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Chinese Investment in Taiwan: A Challenge or an Opportunity for Taiwan?

Chun-yi LEE and Ming-xi YIN

Abstract: Cross-Strait economic activities are no longer unidirectional. The Taiwanese government opened the doors to Chinese investment in 2009. This paper addresses the following crucial question: What is the impact of Chinese investment on Taiwan's high-technology industrial development? Two further questions immediately follow: Will Chinese investment put Taiwanese industrial development at risk? Will an influx of Chinese investment lead to a turning point for Taiwanese industry? The paper first reviews Chinese investment in Taiwan under the framework of the Economic Cooperation Framework Agreement (ECFA) and then explains why we have chosen to focus here on the high-technology industry in Taiwan. It then outlines the main elements of Chinese outward foreign direct investment (OFDI) before seeking to answer the above research questions. Fieldwork for this paper was conducted from December 2014 to March 2016. Interviewees include Chinese investors, along with consultants from a Taiwanese institute created to promote industrial development.

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The Impact of the ECFA on Chinese Investment

In June 2009 the Taiwanese government lifted the ban on Chinese investment in certain industrial sectors. More importantly, the signing of the Economic Cooperation Framework Agreement (ECFA) in 2010 was a significant milestone of cross-strait economic development. The statistical data in this article are taken from the Mainland Affairs Council (n.d.) unless otherwise stated.

The total trade volume between Taiwan and China in 2009 was USD 79 billion, according to Taiwanese customs calculations, and USD 106 billion, according to mainland China's calculations. In 2014 cross-strait trade volume was USD 130 billion by Taiwan's calculation, and USD 198 billion by mainland China's calculation (Mainland Affairs Council n.d.: Table 1). The data indicate that cross-strait economic activities have been growing at an increasing rate over the years. However, this growing trade volume is very unbalanced. From 1991 to July 2015, approved outward investment from Taiwan in China amounted to USD 150 billion, which equates to 61.2 per cent of Taiwan's total approved outward investment. By contrast, since the Taiwanese government lifted the ban on Chinese investment in Taiwan, the actual number of investments from 2009 to February 2016 was 814, and the total invested amount was USD 1.5 billion (Investment Commission 2016). Though this is an impressive amount in five years, when compared to Taiwanese investment in China it is not very significant.

The asymmetry of trade dependency between Taiwan and China is phenomenal, emphasised by the fact that Taiwan's trade dependency on China increased from 4.2 per cent in 1990 to 26 per cent in 2014 (Kao and Shih 2015). Mainland China is Taiwan's greatest trading partner and most important export market. But for mainland China, Taiwan holds much less importance: Taiwan's share of China's trade hovered between 6.1 and 6.8 per cent annually from 1990 to 2001, peaking in 2002 at 7.2 per cent, but in 2014 declined to 4.5 per cent (Kao and Shih 2015: 49–51).

The ECFA is a cross-strait interim free trade agreement (FTA) (Chou 2010: 3). The discussions leading up to the ECFA started in late February 2009, one year after Ma Ying-jeou (Ma Yingjiu) came to power. There were three attempts to draft free trade schemes which were similar to ECFA: first, the creation of the cross-strait Common Market Foundation by the Taiwanese vice president at the time, Vin-

cent Siew (Xiao Wanchang); second, the entry of both China and Taiwan into the World Trade Organisation (WTO) at the end of 2001; and, third, the signing of the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA) in June 2003. However, Chou (2010) has argued that the signing of the ECFA and of the CEPA are fundamentally different: the CEPA was implemented under the “one country, two systems” logic and was an agreement signed between the central government (China) and a special administrative zone (Hong Kong); this is a very different scenario from the ECFA, which was discussed and signed by two political entities (China and Taiwan), neither of which has *de facto* governance capacity over the other, though each of them claims to, in different ways.

Before the ECFA was signed, Chou listed three main reasons for Taiwan to support the ECFA, and three main reasons it should oppose it (Chou 2010). In the following, we will only discuss those reasons that relate to cross-strait economic activities. Among the positive arguments Chou makes, the first and foremost reason for Taiwan to sign the ECFA would be to increase the volume of trade with the mainland, as China, as has been shown previously, is Taiwan’s main trading partner (Chou 2010: 7). Nevertheless, this fact became the most important argument used by those opposed to signing the ECFA. Campaigners against the ECFA emphasised that it would result in China’s gaining access to Taiwanese markets and threaten the employment of Taiwanese labourers and farmers. Furthermore, it would lead to Taiwan becoming overly dependent on trade with China (Chou 2010: 11).

This paper¹ does not intend to argue for or against the ECFA. However, these two anti-ECFA arguments present scenarios that are actually quite at odds with reality. The concern that signing the ECFA would open the door to the Chinese people and threaten domestic jobs in Taiwan was a pure construction. The fact is that Taiwanese regulations on Chinese people who want to visit Taiwan, let alone to reside in Taiwan, are very strict (National Immigration Agency *n.d.*). Although at present, the Taiwanese government allows citizens from 47 mainland cities to visit Taiwan freely (which means those citizens

1 The fieldwork for this research benefitted from the generous support of the Chiang Ching-kuo Foundation for International Scholarly Exchange. The authors also wish to express their appreciation for two anonymous reviewers’ constructive suggestions.

can apply for a tourist visa to Taiwan individually, not being restricted to travelling within a tourist group), for mainlanders who are not from one of those 47 cities, the Taiwanese government specifies that Chinese visitors have to join qualified tourist groups in Taiwan, in order that it can control the tourist groups' itineraries. However, this opening of cross-Strait tourism does not extend to Chinese investors. For instance, my interviewee told me,

I only can get a 15-day visiting visa each time. This is extremely difficult for me as an investor to Taiwan. Fifteen days is a very short period for me to arrange details of my business in Taiwan. From last April [2013] to now [April 2014], I have been to Taiwan at least seven times. If my company only has me as a CEO to set up the company, it will be very troublesome, because I can only stay in Taiwan for 15 days each time. That's a very limited period of time to actually set up a business in any given country. (Anonymous 1 2014)

The argument that Taiwan signing the ECFA would lead to it becoming overly dependent on trade with China is also weak, mainly because even without signing the ECFA, Taiwan's trade had already become overly dependent on China, as indicated above. It is certainly unbalanced and risky for a country to depend on one specific exporting market, as with China in Taiwan's case. However, the argument here is that Taiwan's economy has been overly dependent on the Chinese market since the 1990s, so China and Taiwan signing an interim FTA like the ECFA would not alter that.

The signing of the ECFA was finalised in September 2010 (*BBC News* 2010). However, the ECFA is a framework of economic agreements – to give substance to these pacts, more detailed agreements have to follow. If signing the ECFA was also an attempt by Taiwan to rescue its declining economy, especially after the 2008 financial crisis, then the predicted economic benefits for Taiwan were GDP growth of 1.65 to 1.72 per cent, employment growth of 2.6 per cent, and growth in industrial output of approximately 2.83 per cent (Armstrong 2013: 100). Those numbers cannot be verified, since the first concrete agreement under the ECFA, the Cross-Strait Service Trade Agreement (CSSTA), ran into considerable problems and as of the time of writing has not yet been implemented.

In June 2013, the Kuomintang (KMT, Guomindang) began to push through the CSSTA without acknowledging the views of the

opposition party (Democratic Progressive Party, DPP) and, more importantly, the people's distrust of the ECFA. The CSSTA was negotiated and signed in Shanghai on 21 July 2013 by representatives of the Straits Exchange Foundation and its Chinese counterpart, the Association for Relations across the Taiwan Strait (ARTS) (Rowen 2015: 6). Under the CSSTA agreement, 80 sectors of China's economy will be opened to Taiwanese investment and 64 sectors of Taiwan's economy to Chinese investment, including hotels, tourism, media publishing, and medical services (Rowen 2015). From the number of sectors being opened, it looks like China has shown greater flexibility in opening itself to Taiwanese investment than vice versa; however, what most Taiwanese are concerned about with regard to the CSSTA is not which party is more willing to open up for the other side, but the process of passing this agreement through Taiwan's Legislative Yuan. Anti-CSSTA activists argue that this agreement was concluded during secretive negotiations with China, and they claim that the KMT was trying to pass this legislation without considering the other party's objections (Rowen 2015). A massive social protest broke out on 18 March 2014: that evening, a huge group of occupiers led by the loosely organised student group known as the Black Island Nation Youth occupied the Assembly Hall of Taiwan's Legislative Yuan; the occupation, which has been known as the Sunflower Movement, lasted 24 days, and the signing of the CSSTA was indeed suspended.

Has the Sunflower Movement impacted Chinese willingness to invest in Taiwan? At the moment of the writing, the answer from the Chinese investors is "yes." Following the Sunflower Movement's actions, political uncertainty actually became Chinese investors' biggest worry and concern (Anonymous 1 2014; Anonymous 2 2015; Anonymous 3 2015): Taiwan's democracy seems not to guarantee Chinese investors a stable enough investment environment.

The Importance of High-Technology Industry

This section explains the importance of the IT industry in Taiwan and China, then the setting up of IT businesses by Taiwanese investors in China.

The reason that the IT sector has far more strategic importance than other sectors is because modern IT affects all sectors of the

economy by providing both forward and backward linkage (Nau 1986). As Vincent Wang argues (Wang 1995: 551), the development of the IT industry of a country is not a purely economic decision: it has more to do with political implications. Furthermore, Chu's research shows that the IT industry, or specifically the semiconductor industry, has the potential to create not only political problems but also security concerns, and these relate to both the cross-Strait relationship and the China–Taiwan–United States triangular relationship (Chu 2008). The reason for this is that the most common application of the semiconductor industry, making silicon chips, is used in almost all civil and military high-tech equipment – for purposes tied to, for instance, consumer data processing, communications, the automotive industry, and various other industrial, medical, military, and aerospace functions.

The significance of the IT industry can be understood not only from a politics/security perspective but also from an economic one. The electronic hardware industry is the world's most important goods-producing sector. Not only does it employ more workers and generate greater revenue than any other manufacturing sector, its products also facilitate productivity in other sectors and stimulate innovation across entire economies (Sturgeon and Kawakami 2011: 121). Since the 1990s, Taiwan has aimed to transform itself from a reliable OEM (original equipment manufacturer) into an ODM (original design manufacturer). This means that Taiwanese high-tech companies not only want to do low-end assembling and packing but also aim to establish their own brands. However, establishing brand-name companies in the high-tech sector requires a huge amount of support from the government, and also a supply of human capital. In terms of governmental support, as indicated by Wang (1995) and Wong (2012), the Taiwanese government played a significant role in promoting the development of high-technology industries in Taiwan. In 2014 the Asian Development Bank (ADB) published a report on the development of information and communication technology (ICT), which rated Taiwan the most advanced among developing countries in Asia. Taiwan was even ahead of OECD countries, according to the ADB's report (Asian Development Bank 2014: 76). Therefore, from the past to the present, the high-technology industry has played an important role in Taiwan's economic development.

Apart from the Taiwanese government's efforts to create an environment for innovation, the early business model of most Taiwanese IT/electronics industries was to preserve the upstream factories in Taiwan and set up low-end factories in China for cheap labour and favourable tax policies. As Lüthje pointed out, Taiwanese manufacturers in the microchip industry have taken the lead in building wafer-fabrication plants in China (Lüthje 2003: 345). The advantage of Taiwanese firms is their strong link to Silicon Valley in the United States; therefore, Taiwanese firms play a key role in managing relationships between Chinese factories and American IT firms. However, Chinese domestic firms such as Lenovo and Huawei have also emerged since 2000, as Hart-Landsberg and Burkett (2006) pointed out. They are multinational firms themselves, though it is doubtful whether these Chinese domestic firms can be internationally competitive or advance in the realm of R&D (Hart-Landsberg and Burkett 2006: 20).

China is a net importer of high-tech goods. Between 1997 and 1999, high-tech goods represented 14 per cent of its imports and 8 per cent of its exports. These percentages are relatively high, as in the same period, the European Union showed a high-tech content of 9.5 per cent in both exports and imports (Fontagne, Freundberg, and Ünal-Kesenci 1999). This indicates that China's processing trade is concentrated mostly in relatively high-tech products and carried out largely by foreign firms.

With regard to Taiwanese investment in China, during the period roughly from 2000 to 2010, Taiwanese IT/electronics companies in China laid the foundation for China's IT industry, especially in the Yangtze River Delta (Kunshan and Suzhou area). As indicated by Wang and Lee (2007: 1877), the early model of Taiwanese IT companies' investment in Suzhou was based on Taiwanese factories' urgent need for cheaper production sites (referring to both labour costs and land rents). Kunshan and Suzhou both became quite ideal candidates because of local officials' highly corporate attitudes, which encouraged Taiwanese business people to settle down there (Lee 2012: 6). Nevertheless, there are two important points to address here: First of all, although the IT industry has been Taiwan's most important sector, as argued earlier in this section, the main motivation for Taiwanese IT firms to relocate to China was cheaper production costs. As a result, despite the risk of sharing their "know-how" with Chi-

nese firms or employees, Taiwanese IT investors were migrating across the Strait as early as the mid-1990s.

One of the interviewees pointed out that

Taiwan is very protective of its patent or industrial knowledge. However, Taiwan's know-how is not high-end, is not innovative; Taiwan still learns from Western countries' know-how and applies that knowledge to local markets. In other words, the "know-how" in Taiwan can be very easily copied or learned by Chinese investors. (Anonymous 4 2014)

The quote from this interviewee rightly reflects the fact that Taiwan serves only as a "transmission belt" between Western countries' advanced designs and China's low-skilled production.

Second, China's contribution was no longer limited to low-skilled production: since after 2000, the Chinese domestic firms Lenovo and Huawei have also emerged, as mentioned above. China also ceased to be only a recipient of FDI: since 2005, China has been investing abroad in more impressive amounts. At the end of 2005, the total OFDI flows reached more than USD 12 billion, with an average year-on-year increase since 2000 of 123 per cent (MOFCOM 2014). Among the industrial categories of investment, technology investment amounted to 2.31 per cent (MOFCOM 2014). It is therefore important for us to give a brief overview of China's outward foreign direct investment (OFDI) in our next section.

A Brief Overview of OFDI Theory as Applied to China

This section begins with a broad overview of China's OFDI, then proceeds to look more specifically at OFDI flows in different sectors and different regions.

The standard explanation of OFDI is that multinational enterprises (MNEs) possess and leverage superior managerial and technological resources that enable them to enter the global market. In recent years, a number of studies looking at the emergence of Chinese MNEs have been challenged on the topic of traditional FDI theories by the need to explain Chinese OFDI. One of the strongest criticisms of mainstream FDI theories is that they have been built largely on the observations of developed country investors (Buckley et al. 2007) and fail to capture the unique characteristics of MNEs from emerging

economies. For instance, Li (2003) asserts that the ownership–location–internalisation (OLI) paradigm cannot explain Chinese MNEs very well since they are considered to be latecomers that lack firm-specific advantages to exploit internationally. More specifically, although Chinese MNEs are also searching for lucrative locations and internalising transactions (conforming to the “L” and “I” parts of the OLI paradigm), they start from a resource-meagre position without sufficient technology and management advantages (the “O” seems to be less applicable). Some scholars have found a way to reconcile traditional FDI theory with the emerging MNEs by arguing that Chinese MNEs present a prevalent case of asset-seeking FDI since most of them lack ownership advantages. Broadening the scope of the OLI paradigm, Buckley et al. (2007) suggest that Chinese MNEs could operate more efficiently in certain industries because of certain advantages. On the other hand, the mainstream perspective on internationalisation assumes that firms must exploit their existing ownership advantages when they enter the international market. However, Child and Rodrigues (2005) point out that Chinese firms prefer to address competitive disadvantages over exploiting existing competitive advantages. This is because Chinese firms need to catch up with early-developing countries in terms of technology and know-how. Thus, the latecomer firms need to build sustainable global competitiveness by acquiring appropriate assets and resources. In addition, the consequence of capital-market imperfections in China is that capital is available at below-market rates for a considerable period of time, creating a semi-permanent disequilibrium in the capital market that outward investors can exploit (Buckley et al. 2007). More specifically, state-owned firms may have access to capital at below-market rates. The inefficient banking systems may make soft loans to potential outward investors. This point will be explained further in our next section.

The Determinants of Chinese OFDI

Although existing theories offer a useful starting point for understanding the determinants of Chinese OFDI, it is well accepted that a special theory is needed given all the unique features of Chinese firms (Buckley et al. 2007). Despite the consensus that foreign-market seeking, cost-reduction seeking, and resource seeking could be the prima-

ry motivations for FDI, the continuing discussion about the unique characteristics of developing-country investors is entering a new phase in the context of globalisation (Dunning 1995, 2000; Buckley et al. 2007; Li 2007; Deng 2009). Specifically, the existing OFDI theory, including the OLI model, has been challenged by a growing amount of research concerning whether the logic of these frameworks can be directly applied to emerging economies and, specifically, to China. Differences can be observed in terms of country-, industry-, and company-level determinants of Chinese OFDI. Country-level determinants include the size and level of technological and management know-how of the host market. Industry-level determinants consider the features of different industries. Finally, company-level determinants refer to characteristics of particular firms.

Country-Level Determinants

Market-Seeking Motives

Market-seeking motives are one of the most important drivers for Chinese firms. This is what happens when investors try to invest abroad in order to benefit from global markets. According to Dunning (2001), increasing domestic competition and overcapacity force firms to enter overseas markets. Numerous studies indicate that OFDI flow and market size are positively correlated (Deng 2004; Liu, Buck, and Shu 2005; Buckley et al. 2007). Despite its large population, the Chinese domestic market is limited due to its low GDP. Chinese firms are likely to enter the global market, as the domestic markets have reached the limits of effective demand (Deng 2004). As the Chinese domestic market has become saturated due to inward FDI and intensive competition, Chinese firms have tended to relieve overcapacity by expanding into foreign markets. However, instead of choosing geographically close countries as destinations, Chinese firms prefer to invest in developed countries. Luo and Tung (2007) argue that the market size and potential of the developed markets could be attractive to Chinese firms. Moreover, the fierce competition in bigger markets may help firms learn from their competitors, which could equip them with crucial competitive advantages in developing markets.

Natural-Resource Seeking

Natural-resource seeking as a motive is also one of the vital determinants of Chinese OFDI. According to Buckley et al. (2007), China is well endowed with natural resources; however, the Chinese government still needs to ensure the supply of domestically scarce factors given that the reserves of some specific sectors of natural resources are actually low in per capita terms. Thus, the authorities in China have imposed incentives for firms to engage in natural resource-seeking FDI. At the same time, in order to support its phenomenal growth over more than a decade, large, cheap, and easy access to natural resources is needed both in the short and long term.

Industry-Level Determinants of FDI

In particular industries, Chinese state aid has been provided to firms to bolster those firms' investments abroad. Specifically, firms from the automobile and electronic industries are always offered preferential conditions. Policymaking is implemented at the industry level, which determines sector-specific incentives and restrictions on OFDI. Previous research has argued that outward FDI is more likely when the industry in which particular companies operate is considered more important by the Chinese government (Child and Rodrigues 2005; Buckley et al. 2007; Holtbrügge and Kreppel 2012). Deng (2004) also argues that authorities play a crucial role in shaping the structure of Chinese outward FDI. In fact, outward FDI from Chinese firms largely reflects governmental priorities and could be considered as part of the government's development plan. On the other hand, the competitive pressure on a specific industry in the domestic market could also influence the investment behaviour of Chinese enterprises significantly. Since China's admission to the WTO, firms have been facing increasing competitive pressure from abroad, as more and more sectors are open to foreign investors. The competitive pressure of domestic markets in certain industries may drive firms to invest abroad. Chinese companies are being strongly encouraged to invest abroad. According to KPMG (2015), driven by more support than ever before, through such initiatives as the "Silk Road Economic Belt" and the "21st-Century Maritime Silk Road," infrastructure investment by Chinese firms is expected to grow rapidly. The implementation of the "One Belt, One Road" strategy will bring

in new development opportunities for outward investment in energy cooperation and advanced manufacturing sectors.

Company-Level Determinants of FDI

Technology Seeking

According to Barney (1991), the best way to regard a company is as a collection of productive resources, including different assets, capabilities, organisational processes, and information, that enable firms to gain a competitive advantage in their domestic markets. After becoming leaders in their domestic markets, firms are willing to enter the overseas markets to maintain sustainable growth. However, unlike their competitors from developed countries, which often develop strong advantages before they internationalise, Chinese firms start from a resource-meagre position due to the relatively low level of economic and technological development of their home country (Wang et al. 2012). Deng (2004) claims that firms from emerging countries are more likely to invest in developed countries in order to gain the advanced technology to compensate for their ownership disadvantages.

Strategic-Asset Seeking

Strategic asset-seeking FDI is directed towards the acquisition of advanced technology and manufacturing know-how (Buckley et al. 2007). Dunning (2001) points out that MNEs might be trying to obtain assets such as brand names, know-how, local capabilities, and proprietary technologies. Modern management and technology skills are also very crucial for firms to build a global brand. OFDI will enable Chinese firms, which are in particularly strong demand for technological and management know-how, to take advantage of global opportunities (Hurst 2011). Dunning (2001) observes that Chinese firms are considered as strategic-resource constraints in terms of brand development and proprietary technology. Deng (2009) also points out that strategic resources are the primary motivation behind Chinese investment. However, some other company-specific resources, including human resources and advertising resources, could also be important determinants of OFDI.

Has Chinese Investment Challenged Taiwan's High-Technology Industry?

As indicated in the first section, the amount of Chinese investment in Taiwan, as a whole, is not very significant. It may be futile to discuss the challenge of Chinese investment in Taiwan because the number of investment cases and the amount of investment are both very low. However, the low amount of Chinese investment in Taiwan does not necessarily mean there is little challenge from China to Taiwan's high-technology industry. As discussed in the second section, the link between Taiwan and China in the IT industry has been very close since the early 1990s, when Taiwanese IT producers started to invest in China for cheap land and labour. Therefore, it is difficult to unhook the link between Taiwan and China in high-technology production, even if at this stage the actual amount of Chinese investment in Taiwan is low. This section discusses, first, why Chinese investment in Taiwan, judging from the statistics, is low. The argument in this part mainly applies to the section on the determinants of China's OFDI: the benchmarks by which to evaluate Chinese IT investors' willingness to come to Taiwan. Second, apart from direct investment, the following section discusses whether there are alternatives to Chinese and Taiwanese capital cooperation, with particular consideration towards the second hypothesis raised at the beginning of this paper – that is, whether the combination of Chinese capital and Taiwanese know-how can push Taiwan onto a higher level of the global value chain.

Why Chinese Investment in Taiwan Is Low

From a market-seeking perspective, the market in Taiwan is comparatively smaller than the mainland domestic market; the size of the market, therefore, is determinative. However, although the size of the Taiwanese market is smaller, as Taiwan's internationalisation started earlier than the mainland's, would it be possible for the mainland investors to invest in Taiwan as a test run for American or European markets? Most of our interviewees from mainland enterprises responded that, if they want to access American or European markets, they would go there directly: they do not need to use Taiwan as a "pre-test" for their Western investment (Anonymous 2 2015; Anonymous 3 2013). From an efficiency-seeking perspective (cost re-

duction), most of Taiwan's manufacturing factories have moved to China, as indicated above, in order to save on labour costs, and they have already completed industrial clusters in most Chinese coastal cities. As a result, for Chinese investors, it would be more efficient to produce in China than in Taiwan, due to the accessibility of those ready-made industrial clusters. What might be a consideration for Chinese investors is the resource-seeking perspective. However, here we are not referring to natural resources, but rather to the warmth of the Taiwanese people. To quote one of my interviewees, a Chinese IT service investor:

Taiwan's service industry is much more advanced than in China. I think China already has the "hardware," but Taiwan's service attitude is the key that I think makes it worth it for me to invest in Taiwan. (Anonymous 1 2014)

However, the perception of the warmth of Taiwanese society by Chinese investors has been severely affected by the Sunflower Movement, as described in the first section.

The high-technology sector is important for the Chinese government to support, as discussed in the second section. The attraction of Taiwan for Chinese high-technology investors is Taiwanese know-how and human capital. Therefore, whether the Chinese companies would have a lot to learn is the key point. As the CEO of a Chinese IT company explained,

Although we have few cultural and language differences with Taiwanese firms, we didn't consider investing in Taiwan because Taiwan's domestic market is not big enough, and Taiwan's core technology is not that mature. (Anonymous 5 2015)

Another Chinese interviewee expressed it more directly:

To cooperate with Taiwanese factories has not been our main focus in the past 10 years. Taiwanese factories' innovation capacity has slowed down; therefore, we are intending to work more with German, Japanese, or American companies. (Anonymous 6 2015)

Even when Taiwan's innovation capacity creates only a small gap between Chinese and Taiwanese factories, the strategy of many Chinese firms is to headhunt Taiwanese engineers or entire R&D departments. Headhunting, in fact, is a much easier way for the Chinese high-technology companies to "learn" Taiwanese factories' core know-how, as headhunting allows Chinese companies both to sidestep the

complications of the Taiwanese government's regulation of Chinese investment and to avoid drawing a hostile reaction from post-Sunflower Taiwanese society. Compared to wholesale investment, headhunting is also a much more cost-efficient approach for the companies. A war of high-technology human capital has started in the past five years. The Chinese investors say,

You can't blame those Taiwanese skilled engineers for coming to the Chinese market. We offer a much wider career development vision and to be very realistic, the salary is much better than in Taiwan. (Anonymous 7 2015).

Another interviewee, from the Industrial Technology Research Institute (ITRI) in Xinzhu, Taiwan, stated,

We are quite powerless to prevent colleagues leaving for jobs in China; when they [the Chinese companies] offer the same salary figure but in CNY, it is a real challenge to keep skilled human-resource capital in Taiwan. (Anonymous 8 2015)

Skilled human capital is at the heart of high-technology industries, and government support is essential to prop up these industries. Taiwan had a group of excellent skilled workers in the late 1980s, and the government's decision to develop high-technology industry resulted in the establishment of the Xinzhu Science Park; 30 years later, it is unfortunate that we have seen little progress in the face of the decline of the skills base, as people have been attracted across the Strait by both higher salaries and better career-development prospects. China's strategic headhunting therefore creates enormous challenges for Taiwan's high-technology industry. As one interviewee mentioned, "I graduated from National Chengchi University; now if we want to call for an alumni reunion, we will hold it in China not in Taiwan" (Anonymous 9 2016).

Despite this, it should not be suggested that no Chinese investors intend to come to Taiwan. Towards the end of 2015, Tsinghua Unigroup – a mainland Chinese microchip maker – unveiled its plans to purchase stakes of 25 per cent in each of two Taiwanese chip-testing companies, Siliconware Precision Industries (SPIL) and ChipMOS Technologies, Inc. As part of the SPIL deal, Unigroup pledged adherence to Taiwanese regulations on investment from the mainland by producing an industry cooperation plan and declaring its intention not to take control over SPIL. There would also be tangible benefits

to SPIL in terms of better access to the mainland's increasingly important semiconductor market (Culpan and Browning 2015). Yet, despite such assurances by the mainland side and potential benefits for its Taiwanese counterpart, the deal has been viewed by the Taiwanese government as a national security issue, not least because the semiconductor industry is a sensitive sector in Taiwan with a key role in ensuring its industrial competitiveness (Chao 2015). At the time of writing, these two deals were still awaiting approval from the Taiwanese government. On the prospect of a rejection of these investments, the CEO of Unigroup, Zhao Weiguo, mentioned in an interview the possibility of headhunting human capital from Taiwan as a viable alternative if the government prevents the investment (Huang, Chen and He 2015).

Can Chinese Capital Push Taiwan to a Higher Level of the Global Value Chain?

The reasons for the low levels of Chinese investment are to be found not only in market elements – for instance, the size of the Taiwanese market and capacity of Taiwanese human capital – but also in politics. Though the Taiwanese government lifted the ban on Chinese investment in 2009, it is, as discussed in the first section, difficult for Chinese investors to come to Taiwan, due to various regulations of the Taiwanese government. The Taiwanese government also acknowledges the challenging environment for opening up the Taiwanese IT industry to Chinese investment: it is necessary but not desirable. In December 2015 John Deng (Deng Zhenzhong), at that time economics minister, said that the Ministry of Economic Affairs (MOEA) would consider allowing Chinese investors to buy minority stakes in local integrated-circuit-design companies under certain conditions (Hung and Huang 2015). Though the announcement aims to show more governmental willingness, it also demonstrates reservations on the part of the Taiwanese government in setting the conditions for Chinese investment. The government's attitude is understandable since, as discussed in the second section, chip design is at the core of Taiwanese IT vitality and relates to national security as well. The Taiwanese government therefore has to be very careful of opening up a space for Chinese investment in this sensitive area. However, the speed of capital investment does not wait for the government's eventual decision.

In 2011 Lenovo started to plan a joint venture with Compal in Kunshan: LianBo was formally established at the end of 2012. Compal, a Taiwanese company based in Kunshan since 2003, is the second-biggest notebook computer manufacturer in the world. The reason that Compal wanted to establish the joint venture with Lenovo was the domestic market that Lenovo provided:

We wanted to increase our sales quantity, Lenovo wanted our know-how, that's why we think this joint venture suited our needs. We are not afraid that Lenovo will "steal" our know-how because we always remind ourselves to keep improving our know-how, to maintain a certain technology know-how gap between us and Lenovo. (Anonymous 10 2015)

At the end of 2014, Tsinghua Tongfang bought the computer-manufacturing company Zi-he, establishing a factory in Suzhou Industrial Park in 2001. The company is an ODM computer manufacturer. After more than a decade in China, the heads of Zi-he realised that it would be much easier to let domestic enterprise take care of exploring the market and competing with other domestic enterprises for market channels, while Zi-he could focus on production (Anonymous 11 2016).

These two cases evince that cooperation in fact does exist between Chinese capital and Taiwanese technology. In order to maintain the position of Taiwan's IT manufacturing, and in order to be better than the Chinese enterprises, especially those enterprises with governmental capital support, Taiwanese companies should indeed invest in deepening advanced technology. The only solution for Taiwanese companies is to improve their R&D, to specialise in manufacturing certain parts, to keep the know-how gap between Taiwan's and China's IT manufacturing. As a result, the combination of Chinese capital and Taiwanese know-how can in fact give a harsh but positive push to Taiwan's IT industry. Taiwanese IT manufacturers have to keep pursuing better skills and technology; the cross-Strait technology competition will likely never end.

Conclusion

To answer the questions posed at the beginning of this paper:

Has Chinese investment in Taiwan threatened the development of Taiwan's high-technology industry? Yes and no. First, Chinese

investment has not threatened the development of Taiwan's high-technology industry because the cases of investment are few, due to the unwillingness of most Chinese private entrepreneurs to invest in Taiwan and the Taiwanese government's strict regulation of Chinese investment in Taiwan. Taiwan's market holds little attraction for Chinese investors, and Taiwan's capacity for R&D and innovation is also insufficiently convincing for many Chinese high-technology investors to cross the Strait. Headhunting those Taiwanese engineers or R&D designers might be an easier way for the Chinese high-technology companies to acquire core Taiwanese know-how. Second, although Chinese investment in Taiwan did not threaten the development of Taiwan's high-technology industries, their prospects for future development are rather bleak. Taiwan's technology capacity has been chased by rapidly learned or copied Chinese counterparts. China has become a global market attracting not only foreign investors but also high-skilled workers. Along with its plan for industrial upgrading, the Chinese government supports the domestic industrial supply chain almost unconditionally. Taiwanese factories that in the past have always been a reliable partner of the supply chain are now facing the emergence of a Chinese domestic supply chain, or the so-called "red supply chain" (*China Post* 2015), while many Taiwanese electronics or IT factories have to prepare either to integrate better into the "red supply chain" or to move out of China. The difficulty for Taiwanese electronics or IT factories wishing to move out of China is, ironically, that they are already deeply embedded in the long-existing industrial clusters in China. It probably will be more practical and more realistic for Taiwanese IT/electronics factories to consider how to merge better with the Chinese supply chain, either as parts providers or as technology consultants.

The other half-answer is "yes" because, as reflected in the field-work so far, there are indeed cases of joint ventures or acquisitions between Chinese and Taiwanese IT companies. There are two reasons that such joint ventures and acquisitions did not take place in Taiwan. First, from the market perspective, those Taiwanese companies had all relocated to China since the early 2000s, so it is easier for them to collaborate with Chinese companies. The second, perhaps more salient, reason is that the Taiwanese government's regulations discouraged many Chinese investors. Nevertheless, although Taiwanese government regulations are lengthy and difficult to meet,

and Taiwanese society generally holds a sceptical attitude towards Chinese investment, Tsinghua Unigroup expressed their willingness to buy 25 per cent of the shares of certain Taiwanese companies. The reason, according to this analysis, is not because of Taiwan's market, but because of human capital: a group of talented Taiwanese workers that are not so easily headhunted.

Finally, the emphasis of this article is that the core issue affecting Taiwan's high-technology development is not Chinese investment in Taiwan and the possible threats coming along with this investment. Rather, the tangible challenge for Taiwan's high-technology industries is finding a suitable niche in the rising Chinese high-technology market, no matter whether that niche would rest on the Chinese mainland or in Taiwan. A further challenge is how Taiwanese manufacturers, whether based in Taiwan or China, can keep improving the core technology – not by rejecting collaborative opportunities with Chinese companies, but by strategically opening up.

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