

Can Multinational Enterprises Light up Developing Countries? Evidences from the Access to Electricity in sub-Saharan Africa

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Summary. — This paper examines the role that multinational enterprises (MNEs) and foreign direct investments (FDI) can have in enhancing the access to electricity for local communities in developing countries based on the quality of home and host institutions. Access to electricity is a marker for development but it is far from being universal in developing countries. The shortage of electricity is mainly the consequence of inability of governments in planning, financing, and developing necessary electricity infrastructure. In this context, investments from other actors can be essential. Particularly, we focus on the role of FDI and MNEs. We claim that when MNEs invest in developing countries, they are incentivized to solve the lack of electricity infrastructure mainly for two reasons: to guarantee their business activities and to gain legitimacy with their local stakeholders. In addition, we argue that MNEs and FDI from institutionally underdeveloped countries will be more prone to develop infrastructure for the provision of electricity to local population, as generally they suffer from a negative stereotype. For this study, we rely on 1,547 observations composed of pairs of 83 home countries and 15 host countries in sub-Saharan Africa, observed from 2005 to 2011. Due to the nature of the database, we adopt panel data techniques, i.e., system-GMM and corrected Least Square Dummy Variable estimators. We find that FDI promotes access to electricity in developing countries with weak institutions and this is more likely true when FDI come from institutionally underdeveloped countries. These results are far from obvious, as they controvert common idea among institutional scholars that a regulatory authority is essential in the provision of infrastructure.

In conclusion, with this paper we partially rehabilitate the image of MNEs investing in developing countries, by demonstrating that—under certain conditions—they could contribute to energy poverty alleviation of local population.

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Key words — FDI, MNE, electricity infrastructure, institutions, Africa

1. INTRODUCTION

In the last years, the world is facing profound and escalating challenges, such as climate changes, poverty and inequality, and the rise of economic and financial crises. For decades, the most obvious candidates for solving these global problems were governments and global institutions, such as the World Bank or the International Monetary Fund. These institutions do in fact play a role; nevertheless, the Rio + 20 summit emphasized the need for a much wider partnership. Among the partners that could act jointly to address these widespread challenges, multinational enterprises (MNEs) play a key role, as since the seventies they have been growing in size and capabilities (Gratton, 2014). For instance, Lodge and Wilson (2006) use value added (defined as the sum of salaries and pre-tax profits), as a measure the economic size and estimate that, in 2005, 29 of the world's largest economies were not countries, but multinationals. The necessity of MNEs' involvement has also been emphasized in the 2014 World Investment Report (WIR), released by the United Nations Conference on Trade and Development (UNCTAD). The WIR focuses on the contribution that the private sector could make to the 2030 Agenda for Sustainable Development and the related Sustainable Development Goals (SDGs), aimed at ending poverty, fighting inequality and injustice, and tackling climate change by 2030.¹

When talking about sustainable development, it is necessary to consider one of its fundamental and inescapable drivers, i.e., energy (Dinkelman, 2011). Access to modern energy services, particularly electricity, together with other commodities, functions and services, such as drinkable water, education, transportation, communication, and health, is a collective good,² and its provision is necessary both to

enhance standards of living and to run business activities (e.g., Kebede, Kagochi, & Jolly, 2010; Khavul & Bruton, 2013). However, in 2013, the International Energy Agency (IEA) estimates that 1.2 billion people (almost one fifth of the world population) do not have access to electricity. More than half is located in sub-Saharan Africa, a fifth in developing Asia (without China and India), 20% in India, and the rest in Latin America and Caribbean Sea, and North Africa and Middle East.³ For this reason, in 2011, the United Nations General Secretary launched the Sustainable Energy for All Initiative (SE4All) with one of its objectives being the universal access to electricity by 2030.⁴ However, to meet the goal the IEA evaluates that \$50 billion of investments per year would be required (IEA, 2014).

The reasons of this shortage of electricity in developing countries could be imputed mainly to the rapid population growth and to the failure of local governments in defining sound electrification policies.⁵ In fact, developing countries are generally affected by institutional voids, i.e., they lack those institutions that minimize the three main sources of market failure. Specifically, accordingly with Khanna and Palepu (1997) these sources are: (1) the lack of reliable market information; (2) the inefficiency of the judicial systems and; (3) the misguided regulations, i.e., when regulators place political goals over economic efficiency. This ineffective system of governance, together with other factors such as low rates of

*We are grateful to Arun Agrawal and an anonymous referees for the constructive feedback. We thank Alvaro Cuervo-Cazurra, Jonathan Doh, Elisa Giuliani, Rajneesh Narula and all of the participants at: the 40th EIBA conference in Uppsala (Sweden), the 2015 AIB Northeast Frontier Conference in Boston (US), and the 2015 AIB Annual Meeting in Bangalore (India). Final revision accepted: June 19, 2016.

domestic savings and poor tax revenues, could actually undermine developing countries' ability in planning, financing, and developing necessary infrastructure for power production, transmission, and distribution, leading to the scarcity of access to electricity for local communities (Robbins & Perkins, 2012).

The inability of local governments to provide electricity makes essential the involvement of different actors, such as development banks, no-profit organizations and the private sector, to guarantee the running of social and business activities (Boddewyn & Doh, 2011; Buckley & Boddewyn, 2015). In these circumstances, MNEs, which in the past twenty years have increasingly invested in developing countries, could possibly play a role. Based on the UNCTAD estimates, in 2013, foreign direct investment (FDI) flows to developing countries reaching a new high of \$778 billion, which accounts for 54% of the global inflows. Developing Asia is the region with the highest FDI inflows, with a total amount of \$426 billion, followed by Latin America and the Caribbean region, which experiences a growth of 6%, reaching a peak of \$292 billion. Finally, Africa shows a growth rate of 4% and FDI inflows amount to \$57 billion, while developing Oceania is the only region that remains stable at \$3 billion.

While criticisms of the negative impact of MNEs continues to be vivid (for an overview see Oetzel & Doh, 2009), policy attention has been recently addressed to their potential added value in alleviating poverty. Accordingly, we argue that in countries where governments are too weak to provide infrastructure for the supply, distribution, and transmission of electricity, MNEs can have a positive impact on the society. Indeed, MNEs and FDI can contribute to the expansion and modernization of electricity infrastructure, alone or with other players, as they need them to not only gain access to essential production inputs, reduce costs, and increase business opportunities, but also to stimulate the development of local communities and achieve legitimacy required to operate therein (Kostova & Zaheer, 1999; North, 1990). We also argue that the positive impact of MNEs and FDI is stronger when they come from institutionally weak home countries. Indeed, despite less sophisticated-resources and business practices, those MNEs are more likely to possess the managerial expertise needed to operate in contexts that are similar to their home country (Cuervo-Cazurra & Genc, 2008; Zeng & Eastin, 2012). These arguments are far from obvious, as it is common knowledge that a regulatory authority is necessary in the infrastructure sector to restrain the tendency of private firms of exerting monopoly power. In fact, highly specific investments (i.e., sunk costs), large economies of scale and scope, as well as widespread consumption imply that customers of infrastructure services have limited bargaining power, and suppliers tend to adopt opportunistic behavior if regulation is absent (Levy & Spiller, 1994; Sawant, 2010; Williamson, 1976). For this reason, the delivery options for electricity have historically been either direct provision through state-owned enterprises or indirect provision through regulation of private business (Bergara, Henisz, & Spiller, 1998).

In this paper, we focus on sub-Saharan Africa (SSA). The region has experienced an unprecedented presence of MNEs and FDI in the last 10 years (UNCTAD, 2014); at the same time, in 2013, more than 30% of the population still has no access to electricity (for details see Section 3) (IEA, 2014). Our sample is composed by FDI into 15 sub-Saharan host countries from 83 home countries, observed throughout the 2005–11 period. Given the nature of the data, the econometric analysis relies on dynamic panel techniques. Our findings confirm that MNEs and FDI could stimulate the access to elec-

tricity in developing countries affected by institutional voids, and this effect appears to be stronger when these companies come from institutionally weak environments.

With the present work we aim to contribute to the debate on the potentials and opportunities of MNEs in relation to poverty alleviation in general (Kolk & Van Tulder, 2006) and to the provision of electricity to the population in particular (Sesan, Raman, Clifford, & Forbes, 2013). So far, this debate has received significant attention from a wide spectrum of scholars, without reaching, nevertheless, a univocal consensus. Our scope is to disentangle the concept of poverty and the contribution of MNEs in this regard. For this reason, we focus on a specific form of poverty, i.e., lack of access to electricity, and on a specific type of MNE's presence, i.e., FDI. We argue that this impact could be affected by the institutional framework of both the destination country and the target country of the investment. For this purpose, we rely on several streams of literature specifically, institutional voids and MNE behavior (Boddewyn & Doh, 2011; Khanna & Palepu, 1997), institutional arrangement for the provision of infrastructure for public purposes (Henisz, 2002; Levy and Spiller, 1994), as well as the MNEs' legitimation mechanisms (Kostova & Zaheer, 1999; Zeng & Eastin, 2012).

The paper is organized as follows: Section 2 describes the conceptual framework, Section 3 presents the data and methodology, while Sections 4 and 5 illustrate the results and robustness checks, respectively. Finally, Section 6 reports the discussion and conclusion.

2. CONCEPTUAL FRAMEWORK

(a) *Infrastructure development in weak institutional environments: the role of MNEs and FDI*

Reasons behind the shortage of access to electricity in developing countries are complex and vary across economies. However, one of the main causes can be imputed to the lack of adequate infrastructure for the production, distribution, and transmission of electricity.⁶ In SSA, the inadequacy of electricity system is mainly due to the reduction of investments in construction and maintenance of infrastructure, caused by the decline in state revenues and political stability, which involved most of the countries in the region since the seventies (Robbins & Perkins, 2012). This decrease of investments raises the area's dependence on infrastructure stocks heritage of colonial period, resulting in a qualitative and quantitative mismatching between supply and demand of infrastructure (Escribano, Guasch, & Pena, 2010).

More generally, the electric infrastructure system of a country is expression of its institutional environment and governments have always been involved in its provision or regulation (Laffont & Tirole, 1991; Ostrom, Larry, & Wynne, 1993; Sawant, 2010; Williamson, 1976). Namely, three features make electricity infrastructure a complex form of economic transaction, particularly sensitive to the country's institutional environment: (i) the high level of physical specificity of the investment (i.e., a high component of sunk investment); (ii) the widespread domestic consumption and; (iii) economies of scale and scope (Levy & Spiller, 1994). Following the framework provided by Bergara *et al.* (1998), four complementary institutional mechanisms could be identified that determine the profitability and feasibility of the investments. (i) Political stability, which enhances the potential for opportunistic behavior by governments. (ii) Administrative capabilities of the country, which represent the potential sophistication of

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