Foreign direct investment and regional inequality: A panel data analysis ☆

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A B S T R A C T

Foreign direct investments (FDI) are an important determinant of economic growth. Countries try to attract mobile capital in order to foster economic development, albeit FDI might increase regional inequality since the many different regions of a country usually do not receive FDI in equal measure. A conflict emerges between efficiency and redistribution. The aim of this paper is to investigate the impact of foreign direct investment on regional inequalities. First, the Chinese case is analyzed as an introductory example. FDI has increased regional inequalities in China after the economic reforms in the 1980s, but the effect has vanished – if not reversed – since the end of the 1990s. Second, the major contribution of the paper is to analyze cross-country time-series data on FDI and regional inequalities. Based on a unique panel data set of regional inequalities covering 55 countries at different stages of development, I find net FDI inflows to increase regional inequality in low and middle income countries, while there are no negative redistributional consequences in high income economies. The analysis also shows that the observable higher mobility of individuals in highly developed countries as well as government policies are likely to mitigate the negative redistributional impact of FDI on regional inequality. Insofar, the cross-country data supports the lessons from the Chinese case with respect to the reducing effect development has on the negative impact from FDI on regional inequality.

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1. Introduction

The world is facing a trend in rapid globalization, where international capital flows are accelerating and countries are deepening their trade relationships. One type of international capital flows which has received a lot of attention among academics and policy makers are foreign direct investments (FDI). Especially among policy makers in developing countries, there has been a shift in focus on attracting more FDI. The rationale for increased efforts to attract more FDI stems from the belief that FDI has several positive effects which include productivity gains, technology transfers, the introduction of new processes, managerial skills, and know-how in the domestic market (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2004). These positive effects of FDI stimulate economic growth, and should thus improve the living conditions of people in the receiving country. Numerous studies analyzing the link between FDI and growth have identified growth stimulating effects, at least under certain circumstances (e.g. Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2010; Alfaro et al., 2004; Balasubramanyam, Salisu, & Sapsford, 1996; Basu & Guariglia, 2007; Borensztein, De Gregorio, & Lee, 1998; Hansen & Rand, 2006). However, little is known about the impact of FDI on regional inequalities within host countries, which will be at the heart of this paper.

There are several examples, such as China or India, where FDI inflows affect the different regions of the countries unequally (Siddharthan, 2007). In China – discussed later on in detail – FDI has been concentrated on the coastal regions and has been a major force in the strong increase in regional inequalities in the 1980s and 1990s. Similarly, FDI in India has been concentrated on

the Western and Southern states and territories, enlarging the income gap between these regions and other parts of the country. Both examples imply that a conflict emerges between growth enhancing effects of FDI and increasing regional inequalities.

The link between FDI, growth and regional inequalities can be illustrated using a simple theoretical framework. Assume a federation consisting of two regions inhabited by immobile households. An influx of FDI in region 1 increases the capital stock raising the marginal product of labor, output and consumption in region 1. Note that the output promoting effects in region 1 emerge if FDI involves the transfer of physical capital as in the case of greenfield investment or capacity extensions as well as if intangible capital (knowledge) is transferred as in the case of mergers and acquisitions. At the same time, nothing happens in region 2 at least as long as we abstract from spillovers. Hence, region 1 will be richer than region 2 so that FDI increases overall output of the federation, but it also increases interregional inequality. If we relax the assumption of immobile households, region 2 will also benefit from the influx of FDI. Higher wages and consumption in region 1 will induce households to emigrate from region 2 into region 1, increasing the size of the labor force in the latter region. The influx of labor will depress labor productivity, wages and output per capita in region 1, while the opposite happens in region 2. The result is regional convergence, which becomes stronger as migration costs lower. The discussion shows that FDI increases regional inequalities in general, but the effect is smaller, the higher the degree of factor mobility is. Another issue affecting the relationship between FDI and regional inequality might be government policies which influence resource allocation – e.g. subsidies, local tax holidays, etc. – in order to promote a more equal interregional distribution. Importantly, the cases of high factor mobility or government reallocation policies are less relevant for developing economies than for high income countries due to the worse infrastructure and weak fiscal capacities. Thus, the relationship between FDI and regional inequalities should be conditional on the stage of economic development a country is at, where FDI has a stronger increasing effect on regional inequalities in developing economies compared to high-income countries. The aim of this paper is to search for empirical evidence for this hypothesis.

Although the major contribution of this paper is the analysis of panel data, I first discuss the Chinese case as an introductory example. Almost the entire literature on FDI and regional inequalities concentrates on China.[1] Therefore a discussion of the Chinese case substitutes for a discussion of existing empirical literature, and at the same time illustrates how FDI affects regional inequality. The Chinese case shows, that FDI did increase regional inequalities, but these negative effects have vanished since the mid 1990s. In fact, recent data implies that FDI might have contributed to the weak convergence trend among provinces since 2004.

Subsequent to the discussion of the Chinese case I conduct a panel data analysis using a unique data set of regional inequalities in 55 countries for the period between 1980 and 2009. The data set covers high-income as well as low and middle income countries in order that it is well suited to test the impact of economic development on the relationship between FDI and regional inequalities. It turns out, that there is no unconditional effect of FDI on regional inequality, but – in line with the theory – FDI increases regional inequalities in developing economies while it has almost no significant effect on regional inequalities in high-income countries. Instrumental variable regressions, which consider a weak instrument bias, support this major finding. I also try to disentangle the different determinants of the FDI–regional inequality nexus – factor mobility and government policies – using proxy variables for those different determinants. The regressions imply that both factors are decisive.

The paper is related to studies on inter*personal* inequality and FDI such as Tsai (1995), Feenstra and Hanson (1996), Choi (2006), Basu and Guariglia (2007) and Dreher and Gaston (2008). The important difference between these studies and my analysis is that I focus on inter*regional* inequality – that is the differences between the regions of a country. In this regard, this study comes from geographer's perspective to distribution of economic activity. The distinction is important, since recent studies on the causes of conflict suggest that not vertical inequalities (inter*personal* inequalities) are related to conflict (see Stewart, 2000, 2002), but horizontal inequalities (inter*regional* inequalities) are decisive here (see Buhaug, Gleditschm, Holtermann, Østby, & Tollefsen, 2012; Deiwiks, Cederman, & Gleditsch, 2012; Lessmann, 2012b). Therefore, inter*regional* might be the more interesting factor for a society. Inter*regional* inequalities are even more important, if they overlap with the geographic location of different ethnic groups (see Kanbur & Zhang, 2005).

The difference between inter*personal* and inter*regional* inequality can also be illustrated based on the simple model presented above. Assume a symmetric two region federation, with both regions inhabited by a similar number of households of different income classes (say due to different skill levels). Therefore, we observe inter*personal* inequality between and within regions, but no inter*regional* inequality. An influx of FDI into one region will unambiguously increase inter*regional* inequality, but not necessarily inter*personal* inequality. If the poor in the FDI hosting region are the beneficiary party – e.g. if they switch from agriculture to a new industry sector – than inter*personal* inequalities decrease while inter*regional* inequalities increase. In light of this, a study of inter*regional* inequalities is interesting, since the effects of FDI inflows can be very different from inter*personal* inequalities.

The remainder of the paper is organized as follows: Section 2 reviews the literature on the case of China and presents some recent data. Section 3 presents a unique data set on regional inequalities around the world, which is used in Section 4 to investigate the impact of FDI. Section 5 sums up and concludes.

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[1] To my knowledge, the only empirical study on FDI and inter*regional* inequality which does not focus on China, is Bailey and Driffield (2002). The authors analyze the effect of FDI on regional inequality in the UK between 1984 and 1992 finding inward investment to increase regional inequalities.