

Industrial Policy and Employment Promotion: Case of China

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1- Introduction

Industrial policy is the strategic plan for improving growth and development in manufacturing sector. Government design and implement series of policies in order to increase productivity, competitiveness and capacity of domestic firms. These policies are designed for different industries according to country's competitive advantages and/or priorities. However, neoclassical economists do not believe in industrial policy and label it as government intervention in free market mechanism (Graham 1992).

After ending golden age in developed countries, many governments as well as some international organization such as WTO followed the idea of neoliberalism and didn't pursue and/or suggest industrial policy. But successful experience of East Asian countries such as Japan, Taiwan and South Korea showed that industrial policy could improve economic performance and employment (Chang 2003).

After economic reform in 1978, Chinese government designed and implemented sound industrial policies. Attracting FDI in industrial sectors is one of main part of China industrial policies. In this paper, the effects of FDI as part of industrial policy on employment promotion will be studied.

The next section will look at different perspective on industrial policies and shows the result of industrial policy on some countries. Section three studied the history of FDI and government incentive and regulation regarding to foreign companies from 1980 to 2010. The effects of foreign companies on job creation, human capital and productivity on domestic firms in industrial sector will be analyzed. Furthermore, the effects of China industrial policy on developing foreign enterprises will be also examined. However, because of lack of precise data the period of 2000-2010 has been chosen for this section. The last section tries to conclude the result of this research.

2- Theoretical debate

The history of industrial policy backs to 18th century with arguing about protection of some industries and manufacturing sectors from government and supporting them in order to increase their competitiveness. Alexander Hamilton from US and Friedrich List from Germany were among the economists who support industrial policy in 18th century, their argument was in contrast with Adam Smith idea about giving “most perfect freedom” to capital owner of nations (Smith 1776).

Until end of World War I, government tried to follow Smith’s advices in order to increase economic growth. However, after WWI the pace of economic growth in Europe and US slowed down and gave signals that government policies should change to guarantee sustainable economic growth. Keynes in his book “*The Economic Consequences of the Peace*” in 1919 emphasized his concerns about economics situation in Europe. He states on the second sentences of his book “ [...]very few of us realize with conviction the intensely unusual, unstable, complicated, unreliable, temporary nature of the economic organization by which Western Europe has lived for the last half century”. Therefore he asked for more government activity in economy and regulates markets.

Keynes believed that the main assumptions which make “*laissez-faire*” theory accountable and doable were wrong and not based on actual facts. The ignorance of fundamental uncertainty, economic of scale and existence of time for simplifying the model make it unsustainable and unrealistic. He argued that increase of public investment, changing institutions in order to regulate economic activity and creating public and semi-public companies can guarantee sustainable economic growth as well as decreasing unemployment. However, it doesn’t mean that government should run the companies. Government should give them goals but not directly manage them. The new approach which expanded by Keynes needed more state power to control and directing economic forces for designing and implementing policies in industrial and macroeconomics levels in order to improve aggregate demand and creating more jobs (Crotty 1999).

After “Great Depression”, President Roosevelt followed Keynes’ advices and published the National Industrial Recovery ACT (NIRA) in 1933 which supported industries in local and central government level and guaranteed fair competition. The principal which guide new policies was “private ownership could not simply be left to the unpredictable and often perverse guidance of market forces; there had to be central control.” In addition to new Industrial Policy (IP), the ACT required industries to coordinate with labour institutions in order to set minimum wages, maximum working hours and collective bargaining power for trade unions (Dobbin 1993).

Urgent need for reconstruction and economic reorganization in Europe and improving economic growth in USA after World War II led to more government intervention and giving pace to industrial policies in these countries. Although the industrial policies were not same in goals and tools in different countries but they were directed towards improving technologies, building infrastructures and energy sector. These policies generally backed by tax incentive, direct subsidies and financial helps from public development banks. During this period (1950s-1970s) which also called golden age, countries experienced high economy growth, decreasing unemployment and relatively equal income distribution. However this period comes to an end by the oil crisis in 1970s, end of the Bretton Woods system, increasing unemployment, accelerating inflation and budget deficit (Grabas and Nützenadel 2013).

The three main scholars about industrial policy among recent literatures are neoclassical, revisionist and market friendly. Neoclassical believes that government interventions have more cost than benefit and market can regulate itself with higher efficiency than government intervention in markets. In contrast with neoclassical, revisionist argue that government should and must intervene on market otherwise market will fail to regulate itself. They back their argument with using successful experience of East Asian countries such as Japan and South Korea which designing and implementing industrial policies led to high economic growth in these countries. The third group of scholars believes in certain level of coordination between government and market mechanism in order to grasp high economic growth. International organizations such as World Bank also use market friendly perspective for their advices to countries around the world (Liu 2005, p 1-5).

Foreign Direct investment (FDI) also became part of industrial policy especially in developing countries. FDI have positive effects on technology spillover and improving productivity, management know-how, human capital and capability of industrial sectors. Therefore, attracting FDI will improve industrial sector in host countries. For attracting more FDI, countries should improve their institutional quality, infrastructure and human capital which will lead to higher economic growth (Gachino 2009).

In general, government design and implement their industrial policies in three steps; targeting, nurturing and protecting. In first step government select particular industries in order to help and support them via financial tools and other policies in order to made national champions. Nurturing includes different type of policies such as making domestic cartels and mergers, in order to protect selected industries and helped to reach the quality level which allow them to compete with international competitors. In last steps, governments try to protect their industries against foreign companies via increasing import barrier as well as controlling foreign capital (Liu 2005, p 6-10). It should be mentioned that all of developed countries which promote the free trade notion and are against industrial policies, all have the history of high protection and supporting their industries from end of 19th century until middle of 20th century (Chang 2003).

After conservative revolution in 1980s in UK and USA that spread fast to all developed countries, government started to follow the idea of neoliberalism and decreased the government expenditure. Broad ranges of privatization, deregulation and tax reforms as well as less government intervention were cornerstones of new trend in developed countries. Furthermore, same policies set as best prescription for economic growth and development in developing countries (especially in Latin America). Companies' culture and strategies changed and started to focus on profit maximizing in short run which followed by outsourcing to other countries in order to reduce production costs (e.g. labour and land). Yet after global financial crisis which caused high unemployment, mainstream economist still do not accept active role of government in designing and implementing industrial policy (Dullien et al. 2011).

But some countries did not follow neoliberal approach, among them China that insisted on gradual reform of her policies to boost economic growth and employment by encouraging rapid increase in domestic demand. Sustainable GDP growth, high rate of

capital return and brisk economic development made China one of the world leading manufacturers. Designing sound industrial policies according to her development plan in line with absorbing vast amount of FDI helped China to increase its productivity, to improve their competitive advantage which is known as “China miracle”, to generate millions of new jobs. Although China could create millions of job for her people but, Chinese government always accused for keeping wages low as well as setting very low standard of job condition. In recent year Chinese government tried to decrease the income inequality: Yet china far from reaching to equal income distributions (Naughton 2007, p 1-10).

2-1 Literature review

Industrial policy has strong core in theoretical debates. The supporters of industrial policies argue that because of market failure, government should intervene with industrial policies to support the domestic industries. However, the counterparts believe although designing sound industrial policies can be helpful and have positive effects on economy growth but, the low productivity in Stated Owned Enterprisers (SOEs) and bureaucratic procedure in government’s institutions will lead to decline of country’s competitiveness in international trade.

Dany Rodrick on his paper “Industrial Policy: Don’t ask why, Ask how (2008)” argued that low quality institutes and bureaucratic constraints is not part of industrial policy debate and policy makers should try to increase the effectiveness of institutions and their productivity.

Another study about industrial policy and its implication with looking at macroeconomic factors such as FDI inflow and human capital as well institutional quality in Latin American countries and East Asian Tigers showed that these countries could benefited a lot from industrial policies after WWII until 1990. The author states although industrial polices’ implications were different in selected countries but, they were same in principals. For instance, investing on education and innovation, creating an effective control mechanism and competitive advantages were main pillars for all industrial policy (Di Marion 2008).

Greg Linden (2004) in his research about China industrial policy examined the designing and implementing industrial policy particularly for high tech industries. He argued that China was more successful compare to other East Asian countries because of her large domestic markets, supporting national innovation and pragmatic nature of her policies. Furthermore, he believed although China's industrial policy is politicized but, they doesn't add any extra costs to economy and in same time force domestic companies to increase their quality and productivity.

The result of research about the effects of FDI on job creation using large sample of manufacturing firms from 1995 to 2004 shows that FDI have positive direct and indirect effects on job creation in China. However, the export oriented foreign companies has higher share in job creation that others (Karlsson et al. 2007).

Another study which is examined the last three decades of industrial policy in China shows that government always pursue different industrial policies in several industries in order to integrate these industries into global market with aim of maximizing industries' benefits and whole economy. However, these policies have advantages and disadvantages. For instance, Chinese government was not successful to create global brand and most of domestic companies becomes part of global supply chains of MNCs. Steel industry has been chosen as case study of this research. The author argued that sectorial industrial policy didn't push domestic steel companies to improve their technology and increasing the investment but mostly help them to integrate into global markets (in der Heiden 2011).

3- History of Industrial Policy

In today world it's so difficult to distinguish industrial policy with trade policy and policies toward foreign direct investment because of their boundaries become more and more blurred. For china, foreign direct investment is one of key part of her industrial policies. Most of FDI has been directed to industrial sectors as part of government policies. Although in 2000s investing in other sectors increased considerably but still industry sector absorb the most part of FDI in China. Table 3-1 indicates that during 2001-2010, the share of industrial sector is dropped from 66 to 47 percent, while the proportion of FDI in real estate rose from 11

to 23 percent. For managing foreign capital flow, Chinese government passed laws and designed sound policies. For instance, to prevent bubble in real estate market, Chinese government applied new regulations that restricted foreigners to buy for speculation (invest in China, 2012).

Table 3-1 Distribution of FDI by Economic Sectors (percent)

Sector	2001	2010
Manufacturing	66	47
Electricity, Gas & Water Supply	5	n.a
Transport, Storage & postal Service	2	n.a
Leasing & Commercial services	n.a	7
Wholesale & Retail Trade	n.a	6
Real Estate	11	23
Others	16	17

Source: Jacob, 2012

Therefore in this paper, author tried to focus on FDI as one of main pillars of industrial policies.

3-1 Inward FDI as main part of industrial policy

During 1970s, China suffered from lack of modern technologies and competitive advantages. After long period of isolation, they needed to import machineries and equipment from advanced countries and at the same time they had to protect the domestic industries that were totally state-owned. But, they didn't have enough foreign exchange for trade. Finding oil field at Daqing brought hopes for government to earn foreign exchange from selling oil, but in short time they found that they don't have enough oil to export. Therefore, they needed to attract FDI (Naughton 2007, 378-380).

After 1978, Deng Xiaoping as president of China started to open their economy for foreign investment. But this openness was so limited and gradual. In the first step, they allow foreign export oriented companies to come without giving them access to local markets for protecting domestic companies. Foreign firms were not allowed to send their profit back to their own countries. However, obviously China couldn't attract many foreign firms with so many restrictions (Hou, 2011).

Table 3-2 shows the average FDI, GDP growth and FDI ratio of total investment in different period of time in China. During 1980s the amount of FDI was low, less than 2 percent of total investment in China. Investing on infrastructure, changing regulations and laws in favor of foreign investors, opening Special Economic Zones (SEZs), keeping high GDP growth (10 percent) and moving toward more liberalized market-based system, gave positive signal to investors.

Table 3-2 Average FDI, Total investment and GDP growth

Year Period	Average Annual FDI (Current Million US Dollar)	Average Annual Investment (Current Million US Dollar)	Average FDI Investment Ratio (Percent)	Average GDP Growth (Percent)
82-91	2,261	107,727	1.95	10
92-99	34,359	293,875	11.71	11
2000-2005	58,528	652,534	8.86	9
2006-2010	151,716	2,053,499	8.2	11

Source: Calculated by author from World Bank Data, 2012

There is three ways for foreign firms to invest in China: through wholly owned companies, equity joint ventures and contractual joint ventures. In 1979, the equity joint venture regulation published by government. According to this regulation, the general manager of the joint venture company had to be appointed by Chinese partner, but in 1990 the government abolished this regulation. In 1986, the export oriented and/or high tech wholly owned foreign companies were allowed to work only in SEZs and ETDZs. In 1988, government allowed foreign companies to do business in form of contractual joint ventures (Invest in China 2012). For entering in main industries, foreign companies can only invest in China through joint ventures. They should at least have 25

percent shares and maximum of 50 percent. Furthermore, investment in energy, telecommunication and petrochemical industries is highly restricted because of protecting domestic companies and national security issues (Hedley 2012).

In 90s FDI started to rise again and gain significant momentum in 1992 and 1993 by rising 155 percent and 146 percent respectively and reached from \$4 billion in 1990 to \$11 billion in 1991 and \$27 billion in 1992 (see Appendix 1). Although during 90s, total investment and FDI both increased significantly, the share of FDI to total Investment reached to 11.71 percent and China enjoyed very high GDP growth (annually 11 percent). Furthermore, devaluation of RMB, currency convertibility systems, and access to local market and tax regulation created a very attractive business environment for foreign companies. During this period, Chinese government forced SOEs to increase their productivity and sold inefficient ones to private sectors.

In 1997, East Asian economic crisis hit inward FDI to China. Although China was not deeply affected by Asian crisis, but foreign investors had become more cautious due to negative expectation about Asian markets. While compare to other Asian countries, China had better situation and more stable business environment, FDI annual growth rate decreased from 10 percent in 1997 to minus 1 percent and minus 11 percent in 1998 and 1999 respectively (Lemoine 2000).

In 1995, China issued "*Interim Provisions on Guiding Foreign Investment*" and "*Catalogue for the Guidance of Foreign Investment Industries*" according to its development policies and national economic plan. Due to the new rules, foreign companies should look at the list of projects that were in line with national plan. Generally, investors should consult with administrative offices to know where and how it was better to invest (Invest in China, 2012).

For conserving economic growth and maintaining positive inward FDI trend, China decided to join WTO in early 1990s. Another wave of changing regulations and laws for foreign investors began that gave them more freedom to invest in different economic sectors and to access local markets. Finally after nearly 10 years, China joined WTO in December 2001. It was big event for China and the world that "People's Daily" stated in

its front page in December 11 of 2011, one day after joining WTO, “This is a historic moment in China's reform and opening-up and the process of modernization” (BBC, 2001).

Industrial policies and government development plans were mostly focused on East part of china during 1980-90s mainly because of better infrastructure and geographical situations. In 2000s Chinese government encourage foreign and domestic companies to invest more in inland China (South and middle parts) through different incentive package and investing on infrastructure. Since end of 2000s, the industrial policies are in line with development plans which is encouraging companies to invest in west of China. Theses series of policies called Western Development Strategy (Lu & Deng 2011).

Institutional reforms and changes of regulations under WTO rules, stable political and social environment and optimistic perspective of economic situation encouraged increasing numbers of foreign firms to invest in China. During 2000-2005, annual FDI inflow increased from 34 billion USD to about 60 billion USD. However, FDI-Investment ratio decreased from 11.71 percent to 8.82 percent because of dramatic raise of domestic investment that caused a jump in annual total investment from about USD 300 billion to more than 650 billion USD (Table 3-2).

In 2002, China passed the *Provisions on Guiding the Orientation of Foreign Investment*. The provisions divided investment into four categories: “encouraged”, “permitted”, “restricted” and “prohibited”. Base on this regulation, foreign investors in any format (equity joint ventures, wholly owned and contractual joint ventures) will be encouraged with incentives and different packages to invest in areas favorable to China's development plan. For better implementation of provision, China edited the "*Catalogue for the Guidance of Foreign Investment Industries*" twice in 2002 and 2004. In 2007 the catalogue was revised again. In the new catalogue more industries have been added to the encouraged category. However, companies in traditional manufacturing sectors and export oriented firms are not encouraged anymore; while, environment friendly projects, high tech industries, high end services and investment in

Central and West part of China are very much encouraged in new edition (Invest in China, 2012).

During 2005-2010, FDI Investment ratio decreased (Table 3-1), but China constantly increased its total investment from 42.1 percent of GDP in 2005 to 48.2 percent in 2010. After global financial crisis, China experimented dramatic decline in its inward FDI (minus 34 percent growth in 2009). But again by keeping high GDP growth and increasing the domestic investment (Lunching 4 trillion RMB package for investing in infrastructure in 2009), China showed that it was not affected by the global financial crisis and still can be attractive for foreign investors. In 2010, inward FDI gain momentum and even passed its previous peak in 2008 and absorbed more than \$ 185 billion in 2010, 5.6 percent more than the record high in 2008 (Appendix 1).

To protect fair competition, in 2007 the "*Anti-Monopoly Law*" was issued. According to this Law, government controls the market against monopolistic activities. However, special agreement in cost reduction, protecting resources and technology development are exempted from this law (Invest in China 2012).

The last edited version of "*Catalogue for the Guidance of Foreign Investment Industries*" released in 2011. Due to the new rules, the high-tech industries such as aerospace, new energy automobile and development and manufacturing of internet equipment, software and chips were encouraged by different incentive packages, but manufacturing the whole automobile exempted from encouraged category (Invest in China, 2012).

3-2 Tax Policy

China had two tax incentive policies for foreign invested entrepreneurs (FIEs). The first one is the tax policies for companies located in SEZs and ETDZs such as tax exemption for between 3 to 10 years depending to industry and sector. The second one is for export oriented and high tech companies. For instance, companies that export more than 70 percent of their products could enjoy 50 percent income tax cut (Long, 2005).

Until the end of 2007, the actual income tax burden for FIEs, were 15 percent compare to 25 percent for local companies. For leveling the playing field for local and foreign firms, China implemented “*Enterprise Income Tax Law*” in the beginning of 2008. According to the new tax system, all companies that have business in China, regardless to their origin, must pay 25 percent income tax. Although this new system can effect negatively on inward FDI, but the new income tax in China is still lower than the world average income tax (28.6 percent).

However, there are some exceptions in the new tax system. For instance, foreign companies that want to work in areas such as, environmental protection industries, agricultural development, water conservation, energy saving, production safety, high-technology and public welfare have to pay 15 percent income tax. Other exceptions are for small and medium size enterprises with low profit margin and companies in western part of China. They can benefit from 20 percent income tax and certain tax cut respectively (Chen, 2011).

4- Employment Promotion

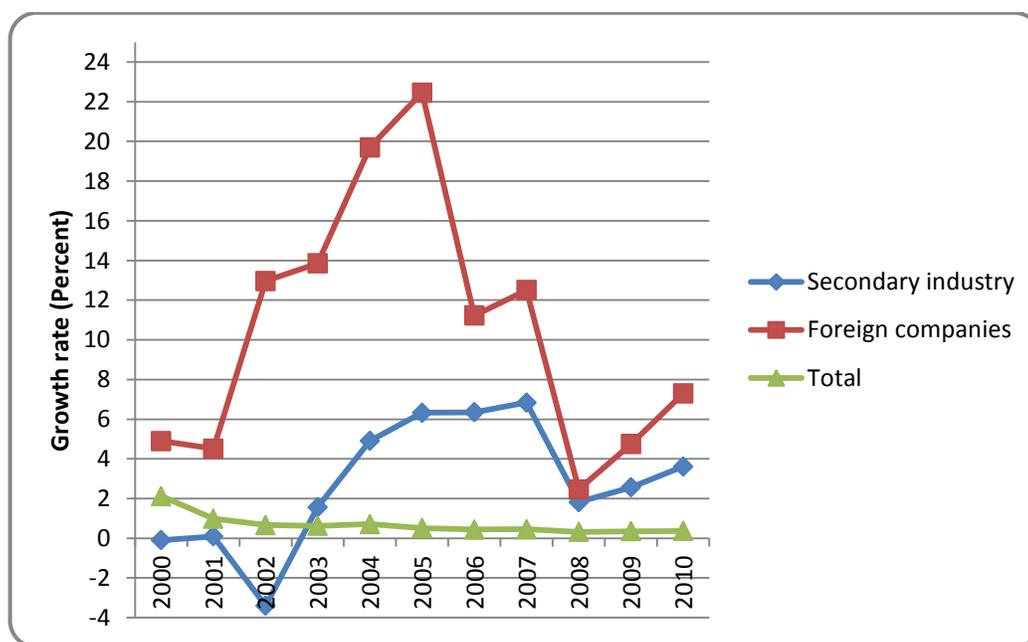
According to ILO, for promoting employment government should increase productive employment through companies’ promotion, improving human capital and investing in labour intensive projects such as infrastructure (ILO 2013).

China as most populated country and second largest economy in the world experienced a massive reforms in her social and institutional reforms. But the country could gradually solve her unemployment and became a good example of employment promotion for other countries from ILO in 2011. Foreign companies had an active role in job creation. The number of employees working in foreign companies increased from 1.65 million in 1991 to 18.23 million in 2010 which mean that average annual growth rate of employment increased by 50 percent in these companies (China Statistical Yearbook 2012).

Figure 4-1 shows the annual growth rate of employment in secondary industry, foreign companies that invest in manufacturing sector and total employment in China from

2000 to 2010. Foreign founded companies had higher growth year compare the others in all years. Employment growth reached to its peak in 2005 for foreign companies with 22.5 percent where this number was 6.3 and 0.5 percent for secondary industry and total respectively. However in 2008, after global financial crisis the growth rate in foreign firms decreased from 12.5 percent in 2007 to 2.5 in 2008 which was still higher compare the other two. But as mentioned earlier after China showed that she didn't hurt a lot from financial crisis the employment started to growth again and reached to 7.3 percent in 2010 (see Appendix 2).

Figure 4-1 Annual employment growth



Source: Calculated by author from China Statistical Yearbook (2000-2011)

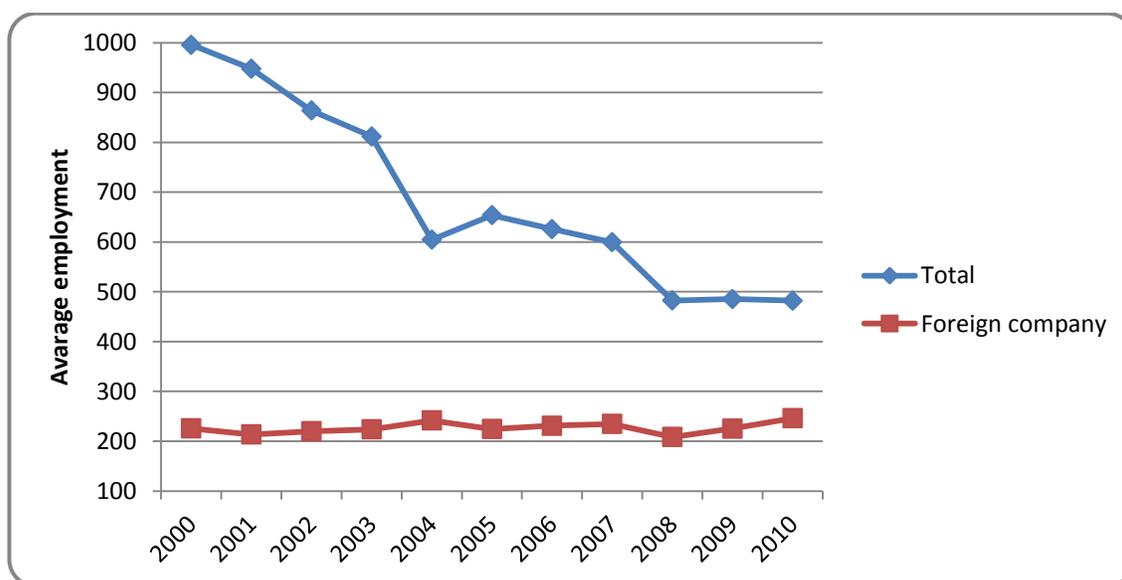
4-1 Development of enterprises

Chinese government pursued different policies to attract FDI according to her industrial and development policies. They choose gradual approach for restructuring and/or changing their institutions, laws and regulations towards foreign and domestic companies as mentioned earlier. These policies and their implementation increased the number of foreign companies in industrial sector from 28.4 thousand units in 2000 to 77.9 in 2008. However, after financial crisis many foreign firms shut down their

business (mainly SMEs) in china which led to decrease in number of them to 74 thousand in 2010 (see appendix 3).

Furthermore, average number of employees working in foreign firms remains more or less stable but in contrast, this number decreased significantly in total industrial units from 996 people in 2000 to 482 in 2010 which can also shows improving productivity in domestic firms that are one of positive effects of FDI on domestic companies (see appendix 3). Figure 4-2 shows the average employment in total and foreign units in industrial sector from 2000 to 2010.

Figure 4-2 Average employment in industrial units



Source: Calculated by author from China Statistical Yearbook (2000-2011)

4-2 Improvement of human capital

Before 1970s, more than half of the population 25 years old and more, were illiterate and did not have any schooling; and the average years of schooling was only 3.4 in China. However after economic reform, the average years of schooling reached to 6.4 years (Nation Master, 2012).

High demand of foreign firms for educated workers motivated young Chinese to increase their educational level. There was not separate data about workers' educational level in foreign firms before 2004. Table 4-1 shows the employees' educational level and its growth rate during 2004-2008 in all companies.

Table 4-1 Employees' educational level

Employees by Educational Level per Thousand Person									
	Foreign Founded Companies			Overseas Chinese Companies			Chinese Companies		
Educational Level	2004	2008	Growth Rate (Percent)	2004	2008	Growth Rate (Percent)	2004	2008	Growth Rate (Percent)
Master or Higher	100	296	195.3	41	136	228.4	1,378	3,170	130
Bachelor	815	1,767	116.8	467	937	100.5	15,714	28,332	80.3
College	1,195	2,308	93.1	938	1,603	70.9	31,207.2	43,827	40.4
Senior High School	4,153	5,871	41.4	3,857	4,760	23.4	63,000.1	74,579	18.4
Junior High School or Lower	5,195	6,464	24.4	6,579	7,039	7.0	77,965	90,449	16.0
Total	11,458.2	16,706.6	45.80	11,882.3	14,474.0	21.81	189,264.7	240,356.7	26.99

Source: China national economy census , 2004 and 2008; growth rate calculated by author

As table 4-1 illustrates, overseas Chinese companies had highest growth with 228.4 percent in having employees with master degree or higher but in number of employees, they have the lowest number in this category. The number of employees with bachelor degree doubled from 2004 to 2008. In contrast, employees with senior high school, junior high school and lower degrees increased only 23.4 and 7 percent respectively, which shows they tend to use better technology and moving from low value added to high value added.

In other categories, foreign founded companies had the highest growth rate. However, the employees' by master or higher, bachelor and college degree increased by 195.3, 116.8 and 93.1 percent respectively while increase in senior high school and junior high school or lower, were 41.4 and 24.4 percent. This trend shows that foreign founded companies are more focus on high skill workers with good educational level.

Chinese companies had higher growth rate in employees with college degree and higher compare to senior school and lower. The highest increase was for workers with master degree and higher by 130 percent and the lowest was for employees by junior high school or lowers degree with 16 percent, which is shows that domestic companies looking for high skilled worker than semi-skilled or unskilled workers. In total, all companies tend to hire employees with high educational and skill level in order to increase their productivity and value added.

Foreign founded companies are mostly skilled labour intensive. By increasing FDI and developing international trade, the demands for skilled workers increase significantly. Foreign companies can pay higher wages for hiring high skilled workers in China due to their better financial resources. Higher wages, better job benefits and moving to high value added industries, encourage Chinese people to improve their educational level (Zhuang, 2011).

Although, the number of employees increasing with different educational level in companies shows the changes in organization culture and company's vision, but looking at employees' structure of companies and its changes by educational level can help to have closer look at companies' policies in hiring employees. Table 4-2 shows the companies' employees structure by educational level in China.

As table 4-2 indicates, in 2008, 1.8 percent of total employees in foreign companies' workforce have the master degree or higher following by domestic companies with 1.3 percent and overseas companies with 0.9 percent. In addition, the highest proportion belongs to workers with senior high school and lower degree in all foreign and domestic companies, but in foreign firms these rates are declining by -3.03 and -14.66 percent for senior high school and junior school or lower respectively.

Surprisingly, overseas Chinese companies had the highest growth rate in employees by college and higher degree compared to domestic and foreign firms. However, having nearly half of employees with junior high school or lower degree in 2008 shows that overseas Chinese companies need to hire more skilled workers in order to increase their productivity and moving toward high value added sector.

Table 4-2 Employees structure by educational level

Employees by Educational Level (Percent)									
Educational Level	Foreign Founded Companies			Overseas Chinese Companies			Chinese Companies		
	2004	2008	Growth Rate (Percent)	2004	2008	Growth Rate (Percent)	2004	2008	Growth Rate (Percent)
Master or Higher	0.9	1.8	102.51	0.3	0.9	169.60	0.7	1.3	81.13
Bachelor	7.1	10.6	48.71	3.9	6.5	64.61	8.3	11.8	41.97
College	10.4	13.8	32.43	7.9	11.1	40.29	16.5	18.2	10.59
Senior High School	36.2	35.1	(3.03)	32.5	32.9	1.33	33.3	31.0	(6.78)
Junior High School or Lower	45.3	38.7	(14.66)	55.4	48.6	(12.17)	41.2	37.6	(8.65)
Total	100	100		100	100		100	100	

Source: Calculated by author from data of China national economy census, 2004 & 2008

By increasing the proportion of employees with higher educational level during 2004-2008, domestic companies showed that they follow the pattern of human capital of foreign founded companies.

5- Conclusion

Industrial policies lose their attractiveness among policy makers in most countries after conservative revolution. Mainstream economists argue that government interventions in markets can't improve economic performance and only add more cost to economy. In contrast with mainstream, Keynes and his followers believe that market can't regulate itself and if governments don't intervene into the market countries experience crisis and instability.

Some countries didn't follow the idea of mainstream economists and pursued industrial policy. Among them China is a very good example which could increase her economic growth, employment and improve her industrial sector. Attracting foreign direct investment is one of the main pillars of China's industrial policies. Chinese government could increase the productivity, job creation and improve human capital in industrial sector via absorbing FDI during the last three decades.

The result of this research shows that foreign companies have higher employment's growth rate during 2000-2010 compared to domestic companies in industrial sector with an average of 50 percent of annual growth from 1991 until 2010.

Furthermore, foreign firms (especially companies from developed countries) had a positive effect on human capital. The number of skilled workers increased sharply in China because of the high demand of foreign firms.

It should also be mentioned that Chinese government was successful to attract foreign companies for investing in her industrial sectors. The number of foreign companies constantly increased until 2008 and decreased a bit after financial crisis.

References:

- China National Economy Census*. Beijing, China: China National Bureau of Statistics, 2004. Print.
- China National Economy Census*. Beijing, China: China National Bureau of Statistics, 2008. Print.
- China Statistical Yearbook*. Beijing, China: China National Bureau of Statistics, 2000-2011. Print
- "China Unveils New Rules for Foreign Investment". Beijing, China, 2010. People Daily Online. <<http://english.peopledaily.com.cn/90001/90778/90861/6949654.html>>.
- "Invest in China". 2012. <http://www.fdi.gov.cn/pub/FDI_EN/Laws/default_new.jsp>.
- "World Development Indicators ": The World Bank, 2012. Print.
- "Nation Master" 2012. Print.
- BBC. "China Joins the Wto - at Last." (2001). <<http://news.bbc.co.uk/2/hi/business/1702241.stm>>.
- Chang, Ha-Joon. *Kicking Away the Ladder: Development Strategy in Historical Perspective*. UK and USA: Anthem Press, 2003. Print.
- Chen, Chunlai. "The Development of China's Fdi Laws and Policies after Wto Accession." *Rising China: Global Challenges and Opportunities*. Eds. Golley, Jane and Ligang Song. Canberra, Australia: ANU E Press, 2011. 85-97. Print.
- Crotty, James. "Was Keynes a Corporatist? Keynes's Radical Views on Industrial Policy and Macro Policy in the 1920s." *Journal of Economic Issues* 33.3 (1999): 555-89. Print.
- Dobbin, Frank R. "The Social Construction of the Great Depression: Industrial Policy During the 1930s in the United States, Britain, and France." *Theory and Society* 22.1 (1993): 1-56. Print.
- Dullien, Sebastian, Hansjorg Herr, and Christian Kellermann. *Decent Capitalism : A Blueprint for Reforming Our Economies*. London: Pluto Press, 2011. Print.
- Gachino, Geoffrey. "Industrial Policy, Institutions and Foreign Direct Investment: The Kenyan Context." *African Journal of Marketing Management* 1.6 (2009): 140-60. Print.
- Grabas, Christian, and Alexander Nützenadel. "Industrial Policies in Europe in Historical Perspective." *WWWforEurope Working Paper* no 15 (2013). Print.
- Graham, Otis L. *Losing Time; Industrial Policy Debate*. USA: Twentieth Century Fund, Inc., 1992. Print.
- Hedley, Mark. "White Paper: Entering Chinese Business-to-Business Markets: The Challenges & Opportunities." (2012). <<http://www.b2binternational.com/publications/white-papers/china-market-entry/>>.
- Heiden, Peter Thomas in der. "Chinese Sectoral Industrial Policy Shaping International Trade and Investment Patterns – Evidence from the Iron and Steel Industry." *Institute of East Asian Studies Working paper* No.88 (2011). Print.

- Hou, Jack W. "Economic Reform of China: Cause and Effects." *The Social Science Journal* 48 (2011): 419-34. Print
- ILO. *China: From an Active Employment Policy to Employment Promotion Law*. Geneva: ILO Publication, 2011. Print.
- . "Employment Promotion". 2013. International Labour Organization. 10th August 2013. <<http://www.ilo.org/global/topics/employment-promotion/lang-en/index.htm>>.
- Jacob, Rahul. "Fdi in China: Inland and at Your Service". 2012. Financial Times. November 12 2012. <<http://blogs.ft.com/beyond-brics/2012/02/06/fdi-in-china-inland-and-at-your-service/#axzz2OqWzbIPp>>
- Karlsson, Sune, et al. "Fdi and Job Creation in China." *Research Institute of Industrial Economics* IFN Working Paper No. 723 (2007). Print.
- Keynes, John Maynard. *The Economic Consequences of the Peace*. New York: Harcourt, Brace, and Howe, Inc., 1919. Print.
- Lemoine, Françoise. "Fdi and the Opening up of China's Economy." *CEPII – Document de travail n° 00-11* (2000). Print
- Linden, Greg. "China Standard Time: A Study in Strategic Industrial Policy." *Business and Politics* 6.3 (2004). Print.
- Liu, Ling. *China's Industrial Policies and the Global Business Revolution: The Case of the Domestic Appliance Industry*. New York: Routledge, 2005. Print.
- Lu, Zheng, and Xiang Deng. "China's Western Development Strategy: Policies, Effects and Prospects." *MPRA Paper No. 35201* (2011). Print.
- Long, Guoqiang. "China's Policies on Fdi: Review and Evaluation." *Does Fdi Promote Development?* Eds. Moran, Theodore H., Edward M. Graham and Magnus Blomström. Washington DC: Institute for International Economics and the Center for Global Development, 2005. 315-36. Print.
- Marion, Michele Di. "Industrial Policies in Developing Countries: History and Perspectives." *The Political Economy of Capabilities Accumulation: The Past and Future of Policies for Industrial Development*. Eds. Cimoli, M., G. Dosi and J. E. Stiglitz. London: Oxford University Press, 2008. Print.
- Naughton, Barry J. *The Chinese Economy: Transitions and Growth*. Massachusetts: The MIT Press, 2007. Print.
- Smith, Adam. London: W. Strahan and T. Cadell, 1776. Print.
- Zhuang, Hong. "Foreign Direct Investment and Human Capital Accumulation in China." *Journal of Chinese Economics and Finance*.3 (2011): 28-37. Print.

Appendices

Appendix 1 FDI, GDP and investment in China (1982-2011)

Year	FDI Inflow (Current Million US Dollar)	Total Investment (Current Million US Dollar)	Total Investment (Percentage of GDP)	FDI - Investment Ratio	GDP (Current Million US Dollar)	Annual GDP Growth	FDI Growth rate	Investment Growth Rate
1982	430	68,107	33.52	0.63	203,183	9	0	0
1983	636	78,132	34.20	0.81	228,456	11	47.91	14.72
1984	1,258	89,818	34.89	1.40	257,432	15	97.80	14.96
1985	1,659	117,760	38.40	1.41	306,667	13	31.88	31.11
1986	1,875	110,198	37.00	1.70	297,832	9	13.02	-6.42
1987	2,314	102,471	37.90	2.26	270,372	12	23.41	-7.01
1988	3,194	115,452	37.30	2.77	309,523	11	38.03	12.67
1989	3,393	124,175	36.10	2.73	343,974	4	6.23	7.56
1990	3,487	128,854	36.10	2.71	356,937	4	2.77	3.77
1991	4,366	142,301	37.50	3.07	379,469	9	25.21	10.44
1992	11,156	188,084	44.50	5.93	422,661	14	155.52	32.17
1993	27,515	185,891	42.20	14.80	440,501	14	146.64	-1.17
1994	33,787	234,315	41.90	14.42	559,225	13	22.79	26.05
1995	35,489	295,115	40.40	12.03	728,007	11	5.04	25.95
1996	40,180	310,759	36.30	12.93	856,085	10	13.22	5.30
1997	44,237	361,055	37.90	12.25	952,653	9	10.10	16.18
1998	43,751	378,219	37.10	11.57	1,019,459	8	-1.10	4.75
1999	38,753	397,563	36.70	9.75	1,083,278	8	-11.42	5.11
2000	38,399	420,665	35.10	9.13	1,198,475	8	-0.91	5.81
2001	44,241	480,905	36.30	9.20	1,324,807	8	15.21	14.32
2002	49,308	551,001	37.90	8.95	1,453,828	9	11.45	14.58
2003	47,077	676,075	41.20	6.96	1,640,959	10	-4.52	22.70
2004	54,936	836,402	43.30	6.57	1,931,644	10	16.69	23.71
2005	117,208	950,156	42.10	12.34	2,256,903	11	113.35	13.60
2006	124,082	1,166,569	43.00	10.64	2,712,951	13	5.86	22.78
2007	160,052	1,457,021	41.70	10.98	3,494,056	14	28.99	24.90
2008	175,148	1,989,604	44.00	8.80	4,521,828	10	9.43	36.55
2009	114,215	2,795,785	48.20	4.09	4,991,256	9	-34.79	40.52
2010	185,081	2,858,515	48.20	6.47	5,930,529	10	62.05	2.24
2011	203,034	3,556,791	48.60	5.71	7,318,499	9	9.70	24.43

Source: World Bank, FDI investment ratio, annual FDI growth rate and annual total investment growth rate calculated by author from World Bank, (2012)

Appendix 2 Employment in foreign firms, secondary sector and total

Year	Secondary industry (Million persons)	Growth rate (Percent)	Foreign companies (Million persons)	Growth rate (Percent)	Total (Million persons)	Growth rate (Percent)
2000	162.2	-0.1	6.4	4.9	720.9	2.1
2001	162.3	0.1	6.7	4.5	728	1
2002	156.8	-3.4	7.6	13	732.8	0.7
2003	159.3	1.6	8.6	13.9	737.4	0.6
2004	167.1	4.9	10.3	19.7	742.6	0.7
2005	177.7	6.3	12.7	22.5	746.5	0.5
2006	188.9	6.3	14.1	11.2	749.8	0.4
2007	201.9	6.8	15.8	12.5	753.2	0.5
2008	205.5	1.8	16.2	2.5	755.6	0.3
2009	210.8	2.6	17	4.7	758.3	0.3
2010	218.4	3.6	18.2	7.3	761.1	0.4

Source: China Statistical Yearbook, growth rate calculated by author from China Statistical Yearbook (2000-2011)

Appendix 3 Enterprises unit

Year	Total unit (Thousand unit)	Average employment	Unit growth rate (Percent)	Foreign Unit (Thousand unit)	Average employment	Unit growth rate (Percent)
2000	162.9	996	0.5	28.4	226	6
2001	171.3	948	5.1	31.4	214	10.5
2002	181.6	864	6	34.5	220	9.7
2003	196.2	812	8.1	38.6	224	11.9
2004	276.5	604	40.9	42.8	242	10.9
2005	271.8	654	-1.7	56.4	224	31.9
2006	302	626	11.1	60.9	231	8
2007	336.8	599	11.5	67.5	235	10.8
2008	426.1	482	26.5	77.9	208	15.4
2009	434.4	485	1.9	75.4	225	-3.2
2010	452.9	482	4.3	74	246	-1.8

Source: China Statistical Yearbook, growth rate calculated by author from China Statistical Yearbook (2000-2011)

