Foreign Direct Investment and Inclusive Growth in China

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Abstract

Foreign investment is one of the fundamental drivers of economic growth. Such investments have the potential to create jobs, raise incomes, and lift millions of people out of poverty while accelerating economic growth. However, economic indicators only reflect part of the story. Thereby, it is crucial to understand the impact of foreign investment on social development, evaluating how they help societies meet the basic needs of their citizens, improve their quality of life, provide opportunities for individuals, or end social exclusion. In this paper, we analyze the positive relations between economic growth, various inequality coefficients, such as the Gini coefficient, the Social Progress Index (SPI) and the Human Development Index (HDI) and foreign investment in China.

1. Introduction

Economic growth is the increase in the national income of a country or region over a period of time. One factor that has a great effect on the GDP is the foreign direct investment (FDI) as indicated in Qiang (2015). FDI is the transfer of foreign capital that a country receives from foreign economic entities. Through these investments the objective is to obtain the maximum return, through the creation of companies in the territory, or by investing in already established companies for their control. Therefore, a priori, it makes sense that the FDI promotes growth.

Most of the policies established by countries aim at such economic growth, since it is true that by increasing the total wealth of a nation, it also improves the chances of reducing its poverty and solving other social problems. For this reason, many countries, such as China, which will be analyzed in this study, aim to increase their FDIs in order to generate an increase in their GDP, which translates into an increase in the country's development and welfare. However, this study shows, despite the existence of such growth due to an increase in FDI, it does not necessarily translate into inclusive growth, but is rather accompanied by a greater inequality as suggested by Ferreira (2020).

To this end, we will begin by explaining the FDI in China and its evolution, and we will demonstrate its relationship with GDP. Then, we will explain what inclusive growth entails, and we will conclude by analyzing the positive relationship between economic growth and some inequality coefficients in China. For this analysis, we will focus mainly on the Gini coefficient, the Social Progress Index (SPI) and the human development index (HDI).

In order to perform the regressions, all the data are obtained from the World Bank, with the exceptions for HDI and SPI, which were obtained from DatosMacro. All data are expressed in US dollars. The data were obtained from the year 2000 to 2020.

Our work provides empirical evidence to the growing literature on FDI and inclusive growth, and in particular, the case of China. Kang and Martinez-Vazquez (2021) report that "FDI has the most positive effect on inclusive growth when there is a sufficiently large manufacturing sector and a developed enough infrastructure base in the host country." Nkoro and Uko

(2022) investigate the role of the domestic financial sector development in the relationship between foreign direct investment (FDI) inflows and inclusive growth in Nigeria. Jin (2009) finds that FDI significantly increases urban inequality and no evidence that FDI widens income disparity between urban and rural areas in China. Chen, Ge and Lai (2011) suggests that exposure to foreign investment increases inter-enterprise wage inequality.

2. Foreign Direct Investment in China

China has had impressive economic growth since it opened its economy to the outside world in 1978 under the Deng Xiaoping government, going from being a developing economy to the second largest economy in the world. China has achieved real GDP growth rates as high as 14% in some years. In addition, it has come to produce more than 10% of the world's total GDP according to World Bank data. China's growth rate has been higher than that of any other economy. The following graph shows China's GDP growth compared to other economies: the US, which is the largest economy in the world today, and Europe. (Lópe, 2020)

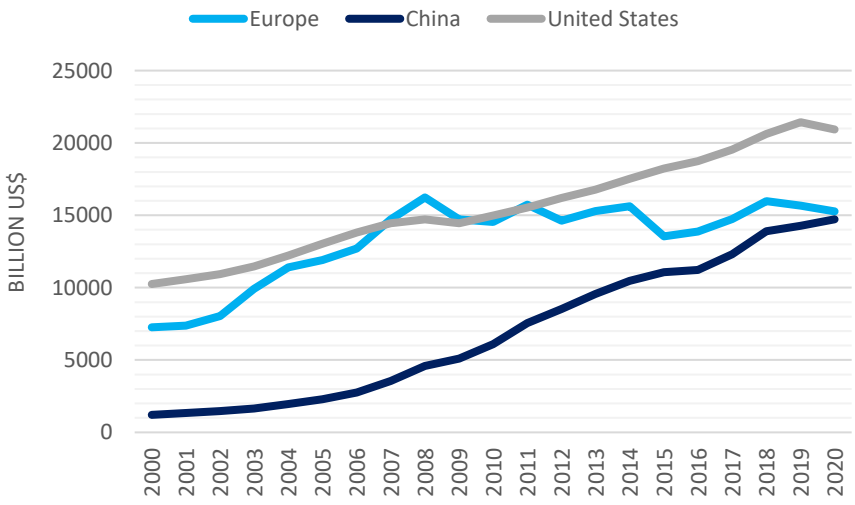


Figure 1.GDP of Europe, China and US 2000-2020

One of the reasons for this spectacular economic growth is the large inflow of foreign direct investment (FDI), currently becoming the second largest recipient of FDI in the world and occupying 8% of total world flows. (The World Bank, 2021)

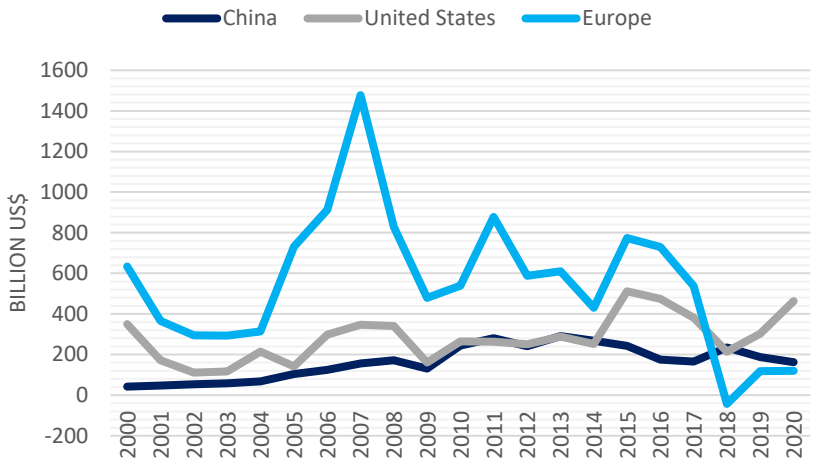


Figure 2. FDI of Europe, China and US 2000-2020

Since its economic opening, China has attracted strong investments due to its cost advantages and its large market, which arouses special interest among its investors. This, despite its economic growth, has allowed it to access foreign markets, attract know-how and modernize its economy by accelerating the process of technology transfer. FDI is also an important source of development finance, and contributes to increased productivity, providing new investment, improved technology and management and export markets.

China's reforms are based on decentralization of economic policy, elimination of trade barriers and provision of tax incentives to attract investment. In addition to these reforms, China's entry into the World Trade Organization (WTO) in 2001 has also improved the FDI environment and foreign investors' confidence in the Chinese economy.

China is a very attractive country for foreign investors, but FDI in China does not come equally from all parts of the world. Transnational corporations (TNCs) invest in China because of the locational advantages the country offers, such as low production costs or the large size of the target market. The origin of FDI flows in the country comes mainly from the rest of the Asian countries, such as Hong Kong or Singapore, due to the advantage of their geographical and cultural proximity. The case of Hong Kong is somewhat more special than the others, since it is believed that part of this investment is partly domestic but that Chinese investors channel it through Hong Kong to benefit from the incentives that the Chinese

government grants to FDI. Hong Kong receives the most investment from China, and it is these same investment flows that are suspected to be returning to China as FDI.

The other countries that stand out as investors in China are: the USA, Germany and the UK, which already for being the most industrialized countries with a large market and abundant capital, are also the ones that accumulate the largest flows of investment abroad. Also noteworthy are the investment flows received through tax havens such as the Cayman Islands and the Virgin Islands, but it is considered that they come mostly from TNCs from other countries that make investments through their free ports.

China has become a strategic partner for more developed countries. Many multinationals see China as the perfect place to invest and bring their factories, attracted by its abundant labor force, market size, etc. While for less developed countries, China has become more of a competitor as they struggle to attract the same foreign capital.

3. Relation between FDI and economic growth

To quantitatively analyze the impact of FDI on China's GDP, we run the following regression:

$$\ln(GDP_t) = \beta_0 + \beta_1 * \ln(FDI_t) + \varepsilon_t$$

The table below shows the results of the regression.

Regression Statistics	
Multiple R	0.88
R Square	0.77
Adjusted R Square	0.76
Standard Error	0.43
Observations	21
Significance F	1.43E-07

	Coefficients	*Standard Error*	*T Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	2.45	0.76	3.24	4.34E-03	0.87	4.04
ln(FDI)	1.23	0.15	8.09	1.43E-07	0.91	1.55

Table 1. Regression Analysis of the FDI and GDP

The positive slope coefficient indicates that FDI is a positive driver in China's GDP. In addition, the high R^2 indicates that the model fits well.

Next, we try to understand what factors affect FDI in China by looking into variables examined in Shafaq (2020):

- Exchange rate (ExcR). The exchange rate affects FDI. If exchange rate appreciates, the costs of installation, salaries, etc. will be higher. On the contrary, if it depreciates, the costs will be lower.
- Market size (proxied by GDP). A larger market size provides greater potential for local sales and therefore greater profitability. In the same way, an increase in profitability means a higher income, which generates an increasingly richer market, thus producing greater domestic consumption.
- Inflation (INF). Inflation hinders the economic decision-making process and, by extension, economic growth. When prices are stable, people make well-informed consumption and investment decisions, and use resources more efficiently.
- Market openness (MO). In this case, market openness is measured as total trade (exports plus imports) as a percentage of GDP. More open economies benefit from the diffusion of technology, economies of scale, and opportunities for specialization. These factors ultimately lead to increased FDI.
- Employment rate (ER). In general, it is suggested that while FDI may decrease the number of jobs in the short run by introducing labor-saving technology, it increases employment growth in the long run by improving labor productivity.

We run the following regression:

$$\ln(FDI_t) = \beta_0 + \beta_1 * \ln(GDP_t) + \beta_2 * \ln(ER_t) + \beta_3 * \ln(MO_t) + \beta_4 * \ln(INF_t) + \beta_5 * \ln(ExcR_t) + \varepsilon_t$$

where ER is Employment Rate, MO is Market Openness, INF is Inflation and ExcR is Exchange Rate. The table below shows the results obtained in the regression.

Regression Statistics

Multiple R	0.98
R Square	0.97
Adjusted R Square	0.96
Standard Error	0.16
Observations	21
Significance F	7.29E-11

	Coefficients	*Standard Error*	*T Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	-31.79	19.91	-1.6	0.13	-74.23	10.65
ln(GDP)	0.98	0.26	3.7	2.13E-03	0.41	1.54
ln(ER)	7.61	3.95	1.92	0.07	-0.82	16.04
ln(MO)	-7.93E-03	0.05	-0.17	0.87	-0.11	0.09
ln(INF)	1.51	0.23	6.49	1.02E-05	1.02	2.01
ln(ExcR)	-1.32	0.74	-1.78	0.09	-2.9	0.26

Table 2. Regression Analysis of the GDP, FDI, ER, MO, INF and ExcR

An R^2 very close to 1 indicates that the model fits well. The results show that FDI in China is positively related to its market size as proxied by its GDP, employment rate, inflation, and negatively related to the exchange rate of its currency.

4. Inclusive progress

As discussed in previous sections, foreign direct investment is one of the key drivers of economic growth. With most foreign investment now flowing into developing economies, it has the potential to create jobs, raise incomes and lift millions out of poverty, while accelerating economic growth.

However, economic indicators only tell part of the story. It is also crucial to understand the impact of foreign investment on social development. Foreign Direct Investment ('FDI') cannot be said to contribute to global development if it fails to help societies meet the basic needs of their citizens, improve the quality of life and provide opportunities for individuals. On the contrary, FDI and the risk of economic growth lead to inequity, social exclusion and potential unrest if they are not accompanied by social progress.

Understanding the relationship between FDI and inclusive growth requires a richer set of metrics with which to assess national performance. For this purpose, the Social Progress

Index (SPI), the Gini coefficient and the human development coefficient have been selected in the Deloitte (2000) study.

However, to truly generate inclusive growth, policymakers, businesses and global institutions need to look beyond common economic indicators. They need to understand that social progress attracts both development and FDI. Social progress develops through infrastructure, institutions, security and political stability, and the skills and quality of life that help countries climb the ladder of economic and social growth. In some markets, FDI fails to deliver social progress, for example when economic growth is too rapid and unbalanced across industries, and when the political environment creates instability. Taking a holistic view of inclusive growth can help governments focus their policymaking, support international organizations and NGOs, and inform investment decisions by multinational corporations to promote shared prosperity. Cheng (2017) argues that a better understanding of the relationship between inclusive growth and FDI can enable the international community to unlock the opportunities that FDI creates in order to achieve social progress and meet the millennium development goals.

- The Social Progress Index

The unique structure of the Social Progress Index captures the many facets of economic and social development, painting a holistic picture of the relationship between social progress and investment.

The Social Progress Index is the creation of the Social Progress Imperative, and focuses on 12 components of social progress, aggregated from 54 underlying indicators. These Components cover three Dimensions: Basic Human Needs such as nutrition and sanitation; Foundations of Well-Being such as health and sustainability; and Opportunities for access to higher education and political participation. The SPI represents the first time that these broad category indicators have been brought together in a single analytical tool in Datosmacro (2021).

While many indices include economic indicators, the SPI uses only social and environmental indicators that measure outcomes rather than inputs. These factors can be analyzed in the

aggregate, to provide a holistic view of development, or they can be studied separately in order to focus on particular issues such as infrastructure, education or political institutions.

- The Gini coefficient

The capital available to individuals influences their possibilities of access to the goods and services available in society. Its unequal distribution gives rise to serious socioeconomic problems, which are increasing worldwide. Information on the level of inequality in a territory is key to designing solutions to improve the situation.

The Gini coefficient is the most widely used method for measuring wage inequality. It is an analytical tool that is usually used to measure the concentration of income among the inhabitants of a region over a given period of time. It was developed by the Italian statistician Corrado Gini in 1912 and set out in his work Variabilità e Mutabilità.

The Gini coefficient measures wage inequality:

- A value of 0 indicates the maximum equality of wage distribution among inhabitants, i.e., everyone has the same income.
- A value of 100 represents the maximum inequality. A single individual has all the income.

This coefficient is often used in economics to compare conditions of inequality between countries. It is also used to examine how income inequality in a population varies over time. Thus, it can help to guide public policies aimed at achieving greater equality and economic development. It can also be used to help the poorest people obtain more income and improve their quality of life. It can also be used to measure other types of inequalities.

- The Human Development Index (HDI)

The Human Development Index (HDI) is an indicator developed by the United Nations Development Program (UNDP) that measures the level of development of each country based on variables such as life expectancy, education or per capita income.

Through its measurements, the UN Human Development Index is responsible for showing the possibilities of economic growth of the world's societies and the way in which their states provide them with an adequate or inadequate environment for this objective and their living conditions in general.

As Wikipedia explains: “[t]his indicator is based on the study of similar variables for each corner of the world, such as life expectancy, the average level of education per inhabitant and the GDP per capita of each country.”

After an investigation and study of the characteristics of each nation, the HDI is responsible for marking values in each of them between 0 and 1, from the lowest to the highest score, so that each country is classified in a corresponding group according to its level of development:

- Very High Human Development ("High Human Development"), those with levels above 0.80.
- Medium Human Development", with levels between 0.70 and 0.80.
- Medium Human Development, whose levels are between 0.50 and 0.70.
- Low Human Development, with a score of less than 0.55.

Broadly speaking, this index seeks to shed light on the standard of living experienced by each country in the world in order to be able to focus future international aid programs in different areas, such as infrastructure, educational and institutional projects.

The indicator has been used by the UN since 1990, replacing previous growth analyses, which did not emphasize the human aspect and its development, and focused especially on the more economic point of view.

The UN maintains the use of the human development index in its ongoing work in pursuit of values such as sustainability and the reduction of inequality levels between continents. In this way, it not only takes into account the level of income and income of individuals in a country, but also measures issues such as education and the living conditions in which the individual lives.

5. Relation between the FDI and the income inequality

Three regressions have been performed relating the FDI to the three variables mentioned above, the SPI, the Gini coefficient and the HDI.

5.1 Relation between FDI and SPI:

$$\ln(SPI_t) = \alpha_0 + \alpha_1 * \ln(FDI_t) + \varepsilon_t$$

Regression Statistics	
Multiple R	0.81
R Square	0.66
Adjusted R Square	0.65
Standard Error	0.05
Observations	21
Significance F	6.83E-06

	Coefficients	*Standard Error*	*T Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	3.57	0.08	43.57	1.66E-20	3.4	3.74
ln(FDI)	0.1	0.02	6.13	6.83E-06	0.07	-0.14

Table 3. Regression Analysis of the FDI and the SPI

5.2 Relation between FDI/GDP and GINI:

$$\ln(GINI_t) = \alpha_0 + \alpha_1 * \ln\left(\frac{FDI}{GDP_t}\right) + \varepsilon_t \quad (10)$$

Regression Statistics	
Multiple R	0.81
R Square	0.66
Adjusted R Square	0.64
Standard Error	0.03
Observations	21
Significance F	7.2E-06

	Coefficients	*Standard Error*	*T Stat*	*P-value*	*Lower 95%*	*Upper 95%*

Intercept	4.02	0.05	76.47	4.03E-25	3.92	4.14
ln(FDI/GDP)	0.09	0.01	6.1	7.2E-06	0.06	0.12

Table 4.Regression Analysis of the FDI/GDP and GINI.

5.3 Relation between FDI and HDI

$$\ln(HDI_t) = \alpha_0 + \alpha_1 * \ln(FDI_t) + \varepsilon_t$$

Regression Statistics	
Multiple R	0.87
R Square	0.76
Adjusted R Square	0.75
Standard Error	0.04
Observations	21
Significance F	2.39E-07

	Coefficients	*Standard Error*	*T Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	-0.97	0.08	-12.66	1.04E-10	-1.13	-0.81
ln(FDI)	0.12	0.02	7.81	2.39E-07	0.09	0.15

Table 5.Regression Analysis of the FDI and the HDI

All three regressions resulted in high R^2's. All t-statistics for the slope coefficients are greater than 2. As the results show, both SPI and HDI are positively related to FDI, indicating that FDI promotes inclusive growth as represented by the SPI and the HDI.

However, the results show that the Gini coefficient is positively related to FDI, suggesting that an increase in FDI generates more wage inequality. This could be due to several possible reasons:

Firstly, FDI being driven by the availability of natural resources may not lead to social progress. The presence of natural resources such as oil, metals and minerals may attract FDI to industries associated with extraction and processing of these products. However, these investments are generally disproportionately directed toward a sector that does not necessarily require a skilled work force, while the value created may be limited to a small

group of elite. As a result, the social progress associated with extensive FDI is unlikely to be realized. Such a country has not experienced progress in areas such as personal rights and personal freedom and choice, despite comparatively high levels of GDP per capita.

Secondly, social progress may fail to keep pace with rapid economic growth and FDI. An economy may be growing rapidly but has a low level of social progress. Areas where such a country lags behind may include personal rights and freedoms, tolerance, and personal security.

6. Conclusion

This study has shown that FDI generates economic growth. However, such economic growth does not always generate a positive outcome. In particular, our results indicate that how China, despite being the country with the second highest foreign direct investment, has not been able to channel this investment to end income inequality so far. As explained in the previous section, this may be due to the fact that growth is occurring so fast that they have not been able to manage it. Moreover, being a country that stands out for its low cost labor force in the past, increasing wages may mean that foreign investment will decrease in the future. On the other hand, it is important to note that China's political economic system is not the traditional one. Finally, it is encouraging to see that the Chinese government has taken notice of the growing income inequalities and is working hard to promote “common prosperity”, in order to address this problem.

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