

*Full Length Research Paper*

# Do the changes in tax incentives encourage direct investment in China by Taiwanese enterprises?

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Received 21 May, 2014; Accepted 25 September, 2014

**This study examined the association between tax incentives of China's 2008 Enterprise Income Tax Law (the 2008 tax law) and inflows of foreign direct investments from Taiwanese enterprises (TDI) to China. In addition, this study also investigated the effects of industry and location on TDI. This study showed that reduced tax rate concessions for foreign enterprises and increased tax rate considerably reduced TDI inflow to China. Furthermore, industry-specific tax incentives became more favorable than location-specific tax incentives after the new tax laws were introduced. The results of joint tests of tax reform and tax incentives indicated that the 2008 tax law did not provide location-specific tax incentives for TDI, while industry-specific tax incentives appeared to be more attractive to TDI. Moreover, Taiwanese enterprises with intensive indirect investment in China as well as with higher shareholdings were inclined to have higher TDI. The implications of these findings implied that foreign direct investment strategy in accordance with industry-specific and location-specific tax incentives can enhance the competitive advantages of multinational companies.**

**Key words:** Tax incentives, the 2008 tax law, Taiwanese direct investment (TDI).

## INTRODUCTION

Since China implemented its economic reform and opening-up policy, the Chinese government has addressed the country's financial and technological shortfalls by encouraging the inflow of foreign capital and technology to facilitate China's industrialization and urbanization. In 2013, China's gross domestic product (GDP) was USD 9,185 billion,<sup>1</sup> and the mean economic growth rate from 2007 to 2013 was 9.74%, indicating that China's economy has undergone rapid and stable growth. The value of foreign investment by the top ten countries or regions neighboring China accounted for 91.61% of all foreign direct investment (FDI) in China. Taiwanese enterprises were the second-largest investor in China,

indicating its influence on China's market.<sup>2</sup> China approved almost 730,000 FDI enterprises, with a total value of USD 1.2 trillion. Because of this rapid growth, China has become the second-largest recipient of FDI in the world. Based on the inflow of foreign investment, China is currently the world's largest developing country.

Taiwanese enterprises were the pioneers of FDI in China. Since the initial economic reform and opening-up policy initiated during the 1980s, Taiwanese businesses have invested in China. China began promoting its economic reform and opening-up policy in the late 1970s, and the investment environment in its coastal cities has continually improved, effectively becoming outposts for

<sup>1</sup> Please refer to the PRC State Administration of Taxation statistical data.

<sup>2</sup> For further information, please refer to the website: <http://www.fdi.gov.cn>.

FDI enterprises. During the 1980s, Taiwanese enterprises established labor-intensive industries in the four economic development zones of Shenzhen, Zhuhai, Xiamen, and Shantou. In the early 1990s, the economic reform and opening-up progressed northward to Shanghai, and later, to more cities along the Yangtze River, as well as in coastal areas and border regions. Consequently, Taiwanese investment moved northward and shifted from labor-intensive industries to technology- and capital-intensive industries. The Investment Commission of the Ministry of Economic Affairs, ROC (MOEA) reported that since China implemented the opening-up policy in 1991, the Taiwanese government has approved 237 investments in China, with a value of USD 174 million. In 2013, 40,762 investments worth USD 133.7 billion were approved, accounting for more than 62% of Taiwan's total outward direct investment. Thus, Taiwanese enterprises clearly occupy a key economic position in China.

Previous studies have primarily investigated the macroeconomic factors affecting FDI in China. Limited extant studies have discussed the effect of tax incentives for investing in specific locations and industries on FDI. This study explores the effect of tax reform incentives on FDI in China after controlling the effect of macroeconomic factors on FDI. We performed a regression analysis to examine the effect of tax incentives on Taiwanese direct investment (TDI) in China. The empirical results of this study suggest that by reducing tax rate concessions for foreign enterprises and increasing the tax rate to 25%, the 2008 tax law effectively decreased the level of TDI in China. After the 2008 tax law was enacted, TDI in Western China was taxed at a reduced rate of 15%, primarily because TDI in that area accounted for only 3% of all TDI in China. Despite attempts to encourage foreign investment in China's western regions, the appeal of tax incentives was limited. Hence, our results show that the increase in TDI was not significant. Furthermore, after promulgating the 2008 tax law, tax incentives for investing in high-tech electronic industries became more favorable than those investing in western China. Because Taiwanese businesses investing in high-tech electronic industries were taxed at a rate of 15%, more Taiwanese enterprises invested in these industries. This study performed joint tests on the 2008 tax law and tax incentives, and the joint test results indicate that the 2008 tax reform did not provide tax incentives encouraging TDI in western China, although it provided effective tax incentives for investing in high-tech electronic industries. The results also show that higher TDI in China and comparatively higher *tax rates* for holding shares facilitated an increase in TDI in China. These two factors were critical tax incentives for TDI enterprises in China.

The contributions of this study are three-fold. First, the validity of this research is strengthened by using a large firm-year sample (from 2001 to 2013) of subsidiaries operating in China. Second, this study incorporated a more comprehensive set of control variables to better investigate the effect of tax incentive on FDI. In addition to controlling the effect of the 2008 China new income tax law on FDI, we also controlled the macroeconomic factors influencing China's overall FDI, including the economic growth rate, consumer price index, employment rate, and the market size of securities to enhance the breadth of this research. Finally, this study provides empirical evidence on the implication of tax reform on industry-specific and location-specific FDI managerial decisions. Specifically, the results provide strategic perspectives for Taiwanese enterprises, one of the largest FDI inflow regions in China, to focus on west-bound and new-high-tech industry investment in China. The findings therefore can also shed light on other inflow sources with respect to FDI inflow investment decisions.

The remainder of this paper is organized as follows. Section 2 details the background of tax reforms in China. Section 3 describes previous studies that are relevant to developing our hypotheses. Section 4 describes the research methodology of the empirical model employed in this study, *including* the empirical variables and sample selection method. Section 5 reports the empirical results and presents additional analyses, and finally, Section 6 *presents* our conclusion, limitation and the implications of our findings.

### ***Institutional background and tax reform in China***

Since China's economic reform and opening up to foreign trade, foreign direct investment enterprises in China have played a crucial role in facilitating China's economic development and levitating the development of industries. Table 1 listed the top-ten FDI inflow countries (regions) in China. Asian countries (regions) accounted for the top six due to geographical reason. Hong Kong has long been China's largest source of FDI inflow. The amount of Hong Kong's investment in China has accumulated to USD 420 billion over the period of 2001 to 2012. Japan is China's second largest source of FDI in China which the amount had accumulated to USD 59 billion. South Korea is the fastest growing and also the third largest country (region) FDI inflow source. Prior to 1995, Taiwan was the second largest FDI inflow source next to Hong Kong. However, with China's opening up policy, more and more countries invested in China. Taiwan became the fourth largest source of FDI in 2002. After 2003, Taiwan became China's

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**Table 1.** FDI Inflows in China.

Year	Hong Kong	Japan	Macao	Singapore	Korea	Taiwan	USA	Germany	France	UK
2001	1,671,730	434,842	32,112	214,355	215,178	297,994	443,322	121,292	53,246	105,166
2002	1,786,093	419,009	46,838	233,720	272,073	397,064	542,392	92,796	57,560	89,576
2003	1,770,010	505,419	41,660	205,840	448,854	337,724	419,851	85,697	60,431	74,247
2004	1,899,830	545,157	54,639	200,814	624,786	311,749	394,095	105,848	65,674	79,282
2005	1,794,879	652,977	60,046	220,432	516,834	215,171	306,123	153,004	61,506	96,475
2006	2,023,292	459,806	60,290	226,046	389,487	213,583	286,509	197,871	38,269	72,610
2007	2,770,342	358,922	63,700	318,457	367,831	177,437	261,623	73,397	45,601	83,094
2008	4,103,640	365,235	58,161	443,529	313,532	189,868	294,434	90,049	58,775	91,401
2009	4,607,547	410,497	81,471	360,484	270,007	188,055	255,499	121,657	65,365	67,902
2010	6,056,677	408,372	65,524	542,820	269,217	247,574	301,734	88,840	123,820	71,032
2011	7,050,016	632,963	68,043	609,681	255,107	218,343	236,932	112,896	76,853	58,152
2012	6,556,119	735,156	50,556	630,508	303,800	284,707	259,809	145,095	65,242	40,960
Total	42,090,175	5,928,355	683,040	4,206,686	4,246,706	3,079,269	4,002,323	1,388,442	772,342	929,897

Source: National Bureau of Statistics of China, 2001-2012. (USD 10,000).

fifth-largest FDI inflow source. In 2012, Taiwan invested in China amounted to USD 2.8 billion. Furthermore, Table 1 also indicated that Germany, United Kingdom, France, United States and Canada also in the top-ten list.

### The 1991 tax reform on FDI in China

China's open door policy, which was adopted in 1979, initiated long-term socioeconomic change after 30 years of economic stagnation. With it came the flow of FDI during the early 1980s, which was followed by the proliferation of income tax laws, including the Income Tax Law Concerning Joint Ventures with Chinese and Foreign Investment (the 1980 tax law), which was designed to govern equity joint ventures, and the Income Tax Law Concerning Foreign Enterprises (the 1981 tax law), which concerned contractual joint ventures and wholly foreign-owned enterprises. Throughout the 1980s, these two laws imposed various tax rates and incentives on these three types of FDI (Cho et al., 1998).

The 1991 tax reform, which lowered the marginal tax rate from 40 to 30% and expanded the range of tax preference, resulted in positive changes in foreign investment flows between China and its competitors. China's Income Tax Law for Foreign Investment Enterprises included many tax incentives, such as a 5-year tax holiday, 40% income tax refund for profits from reinvesting in China for a minimum of 5 years, 50% income tax refund for over 70% of export-oriented FIEs in any year, and the designation of investment incentive zones with a tax rate of 15 or 24%, which was less than the statutory rate (30%), and a local surtax (10%). In addition, China designated special economic zones *with* the lowest tax rate (15%) and more tax incentives, and they were thus ranked as a highly favored tax group. Furthermore, coastal open cities were designated with a concessionary (after the tax-

holiday) tax rate (24%), and they were accordingly ranked as a moderately favored tax group.

### The 2008 tax reform on FDI in China

Before 2008, foreign-funded companies in China were taxed at a relatively low rate, and a series of preferential policies were implemented to encourage FDI in China. Most foreign-invested enterprises were taxed at a rate (15% or 24%) that was almost 10% less than that for domestic enterprises (33%). On March 16, 2007, China passed the new Enterprise Income Tax (EIT) Law (the 2008 tax law), which will come into effect on January 1, 2008. This was the first law in China's history that imposed an income tax on all *types of enterprises*, and it replaced the Foreign Invested Enterprises (FIE) Income Tax Law (which applied to FDI enterprises) and Interim EIT Regulations (which applied to Chinese-owned enterprises). The 2008 tax law unified the income tax system imposed on foreign and domestic enterprises in China, and it provided a single statutory rate of 25% on business profit. The legislation integrated the taxation of local and foreign firms by consolidating the domestic and foreign EIT laws.

The 2008 tax law removed various tax incentives for foreign investors establishing factories in China to *manufacture* exportable goods. The 2008 tax law was anticipated to have a profound impact on foreign-based investors who had already established manufacturing operations in China under the old tax system that favored the production of exportable goods. However, these changes also offered opportunities for technology or service companies to expand their operations in China by providing new tax incentives and domestic market opportunities.

### **Taiwanese enterprises investments in China**

Taiwanese investment in China has promoted China's economic development and Taiwan's industrial upgrade. Taiwanese enterprises were the pioneers of FDI in China, and they occupy a key economic position in the country. During the 1980s, they established labor-intensive industries in China's four economic development zones (Shenzhen, Zhuhai, Xiamen, and Shantou). In the early 1990s, the opening-up policy was progressively implemented northward to Shanghai, and subsequently in more cities along the Yangtze River, as well as in coastal areas and border regions. Consequently, Taiwanese FDI enterprises moved northward and shifted from labor-intensive industries to technology-intensive and capital-intensive industries. According to the Investment Commission of the MOEA statistical data show that in 1991, the Taiwan government approved 237 investment projects in China (valued at USD 174 million). Subsequently, the number of investments increased rapidly, and 40,762 projects were approved up to 2013 (valued at USD 133.7 billion). TDI in China accounted for more than 60% of total TDI. The amount of direct and indirect investments in China between 1993 and 2012, the Taiwanese government approved USD 27,477 million direct investment and USD 80,831 million indirect investments in China. This shows that approximately 75% of Taiwanese enterprises invested China indirectly.

Between 1952 and 2013, *the TDI* was primarily located in China's coastal areas, including Jiangsu Province (32.6%), Guangdong Province (20.3%), and Shanghai (15.61%). By contrast, considerably fewer TDI was located in China's western regions, including Sichuan Province (2.2%) and Chongqing (1.53%). The remaining TDI was located in the western area of Guangxi Zhuang Autonomous Region, Northwestern China, Guizhou Province, Yunnan Province, and Tibet Autonomous Region, accounting for less than 1% of TDI. To balance the disparity between developments in China's eastern and western regions, the 2008 tax law offering tax concessions to encourage FDI in Western China. The table also shows that Taiwanese FDI enterprises in the coastal cities in Eastern China<sup>3</sup> accounted for 71.58% of all approved investments, primarily because of geographic, transportation infrastructure, and climate factors in that region. In addition, investments in Northern<sup>4</sup> and Central China<sup>5</sup> respectively accounted for 5.01 and 22.92% of all approved investments.

At the end of 2013, the top three industries for TDI in China were electronic components manufacturer (19.08%), computers, electronics, and optical products manufacturer (13.74%) and electrical equipment manufacturer (7.32%). These industries collectively accounted for 40.14% of

TDI in China.

## **LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT**

### **Tax incentives for FDI**

Before 1979, FDI was not allowed in China. In 1979, China opened its economy to foreign investors, and FDI in China grew to USD 133 billion by the end of 1995. In the previous 15 years, China has actively opened its regional markets to foreign businesses, and progressively opened inland areas to foreign trade. Consequently, substantial changes have been implemented regarding the size, source, and type of investment for introducing foreign capital and technology. Because of China's foreign investment policy for coastal areas, foreign businesses have invested approximately four times more in coastal provinces than they have in inland provinces. Furthermore, FDI inflow to China increased considerably after China's entry into the World Trade Organization in 2001. At the end of 2010, the cumulative FDI inflow to China peaked at USD 1,047 billion. Since 1979, China has formulated a series of tax incentives, including tax exemptions and lower tax rates, through tax laws for foreign enterprises. These laws were drafted in accordance with the principle of minimum tax burden and maximum preferential tax treatment, and to further open China's markets to foreign trade. These tax incentives are industry-specific, location-specific, and enterprise-specific. The tax incentives include partial tax concessions, such as reduced tax rates, tax holidays, tax refunds, depreciation, and loss carry backs and carry forwards, with a particular focus on enterprise income tax.

Previous studies have shown that most developing countries use tax incentives to attract FDI (Hadari, 1990; Usher, 1977). However, previous studies have yielded conflicting results regarding the effectiveness of using tax incentives to attract FDI. One view is that Chinese tax policies have had a decisive influence on foreign investment in China. Between 1979 and 1995, the coastal regions, which were given more tax preferences, attracted approximately 83% of foreign investment (compared which only 17% for the inland regions). Policies offering greater tax preferences in the coastal regions are a critical factor in the recent rapid absorption of FDI in those regions. Specifically, if foreign enterprises investing in China intended to increase their after-tax returns, increased FDI would be anticipated in the special tax incentive zones that offer concessionary rates (15 or 24%), compared with that in other areas where FDI is subject to higher statutory tax rates. Attitudinal and empirical studies on the effect of tax incentives on FDI have been inconclusive. Some studies (Fortune, 1977; Root and Ahmed, 1978; Hartman, 1984; Boskin and Gale, 1986; Papke, 1987; Young, 1988; Slemrod, 1990; Grubert and Mutti, 1991; He and Guisinger, 1993; Swenson, 1994;

<sup>3</sup> This includes the six provinces and one municipality: Shandong, Zhejiang, Anhui, Fujian, Jiangxi, Jiangsu and Shanghai.

<sup>4</sup> This includes Beijing, Tianjin, Hebei, Shanxi and Inner Mongolia.

<sup>5</sup> The region includes Henan, Hubei, Hunan, Guangdong and Hainan.

Hines, 1996) have shown that tax incentives are a critical factor for attracting FDI and for making regional investment decisions; however, other studies (Forsyth, 1971; Carlton, 1983; Lim, 1983; Yelapaala, 1984; Moore et al., 1987; Ernst and Young International, 1994) have presented opposite conclusions. This inconsistency may partially be the result of the various tax measurements employed in these studies. Hartman (1984), Boskin and Gale (1986), and Young (1988) measured the influence of effective tax rates on FDI. Grubert and Mutti (1991) empirically showed that statutory tax rates are stronger determinants of income shifting than effective tax rates.

China provides an ideal opportunity for testing these assertions because of its relatively high FDI, as well as the various tax incentives that China has offered to attract FDI during the previous two decades. China's total FDI has grown annually at an average rate of 41%; specifically, it has increased from USD 1.26 billion in 1984 to USD 41.73 billion in 1996 (China State Statistical Bureau, 1983–1997). By 1993, China had become the second-largest recipient of FDI in the world (second to the United States), and the largest beneficiary in the developing world.

Tax incentives have been adopted worldwide to attract foreign direct investment (FDI) and its superior technology. Deng et al. (2012) develop a static computable general equilibrium (CGE) model of China to explore it. Their results suggest that abolishing differential tax system leads to weaker FDI spillovers in the short term. Park et al. (2013) examine how a tax regime, composed of a host country's corporate taxes and tariffs, affects inbound and outbound FDI. Their empirical results of this study intensify the opinion that tax burdens or incentives are deeply associated with inbound or outbound FDI, and imply that the adjusted outbound FDI gravity model is helpful to examine determinants of FDI or tax effects on FDI. Klemm and Parys (2012) prepared a new dataset of tax incentives in over 40 Latin American, Caribbean and African countries for the period 1985–2004. They found evidence that lower rates and longer tax holidays are effective in attracting FDI in Latin America and the Caribbean but not in Africa. An (2012) examined whether FIEs are responding to the 2008 tax reforms in China by reducing their investment in China. This study found that FIEs are reducing their investment in China and the magnitude of the response is larger for Hong Kong-Macau-Taiwan (HMT) investment enterprises. The evidence of An (2012) supports the claim that some Chinese investors engaged in "roundtripping" FDI.

Based on the aforementioned studies, China's tax policies do have impact on DFI. According to An (2012), the influence of tax incentives under 2008 tax reforms was a reducing effect. As one of the top-ten FDI inflow source, it is expected that Taiwanese direct investment (TDI) inflow to China would decrease after the new tax laws were enacted. Accordingly, this study proposed the following hypothesis:

H1: *Ceteris paribus*, after the 2008 tax laws were implemented in China, tax incentives for foreign investors were reduced, and TDI is decreased.

### **Tax incentives on FDI types.**

In China, there are three types of FIE on FDI: equity joint ventures, contractual joint ventures, and wholly foreign-owned enterprises. Equity joint ventures are limited liability corporations (there is a minimal requirement of 25% foreign participation) in which Chinese and foreign partners jointly invest and manage the operations. Contractual joint ventures may or may not form as legal entities, and there is no minimal foreign participation requirement. In addition, the profits and losses are shared in accordance with the terms and conditions stipulated in the venture contract. Wholly foreign-owned enterprises may be established by foreign companies using their own capital, technology, and management. Moreover, foreign investors are responsible for all risks, gains, and losses. In 1991, the Income Tax Law for Foreign Investment Enterprises and Foreign Enterprises (the 1991 tax law) were simplified, and all types of FDI were granted identical tax benefits.

Under the 1991 tax law, all three types of FDI were treated identically, and they were subjected to the same tax rates and incentives. Two major differences exist in the tax provisions for the three types of FDI. First, the 1991 tax law replaced the progressive tax rates of the 1981 tax law with a flat income tax rate (30%) and local tax (3%) on all types of FDI. Consequently, the tax liability of large contractual joint ventures and wholly foreign-owned enterprises was reduced, whereas the small and medium enterprises, which previously paid lower taxes, were liable to pay a higher tax rate. Second, the 1991 tax law unified tax exemptions, reductions, and refunds for all types of FDI. Regarding the choice of investment type, foreign investors considered both tax and nontax factors. To compare the governing laws and regulations, legal liability, duration, approval and registration, capital requirements, profit/loss distribution, management and ownership control, and termination of business of the three types of FDI in China. Tung and Cho (2000) explored whether the various types of FDI were affected differently. They showed that China's tax reforms in 1979–1991 provided more tax incentives for equity joint ventures than they did for contractual joint ventures and wholly foreign-owned enterprises; moreover, most types of FDI in China were equity joint ventures. After the 1991 tax reform, the effect of tax incentives on the type of investment was insignificant.

### **Tax incentives based on FDI zone**

Location theory purports that multinational enterprises (MNEs) maximize their FDI potential by selecting an FDI

location that is close to their market or *to their source of raw materials*. When an investment location attracts increasingly more FDI, it becomes an agglomerated location. Moreover, the agglomeration effect is typically associated with externalities. Operating in concentrated production or population areas facilitates the rapid spillover of knowledge and access to joint networks of suppliers and distributors. Consequently, firms can enhance their technology level to acquire economies of scale and scope. Investing in regions featuring substantial industrial clustering is likely to involve relatively lower costs than *in regions* with a dispersed manufacturing sector. Regarding the agglomeration effect, Krugman (1991) considered clustering as a form of economic activity resulting from historical contingencies. Because of contingencies, some locations became clustering sites for specific industries; for example, manufacturing firms that minimize their transportation costs can attain economies of scale. Thus, they typically select locations with aggregated industries.

Previous studies have shown that most developing countries use tax incentives to attract FDI (Hadari, 1990; Usher, 1977). However, previous studies have yielded conflicting results regarding the effectiveness of using tax incentives to attract FDI. Tung and Cho (2000) assessed whether preferential tax treatment was an effective method for attracting FDI to China, and whether it influenced the organizational structure of FDI enterprises. Consistent with previous research, their results indicate that concessionary tax rates and incentives were effective for attracting FDI into the designated special tax incentive zones in China. Consistent with Scholes and Wolfson (1992), they showed that the increased inflow of FDI into these zones was the result of concessionary tax rates enhancing the after-tax return on investments.

In China, from the early 1980s to the early 1990s, special tax incentive cities and zones emerged, spanning from the south to the north areas and from the coastal regions to the inner areas of China. All provinces and autonomous regions (except for Tibet) were opened to FDI. These cities and zones offered various tax concessions to foreign investors (Cho and Tung, 1998). The open door policy began in 1980 when China opened four special economic zones in comparatively less developed rural areas of Southern China. The local governments of these zones were given autonomy over their economic development and, a 15% tax rate has been available to foreign investors operating in these areas since 1984. The success of the special economic zones led to the further opening up of China to foreign investment. In 1984, 14 Coastal Open Cities were designated to attract foreign capital and technology to improve local industries.

In 1992, the Chinese government opened up 18 provincial capitals, six cities along the Yangtze River, and 13 border open cities. Hence, the development of special tax incentive zones was further extended to inner parts

and border regions of China. Simultaneously, the government undertook various measures to facilitate the inflow of FDI, such as developing an institutional infrastructure and adopting laws to regulate the legislative, administrative, and judicial operations of government. To attract FDI into the special tax incentive zones, generous tax incentives were offered to investors. Specifically, FIEs operating in the zones were granted concessionary tax rates of either 15 or 24%, which was comparatively lower than the statutory tax rates (33%) levied on FIEs outside of these areas.

The theory of location advantages considers the dispersion of resources and markets, international transport, trade barriers, infrastructure, cultural and psychological gaps, and political factors. Manufacturers typically select their preferred regions based on their characteristics. Crow (1979) indicated that many countries could achieve regional industrial development by offering additional incentives to attract business to designated regions. Scholes and Wolfson (1989, 1992) also indicated that tax rules jointly influence investment decisions and organizational form. If tax factors are critical investment decisions, China's concessionary income tax rates (15 or 24%) would be adopted in the different special tax incentive zones. Dunning (1988) stressed the importance of location selection for FDI, and indicated that the factors requiring consideration are ownership structure, investment location, and the degree of internationalization. Klimberg and Ratick (2008) indicated that a suitable investment location should be determined based on the location configuration, optimal applicability, and equipment performance. Pan and Chi (1999) showed that FDI MNEs in Beijing, Shanghai, Tianjin, and other coastal metropolitan cities exhibited optimal production efficiency. Li et al. (2003) reported that the performance and investment location of enterprises did not differ significantly between coastal and inland cities.

Buettner and Ruf (2007) investigated the impact of taxation on the decision of German multinationals to hold or establish a subsidiary in other European countries or abroad. Taking account of unobserved local characteristics as well as firm-specific preferences for potential locations, their findings confirmed that there are significant effects of tax incentives on cross-border location decisions. Azemar et al. (2007) measured the effects of taxation on FDI and estimated the impact of tax sparing provisions on Japanese outbound FDI between 1989 and 2000. They found that a positive relation exists between the tax sparing provision and the location of Japanese FDI. Parys and James (2010) investigated to what extent tax incentives are effective in attracting investment in Sub-Saharan Africa and found no robust positive relation between tax holidays and investment in the tax incentives zone. Guo (2010) examined the relation between taxes and the distribution of FDI in China. The results show that taxes have a significantly negative effect on the location. Foster (2011) showed that FDI in China

was markedly skewed in favor of the richest east region, whereas the western region was the weakest attractor. Chen and Yeh (2012) examined variations in the preferences of location antecedents and the rate of FDI by MNEs in relation to increased FDI experience and evolved strategic intentions.

Taiwanese FDI enterprises prefer certain economic regions. The eastern region of China, which has the longest coastline, is nearest to Taiwan, and it features extensive internal and external links, convenient transportation, and advanced communications infrastructure, all of which attract foreign companies. Currently, Shanghai Pudong New District, which was expanded into an open economic zone, is the largest base of Chinese industrial technology, and it is a crucial international port city in the Western Pacific region. Therefore, most Taiwanese FDI is concentrated in Eastern China, accounting for 71.58% of all investments. With increasingly more foreign companies entering Eastern China, the infrastructure has advanced, and the quality of workers and employees has improved. However, the labor and land tax costs have increased accordingly. The 2007 *Report on the Operating Conditions of China Investment Undertakings* showed that the strongest incentive for Taiwanese FDI in China is cheap labor. Moreover, increasing labor costs has a negative impact on the business performance.

Regarding the 2008 tax law, China's central government revised the List of Industries for Foreign Investment in Mid-west China to develop the country's eastern regions, which gradually became critical bases for MNEs investing in China. With China's economic development, the costs of land, labor, and other factors in Eastern China have increased recently. Certain industries became less competitive, and the declining economic efficiency caused companies operating in Eastern China to become inefficient.

To minimize the gap between the eastern and western regions of mainland China, China's government implemented the China Western Development Program to relocate some manufacturing industry chains operating near China's coastal region to the western region, thereby attracting *Notes Book (NB)* industry clusters to Chongqing and Chengdu, Sichuan Province, to establish factories. Chongqing and Chengdu are competing aggressively to become leaders of the NB industry chain through internal competition for resources, and external competition for positive investment opportunities. In addition to the environmental advantages of the investment location, new railroad infrastructure can significantly reduce the time and cost of transportation. Successful investment in Chongqing, Taiwanese FDI enterprises to the free trade zone investment enjoys state subsidies of 10 years and 15% income tax for export tax rebates.

To continue encouraging economic developments in Western China, the Ministry of Finance, General Administration of Customs, and State Administration of Taxation jointly issued the 58th Notice on the In-depth

Implementation of the Western Development Strategy on Tax Policy in July 2011. The 58th Notice extended the tax preferential policies of the western development period from January 1, 2011 to December 31, 2020. The 58th Notice made provisions for enterprises operating in preferred industries in the western area of China, as well as provisions encouraging industrial projects for the main business in China. After companies have been audited by tax authorities, they are required to pay a reduced corporate income tax rate of 15% in Taiwan. Thus, since 2008, China's tax concessions have favored businesses operating in the country's western regions, and they have also encouraged Taiwanese FDI in China's northwestern and southwestern regions. Hence, this study expected that the implementation of the 2008 tax law will increase FDI in Western China. Accordingly, we proposed the following hypothesis:

H2: *Ceteris paribus*, after the 2008 tax law implementation, the TDI enterprises in Western China have the higher TDI.

### **Tax incentives based on the FDI industry**

The 1991 tax law provides many tax incentives for FDI enterprises in China; such as a 50% reduction in the tax rate for income from exportable products or high-technology enterprises, 40% income tax refund for reinvesting in China. After implementing the 2008 tax law, the principle of providing favorable tax concessions for location-specific investment has shifted to favor more for industry-specific investment. Thus, high-technology enterprises were taxed at a rate of 15% instead of the standard rate of 25%. However, new high-technology enterprises were required to meet stringent requirements, including the core intellectual property, research and development expenditure exceeding a specific threshold, and reach the required proportion of scientific and technical personnel. High-tech enterprises can enjoy other tax breaks including 50% additional deduction or amortization of development costs, small and medium high-tech enterprises can be offset part of the taxable investments and accelerated or shorten the depreciation of fixed assets. Hence, Taiwan businessmen invest in high-tech industry of emerging technologies to China, higher the amount of their investment. The hypothesis is proposed as follows:

H3: *Ceteris paribus*, after the 2008 tax law implementation, the TDI enterprises belonging to high-tech and new technology industries have higher TDI.

### **Non-tax incentives factors**

#### **Types and holding shares of FDI flow**

Taiwanese FDI enterprises typically invest in China either

directly or indirectly. Direct investments include remittance of investments to subsidiaries in China either through companies operating in a third region or via direct remittance. Indirect investments are made either through investment companies or through existing companies registered in a third region, which accounted for one-third of TDI in China. Currently, most Taiwanese businesses invest in China through investment companies operating in Hong Kong and Macau. Moreover, because the tax rates in Hong Kong and Macau are relatively low, large shareholders can increase their profits through tax savings. Furthermore, in 2008, Taiwan's tax authorities drafted an amendment of Article 24 of the Relations between Peoples of the Taiwan Area and the Mainland China Area. The article states that proceeds (i.e., dividend revenues) received by Taiwanese FDI enterprises in China that have been subjected to a 10% tax are considered an income item that can be deducted from their taxable income when the dividend is paid to Taiwan.

Because most Taiwanese FDI enterprises operating in China involve indirect investments, Taiwanese enterprises benefit from paying less tax. Article 24 also states that most of Taiwanese companies using investment companies (or subsidiaries) operating in a third region to invest in enterprises in mainland China, in accordance with Taiwan's Income Tax Law, declare the investment proceeds *from* third-region companies derived from investing in companies in mainland China as investment returns, *because this income is considered as taxable income*. However, the portion of returns on investments in third-region areas (or in mainland China) that have already been subjected to income tax can be deducted from their tax payable in Taiwan. Draft amendments to the general relaxation of investment Taiwanese businessmen on the mainland China taxation provisions to reduce tax duplication, thereby encouraging companies to return their dividends to their parent company in Taiwan. Therefore, this study controlled the effect of the type of investment on FDI behavior.

### Rates of the holding shares

Taiwanese parent companies' holding shares in subsidiaries represented various decision-making power which will affect the TDI decisions in China. Regardless of whether Taiwanese enterprises invest directly or indirectly in subsidiaries in China, up to 25% of shares held by parent companies are considered gains (or losses) on equity investments. Although Taiwanese parent companies can repatriate their investment income, because no tax agreement exists between Taiwan and China, repatriated profits are subject to a 10% withholding tax. According to the current tax conventions of the Organization for Economic Cooperation and Development, if Taiwan signed a tax agreement with mainland China, the withholding tax rate on repatriated investment profits

would be reduced to 5%, provided that the Taiwanese shareholders held more than 25% of shares. Because of the tax incentives for holding more than 25% of shares, we controlled the tax incentives for stock ownership to control the effect of holding shares on Taiwanese FDI in China.

### Macroeconomic factors

Numerous empirical studies have discussed the determinants of regional FDI distribution in China. Cheng and Kwan (2000) examined data from 29 provinces from 1985 to 1995, and they observed the agglomeration effects from the rate of foreign capital stocks. They showed that larger markets, perfect infrastructures, preferential policies, and lower wages exerted a positive effect on FDI. In addition, *they* reported that although education exerts a positive influence on FDI, the effect was non-significant. Coughlin and Segev (2000) used data of regional provinces in China from 1990 to 1997 to examine the mode of the determinants of FDI in China. They showed that market size, labor productivity, and location (i.e., coastal versus inland) exerted a positive effect on FDI. Conversely, higher wages and illiteracy rates negatively influenced FDI. Wei and Liu (1999) reported that lower wage rates and higher GDP growth rates have a positive effect on attracting FDI. Furthermore, high levels of international trade have a positive effect on FDI. *Ceteris paribus*, the higher the research and development manpower, the more attractive a region would be to foreign investors. Moreover, a positive relationship exists among infrastructure, preferential policies, and FDI. In addition, areas that are geographically closer to the main sources of FDI have a positive effect on pledged FDI.

Sun et al. (2002) examined the changes in importance of FDI determinants over time. Among the various determinants for attracting FDI, wages exhibited a positive relationship with FDI before 1991, although the relationship was negative following 1991. In addition, labor quality and infrastructure were crucial determinants of FDI distribution. Buettner and Ruf (2007) investigated the impact of taxation on the decision of location for investments. The results confirmed a significant effect of market size on cross-border location decisions.

Liu et al. (2012) analyzed the relative importance of the potential determinants of FDI inflow across the coastal, northeastern, central, and western regions in China between 2001 and 2009. Specifically, they examined market size, labor cost, labor quality, physical infrastructure development, telecommunications, and the degree of economic openness and government incentives to attract FDI. This study used the employment rate, economic growth rate, inflation price index, and market size to control the effect of macroeconomic factors on FDI.



Naveed et al. (2013) found that economic growth was the most dominating factors of FDI. Khan et al. (2014) analyzed the relationship between macroeconomic factors (e.g. economic growth, consumer consumption index) and FDI in South Asia. Similar to Naveed et al. (2013), Khan et al. (2014) also found that economic growth is an important factor.

## RESEARCH DESIGN

### Regression model

This study investigated the impact of tax incentives on TDI in China by controlling the effect of macroeconomic factors on TDI. The multiple regression equation is expressed as follows:

$$TDI_{it} = \alpha_0 + \alpha_1 DY08_{it} + \alpha_2 DY08 \times AREA_{it} + \alpha_3 DY08 \times ELEC_{it} + \alpha_4 AREA_{it} + \alpha_5 ELEC_{it} + \alpha_6 TYPE_{it} + \alpha_7 HOLD_{it} + \alpha_8 INVREV_{i,t-1} + \alpha_9 EMPLOY_t + \alpha_{10} GDP_t + \alpha_{11} CPI_t + \alpha_{12} INDEX_t + \varepsilon_{it} \quad (1)$$

### Measurement variables

#### Dependent variables

$TDI_{it}$  was measured using the natural logarithm of the value (in NTD 1,000) of Taiwanese FDI in China's subsidiaries of firm  $i$  at year  $t$ .

#### Hypothesis variables

$DY08_{it}$  is a dummy variable for the year; if the year was between 2008 and 2012, then  $DY08 = 1$  (otherwise,  $DY08 = 0$ ). It is not uncommon to use Year dummy to capture the effect of tax reform on business decisions in related articles. For instance, previous studies adopted year-dummy variable to explore the effect of USA TRA 1986 tax reform on dividend policy (Burman et al.1994; Papaioannou and Savarese, 1994; Schulman et al., 1996; Casey et al., 1999; Casey and Dickens, 2000) and domestic income shifting behavior (Shevlin et al. 2012). Wang and Chen (2004) used the dummy-year variable to examine the implementation of 1998 Taiwan imputation tax system on cash dividend payout ratios and capital structure (Wang and Chen, 2007). Tung and Cho (2000, 2001) also employed the year dummy variable to examine whether concessionary tax rates and tax incentives under 1991 China tax reforms attract FDI into certain designated areas. This study anticipated that a negative correlation would exist between TDI and the 2008 tax law enacted.

$AREA_{it}$  is a dummy variable denoting location; if a Taiwanese subsidiary firm  $i$  was located in Western China, then  $AREA = 1$  (otherwise,  $AREA = 0$ ). We anticipated

that preferential tax treatment was given to enterprises operating in Western China *when* the 2008 tax law was enacted. We hypothesized that the correlation between  $TDI$  and  $AREA$  would be positive.

$ELEC_{it}$  is a dummy variable representing specific industries; if a Taiwanese subsidiary firm  $i$  invested in a high-technology electronics industry, then  $ELEC = 1$ , (otherwise,  $ELEC = 0$ ). We anticipated that the preferential tax rate of 15% was applied to FDI enterprises operating in high-technology electronics industries after the new tax laws were enacted. We hypothesized that the correlation between  $TDI$  and  $ELEC$  would be positive.

### Control variables

$TYPE_{it}$  is a dummy variable denoting the investment type. If a Taiwanese parent firm *made either through investment companies or through existing companies registered in a third region* to indirectly invest China subsidiary  $i$ , then  $TYPE = 1$  (otherwise,  $TYPE = 0$ ; i.e., a direct investment). We anticipated that preferential tax treatment was given for indirect investments, and we hypothesized that the correlation between  $TDI$  and  $TYPE$  would be positive.

$HOLD_{it}$  is a dummy variable for the rate of holding shares; if a subsidiary firm  $i$  received more than 25% of its investments from a Taiwanese parent firm, then  $HOLD = 1$  (otherwise,  $HOLD = 0$ ). We anticipated that less tax was withheld when invested holding shares exceeded 25%. We hypothesized that the correlation between  $TDI$  and  $TYPE$  would be positive.

$INVREV_{i,t-1}$  denotes the preceding period ( $t-1$ ) investment revenue for firm  $i$  in year  $t$  in China. Most subsidiaries retain the profits as savings in the host country, and they do not return it back to their parent firm. We controlled this effect on  $TDI$ , and we anticipated that the correlation between  $TDI$  and  $INVREV$  would be positive.

$EMPLOY_t$  represents the rate of employment at year  $t$  in China; we expect there is positive correlation between  $TDI$  and  $EMPLOY$ .

$GDP_t$  denotes the real GDP per person at year  $t$  in China. China's GDP growth has been relatively high in these years; however, this study controls the impact of  $GDP$  on  $TDI$ .

$CPI_t$  denotes the consumer price index (CPI) at year  $t$  in China; we anticipated that the correlation between  $TDI$  and  $CPI$  would be positive.

$INDEX_t$  is the weighted stock market index of the Shanghai Stock Exchange at year  $t$ . We anticipated that the correlation between  $TDI$  and  $CPI$  would be positive.

### Research sample data

Because of the *unavailability* of financial statements of Taiwanese FDI enterprises in China, we used data from a

**Table 2.** Taiwan FDI Amount in China.

<b>Panel A: Types of investment</b>						
<b>Variables</b>	<b>Mean</b>	<b>Minimum</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Maximum</b>
direct remittance (n=617)	1025016.72	1892	85300	252736	1054245	19087152
third-region remittance (n=714)	2134082.91	34	127709	531296	1753314	27359037
through investment companies (n=25,688)	2107739.72	40	175985	542832	1624459.50	73505945
through existing companies (n=12,400)	3027295.64	656	197834	665734	1988625	55000000

  

<b>Panel B: Areas of investment</b>						
<b>Variables</b>	<b>Mean</b>	<b>Minimum</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Maximum</b>
East China Area (n=24,346)	2361558.49	136	188594	605535	1859995	73505945
South China Area (n=10,917)	2048339.20	40	157310	445079	1341520	73505945
Central China Area (n=797)	3898000.79	6978	434199	989769	2885863	73505945
North China Area (n=2,789)	2104046.55	527	153836	536979	1321990	73505945
Northwest Area (n=310)	3477419.68	4278	205934	852459	1929755	27359037
Southwest Area (n=913)	5105919.41	6990	476742	1205485	5339966	73505945
Northeast Area (n=610)	3458906.80	9731	435979	1205485	1783951	73505945

Firm-Year/NTD1,000.

*TEJ* database (specifically, parent company financial information, location, FDI type, rate of holding shares, and value of investments from parent companies investing in China). Initially, we obtained a sample comprising 43,138 observations samples from the *TEJ*. After removing 2,418 missing data, this study analyzed the remaining 40,720 firm-year observations. Subsequently, we deleted 23,523 observations for outliers and missing data due to the use of one-period-lagged values. The final samples of 17,197 observations were used in the correlation and regression analyses.

## EMPIRICAL RESULTS

### Descriptive statistics and correlation coefficients analyses

Table 2 (Panel A) reports investment types for TDI in China. Investment types include direct- and indirect-investment. Direct investments include remittance of investments to subsidiaries in China either through via direct remittance (direct remittance) or via companies operating in a third region (third-region remittance). Indirect investments are made either through investment companies (through investment companies) or via through existing companies registered in a third region (through existing companies), which accounted for one-third of TDI in China. Panel A shows that 671 firms direct remittance invested in China subsidiaries between 2001 to 2012. The mean of these investments is NTD 1,025 million. There are 714 China subsidiaries firms received remittance investments from a third-region company, and the mean is NTD 2,134 million. There are 25,688 firms used

investment companies to invest indirectly in subsidiaries, which was the most commonly used approach, and the mean is NTD 2,108 million. Panel A also indicates that 12,400 firms used existing companies in third-region to invest indirectly in China subsidiaries, and the mean is NTD 3,027 million. Based on the *TEJ* database, we divided the investment areas into eight areas (East China, South China, Central China, North China, Northwest, Southwest, Northeast, and other regions). Table 2 (Panel B) shows that between 2001 and 2012, most TDI in China was primarily in the coastal regions of East China Area, with 24,346 firm-year observations, accounting for 60% of the entire sample. The mean of these investments is NTD 2,362 million. The number of observations of South China Area is 10,917, and the mean is NTD 2,048 million. The number of observation of North China Area is 2,789 and the mean is NTD 2,104 million. After implementing the 2008 tax law, China government encouraged FDI inflow into Western China to balance the disparity in economic development between China's eastern and western regions. The TDI accounted for only 310 firm-year observations for Northwest Area, and the mean investments for this region is NTD 3,477 million. Panel B shows that there were 913 firm-year observations for Southwest Area, but the mean investments is NTD 5,106 million. The data in Table 2 show that TDI inflow to China's western region increased slowly over time, because the opened up years are shorter and the costs of property, equipment are larger, the returns on investment are stagnant. Table 3 reports the descriptive statistics of research variables. The Panel A of Table 3 shows the mean investment (*TDI*) is NTD 2,852 million. In addition, the analysis shows that regarding the location of foreign-invested firms (*AREA*), only 3% were located in

**Table 3.** Regression variables descriptive statistics result.

<b>Panel A: Total Sample (n=17,197)</b>						
<b>Variable</b>	<b>Mean</b>	<b>Minimum</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Maximum</b>
Investment Amount	2852227	350	220449	709680	2269071	73505945
<i>TDI</i>	13.44	5.86	12.30	13.47	14.63	18.11
<i>DY08</i>	0.57	0	0	1	1	1
<i>AREA</i>	0.03	0	0	0	0	1
<i>ELEC</i>	0.60	0	0	1	1	1
<i>TYPE</i>	0.94	0	1	1	1	1
<i>HOLD</i>	0.98	0	1	1	1	1
<i>INVREV (t-1)</i>	9.65	0	8.31	9.78	11.11	16.96
<i>EMPLOY</i>	95.87	95.7	95.80	95.90	95.90	96.40
<i>GDP</i>	3476.60	1038	2064	3404	5434	6076
<i>CPI</i>	2.96	-0.4	1.9	2.5	4	7
<i>INDEX</i>	2482.26	1161.06	1820.81	2269.13	2808	5262

  

<b>Panel B: Pre-2008 (n=7,343)</b>						
<b>Variable</b>	<b>Mean</b>	<b>Minimum</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Maximum</b>
Investment Amount	1571813	350	152197	494176	1322017	30522129
<i>TDI</i>	13.03	5.86	11.93	13.11	14.09	17.23
<i>DY08</i>	0.03	0	0	0	0	1
<i>AREA</i>	0.57	0	0	1	1	1
<i>ELEC</i>	0.95	0	1	1	1	1
<i>TYPE</i>	0.99	0	1	1	1	1
<i>HOLD</i>	9.51	0	8.2607514	9.6524588	10.94	16.55
<i>EMPLOY</i>	95.91	95.7	95.8	95.9	96	96.4
<i>GDP</i>	1817	1038	1270	1726	2064	2645
<i>CPI</i>	3	-0.4	1.6	2.8	3.20	6.50
<i>INDEX</i>	2488	1161.06	1266.5	1497.04	2675.47	5261.56

  

<b>Panel C: Post-2008 (n=9,854)</b>						
<b>Variable</b>	<b>Mean</b>	<b>Minimum</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Maximum</b>
Investment Amount	3806366	527	294308	938022	2985448	73505945
<i>TDI</i>	13.75	6.27	12.59	13.75	14.91	18.11
<i>DY08</i>	0.04	0	0	0	0	1
<i>AREA</i>	0.61	0	0	1	1	1
<i>ELEC</i>	0.93	0	1	1	1	1
<i>TYPE</i>	0.98	0	1	1	1	1
<i>HOLD</i>	9.76	0	8.3416486	9.8845595	11.2458431	16.9622158
<i>EMPLOY</i>	95.85	95.70	95.80	95.90	95.90	95.90
<i>GDP</i>	4713	3404	3740	4423	5434	6076
<i>CPI</i>	2.98	1.20	1.90	2.50	4.10	4.60
<i>INDEX</i>	2478	1820.81	2199.42	2269.13	2808.08	3277.14

Variable definitions: *Investment Amount*<sub>*t*</sub>: this is measured by the investment amount of Taiwan FDI in China's subsidiaries firm *i* at year *t* in NTD. *TDI*<sub>*t*</sub>: this is measured by the natural logarithm of investment amount of Taiwan FDI in China's subsidiaries firm *i* at year *t* in NTD. *DY08*<sub>*t*</sub>: this is the dummy variable of year, if the year is 2008 to 2012 then *DY08*=1; o.w. then *DY08*=0. *AREA*<sub>*t*</sub>: this is the dummy variable of location, if the China's subsidiaries firm *i* invested in location of western China then *AREA*=1; o.w. then *AREA*=0. *ELEC*<sub>*t*</sub>: it is the dummy variable of industry, if the China's subsidiaries firm *i* invested in high-tech electronic industries then *ELEC*=1; o.w. then *ELEC*=0. *TYPE*<sub>*t*</sub>: it is the dummy variable of investing type, if a Taiwanese parent firm made either through investment companies or through existing companies registered in a third region to indirectly invest China subsidiary *i*, then *TYPE* = 1 (otherwise, *TYPE* = 0; i.e., a direct investment). *HOLD*<sub>*t*</sub>: it is the dummy variable of holding share rate, if the China's subsidiaries firm *i* is invested by Taiwan parent firm more than 25% then *HOLD*=1; o.w. then *HOLD*=0. *INVREV*<sub>*t*</sub>,*t*-1: it is the last period (*t*-1) investment revenue for firm *i* at year *t* in China. *EMPLOY*<sub>*t*</sub>: it is the rate of employment at year *t* in China. *GDP*<sub>*t*</sub>: it is the real GDP per person at year *t* in China. *CPI*<sub>*t*</sub>: it is the Consumer Price Index at year *t* in China. *INDEX*<sub>*t*</sub>: it is the weighted stock index of Shanghai at year *t* in China.

Western China, whereas almost 50% of Taiwanese FDI enterprises invested in high-technology electronics industries (*ELEC*). Regarding the preferred investment type, 94% of Taiwanese FDI enterprises invested indirectly in China (*TYPE*), with 98% of parents' firms holding more than 25% of subsidiaries shares (*HOLD*). Regarding the macroeconomic factors, both the mean and median rate of employment (*EMPLOY*) in China is 96%. In addition, the mean (median) of GDP per person (*GDP*) and CPI is RMB 3,477 (RMB 3,404) and 2.96% (2.5%), respectively.

Finally, the mean (median) of index of the capital (securities) market is 2,482 (2,269). We divided the sample into the following two groups based on when the 2008 tax law was enacted: the pre-enactment group (2001–2007;  $DY08 = 0$ ); and the post-enactment group (2008–2012;  $DY08 = 1$ ). Table 3 (Panels B and C) show that the mean investment (*TDI*) of the pre-enactment group is NTD 1,572 million, whereas that of the post-enactment group is NTD 3,806 million. It appears that the mean *TDI* increased by 1.42 times after the 2008 tax law was enacted.

The statistical analysis for the research variables are detailed as follows. The mean *AREA* increased from 3 to 4%, and only 1% of *TDI* were located in Western China after the 2008 tax law was enacted. The mean *ELEC* increased from 57 to 61%, and only 4% *TDI* were in the high-technology industries after the enactment of the new tax law. Table 4 presented both Pearson and Spearman correlation coefficient matrixes. Based on the Pearson correlation coefficient matrix, the correlation coefficient is 0.86 between *DY08* and *GDP*. Unexpectedly, the enactment of 2008 tax reform in China (*DY08*) is positively correlated with *TDI*. Furthermore, *DY08*, *TDI* are positively correlated with  $DY08 \times AREA$  and  $DY08 \times ELEC$ , as expected. The results indicated that the 2008 tax law did provide location-specific and industry-specific tax incentives for FDI. The inter-correlation among the independent variables suggests that a multivariate analysis is further required to consider the effect of enactment of 2008 tax reform on *TDI* decisions by simultaneously incorporating all the independent variables. The Spearman correlation coefficients matrix provides similar results. The Variance Inflation Factor (*VIF*) test shows that the values are all below 4, which implies they may not exit serious multicollinearity problems.

## Regression analyses

Before 2008, foreign-funded companies in China were taxed at a relatively low rate, and a series of preferential policies were implemented to encourage FDI inflow to China. Most foreign-invested enterprises were taxed at almost 10% less than that applied to domestic enterprises. On March 16, 2007, the National People's Congress of China promulgated the 2008 tax law (effective as of

January 1, 2008). This was the first law in China's history imposing an income tax on all forms of enterprise, and it replaced the FIE Income Tax Law and Interim EIT Regulations. The EIT unified the income tax system imposed on foreign and domestic enterprises operating in China, and it provided a single statutory rate of 25% on business profit. The 2008 tax law removed various tax incentives for foreign investors establishing factories in China for producing exportable goods. The 2008 tax law was anticipated to have a profound impact on foreign-based investors who had already established manufacturing operations in China under the old tax system that favored the production of exportable goods. However, these changes also offered opportunities for technology industries to expand their operations, and for factories to relocate to Western China by providing new tax incentives and domestic market opportunities.

Table 5 shows the result of the Taiwanese FDI (*TDI*) regression model. The coefficient of *DY08* is significantly negative, indicating that implementing the 2008 tax law, which reduced tax concessions for Taiwanese FDI and increased tax rates to 25%, resulted in a significant reduction in *TDI* ( $t = -2.38$ ,  $p < 0.0174$ ); thus, H1 is supported. For the period after the new tax laws were enacted, the  $DY08 \times AREA$  regression coefficient is positive ( $t = 1.15$ ,  $p = 0.2516$ ), but lacks statistically significance, indicating that the *TDI* in Western China capitalized on the reduced tax rate of 15%, which was a 10% reduction (25%–15%=10%). Because *TDI* in Western China was only 3%, despite China's tax incentives encouraging *TDI* inflow to the western regions, the appeal of tax incentives for investing in this region was limited. Hence, although we observed an increase in *TDI*, the difference is not significant; thus, H2 is unsupported. Furthermore, for the period after the 2008 tax law was enacted, the  $DY08 \times ELEC$  regression coefficient is positively significant ( $t = 7.90$ ,  $p < 0.0001$ ), indicating that industry-specific tax incentives were preferable to location-specific tax incentives. Taiwanese FDI enterprises investing in high-technology electronic industries capitalized on the tax rate 15%, and *TDI* in high-technology electronics industries increased; thus, H3 is supported. This finding is consistent with the results reported by Liu et al. (2012).

Table 5 shows the variables for controlling the effect of nontax factors on *TDI*. The regression coefficient of *AREA* (0.295) is statistically significant ( $t = 2.47$ ,  $p = 0.0136$ ), indicating that Taiwanese FDI enterprises located in Western China (i.e., Northwestern and Southwestern China in this study) were offer greater tax incentives by China's government. Since 2008, China's tax concessions for developing the western region has provided enterprises this region belonged to the encouraged industry catalogue and located in the western area. There are provisions encouraging industrial project for the main business in China; and its main business income total income exceeds 70% business that year, as well as the

Table 4. Correlation coefficients statistics result.

Variables	<i>TDI</i>	<i>DY08</i>	<i>DY08</i> × <i>AREA</i>	<i>DY08</i> × <i>ELEC</i>	<i>AREA</i>	<i>ELEC</i>	<i>TYPE</i>	<i>HOLD</i>	<i>INVREV</i>	<i>EMPLOY</i>	<i>GDP</i>	<i>CPI</i>	<i>INDEX</i>
<i>TDI</i>	1	0.203***	0.072***	0.120***	0.060***	-0.056***	0.068***	0.045***	0.325***	-0.037***	0.228***	0.104***	0.086***
		(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)
<i>DY08</i>	0.199***	1	0.114***	0.636***	0.015*	0.042***	-0.046***	-0.016**	0.058***	-0.250***	0.864***	0.011	-0.007
	(<.0001)		(<.0001)	(<.0001)	(0.0575)	(<.0001)	(<.0001)	(0.0330)	(<.0001)	(<.0001)	(<.0001)	(0.1473)	(0.3397)
<i>DY08</i> × <i>AREA</i>	0.069***	0.114***	1	0.056***	0.780***	-0.012	-0.002	-0.004	0.019**	-0.018**	0.113***	0.007	-0.006
	(<.0001)	(<.0001)		(<.0001)	(<.0001)	(0.1313)	(0.7904)	(0.6129)	(0.0124)	(0.0192)	(<.0001)	(0.3913)	(0.4188)
<i>DY08</i> × <i>ELEC</i>	0.117***	0.636***	0.056***	1	-0.004	0.606***	-0.019**	0.006	0.069***	-0.155***	0.555***	0.014*	-0.004
	(<.0001)	(<.0001)	(<.0001)		(0.5964)	(<.0001)	(0.0119)	(0.4651)	(<.0001)	(<.0001)	(<.0001)	(0.0787)	(0.6182)
<i>AREA</i>	0.058***	0.0145*	0.780***	-0.004	1	-0.038***	-0.008	-0.001	-0.002	0.004	0.021***	-0.002	-0.013
	(<.0001)	(0.0575)	(<.0001)	(0.5964)		(<.0001)	(0.3059)	(0.8571)	(0.8034)	(0.5714)	(0.0052)	(0.7744)	(0.1085)
<i>ELEC</i>	-0.049***	0.043***	-0.012	0.606***	-0.04***	1	0.007	0.011	0.050***	-0.027***	0.048***	0.025***	0.015*
	(<.0001)	(<.0001)	(0.1313)	(<.0001)	(<.0001)		(0.3859)	(0.1537)	(<.0001)	(0.0004)	(<.0001)	(0.0011)	(0.0506)
<i>TYPE</i>	0.063***	-0.046***	-0.002	-0.019**	-0.008	0.007	1	0.009	0.027***	-0.009	-0.057***	0.008	0.017**
	(<.0001)	(<.0001)	(0.7904)	(0.0119)	(0.3059)	(0.3859)		(0.2602)	(0.0006)	(0.2600)	(<.0001)	(0.3124)	(0.0288)
<i>HOLD</i>	0.049***	-0.016**	-0.004	0.006	-0.001	0.011	0.009	1	0.004	-0.005	-0.015**	-0.001	0.002
	(<.0001)	(0.0330)	(0.6129)	(0.4651)	(0.8571)	(0.1537)	(0.2602)		(0.6163)	(0.5049)	(0.0442)	(0.8761)	(0.7538)
<i>INVREV</i>	0.324***	0.056***	0.018**	0.069***	0.001	0.052***	0.024***	0.002	1	0.011	0.062***	0.041***	0.043***
	(<.0001)	(<.0001)	(0.0193)	(<.0001)	(0.9900)	(<.0001)	(0.0020)	(0.8325)		(0.1509)	(<.0001)	(<.0001)	(<.0001)
<i>EMPLOY</i>	-0.004	-0.201***	-0.009	-0.122***	0.006	-0.007	-0.009	-0.003	0.018**	1	-0.041***	0.132***	0.203***
	(0.5688)	(<.0001)	(0.2320)	(<.0001)	(0.4611)	(0.3800)	(0.2213)	(0.6758)	(0.0183)		(<.0001)	(<.0001)	(<.0001)
<i>GDP</i>	0.226***	0.861***	0.111***	0.553***	0.019**	0.050***	-0.053***	-0.015**	0.061***	0.090***	1	0.270***	0.139***
	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(0.0117)	(<.0001)	(<.0001)	(0.0444)	(<.0001)	(<.0001)		(<.0001)	(<.0001)
<i>CPI</i>	0.097***	0.037***	0.012	0.032***	0.000	0.024***	0.001	-0.007	0.035***	0.430***	0.342***	1	0.728***
	(<.0001)	(<.0001)	(0.1216)	(<.0001)	(0.9945)	(0.0020)	(0.9458)	(0.3961)	(<.0001)	(<.0001)	(<.0001)		(<.0001)
<i>INDEX</i>	0.134***	0.267***	0.022***	0.171***	-0.011	0.024***	0.004	-0.007	0.045***	0.263***	0.399***	0.593***	1
	(<.0001)	(<.0001)	(0.0033)	(<.0001)	(0.1473)	(0.0019)	(0.6098)	(0.3306)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	

a. The upper right corner is Pearson Correlation Coefficients; the lower left corner is Spearman Correlation Coefficients. b. \*\*\*, \*\*, and \* denote significance at the 0.01, 0.05, and 0.10 level, respectively. c. Variable definitions: *TDI<sub>it</sub>* : this is measured by the natural logarithm of investment amount of Taiwan FDI in China's subsidiaries firm *i* at year *t* in NTD. *DY08<sub>it</sub>* : this is the dummy variable of year, if the year is 2008 to 2012 then *DY08*=1; o.w. then *DY08*=0. *AREA<sub>it</sub>* : this is the dummy variable of location, if the China's subsidiaries firm *i* invested in location of western China then *AREA*=1; o.w. then *AREA*=0. *ELEC<sub>it</sub>* : it is the dummy variable of industry, if the China's subsidiaries firm *i* invested in high-tech electronic industries then *ELEC*=1; o.w. then *ELEC*=0. *TYPE<sub>it</sub>* : it is the dummy variable of investing type, if a Taiwanese parent firm made either through investment companies or through existing companies registered in a third region to indirectly invest China subsidiary *i*, then *TYPE* = 1 (otherwise, *TYPE* = 0; i.e., a direct investment). *HOLD<sub>it</sub>* : it is the dummy variable of holding share rate, if the China's subsidiaries firm *i* is invested by Taiwan parent firm more than 25% then *HOLD*=1; o.w. then *HOLD*=0. *INVREV<sub>i,t-1</sub>* : it is the last period (*t-1*) investment revenue for firm *i* at year *t* in China. *EMPLOY<sub>t</sub>* : it is the rate of employment at year *t* in China. *GDP<sub>t</sub>* : it is the real GDP per person at year *t* in China. *CPI<sub>t</sub>* : it is the Consumer Price Index at year *t* in China. *INDEX<sub>t</sub>* : it is the weighted stock index of Shanghai at year *t* in China, we expect there is positive correlation between *TDI* and *CPI*.

**Table 5.** Regression analysis result.

Variables	Pred. Sign	Parameter Estimate	t-Value	Pr >  t
Intercept	?	50.456	4.67	<.0001
DY08	-	-0.163**	-2.38	0.0174
DY08 × AREA	$\alpha_2$ +	0.170	1.15	0.2516
DY08 × ELEC	$\alpha_3$ +	0.398***	7.90	<.0001
AREA	$\alpha_4$ +	0.295**	2.47	0.0136
ELEC	$\alpha_5$ +	-0.522***	-13.75	<.0001
TYPE	+	0.489***	9.57	<.0001
HOLD	+	0.330***	3.47	0.0005
INVREV	+	0.261***	47.17	<.0001
EMPLOY	+	-0.427***	-3.78	0.0002
GDP	+	0.000***	10.61	<.0001
CPI	+	0.002	0.17	0.8659
INDEX	+	0.000***	4.32	<.0001

Adj. R-Sq. 17.52%; F-Value 305.46 (p value <.0001); Test 1:  $H_0 \alpha_2 = \alpha_4$ ; F Value

0.24 (p value =0.6222) Accept  $H_0$ ; Test 2:  $H_0 \alpha_3 = \alpha_5$ ; F Value 123.42 (p value

<.0001) Reject  $H_0$ ; *INVREV*-1: Due to one lag period missing data 23,523 firm-year, this paper use n=17,197 to follow-up regression analysis. b. \*\*\* and \*\* denote significance at the 0.01 and 0.05 level, respectively. c. Variable definitions: *TDI<sub>it</sub>*: this is measured by the natural logarithm of investment amount of Taiwan FDI in China's subsidiaries firm *i* at year *t* in NTD. *DY08<sub>it</sub>*: this is the dummy variable of year, if the year is 2008 to 2012 then *DY08*=1; o.w. then *DY08*=0. *AREA<sub>it</sub>*: this is the dummy variable of location, if the China's subsidiaries firm *i* invested in location of western China then *AREA*=1; o.w. then *AREA*=0. *ELEC<sub>it</sub>*: it is the dummy variable of industry, if the China's subsidiaries firm *i* invested in high-tech electronic industries then *ELEC*=1; o.w. then *ELEC*=0. *TYPE<sub>it</sub>*: it is the dummy variable of investing type, if a Taiwanese parent firm made either through investment companies or through existing companies registered in a third region to indirectly invest China subsidiary *i*, then *TYPE* = 1 (otherwise, *TYPE* = 0; i.e., a direct investment). *HOLD<sub>it</sub>*: it is the dummy variable of holding share rate, if the China's subsidiaries firm *i* is invested by Taiwan parent firm more than 25% then *HOLD*=1; o.w. then *HOLD*=0. *INVREV<sub>i,t-1</sub>*: it is the last period (*t-1*) investment revenue for firm *i* at year *t* in China. *EMPLOY<sub>t</sub>*: it is the rate of employment at year *t* in China. *GDP<sub>t</sub>*: it is the real GDP per person at year *t* in China. *CPI<sub>t</sub>*: it is the Consumer Price Index at year *t* in China. *INDEX<sub>t</sub>*: it is the weighted stock index of Shanghai at year *t* in China.

$$TDI_{it} = \alpha_0 + \alpha_1 DY08_{it} + \alpha_2 DY08_{it} \times AREA_{it} + \alpha_3 DY08_{it} \times ELEC_{it} + \alpha_4 AREA_{it} + \alpha_5 ELEC_{it} + \alpha_6 TYPE_{it} + \alpha_7 HOLD_{it} + \alpha_8 INVREV_{i,t-1} + \alpha_9 EMPLOY_t + \alpha_{10} GDP_t + \alpha_{11} CPI_t + \alpha_{12} INDEX_t + \varepsilon_{it} \dots \dots \dots (1)$$

implementation of enterprise applications and management audits by tax authorities. After companies have been audited by tax authorities, they are required to pay a reduced corporate income tax rate of 15% in Taiwan. Thus, these tax incentives encouraged TDI to flow from the southeastern region to the southwestern region. Furthermore, relative to the financial services industries, the high-technology electronics industries require more capital, land, and plant equipment. Recently, TDI inflow to China's high-technology electronics industries has decreased. The regression coefficient of *ELEC* (-0.522) is statistically significant. The F values in the last row of Table 5 shows the joint test results of the effect of tax reform and tax incentives. The result of Joint Test 1 is not

significant, indicating that the 2008 tax reform did not provide tax incentives for FDI in specific locations. However, the result of Joint Test 2 is significant, indicating that industry-specific tax incentives following the 2008 tax reform were effective. The type of investment and ratio of holding shares are critical factors for Taiwanese FDI inflow to China. The *TYPE* and *HOLD* regression coefficients are positively significant, indicating that Taiwanese FDI enterprises invested indirectly in China to decrease the amount of payable income tax, hence the increase in *TDI*. This study also controlled the investment revenues from the preceding period; most Taiwanese FDI subsidiaries retained their investment income in China to minimize their payable income tax for remittances on

dividends, and to reinvest in China. The regression coefficient of *INVREV* (0.261) is statistically significant ( $t = 47.17, p < .0001$ ).

With respect to macroeconomic factors, the regression coefficient of *EMPLOY* is significantly negative; because the increased employment rate decreased *TDI*, it did not conform to this study. The higher *GDP* and *INDEX* values indicate that more foreign funds are required to increase *TDI* in China. This finding is in agreement with the findings reported by Sun et al. (2002) and Liu et al. (2012).

## Conclusion

Since China's reform and opening up, Chinese government has aggressively introduced foreign capital and technology to promote China's industrialization and urbanization. The China 2008 tax law decreased tax concessions and raised tax rates to 25% for FDI. Under the 2008 tax law reform, the FDI invested in Western China and high-technology industries will enjoy the 15% tax rate which decreased tax burden by 10% (from 25 to 15%). This study used official macroeconomic data to explore the association between the tax incentives of China 2008 tax law on *TDI* in China. This study also performed tests on the effect of tax incentives of 2008 new tax law on FDI in specific locations and industries.

The empirical results showed that the enactment of 2008 tax reform was associated with significant reduction in *TDI* in China. As to location specific tax concessions, we failed to find significantly positive relation between *TDI* invested in western China after the 2008 tax law was enacted. This may be due to the proportion of *TDI* invested in Western China was only about 3%; although China encourages FDI bounded toward the western area, the aggregate tax incentive is still limited. In addition, after promulgating the 2008 tax law, tax incentives for investing in high-technology industries are more favorable than non-high-technology industries.

Taiwanese businesses investing in high-technology electronic industries were taxed at a rate of 15%, thus more Taiwanese enterprises invested directly in those industries after the 2008 tax law was enacted. In other words, the test results indicated that the 2008 tax reform did not provide tax incentives for FDI in specific locations, although it provided effective tax incentives for FDI in specific industries. This finding supports the goals of the China 2008 tax reform which emphasizes tax incentives more on industry-specific than on location-specific. The results of this study have rendered implications for government policy making and investment strategies formation for management of enterprises. Given an increasing competitive environment, how to save tax burden via the choices of the location and industries is imperative for enterprises. It is therefore essential to be knowledgeable about tax incentives of FDI in China as well as the impacts on the parent company and factors

that may improve or exacerbate investments.

There are some research limitations to this study. First of all, due to the inherent difficulties in obtaining the financial statements of subsidiaries in China, we can only use data from their parent companies. Secondly, the incorporation of macro-economic and tax incentives variables cannot be all inclusive. There are some factors we cannot control. For instance, the political factor sometimes could be the most influential factor on FDI. In the future, the disclosure of subsidiaries data in China could enhance the in-depth research on FDI study.

## ACKNOWLEDGEMENT

We thank the editor and two anonymous reviewers for providing helpful comments. We also acknowledge financial support from the Ministry of Science and Technology, Taiwan (NSC 99-2410-H-141-006).

## Conflict of Interests

The authors have not declared any conflict of interests.

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