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FDI's contribution to poverty reduction in Mexico

Contribución de la IED en la reducción de la pobreza en México

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Abstract

The paper identifies the FDI effects on poverty reduction at the state level in Mexico over the period 2010-2018, using a panel data model following the sys-GMM methodology. The estimated model includes variables conventionally used in the literature grouped into four categories: productive and globalization, political, public spending and infrastructure. Differentiated effects are observed in poverty depending on the poverty proxy variable used. It is found that FDI tends to reduce moderate poverty, but increases extreme poverty. This distinction introduces an additional element to the current discussion on the role of FDI. Regarding the effect of the other factors on the reduction of poverty, remittances and temporary employment reduce total poverty, public spending moderate poverty, participations and contributions do not show a clear pattern, the Prospera Program tends to increase extreme poverty as well as corruption and productive specialization in the primary sector. Road density reduces poverty, but corruption increases it. It is concluded that the economic model is characterized by attracting FDI that reduces moderate poverty, but generates extreme poverty in those excluded from the benefits of FDI.

JEL Code: F21, F63, H50, I32, J01
Keywords: FDI; poverty; extreme poverty; public expenditure; sys-GMM

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Resumen

El documento identifica el efecto de la IED en la reducción de la pobreza a nivel estatal en México en el periodo 2010-2018, mediante un modelo de datos de panel siguiendo la metodología sys-GMM. El modelo estimado incluye variables convencionalmente empleadas en la literatura que se agrupan en cuatro categorías: productivos y globalización, políticos, gasto público y de infraestructura. Se observan efectos diferenciados en la pobreza dependiendo de la variable proxy de pobreza utilizada. Se encuentra que la IED tiende a disminuir la pobreza moderada, pero incrementa la pobreza extrema. Esta distinción introduce un elemento adicional a la discusión actual sobre el rol de la IED. En cuanto al efecto de los otros factores sobre la reducción de la pobreza se tiene que las remesas y el empleo eventual disminuyen la pobreza total, el gasto público la pobreza moderada, las participaciones y aportaciones no muestran patrón claro, el Programa Prospera tiende a aumentar la pobreza extrema al igual que la corrupción y la especialización productiva en el sector primario. La densidad carretera reduce la pobreza, pero la corrupción la incrementa. Se concluye que el modelo económico se caracteriza por atraer IED que reduce la pobreza moderada, pero que genera pobreza extrema en aquellos excluidos de los beneficios de la IED.

Código JEL: F21, F63, H50, I32, J01
Palabras clave: IED; pobreza; pobreza extrema; gasto público; sys-GMM

Introduction

Foreign Direct Investment (FDI) is conventionally recognized as an important resource for economic development. Nevertheless, the empirical literature on the contribution of FDI to poverty reduction is not consensual. Studies generally recognize a central role of FDI in growth and development (Iamsiraroj, 2016; Dinh et al., 2019). The positive effects are felt through increased supply, reduced prices, tax revenue, and government spending. Moreover, according to Hayami (2001), FDI is an important way for the host country to break out of the vicious circle of underdevelopment. In particular, FDI offers an alternative path to combat poverty (Ahmad et al., 2019; Ganic, 2019) mainly because of its effects on the demand for skilled or unskilled labor (Zia & Nishat, 2010).

The literature points to an indirect impact of FDI on poverty reduction through economic growth (Magombeyi & Odhiambo, 2017) and inequality (Suanes, 2016; Fazaalloh, 2019). Developing countries seek to combine domestic with foreign resources to boost economic growth and societal income and thus reduce poverty (Do et al., 2021).

In the case of Mexico, the literature has not sufficiently explored the relation between FDI and poverty by state. It tends to focus on its determinants or effects on growth, productivity, exports, inequality, and employment from a national or sectoral perspective and, to a lesser extent, from a regional analysis.

Díaz and Turner (2012) mention that until 2000, in the northern border states, the main beneficiaries of the expo-oriented model, increasing amounts of FDI led to high growth rates and low

levels of unemployment, thus containing the advance of poverty. In contrast, Bravo (2015), using simple linear regression, finds that FDI is not necessary for poverty reduction at the national and state levels during 1990-2010 and that high GDP and FDI flows do not guarantee decreased state poverty.

Thus, according to Torres et al. (2017), some states have been more successful than others in attracting FDI. From 2008-2018, Mexico City captured 17.8% of the total FDI in the country, followed by Nuevo Leon and the State of Mexico with just over 9% each. Conversely, Nayarit, Tlaxcala, Colima, Yucatán, and Chiapas each received less than 0.5% of the total. Thus, there is a high level of inequality in the levels of FDI captured at the state level. Figueroa (2013) explains that FDI is concentrated in cities with higher levels of infrastructure, purchasing power, and education.

At the same time, the states with the greatest FDI attraction (e.g., Mexico City, Nuevo León, Baja California Sur, Coahuila), in general, contribute with greater gross value added and have lower percentages of the population living in poverty. Similarly, the states with the lowest attraction of foreign capital have the highest poverty levels (e.g., Chiapas, Guerrero, Oaxaca). There is also a group of states with relatively high participation of FDI and value-added but high poverty levels (e.g., Veracruz, Puebla, Zacatecas). Nonetheless, despite following a growth model from trade intensification based on attracting FDI (average FDI growth of 58% between 2008 and 2018), neither the country nor the states have achieved a reduction in poverty of comparable magnitude (average decrease of 8.9% in that period).

Indeed, this paper intends to identify the effect of FDI on poverty at the state level in Mexico in 2010-2018, given the availability of data from CONEVAL, a source of state poverty data. It is recognized that poverty is a multidimensional phenomenon linked to monetary aspects and other conditions related to rights and freedoms that illustrate the ability of individuals and households to meet their basic needs. Nevertheless, the focus is on researching the effects of FDI on poverty reduction at the state level in Mexico, so it incorporates additional explanatory variables to broaden the view of the subject, such as economic, political, social, and infrastructure variables.

Section 2 reviews the theoretical and empirical literature on the FDI-poverty link. Section 3 describes the variables and the dynamic panel sys-GMM econometric methodology given the data structure. Section 4 presents the results and discussion. Finally, some reflections are presented. The paper contributes to the analysis of FDI, particularly its effect on poverty reduction at the state level in Mexico.

FDI and poverty

The literature has identified the direct and indirect impacts of FDI on poverty reduction in the foreign country in which it operates (Oishi & Kesebir, 2015). The indirect impact is through economic growth, resulting in improved living standards (improved productivity and economic environment). In contrast,

the direct impact is generated through increased employment and a reduction in people living below the poverty line due to increased demand for employment and improved labor force (Klein et al., 2001).

Regarding the first effect, Dollar and Kraay (2000) estimate that growth tends to increase the incomes of people experiencing poverty in direct proportion. Kakwani (2000) indicates that the positive effects of FDI more than offset the negative effects—crowding out of domestic investment- resulting in net economic growth and poverty reduction. It can also reduce the adverse impact on people experiencing poverty of financial instability and improve government management capacity (Hung, 2005). Likewise, it supports social safety nets based on redistributive public programs (Klein et al., 2001). Moreover, as FDI drives economic growth, the local market expands (Jeong, 2009), offering new income-earning opportunities for people with low incomes, i.e., the demand for labor grows from FDI itself, from new FDI, from complementary investments, from public or private investment or even from the informal market.

Additionally, FDI is associated with complementary productive investments and investments in public infrastructure (education, transportation, health, etcetera) (Wekesa et al., 2016). Hayami (2001) states that FDI closes the gap between desired investment and domestic savings, increases tax revenues, and improves host economies' management, technology, and labor skills. The net availability of capital in the domestic economic system due to FDI inflows depends on the substitution and complementarity between FDI and domestic capital (De Mello, 1999). Thus, the greater the complementarity, the greater the contribution of FDI to poverty reduction.

The effects of FDI on poverty depend on various factors on both the productive capital and the host location. Calvo and Hernandez (2006) found that the benefits of FDI varied according to the initial local conditions and the orientation of the foreign subsidiary. Thus, on the one hand, the magnitude of the effect is determined by the amounts and characteristics of FDI associated with green investments, reinvestments, technological or labor intensity, industrial sector, tax exemptions, and labor hiring, among others (Xibao & Zhi, 2009). Conversely, the economic, industrial, social, political, and governmental characteristics of the host location affect the scope of FDI (Elboiashi, 2015), e.g., local suppliers, tax collection from FDI and its local use, community acceptance of a certain manufacturing plant, land use conversion it employs, etcetera. Collectively, all these conditions influence poverty reduction through FDI.

In particular, Meyer (2004) states that the mode of FDI entry plays a key role in the effects of FDI on poverty reduction in the host country. FDI can be in the form of mergers and acquisitions or greenfields. Mergers and acquisitions, which involve a change of ownership, bring fewer welfare benefits to the local society. In contrast, new FDI, which increases capital, brings more benefits.

Also, according to Winters (2002), trade liberalization impacts poverty through changes in commodity prices, offering more products at competitive prices that give local society access to satisfiers. For Francois et al. (2004), the increase in trade in developing countries, where unskilled workers tend to be in the majority, favors reducing the number of impoverished people.

The benefits of FDI in the host country depend on the orientation of the foreign subsidiary. There are three reasons for localizing FDI in a given country. Search for markets, motivating an increase in local content and employment. Search for raw materials, where employment generation may be limited. Search for a platform for exports, contributing to income and technology transfer (Chang 2003). Regardless, in cases where FDI is capital-intensive or based on advanced technology, the host economy may lack skilled supporting labor, limiting the effect on employment, income, and poverty reduction (Calvo & Hernández, 2006).

Similarly, the host country's economic development level determines the potential advantages of FDI in poverty reduction (Meyer & Sinani, 2009). The development level influences domestic companies' number and capacity to insert themselves into the FDI value chain and thus benefit from inward FDI. A developing country tends to offer a poor business ecosystem, which limits the potential positive effects of FDI. Nevertheless, the impact of foreign direct investment is strong in low-income countries with high levels of social capabilities (supportive institutional framework, effective communication, a well-educated workforce, and infrastructure support) (Kemeny, 2010).

To this end, Klein et al. (2001) indicate that there are preconditions for FDI to contribute to poverty reduction, among which are an adequate environment for foreign capital, an egalitarian and competitive platform that avoids protection for any capital, and regulation (restrictions and discrimination) of foreign investors. In particular, these measures favor the reduction of income poverty. Likewise, Fowowe and Shuaibu (2014) indicate that FDI inflows contribute to poverty reduction depending on institutional quality, human capital development, and financial system development.

Besides, in poverty reduction, the application of Corporate Social Responsibility (CSR) policies and guidelines by Multinational Enterprises (MNEs) in the FDI recipient country can be noted, as stated by Akwaowo and Swanson (2016). MNEs, through their FDI, must face the important decision on how to act according to CSR guidelines, in order to, among other things, reduce poverty in the recipient countries. In this regard, Tomas de Cavia (2019, P.3) mentions that FDI, accompanied by CSR policies, measures, and regulations, is a dynamic factor of economies and a powerful tool for poverty reduction, especially when investments are conducted in developing countries.

According to Kolstad and Tondel (2002), "The higher the level of FDI, the higher the level of economic growth, which enables better social development and other development goals." In their line of argument, the authors assert that "the degree to which economic and social progress improves the lives of

all members of society is identified through wealth distribution and poverty reduction." Furthermore, Visser (2009, P.481) states, "There is a powerful argument that CSR in developing countries is directly linked to the socioeconomic environment in which business organizations operate and, above all, to the development priorities that this entails. This argument is linked to poverty reduction, health provision, infrastructure development, and education."

Nevertheless, the direct effect of FDI on poverty reduction requires that the demand for labor mostly favors the unemployed poor or low-income earners. When they find work where they receive training, they become skilled laborers with aspirations for higher incomes and higher living standards, surpassing the poverty line (Sarisoy & Koc, 2012). For Do et al. (2021), FDI directly alleviates poverty through better training of local workers.

The World Bank (WB, 2019) also considers individuals who receive less than one dollar a day to be in extreme poverty and those who receive less than two dollars a day as poor. In the case of Mexico, the National Council for the Evaluation of Social Development Policy (CONEVAL, 2018) considers a person to be in poverty when they have at least one social deprivation[1] and their income is insufficient to acquire goods and services to satisfy their basic needs. Likewise, it defines a person in extreme poverty if they have three or more deprivations and an income below the minimum welfare line. This income is considered so low that it does not allow them to acquire the nutrients necessary for a healthy life.

Therefore, poverty is the lack of economic opportunities, access to basic services such as education and health care, opportunities to participate in the public decision-making process, and deprivation of social protection. According to Sen (1999), maintaining or expanding these deprivations would limit people's ability to maximize their potential. Thus, limited individual capabilities translate into obstacles to freely choosing the most valued and desired way of life.

Thus, through public policies, the state seeks to generate an enabling environment so that people can provide adequate nourishment for themselves and their families. In particular, it has been interested in promoting the formation of human capital and specialized personnel, given its relevance in attracting FDI (Asali & Campoamor, 2011).

Following this idea, Checchi et al. (2007) estimate that FDI positively affects human capital formation, reflected in greater employment opportunities and wages, which makes it possible to access health services, social security, quality housing, basic public services, and food. Jensen and Rosas (2007) state that FDI is related to improvements in the levels of income inequality, and through this, FDI impacts poverty reduction (Kwasi, 2017).

[1]In the Deprivation Index, composed of six indicators: educational backwardness, access to health services, access to social security, housing quality and space, basic services in housing, and access to food

Indeed, there is no consensus in the literature regarding the effect of FDI on poverty. Studies have identified estimated negative effects of FDI. UNCTAD (1999) notes that the direction of the impact of FDI depends on the variables included in the study. For example, Huang et al. (2010) find a negative effect of these capitals on poverty in 12 Latin American and East Asian countries. Mihaylova (2015) suggests that FDI likely focuses on capital-intensive activities, leading to higher unemployment rates in traditional sectors and increased poverty. The results of Osemenshan et al. (2020) show that FDI negatively affects poverty reduction. Specifically, they suggest that the level of FDI needed to alleviate poverty has not been achieved.

On the other hand, according to Do et al. (2021), FDI has indirectly worsened poverty through international trade. Te Velde (2003) states that international trade, linked to the effect of FDI, may increase the demand for skilled rather than unskilled labor, which does not improve poverty.

Methodology and data

A dynamic panel data econometric methodology with fixed effects is employed. In particular, a Generalized Method of Moments (sys-GMM) model is estimated, which incorporates equations in differences and levels and a specific set of instrumental variables. The procedure used by Ángeles and Ramirez (2014) is followed.

Since the states show differences in the dimensions of interest, the existence of fixed effects is accepted. This information is verified with the Breusch and Pagan Lagrange multiplier test (BPLM), which evaluates random effects using the null hypothesis where the individual specific variance equals zero (H_0: $\sigma^2_u=0$).

A dynamic panel data model (DPSM) that lags the dependent variable is proposed, which enables testing the correct specification of the model and the possibility of autocorrelation (Ángeles & Ramírez, 2014):

$$POB_{it} = \alpha_i + \gamma POB_{it-1} + \sum_{k=1}^{n} \beta_k X_{kit} + \eta_i + u_{it} \quad (1)$$

Where X is the vector of explanatory variables, and POB is some variable related to poverty —defined below—in the i-th state at time t. The variables in X are grouped into four categories: productive and globalization (PROGLO), political (POL), government spending (GP), and infrastructure (INFRA). The model is specified from the review of the literature summarized above that estimates the effects of

FDI on poverty. In particular, it is an extension of Khan et al. (2019), Uttama (2015), Ucal (2014), and Fowowe and Shuaibu (2014). These models incorporate as dimensions of analysis in addition to trade openness and FDI, other economic (GDP per capita, inflation, employment), financial (domestic and external public debt), political (regional integration, corruption), and infrastructure (telephone lines, goods transported via road, rail, air, or ports) factors. Aaron (1999) and Hung (2005) classify the possible effects of FDI on poverty reduction in the host economy as direct and indirect, and they are grouped into this group of variables.

The lagged dependent variable leads to the regressor γ and the error term u_{it} being correlated. Therefore, the Generalized Method of Moments (GMM) proposed by Arellano and Bover (1995) is used. The method eliminates the individual effects associated with each state, η_i, by posing a dynamic equation in the first differences as follows:

$$P_{it} - P_{it-1} = \gamma(P_{it-1} - P_{it-2}) + \sum_{k=1}^{n} \beta_k (X_{kit} - X_{kit-1}) + (u_{it} - u_{it-1}) \quad (2)$$

Bun and Windmeijer (2007) state that if the dependent variable appears as an explanatory variable, the strict endogeneity of the regressors does not hold. To control for the endogeneity of the lagged dependent variable, P_{t-1}, reflected in the correlation between it and the error term in the new equation, the GMM estimator in the first difference is followed, with the lagged endogenous variables as instruments.

Nonetheless, this estimator shows finite sample bias and low precision (Blundell & Bond, 1998), which are explained by the weakness of the instruments given the lagged levels of the series. This weakness is explained by the variance of the individual effects, η_i, concerning the variance of u_{it} (Blundell et al., 2012).

Thus, since lagged differences are still informative about current levels, Blundell and Bond (1998) propose to estimate a system of equations, system GMM (sys-GMM), which combines moment conditions for the model in first differences with moment conditions for the model in levels (Bun & Windmeijer, 2007), each with a specific set of instrumental variables. The method uses lagged γ_{it} differences as instruments for the equations in levels and lagged γ_{it} levels as instruments for the first-difference equations (Angeles & Ramirez, 2014). The sys-GMM, based on the moment condition $E[\Delta P_{it-1}(\eta_i+u_{it})]=0$, significantly improves accuracy and reduces small sample bias (Blundell & Bond, 2000).

Therefore, three specification tests are employed to enable the consistency of the sys-GMM estimator to be assessed: (i) the Hansen test of overidentifying restrictions to test the joint validity of the

instruments given the heteroscedastic distribution of the errors;[2] (ii) the difference-in-Hansen test, defined as the difference between the Hansen statistics of the differenced GMM and the sys-GMM;[3] and, (iii) the Arellano-Bond autocorrelation test to determine the existence of first and second order autocorrelation, and to corroborate that $[u_{it}-u_{it-2}]=0$, assuring the consistency of the GMM estimator.

Given the availability of information, the study covers the years 2008, 2010, 2012, 2014, 2016, and 2018 with data from CONEVAL at the state level. Based on the review of the literature, the variables used in the estimation are classified into two groups. The first group includes five poverty indicators (POB), which show the percentage of the population living in poverty, moderate poverty, extreme poverty, income below the income poverty line, and income below the extreme income poverty line. Table 1 defines these variables and describes them statistically.

This approach to poverty differs from the usual one, which considers it the lowest quintile in a country's income distribution (e.g., in Dollar & Kraay, 2004). It differs from studies that use GDP per capita, infant mortality rate, and household consumption, among others, as a proxy for poverty (Magombeyi & Odhiambo, 2017).

Including different poverty measures makes it possible, in addition to examining the effect of FDI on poverty, to analyze in which type of poverty this effect is felt. Given the lack of consensus on the effect of FDI on poverty, this helps to clarify the estimated sign. Econometrically, this constitutes a robust analysis of the results.

Likewise, in addition to the econometric specification, the consideration of the lagged dependent variable in the model is supported by the Mexican context, characterized by the persistence of poverty as pointed out by various sources such as Rodríguez (2016), Millán (2018), Canto (2019), and CONEVAL itself (2015). Andrade et al. (2017) establish that poverty is persistent, notwithstanding the economy's capacity to generate wealth. Accordingly, as they state, it is accepted as a hypothesis that poverty tends to be self-perpetuating or, at least, to affect its own future behavior.

The second group includes the explanatory variables at the state level. PROGLO includes i) total casual insured workers, which are people insured in the Mexican Social Security Institute (IMSS) in urban and rural areas, tate; ii) productive specialization, understood as the percentage share of primary sector activities in the state GDP, ep; iii) foreign direct investment, total sum of new investments, reinvestment of profits and intercompany accounts, tiedr; and, iv) international remittances, monetary amount from abroad transferred by an individual to a beneficiary in national territory, remr.

[2]The null hypothesis states that the overidentification restrictions are valid.
[3]The test operates under the null hypothesis of joint validity of a subset of instruments and is asymptotically distributed as a χ^2 with n degrees of freedom equal to the additional instruments.

POL captures institutional quality or governmental stability (Devangi et al., 2013) and is approximated by v) perception of corruption, the percentage of the population aged 18 and over in urban areas of 100 000 inhabitants or more that consider corruption to be an important problem in their state, corr. GP, due to its link with poverty reduction, is approximated using different measures of social spending (Cammeraat, 2020), such as (vi) government spending, the sum of public investment (public works and production projects and promotion measures), and transfers, allocations, subsidies and other aid, gp; (vii) participations to states from Ramo 28, resources allocated to states and municipalities under the terms established by the Fiscal Coordination Law (LCF) and the Agreements of Accession to the Fiscal Coordination System and Administrative Collaboration in Federal Fiscal Matters, rr28; viii) federal contributions for states and municipalities for Branches 25 and 33, resources to strengthen their capacity to meet demands in education, health, basic infrastructure, financial strengthening, and public safety, based on the provisions of the LC, plus the resources of the SEP in salary and economic provisions for the educational spending funds of Branch 33, rr2533; and, ix) federal spending for the Prospera Social Inclusion Program including operating costs, prospr. Finally, INFRA, because of its direct links via economic growth and in the productivity and income options of the regions (Setboonsarng, 2006), is expressed as vi) road density, length of the total road network (paved, surfaced, dirt, and improved dirt roads) per thousand inhabitants, dcp.

The variables are considered realistically (2013=100) and transformed into logarithms. Coefficients with a negative sign are expected for all variables, indicating that they contribute to reducing state poverty. In addition, given the heterogeneity among states, individual effects are considered. For this purpose, a regional dummy variable, dfn, is included. This variable enables testing whether regional effects associated with attracting foreign capital show a difference between the northern border states and the rest.[4]

Table 1
Definition of variables and descriptive statistics

Dimension	Variable	Name	Description	Source	Mean	Std. dev.	Min	Max
POB	psp	Population living in poverty (% of total population)	Percentage of people with at least one social deprivation within the Social Deprivation Index and insufficient income to acquire goods and services to satisfy nutritional and non-nutritional needs	Consejo Nacional de Evaluación de la Política de Desarrollo	3.716	0.338	2.656	4.363

[4]As usual in this type of model, time dummy variables are also included to capture possible effects of time. Nevertheless, in no case are statistically significant coefficients found, so they are excluded from the results.

	pspm	Population living in moderate poverty (% of total population)	Percentage of people who are poor but not extremely poor. Refers to the difference between the incidence of the population in poverty minus the incidence of the population in extreme poverty.	Social (CONEVAL)	3.511	0.253	2.613	3.959
	pspe	Population living in extreme poverty (% of total population)	Percentage of people who have three or more social deprivations and who, in addition, are below the minimum welfare line.		1.834	0.853	-0.746	3.656
	piilpi	Population with income below the income poverty line (% of total population)	Percentage of the population with income below the monetary value of a basic food, goods, and services basket (basic food basket plus non-food basket).		3.870	0.270	2.974	4.393
	piilpei	Population with income below extreme poverty line by income (% of total population)	Percentage of the population with income below the monetary value of a basic food basket		2.747	0.551	1.126	3.930
PROGLO	ep	Share of primary activities in the state's GDP (%)	Percentage share of primary sector activities in the state's GDP	Instituto Nacional de Estadística y Geografía (INEGI)	1.192	1.069	-3.269	2.558
	tate	Total casual insured workers (individuals)	Insured urban and rural casual workers in the IMSS	Secretaría del Trabajo y Previsión Social (STPS) Sistema de Información Estadística Laboral (SIEL)	12.726	0.863	11.076	15.019
	tied	Total FDI (million pesos) (constant 2018=100)	The total sum of new investments, reinvestment of earnings, and intercompany accounts		10.968	1.585	0.000	13.771
	rem	Remittances (millions of pesos) (constant 2018=100)	Monetary amount from abroad, transferred through companies and originated by a sender (individuals residing abroad) to be delivered in Mexican territory to a beneficiary (individuals residing in Mexico)	Secretaría de Economía (SE) Banco de México (BANXICO)	11.133	1.027	8.348	13.102
GP	gp	Public spending (millions of pesos) (constant 2018=100)	The sum of public investment and transfers, allocations, subsidies, and other aid		12.155	0.612	10.981	14.109
	rr28	Branch 28 budget (millions of pesos) (constant 2018=100)	These are the participations to states and municipalities under the terms established (Ramo 28), channeled through the following funds: General Participation Fund, Municipal Development Fund, Special Tax on Production and Services, Fiscalization Fund, Clearing Fund, Hydrocarbon Extraction Fund, and New Automobile Tax Compensation Fund	Instituto Nacional de Estadística y Geografía (INEGI) Secretaría de Hacienda y Crédito Público (SHCP) Secretaría de Desarrollo Social Coordinación Programa PROSPERA	11.706	0.719	10.303	13.654
	rr2533	Budget of Branches 25 and 33 (millions of pesos) (constant 2018=100)	These are federal contributions to states and municipalities (Branch 33) to strengthen their response capacity and meet governmental demands in education, health, basic infrastructure, financial strengthening and public safety, food and social assistance programs, and educational infrastructure.		11.764	0.642	10.463	13.190
	prospr	Prospera Social Inclusion Program (millions of pesos) (constant 2018=100)	Federal spending on the Social Inclusion Program (PROSPERA). Data include program operating costs.		8.995	0.955	6.898	11.041

POL	corr	Corruption (percentage of population)	Perception of the most important problems in the state. Population aged 18 and over living in urban areas of 100 000 inhabitants.	Instituto Nacional de Estadística y Geografía (INEGI). Encuesta Nacional de Calidad e Impacto Gubernamental (ENCIG)	3.893	0.134	3.510	4.241
INFRA	dcp	Road density (kms per 1 000 inhabitants)	Length of total road network expressed in terms of population. Includes paved, surfaced, unpaved, and improved dirt roads.	Secretaría de Comunicaciones y Transportes (SCT)	1.136	1.137	-4.634	2.253

The Social Deprivation Index considers six indicators of social deprivation: educational backwardness, access to health services, social security and nutrition, housing quality and space, and basic housing services. The food basket is the set of foods whose value enables the construction of the minimum welfare line, determined according to the consumption pattern of a group of people who satisfy their energy and nutrient requirements. New investment is FDI associated with initial investments by foreign individuals or legal entities upon establishing themselves in the country; contributions to the social capital of Mexican companies (initial or increases) by foreign investors; transfers of shares by Mexican investors to direct investors; and the initial amount of the consideration in trusts that grant rights over FDI. Reinvestment of earnings is the portion that is not distributed as dividends and represents an increase in capital resources owned by the foreign investor. Intercompany accounts are debt transactions between Mexican companies with FDI social capital participation and related companies abroad. Public investment is public works in public property, public works in own property, production projects, and promotion measures. Transfers, allocations, subsidies, and other aid are destined directly or indirectly to the public and private sectors, agencies, and parastatal companies and support as part of their economic and social policy. The natural logarithm normalizes variables.
Source: created by the authors based on information from CONEVAL (Spanish: Consejo Nacional de Evaluación de la Política de Desarrollo Social), SE (Spanish: Secretaría de Economía), IMSS (Spanish: Instituto Mexicano del Seguro Social), and INEGI (Spanish: Instituto Nacional de Estadística y Geografía)

Results and discussion

Table 2 shows the results of the tests of the fixed effects model in the different specifications for each poverty variable. For all of them, the Breusch and Pagan Lagrange multiplier test (BPLM), which evaluates random effects, rejects the null hypothesis, enabling it to corroborate the assumption of individual effects among states. Likewise, the Hausman test yielded a meaningful result, accepting, in all cases, that the best specification is the fixed effects model. For all five specifications, the tests suggest that the data do not show cross-sectional dependence or multicollinearity. Nevertheless, there is evidence of heteroscedasticity and first-order autocorrelation.

Table 2

Tests conducted on the Fixed Effects panel model

Tests/variable	piilpi	piilpei	psp	pspm	pspe
BPLM	45.61	29.58	31.70	76.96	33.01
Hausman	264.80	104.8	64.09	80.89	6.81
Cross-sectional dependence					
Pesaran	1.41	4.62	1.02	3.75	1.22
Multicollinearity					
VIF	5.24	5.24	5.24	5.24	5.24
Autocorrelation					
Modified DW	1.39	1.26	1.38	1.35	1.48
Baltagi- Wu- LBI	1.86	1.71	1.83	1.82	1.90
Heteroscedasticity					
Wooldridge	113.1	61.4	121.2	78.3	100.2
Wald	689.8	702.1	1111.1	436.8	1081.1

* significant at 1 percent

The Breusch-Pagan LM test (BPLM) establishes as a null hypothesis that the pooled OLS estimator is adequate (Ho: $\sigma^2_u=0$).

The Hausman test contrasts the null hypothesis that no substantial difference exists between the fixed and random effects estimators (Ho: Corr(ui, X)=0).

The Pesaran test states as the null hypothesis that there is no cross-sectional dependence (between cross-sectional units).

The autocorrelation tests establish a null hypothesis that no autocorrelation exists (Ho: $u_{it}=u_{it-1)}$.

The modified Wald test's null hypothesis is that there is no heteroscedasticity problem (Ho: $\sigma^2_i=\sigma^2$).

Source: created by the authors based on STATA estimates

Consequently, dynamic panel models (sys-GMM) are estimated. Regarding the consistency of the sys-GMM estimator, Table 3 shows the results of the specification tests. The p-values for the Hansen, Diff-in-Hansen, and AR (1) and AR (2) tests are reported. The tests do not reject the null hypotheses of joint validity of the instruments or validity of the additional instruments in any of the specifications. Similarly, there is no evidence of second-order autocorrelation. Thus, it is accepted that the specifications are well-defined (preferred over GMM modeling in first differences) and reflect the effects of FDI on poverty at the state level.

Moreover, the significance of the coefficients is systematically maintained, and the signs remain unchanged. Nevertheless, the effects of FDI on poverty using GMM were estimated to consider the robustness of the results. The results (Table 3) are unchanged (signs, magnitudes, and, to a lesser extent, significance). Thus, the reported results are a robust reflection of the effects of the variables on poverty.

FDI-Poverty

Interesting results can be observed regarding the effect of FDI. On the one hand, it plays a relevant role in reducing the percentage of people living in poverty, moderate poverty, and with income below the poverty line. One possible explanation is the influence of this variable on the labor market, generating employment options that represent a permanent source of income and enable workers to acquire goods and services related to alimentary and non-alimentary needs. This idea is aligned with the evidence of Temkin and Cruz (2019), who found positive effects of FDI on generating formal jobs in the country. It is consistent with the argument of FDI's direct and indirect contribution to employment and income (Klein et al., 2001).

Nevertheless, the estimated coefficients are low magnitude, hence their contribution to poverty reduction is also low. In particular, Temkin and Cruz (2019) point out that FDI generates employment when domestic companies meet the standards required by foreign companies. Thus, given the competitiveness of small and medium-sized companies in Mexico, the positive effect on employment, and hence on the reduction of poverty, is limited.

In contrast, given that the coefficient of FDI is meaningful and shows a positive sign, this variable tends to increase the percentage of people in extreme poverty and with income below the extreme poverty line. This fact suggests that the presence of foreign capital, while generating jobs for some, simultaneously reduces job opportunities for others. This idea is supported by the fact that the country participates in global value chains where decisions are made by transnational companies and by the lack of productive integration in national chains (Blyde, 2013), limiting the potential to generate jobs that enable absorbing the supply from the poorest.

Table 3
Estimates: effects of FDI on Poverty at the State Level

Variables	sys-GMM Estimate					GMM Estimate				
	piilpi	piilpei	psp	pspm	pspe	piilpi	piilpei	psp	pspm	pspe
$Piilpi_{t-1}$	0.884*** [0.119]	-	-	-	-	0.430*** [0.154]	-	-	-	-
$Piilpei_{t-1}$	-	0.703*** [0.078]	-	-	-	-	0.160* [0.089]	-	-	-
Psp_{t-1}	-	-	0.848*** [0.121]	-	-	-	-	0.280* [0.158]	-	-
$Pspm_{t-1}$	-	-	-	0.784*** [0.108]	-	-	-	-	0.507*** [0.148]	-
$Pspe_{t-1}$	-	-	-	-	0.612*** [0.118]	-	-	-	-	0.369* [0.226]
Tiedr	-0.056* [0.031]	0.028*** [0.010]	-0.030** [0.046]	-0.070** [0.051]	0.011*** [0.009]	-0.020* [0.009]	0.020*** [0.004]	0.001 [0.004]	-0.021** [0.008]	0.024** [0.006]
Gp	-0.065*** [0.032]	0.011 [0.063]	-0.013*** [0.028]	-0.054** [0.047]	0.05 [0.068]	-0.053* [0.037]	-0.034 [0.073]	-0.042 [0.037]	-0.064** [0.030]	0.001 [0.100]
Rr28	-0.052*** [0.027]	-0.076** [0.038]	-0.005 [0.064]	-0.080** [0.033]	-0.08 [0.165]	-0.092** [0.097]	-0.134 [0.272]	-0.091 [0.115]	-0.042* [0.015]	-0.053 [0.216]
Rr2533	-0.061** [0.101]	-0.159** [0.145]	-0.042 [0.139]	-0.05 [0.076]	-0.221* [0.026]	-0.046** [0.095]	-0.046** [0.055]	-0.093 [0.161]	-0.125 [0.182]	0.351 [0.375]
Prospr	0.083*** [0.028]	0.217*** [0.033]	0.093*** [0.034]	0.095*** [0.023]	0.371*** [0.095]	0.050* [0.029]	0.142* [0.074]	0.016 [0.033]	-0.027 [0.027]	-0.038 [0.096]
Remr	-0.055* [0.028]	-0.122** [0.049]	-0.048** [0.024]	-0.028 [0.020]	-0.170*** [0.051]	-0.106*** [0.035]	-0.337*** [0.104]	-0.121*** [0.037]	-0.0885** [0.038]	-0.382*** [0.104]

Tate	-0.100**	-0.183*	-0.094*	-0.071**	-0.259**	-0.134	-0.602***	-0.205	-0.008	-1.213***
	[0.046]	[0.094]	[0.051]	[0.031]	[0.106]	[0.137]	[0-209]	[0.165]	[0.161]	[0.400]
Dfn	0.317**	0.406	0.247**	0.203**	0.323	0.306**	0.197	0.286**	0.215	0.287
	[0.129]	[0.287]	[0.125]	[0.092]	[0.240]	[0.099]	[0.183]	[0.109]	[0.185]	[0.265]
Ep	0.066*	0.148**	0.072*	0.044	0.088	0.249***	0.331**	0.272***	0.189***	0.269
	[0.040]	[0.074]	[0.037]	[0.029]	0.089]	[0.066]	[0.139]	[0.058]	[0.066]	[0.216]
Corr	0.181**	0.612***	0.216**	0.141	0.856***	0.141*	0.264**	0.169**	0.033	0.354
	[0.090]	[0.175]	[0.095]	[0.101]	[0.244]	[0.097]	[0107]	[0.087]	[0.060]	[0.224]
dcp	-0.093***	-0.131*	-0.086***	-0.058**	-0.050	-0.178***	-0.095	-0.128**	-0.112	-0.433
	[0.035]	[0.077]	[0.032]	[0.025]	[0.105]	[0.057]	[0.123]	[0.055]	[0.085]	[0.272]
Constate	1-906***	3.426***	1.998***	2.021***	3.498**	4.579**	13.93***	7.010***	4.170**	25.46***
	[0.724]	[1.142]	[0.757]	[0.659]	[1.467]	[1.933]	[4.459]	[1.902]	[1.679]	[6.258]
AB AR(1)	0.003	0.002	0.001	0.000	0.003	0.024	0.057	0.067	0.007	0.608
AB AR(2)	0.941	0.692	0.887	0.464	0.181	0.313	0.693	0.223	0.580	0.437
Sargan/Hansen Test	0.122	0.195	0.173	0.239	0.112	0.492	0.385	0.679	0.796	0.669
Diff-in-Hansen Test	0.398	0.701	0.348	0.497	0.242	-	-	-	-	-
Observations	160	160	160	160	160	128	128	128	128	128
No. of instruments	30	30	30	30	30	21	21	21	21	21

The Sargan/Hansen test establishes as a null hypothesis that the overidentification restrictions are valid.
The difference-in-Hansen test establishes the null hypothesis of joint validity of a subset of instruments.
The Arellano-Bond autocorrelation test establishes a null hypothesis that $[u_{it}-u_{it-2}]=0$.
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Source: created by the authors based on STATA estimates

For those who are not directly employed in foreign companies, generally larger ones, one employment option within the formal market is small companies and in certain less productive sectors such as agriculture, hospitality, commerce, personal services, etcetera., which increases the risk of poverty (García & Toharia, 2007).

Thus, workers excluded from the benefits of FDI tend to face a labor and income situation associated with unemployment or informality, which leads them to extreme poverty. In this case, the presence of foreign companies, directly or through effects on the market structure, can generate unemployment, precarization of labor conditions, and an increase in informal labor (Aragonés & Salgado, 2015). CONEVAL (2015) points out that globalization has played an important role in the increase of extreme poverty in Mexico, which is consistent with the fact that, on average for the whole period, new investments represented 30% of total FDI.

The fact that FDI contributes to reducing moderate poverty and increasing extreme poverty suggests the idea pointed out by Fernandez (2010) of the segmentation of the labor market in Mexico, which includes different wage formation and mobility mechanisms. In other words, FDI tends to segment and polarize the quality of employment, with a positive bias only for part of the labor supply. Moreover, considering the aggregate effect on poverty, there is a lack of quality employment generation by these capitals.

In this regard, it is recognized that this effect depends on different factors such as the magnitude of the initial FDI, the level of technology employed, the scale of labor demand, the level of specialization required, and the degree of integration in the domestic production chain, among others (Mirza & Giroud, 2003). In particular, this bias can be understood from the approach of Mirza and Giroud (2003), who state

that FDI generates high-caliber human capital, but only a reduced level of it can be inserted in new investments, domestic or foreign. Moreover, in line with Calvo and Hernandez (2006), when FDI is capital-intensive or technology-based, it demands human capital, benefiting skilled personnel and excluding personnel in other situations.

Accordingly, as pointed out by (Jeong, 2009), with the entry of FDI, the domestic market expands, thus increasing the demand for labor from this or new FDI and complementary investments. Nevertheless, those with fewer possibilities of accessing new jobs are workers employed in sectors with lower levels of specialization. For Topalli et al. (2021), the sector and the specific strategy of FDI influence poverty reduction. That is, as investments tend to go to more productive and profitable sectors, workers in the rest of the sectors may receive lower wages.

Likewise, following Meyer (2004), when FDI is based on mergers and acquisitions, capital results in a change of ownership and, on many occasions, the contraction of current sources of employment. Therefore, only some workers can participate in these companies.

In short, expanding on the argument of Sarisoy and Koc (2012), the segmentation and polarization of employment linked to FDI can be explained by the fact that skilled people obtain higher employment income. In contrast, the less skilled remain unemployed or receive wages that do not enable them to rise above poverty.

Finally, this can be explained by following Abdelaal's argument (2010), for whom people living in poverty tend to blame unemployment for their income shortfall and working in low-wage sectors, where the presence of FDI is usually limited. That is, the impact of FDI on poverty depends on the nature of the employment created.

Other results

Regarding the effect of the productive and globalization variables, casual employment is significant in all specifications, while remittances and productive specialization are not significant in the models of moderate poverty, the former, and moderate and extreme poverty, the latter. In addition, both casual employment and remittances show coefficients with negative signs. Therefore, they represent a mechanism for reducing poverty and destitution.

For casual employment, the result is contrary to expectations since, as García and Toharia (2007) point out, the risk of poverty is higher for workers with temporary contracts than for those with permanent contracts. Moreover, according to the International Labor Organization (ILO, 2003), casual workers do not enjoy the same social protection as permanent workers and face precarious remuneration, leading them to work longer. Nevertheless, the results suggest that casual work is a way to supplement household

income and advance in terms of poverty. In other words, they face multiple work shifts to achieve sufficient income levels and escape poverty.

Remittances represent a market mechanism for poverty reduction that is far from optimal from a social approach. This result is consistent with Mora and Morales (2018) and Mora et al. (2018), who point out that international remittances favor poverty reduction in Mexico. Accordingly, Bonilla Leal (2016) points out that for 28% of Mexican households, private transfers from abroad, generally sent by relatives in the United States, represent the main source of income and a way to address social deprivation.

Nevertheless, as Mora and Morales (2018) maintained, the impact of remittances depends on the existing institutional structures in each state and their effectiveness in addressing socioeconomic problems. Moreover, the average effect of remittances on poverty reduction depends substantially on the type of poverty; higher coefficients of remittances are observed for extreme poverty than for moderate poverty. This result is also reported by Sanchez (2010).

Furthermore, productive specialization seems to have a positive impact on poverty. The concentration of productive activity in the primary sector leads to an increase in poverty levels measured by the moderate- and extreme-income line and the percentage of people in moderate poverty. This fact concerns the primary sector's negative contribution to economic growth (Cruz & Polanco, 2014). Attempts at accelerated industrialization in developing economies have stifled the primary sector (Yao, 2000, cited in Cruz & Polanco, 2014), limiting remuneration and increasing poverty rates, mainly through its effects in rural areas.

Regarding the government spending variables, the estimates point to effects on poverty. Specifically, the government spending variable only shows significant and negative coefficients for the moderate and general poverty models. This means that current and capital spending, materialized in public works, production projects, and development measures, among others, conducted by state governments only contributes to reducing the proportion of people with some social deprivation and insufficient income.

Similar evidence is found in Cortés (2014), Loera et al. (2016), and Martínez et al. (2019), who indicate that government spending, particularly social spending, tends to reduce poverty in the country. One plausible explanation is the generation of direct or indirect jobs. For example, public works favor hiring temporary construction workers, translating into household income and a better situation to address social deprivation.

Regarding federal government transfers to state and municipal governments, the coefficient of the rr28 budget is relevant and negative for three models (moderate, income, and extreme income poverty). As these resources are not freely conditioned and exercised by states and municipalities, a relatively systematic incidence is observed in the fight against moderate poverty, particularly of the resources from

the General Participation and Municipal Development Funds and vehicle ownership, as these are the main components of this branch.

Federal contributions from branches 25 and 33 significantly affect extreme income and poverty. Nevertheless, contrary to expectations, the sign is positive, suggesting that the resources labeled by the federal government tend to increase these types of poverty. The "conditional" nature of this spending may make it less efficient and, therefore, may not meet concrete needs to access public goods and services. State governments' lack of decision-making powers limits them in making fundamental decisions to improve the quality of effective action (CONEVAL, 2011). Therefore, the results suggest that the objective of transfers through branches 25 and 33, aimed at reducing the inequality gap in education, health, and security, was not met during this period.

When considering federal spending on the Prospera program, there is a relevant effect in all models, with a positive sign. This fact means that the resources for social development in this way are creators of poverty. This result differs from research such as Urzúa and Brambila (2009), who estimate that the Progresa-Oportunidades program decreases poverty; Scott (2017), who indicates that it has avoided deepening poverty or López et al. (2018), who states that the progressive nature of the program has managed to reduce extreme poverty.

In any case, Camberos and Bracamontes (2015) find that the impact of Oportunidades has been of very low magnitude and with heterogeneous impact in the regions (Bracamontes et al., 2011); Contreras (2016) adds that the Oportunidades-Prospera program has not achieved substantial achievements in reducing poverty rates in the country. Furthermore, Hernández and Aguilar (2015) state that belonging to the Oportunidades program does not reduce the probability of being poor. For Mendizábal (2019), although this welfare program received the largest amount of economic resources with the largest register of beneficiaries, becoming the country's social policy (Barclay, 2020), it did not achieve effective results to counteract poverty.

The estimated negative effect can be explained by Rodriguez and Patrón (2017), who point out that targeted programs usually provide aid to people with low incomes but do not prevent poverty and, in fact, often generate poverty traps. They state that the economic benefits are scarce, which complicates escaping poverty. Thus, the program does not enable breaking out of the perverse poverty cycle. In particular, Barajas (2016) establishes that although Prospera offered information and advice for the members of beneficiary families to access the productive development and employment programs of its new lines of action, this scope was extremely reduced. For example, only 0.12% of beneficiary families were supported out of a registry of more than 6 million.

Nevertheless, as Barclay (2020) points out, the program's evaluation shows dichotomous results: the program works, but its results are mixed and meager. Accordingly, further analysis is required as the literature finds evidence of this program's effect in both directions.

On the other hand, the results regarding lagged poverty variables are, in all cases, significant and have a positive sign. Prior poverty contributes to current levels of poverty and is self-perpetuating. This is consistent with the idea of poverty persistence, pointed out by Canto (2019), Millán (2018) and Scott (2017), among others. The coefficients of lagged poverty are those with the highest magnitude, which indicates not only the complexity of combating it but also that the persistence of poverty stems from social expenditure that is incapable of breaking the intergenerational transmission of poverty in any of the measurements considered.

The persistence of poverty is associated with individual characteristics of people experiencing poverty themselves and poverty generated by the mechanisms of poverty traps (Biewen, 2014), which implies trapped social mobility in which the population has difficulty accessing the labor market and obtaining better remuneration (Colmex, 2018).

As for the variable associated with political factors, it was found that corruption is one of the main determinants of poverty. This variable is significant in all specifications except for moderate poverty. González and Sánchez (2019) also report the negative effect of corruption on people experiencing poverty in the country. Low institutional quality, which reflects corruption, has limited or denied access to opportunities or basic services for the population in the states. Thus, corruption, a phenomenon rooted in socioeconomic life, contributes to poverty and its persistence.

Likewise, it is found that road infrastructure reduces virtually all poverty indicators (except for the percentage of people in extreme poverty). Similar results are reported by Obregón (2010) and García et al. (2018). Consequently, states with higher road network density in relation to their population face the lowest poverty levels. Possibly, road infrastructure expands the operation of isolated or small markets, increasing competition and choice and leading to distributional effects in favor of consumers (Saavedra, 2011) and domestic producers. Roads connect local markets with larger markets, favoring their "outward" oriented economic growth and positively affecting poverty rates.

Finally, the regional dummy variable differentiating the northern border states is positive and significant for the moderate poverty models. This differentiation suggests that the reduction in moderate and moderate-income poverty in the border states has been lower than in the other states, on average 0.179 percentage points lower. This fact can be explained by the effects on the manufacturing plant industry due to greater competition in global markets where a significant part of this production is destined.

In any case, the coefficient indicates that, on average, the rest of the states had greater progress in reducing total or moderate poverty than the border states, but it does not imply zero progress in this

process. According to CONEVAL (2019), the main progress of these states is in extreme poverty, in which, except for Tamaulipas, all states significantly reduced those percentages in the period studied. Nevertheless, 16 other states also decreased this type of poverty, so there does not seem to be a significant difference between states in patterns of extreme poverty.

Final thoughts

The evidence shows that the effect of FDI and the other variables on poverty is sensitive to the proxy variable used to measure the latter variable. Magombeyi and Odhiambo (2017) also estimate that the effect of FDI on poverty is sensitive to the proxy variable used to measure the latter. While the magnitudes remain in range, the significance and signs of the explanatory variables change slightly. Remittances and casual employment decrease extreme poverty to a greater extent, while productive specialization increases income poverty. Government spending reduces moderate poverty; federal participation and contributions do not show a clear pattern, but the former tends to reduce poverty and the latter to increase it. Likewise, expenditure via Prospera increases poverty, particularly extreme poverty.

Although casual employment and remittances tend to contribute mainly to reducing extreme poverty, these dimensions are manifestations of poverty. Remittances come from precarious and vulnerable migrant workers toward family members in conditions of poverty and contexts of social marginalization (Canales, 2007). At the same time, temporary employment is characterized by precarious conditions (Cano, 2004). The comparative lack of protection in the primary sector also reinforces poverty.

Regarding government spending, there is limited efficiency and impact on fulfilling social objectives. Whether directly, through economic support to shore up monetary income, or indirectly, through the generation of jobs that lead to higher incomes, the capacity of public resources to reduce poverty is mainly focused on moderate poverty, negatively affecting the proportion of the population living in extreme poverty. The limited effective coordination of policies and programs among governments at the three levels and the separation of the precise needs of the territories, linked to qualitative conditions, are the basis of these results and are also linked to the persistence of poverty.

Although road density contributes to reducing income poverty and moderate poverty by expanding access to markets and opportunities, corruption is a central factor in perpetuating poverty. There is also evidence that poverty is self-reinforcing, making it even more complex to combat.

Specifically, there is evidence that FDI tends to reduce moderate poverty but, at the same time, increases extreme poverty. The participation of foreign companies in the economy distorts the labor market, offering employment and income opportunities, directly and indirectly, for some, helping to escape poverty but excluding others, representing an obstacle to achieving income and employment

alternatives to improve access to basic goods and services, leading them to destitution. In short, from the approach of this research, the economic model in the country is characterized by generating moderate poverty with work linked to FDI and extreme poverty without formal work, excluded from the benefits of FDI. This transnational development model focuses on improving competitiveness to attract investment, leaving aside alternatives for improving the social conditions of workers.

To change this situation, foreign capital with quality jobs and sufficient quantity to contribute to poverty reduction is required. As has been widely pointed out in the literature, one alternative is the insertion of small and medium-sized companies in the value chain of subsidiaries, moving up toward higher value stages. In any case, greater government efforts are needed to establish complementary policies and materialize the potential benefits of FDI regarding technological diffusion and adaptation, export promotion, and profit taxes, among others.

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