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FOREIGN DIRECT INVESTMENT AND IT`S IMPACT ON REGIONAL ECONOMIC GROWTH IN THE JIANGXI PROVINCE OF   P. R. CHINA

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Summary: since China became a member of World Trade Organization (WTO), in the Jiangxi province of China, FDI has increased abruptly, while the region's economy has realized quick growth. The theories suggest that FDI may have a positive impact on economic growth. Although the prediction of FDI theories is supported by many existing literatures in China, those literatures mainly analyze the whole nation, or its large regions. Few focus on the analysis of a single province, especially those in the central regions of China, such as Jiangxi.

This paper analyzes the impact of FDI in the Jiangxi province of China between 2001 and 2008 through the regional approach. This research question would be twofold, as following: 1) Did FDIs have a positive impact on economic growth in Jiangxi? If so, if this was due to the unbalance of regional development, which regions were they in? Was this due to an unbalance of development in other areas? And, if so, what were these areas? 2) For different regions, which factors would give effect on the FDI?

This study uses a panel set data of 91 regions, plus 8 years. All this data is from the Jiangxi Statistical Books 2002-2009.

The result shows that the impact of FDI existed between 2001 and 2008, and FDI could be largely explained by only the labor input. However, due to the unbalance of development among regions, the impact of FDI is stronger in the regions near the coast province while the impact of other investment is opposite. Form regions, FDI could be explained by only 1-2 factors, and those factors are different in 4 regions. Such as, the FDI could be explained by only the growth rate of RDP per captia of the previous year in the North East region, but only by the labor input in the South East region.

Key words: Foreign Direct Investment, Impact, Regional, Jiangxi, China.

1. BACKGROUND

Jiangxi is located in the middle of China, and it is one of the country`s less developed provinces. In 2009, it had a population of 43.39 million, about 3.23% of the entire population of China. Its Regional Gross Domestic Production was RMB 7589.2 billion, only 2.26% of the national GDP. Exports and imports amounted to USD 13.6 billion, just 0.57% of the national amount. The RGDP per capita was only RMB 17490.66, which is 77.06% of the national figure.

Although Jiangxi is one of the country`s less developed provinces, it has achieved rapid economic growth since the economic reforms were adopted by the Chinese Central Government in 1978. the Real Regional Gross Domestic Product of Jiangxi increased very quickly, from RMB 176.29 billion in 1978 to RMB 453.49 billion in 1995, with an average annual growth rate of 11.25%. However, from 1995 to 2003, the economic system transformed from a centralized economy to a market driven economy in Jiangxi. A large number of state-owned enterprises could not adapt themselves to market competition, and so bankrupted. Jiangxi   faced internal economic pains in the period. From 1997 to 2003, and it also suffer from the Asian economic crisis. After 1997, the Real RGDP seemed to gain no growth in the period. Finally, from 2004 to 2008, the transformation of Jiangxi`s economy seemed to come to an end, and the economy entered a steady development period. In this period, both foreign and domestic investment was very active. The Real RGDP increased quickly again from 2004, with an average annual growth rate of 3.42%.

The Jiangxi economy faced another problem: different levels of economic development between regions. The Real RDP of the North East region is clearly higher than the other regions in Jiangxi between 2001 and 2008. This is because there are 3 industrial cities in the North East region. The South West meanwhile had the smallest RDP.

Since the famous open-door policy was issued by the Chinese Central Government in 1979, the Chinese economy has realized a rapid GDP growth while has absorbed a large number of Foreign Direct Investment (FDI). Due to policies, FDI was mainly concentrated in the coastal area at the end of the 20 century. Since the beginning of the 21 century, the coastal area has tried to upgrade its industry from low-tech and labor-intensive manufacturing, to the high-tech, and environmentally-friendly manufacturing, or high-value-added

services. Given these changes, the Canton Government raised the regulations for the lowest salary, and restricted environmental regulations. Then, more FDI companies moved from the Canton province to Jiangxi.

Besides, there are many reasons for FDI`s entering in Jiangxi. Natural resources are abundant in Jiangxi. The region`s infrastructure has progressed markedly since the end of 1990s. Moreover, in 2004, the Chinese Central Government began to make effect to realize the economic raise in the middle part of China. The promotion policy for FDIs` entering the middle parts was issued in the same year. Sot Jiangxi has absorbed a significant amount of FDI from USD 0.84 Million to USD 3.6 billion in 2008. For the reasons of policy, FDI was only allowed to enter 2 cities Jiangxi before 1992, and it increased a little bit fast from 1993 to 1996, but in 1997, due to the Asian economic crisis, the FDI decreased abruptly. However, since 2002, Jiangxi has enjoyed substantial levels of FDI.

However, the development of FDI is unbalanced between regions in Jiangxi. The FDI increased very rapidly in the North East region and South East region. The FDI in the North East region is clearly larger than other regions. The South West has the smallest FDI amount. Generally speaking, the FDI sum in eastern regions is less than that in western regions.

2. THE OBJECTIVE OF THE STUDY

This study will analyze the impact of the FDI on economic growth through the regional approach. Although there are many studies which have found that FDI has a positive impact on economic growth in China (Wei 1995, Zhang 1995, Branstetter and Feenstra 1999), those studies are limited to the whole nation, or large regions of   it. Few studies have been devoted to the analysis of the impact of FDI on sub-regional economic growth, especially on a single province like Jiangxi. Furthermore, few studies have examined both sectoral and regional levels.

So, we have set the research questions as follows:

1) Did FDIs have a positive impact on economic growth in Jiangxi? If so, if this was due to the unbalance of regional development, which regions were they in? Was this due to an unbalance of development in other areas? And, if so, what were these areas? 2) For different regions, which factors would give effect on the FDI?

Due to the limitation of data, the studies will focus on the period between 2001 and 2008. As stated before, in that period, the Jiangxi economy was engaged in economic transformation. It seems that the toughest period happened from 2004. So we could analyze how FDI performed against the background of economic transformation.

3. LITERATURE REVIEW

In existing literatures, there are two different kinds of views on the impact of FDI on economic growth. The evidence has been provided in many cases for both the positive and negative impact of FDI.

First of all, the neoclassical theories suggest that FDI may be an engine of host economic growth. The reasons supporting a positive impact can be identified as follows:

1. FDI may have a positive effect on capital formation and employment (see *Solow, 1956, the case of USA)*;

2. FDI may have a positive effect on manufacturing exports (see *Feder, 1982,* the case of 6 Asian countries; *Athukoral and Menon, 1995,* the case of Malaysia; *Zhang and Song, 2000,* the case of China; *Liu et al, 2001,* the case of China; *Xu and Wang, 2007,* the case of China);

3. FDI may bring special resources such as capital, managerial skills, knowledge flows and others (see *Balasubramanyam,Salisu,&Sapsford, 1996,* the case of 46 developing countries; *Borensztein, De Gregorio, & Lee, 1998,* the case of 69 developing counties);

4. FDI may result in technology and spillover effects (see *Romer, 1993,* the case of 114 countries; *We, 1995,* the case of China; *Markusen & Venables, 1999,* the case of 114 countries; *Zhang, 2001,* the case of China). [1]

The other view is that the Marxist and dependency approaches may treat FDI as one mechanism for exploitation of, and gaining control over, developing countries by western industries. The reasons supporting a negative

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[1]   The arguments for positive economic effects of FDI are: (a) Inward FDI may enhance capital formation and employment augmentation. (b) FDI may promote manufacturing exports. (c) By its very nature, FDI may bring into host economies special international production networks, and established brand names; and (d) FDI may result in technology transfers and spillover effects. (Zhang 2001)

impact can be identified as follows:

1. FDI might decrease the domestic savings and investment (see *Papanek, 1973,* the case of 34 countries for 1950s and 51 countries for 1960s; *Cohen, 1993,* the case of 81 developing countries; *Reinhart & Talovi, 1998,* the case of East Asian and Latin American Countries; *Bornschier, 1980,* the case of 90 Countries; *Razin, et al, 1999,* the case of 19 developing countries);

2. FDI may decrease the foreign exchange earnings on both current account and capital account in the long-term. (see *Singer, 1950,* the case of Less Developing Countries; *Weisskof, 1972,* the case of 31 under developing countries);

3. FDI may suppress or inhibit the development of local management skill and technologies (see *Zhang, 2001,* the case of China).[2]

The exit literature on the relationship between FDI and domestic investment are like the following:

1. FDI would decrease saving, and therefore decrease domestic investment (the cases are listed above) ;

2. The impact of FDI would be significant larger than that of domestic investment (see *Balasubramnyam, 1996,* the case of 46 developing countries, *Zhang, 2001,* the case of China);

3. FDI has a complementary effect on domestic investment, when the host country has enough human capital to absorb the potential technical spillovers (*De Melo, 1999,* the case of OECD countries and Non-OECD countries; *Xu and Wang, 2007,* the case of China, *Borenztein et al , 1996,* the case of 69 developing countries).

In existing literature, the effect of FDI on regions is usually analyzed by the econometric approach. The Solow type product function could analyze FDI`s effect on the capital formation. Due to the well- known, and formidable problem- lack of capital stock data, it is popular to use the growth rate type of Solow product function. In this case, the FDI inflow amount is used instead of

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[2] The economic arguments for the negative effects of FDI are: (a) FDI might lower domestic savings and investment.(b) In the long-term FDI may reduce foreign exchange earnings on both current and capital accounts. (c) Management know-how, and technology provided by MNC`s, may suppress or inhibit developing local sources of scarce skills and resources, due to foreign dominance in the host country (Zhang 2001).

foreign capital stock.

In a specific case, Balasubramanyam, et al. (1996) used a growth rate model and a set of cross-section data of 46 developing countries, he found that the beneficial effect of FDI, in terms of enhanced economic growth, was stronger in those countries which pursue an outward oriented trade policy, rather than those which adopt an inward looking philosophy.

Zhang (2001) also used a growth rate model and cross-section, and panel data of China, for the period 1984-98. He found that FDI seemed to help China`s transition and promote income growth, and that this positive growth effect seems to rise over time and to be stronger in the coastal rather than inland regions.

4. METHODOLOGIES AND DATA

First of all, an appropriate mechanism through which FDI contributed to Jiangxi`s regional development can be expressed in the system of Equations (1-2), as following:

$$y_t = \alpha_1 + \alpha_2 \left(\frac{FDI}{Y}\right)_{t-1} + \alpha_3 \left(\frac{OI}{Y}\right)_{t-1} + \alpha_4 \iota_t \tag{1}$$

$$\left(\frac{FDI}{Y}\right)_{t-1} = \beta_1 + \beta_2 \left(\frac{dEx}{Y}\right)_{t-1} + \beta_3 gprdp_{t-1} + \beta_4 \iota_{t-1} + \beta_5 \left(\frac{OI}{Y}\right)_{t-1} \tag{2}$$

y is the growth rate of RDP

$\frac{FDI}{Y}$ is the ratio of FDI to RDP,

$\frac{OI}{Y}$ is the ratio of Other Investment to RDP,

$\frac{dEx}{Y}$ is the ratio of export`s growth on RDP

I is the labor input

$gprdp$ is the growth rate of RDP per capita

t is the time.

Equation (1) states that the foreign capital may increase or decrease the capital formation, then have positive or negative impacts on the RDP growth. Equation (2) states that foreign investors paid close attention to export condition,

local market, Labor input, and the competition from the domestic counterparts in the previous year.

Here, the data used is a regional level panel set of 91 regions[3] plus 8 years. The data set is sourced from the Jiangxi Statistical Books 2002-2009. The variable RDP and RDP per capita is the real value, which is adjusted by the GDP deflators of Jiangxi, into the money base of 2008. The variable FDI real annual FDI inflow is adjusted by the Producer Price Indexes of Jiangxi, into the money base of 2008. The Other Investment equals the Total Investment minus FDI, it is also adjusted by the Producer Price Indexes of Jiangxi, into the money base of 2008. The variable labor input is the real value of total workers` wages, which is adjusted by the Consumer Price Indexes of Jiangxi into the money base of 2008. The variable Export is the real value and is adjusted by the Producer Price Indexes of Jiangxi.

5. THE EMPIRICAL RESULT.

As stated in the background section, the Jiangxi economy faced the problem: different levels of economic development between regions. So in order to analysis the FDI`s impact in different regions. Here, the whole province was divided into 4 regions according to geography. Then the system of Equations was regressed with the panel set of all regions, the result is showed in Table 1, as follows:

Table 1: the Empirical Result

	Whole Province	North East	North West	South East	South West
Equation 1					
Constant	0.029012***	0.029365**	0.021559	0.020686*	0.028526*
FDI/Y	**0.135193***	**0.400928***	0.146306	**0.296348***	0.022224
OI/Y	**0.049694***	0.037005	**0.06151***	0.030506	**0.075816***
I	0.11457***	0.082771*	0.066453	0.124238**	0.179163***
Observations: 546	637	210	105	140	182
R-squared	0.064495	0.049493	0.087131	0.103473	0.079064
S.E. of regression	0.071318	0.072053	0.066994	0.061026	0.080077
Equation 2					
Constant	0.049676***	0.031998***	0.051424***	0.049552***	0.071535***
dEx/Y(t−1)	0.018512	0.00983	0.078146	0.053965	**0.305823***
gprdp(t−1)	0.009331	**0.036465***	0.003447	0.064488	−0.027547
I(t−1)	**0.027067***	0.017085	0.023669	**0.059803***	0.024052
OI/Y(t−1)	−0.007038	−0.001455	0.000674	0.003902	**−0.049347***
Observations: 546	637	210	105	140	182
R-squared	0.009551	0.032269	0.0132	0.065381	0.048786
S.E. of regression	0.036915	0.021701	0.03683	0.032361	0.046881
Note: ***, ** and *means significant in 1%, 5% and 10%					

[3] The 91 regions include 11 cities, and 80 counties.

Form Table 1 it can be seen as following:

From the regression result of equation 1, it can be seen that the growth rate of RDP is largely explained by the FDI-RDP ratio, OI-RDP ratio and growth rate of Labor input. The higher the FDI-RDP ratio, OI-RDP ratio and growth rate of Labor input are, the higher the growth rate of RDP is. The effect of FDI-RDP ratio is stronger in the North East and South East region; the effect of OI-RDP ratio is stronger in the North West and South West region. It suggests that the impact of FDI exist in the region without significant impact of Other Investment.

From the regression result of equation 2, it can be seen that FDI-RDP ratio is largely explained by the Export`s Change-RDP ratio, the growth rate of RDP per captia, the growth rate of labor input and the OI-RDP ratio. The higher the Export`s Change-RDP ratio, the growth rate of RDP per captia and the growth rate of labor input of the previous year are, the higher FDI-RDP ratio is. The lower the OI-RDP ratio of the previous year is, the higher FDI-RDP ratio is. The effect of Export`s Change-RDP ratio is stronger in the South West region; the effect of the growth rate of RDP per captia is stronger in the North East region; the effect of the growth rate of labor input is stronger in the South East region; the effect of the OI-RDP ratio is stronger in the South West region.

Combined the regression result of Equation 1 and 2, we could find as following:

1. It is seen that the impact of FDI is significant in the North East and South East region. Since the coast provinces locate in the east and south part of the province, the foreign investor would like to move the regions near the coast province so as to keep the operating system and marketing channel. So it is nature that the FDI would like to move to the North East region and South East region rather than the North West region and South West region. And it seems that the impact of FDI in the North East region is stronger than that in North South region.

2. For the whole province, the impact of FDI and that of Other Investment are both significant. The FDI could be explained by only the labor input. Since the worker`s wage in Jiangxi is relatively lower than that in coast province, so that`s to say, the foreign investor paid much attention to the increase of workers in Jiangxi.

3. For the North East region, the impact of FDI is significant while the impact of Other Investment is insignificant. And FDI could be explained by only the growth rate of RDP per captia of the previous year. Since the North East region is most developed region in Jiangxi, in another word, the foreign investor paid much attention to local market in the North West region.

5. For the South West region, the impact of FDI is insignificant while the impact of Other Investment is significant. However, FDI could be explained by both the Export`s Change-RDP ratio and the OI-RDP ratio. Since south west near the coast province in the south, the FDI would like to enter into the region. The foreign investors paid much attention to change of export, But the competition with the domestic counterparts is significantly suppressed the FDI amount in the region. Since the impact of Other Investment is significant in the region. It might be that there are many the domestic investors moving from the coast provinces too. Those domestic companies competed with FDI seriously.

6. For the South East region, the impact of FDI is significant while the impact of Other Investment is insignificant. The FDI could be explained by only the labor input. It is similar with the case of whole province. In another word, the foreign investor paid much attention to the increase of workers in South East region.

6. CONCULSION & POLICY RECOMMENDATION

This paper developed a system of equations regarding the FDI`s impact of FDI in the Jiangxi province of China. On one hand, it analyzed whether the growth rate of RDP could be explained by the FDI-RDP Ratio. On the other hand, it analyzed whether the FDI-RDP ratio was explained by the Export`s Change-RDP ratio, the growth rate of RDP per captia, the growth rate of labor input and the OI-RDP ratio. In another word, the Equation 1 analyzed whether the impact of FDI on RDP growth exist, the Equation 2 try to explained the FDI by the export, local market, labor input and competition with domestic counterparts of pervious year.

From the result, in general, it is seen that the impact of FDI existed between 2001 and 2008, and FDI could be largely explained by only the labor input. However, due to the unbalance of development among regions, the impact of FDI is stronger in the regions near the coast province while the impact of other investment is opposite. Form regions, FDI could be explained by only 1-2

factors, and those factors are different in 4 regions. Such as, the FDI could be explained by only the growth rate of RDP per captia of the previous year in the North East region, but only by the labor input in the South East region.

From the result, some policy recommendations could be given as following: (1) since the impact of FDI is stronger in the regions near the coast province, the governments is recommended to issue some policy to encourage the Foreign investor move to the West regions. (2) since the FDI could be explained by some factors in regions, the governments is recommended to enhance those factors so as to attract more FDI, moreover, other factors are recommended to be enhanced too.

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