

**STRUCTURAL REFORMS AND THE MULTINATIONALIZATION STRATEGY OF
DEVELOPED, DEVELOPING, AND LEAST-DEVELOPED COUNTRY FIRMS ***

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STRUCTURAL REFORMS AND THE MULTINATIONALIZATION STRATEGY OF DEVELOPED, DEVELOPING, AND LEAST-DEVELOPED COUNTRY FIRMS

We analyze the impact of structural reforms on the multinationalization strategy of developed, developing, and least-developed country firms. Structural reforms are a form of institutional change whereby a country's institutional framework is realigned to improve governance and facilitate market functioning. We argue that structural reforms help firms become multinationals by reforming institutions that support the international competitiveness and multinationalization of firms. However, we propose that structural reforms have a differential impact on the multinationalization strategy of firms depending on the level of institutional voids in the country. Specifically, we argue that structural reforms have the highest positive impact on the multinationalization strategy of developing-country firms, followed by developed-country firms, and then by least-developed country firms. Structural reforms especially accelerate the multinationalization of developing-country firms by reducing institutional voids that constrain their competitiveness, institutional voids that are not prevalent in developed countries. However, this is not the case for firms from the least-developed countries because countries have to be above a threshold of institutional development for their firms to fully benefit from structural reforms. As such, structural reforms reduce the multinationalization gap between developed and developing-country firms, but increase the gap between least-developed country firms and those from more developed countries.

Keywords: Structural reforms, multinationalization strategy, institutional voids, developing countries, least-developed countries, outward foreign direct investment, institutional economics

JEL classification: F23, M16

We study the multinationalization strategy of developed, developing, and least-developed country firms¹. Recent years have witnessed a large growth in the creation and expansion of multinational enterprises (MNEs) around the world, especially those from developing countries. Whereas in 1990 there were 4,100 developing-country MNEs, or 11.71% of all MNEs worldwide, by 2006 the number of developing-country MNEs had quintupled to 20,172, or 25.72% of the total (UNCTAD, 1992; 2007). At the same time, the stock of outward foreign direct investment (OFDI) from developing countries has increased by a factor of 50, growing from US\$21 billion, or 1.15% of the total in 1990, to US\$1.01 trillion, or 9.51% of the total in 2005 (UNCTAD, 2007). This growth has been a surprise to many, especially when these firms began acquiring large competitors in developed countries, such as the purchase of the personal computer division of the American firm IBM by the Chinese firm Lenovo, or the purchase of the US brewer Miller by the South African firm SAB.

This recent growth of developing-country MNEs has resulted in a renewed interest in the topic, which has highlighted the differences between current and past research (for example, see the special issues edited by Aulakh, 2007, Gammeltoft, 2008, and Luo and Tung, 2007). Past research has focused primarily on MNEs from developed countries and on their entry into and performance in developing countries (e.g., Delios and Beamish, 1999; Delios and Henisz, 2003; García-Canal and Guillén, 2008; Goerzen and Beamish 2003; Hennart and Park, 1994; Makino, Isobe, and Chan, 2004). Although this literature has been instrumental in developing a better understanding of MNEs from developed countries, its findings do not necessarily generalize to developing-country MNEs, because the latter have to operate in a vastly different institutional

¹ By multinationalization strategy we are referring specifically to a firm's strategic decision whether to become a multinational corporation and subsequently to increase its multinational presence. Although there are many other aspects of the multinationalization strategy of firms – such as the mode of entry into host countries (see the review in Datta, Herrman, and Rasheed, 2002) – these aspects are beyond the scope of this paper.

environment (e.g., Bonaglia and Goldstein, 2007; Bonaglia, Goldstein, and Mathews, 2007; Cuervo-Cazurra and Genc, 2008). Initial studies on developing-country MNEs discussed their low-cost advantages and indicated that they were at a disadvantage in technology and marketing in comparison to developed-country MNEs (e.g., Lall, 1983; Wells, 1983). Recent studies have highlighted that this competitive gap has narrowed and that some of these firms have become leading investors in other developing countries (e.g., Cuervo-Cazurra and Genc, 2008; del Sol and Kogan, 2007). However, whereas our understanding of the strategies of these firms has advanced (e.g., Ramamurti and Singh, 2008), it is still not clear why most developing-country firms did not become MNEs until recent times.

We build on institutional economics (e.g., North, 1981, 1990) to argue that structural reforms, which occurred in many developing countries in the last quarter of the 20th century, largely explain the recent growth of developing-country MNEs. Structural reforms are a form of institutional change whereby the institutional framework is realigned to improve governance and facilitate market functioning. We propose that structural reforms help firms become MNEs by reforming institutions that support the international competitiveness and internationalization strategy of firms. However, we propose that structural reforms have a differential impact on the multinationalization strategy of firms depending on the level of institutional voids in the country. Specifically, we argue that structural reforms have the highest positive impact on the multinationalization strategy of developing-country firms, followed by developed-country firms, and then by least-developed country (LDC) firms². Structural reforms accelerate the multinationalization of developing-country firms by reducing institutional voids that constrain

² UNCTAD (2004) classifies countries as least-developed using a composite measure that captures the per capita gross domestic product, life expectancy, calorie intake per capita, school enrollment, adult literacy, percentage of GDP composed of manufacturing, percentage of labor employed in industry, commercial energy consumption per capita, and concentration of merchandise exports. As such, this categorization captures not only the economic, but also the social and institutional development of nations.

their competitiveness, institutional voids that are not prevalent in developed countries. However, firms from the least-developed countries do not achieve this acceleration because their countries do not reach the threshold of institutional development required for structural reforms to have a significant impact. As such, we argue that structural reforms reduce the multinationalization gap between developed and developing-country firms, but increase the gap between least-developed country firms and those from more developed countries.

These arguments contribute to the literature on the emergence of MNEs and on institutional voids. They complement the investment development cycle model, which argues that as countries develop, they move from being net recipients of foreign direct investment (FDI) to becoming net sources thereof (Dunning, 1981, 1986; Dunning and Narula, 1996). We complement this model by proposing that structural reforms accelerate the rate of transformation of developing-country firms into MNEs by resolving some of the institutional voids that limit their international competitiveness (for a discussion of institutional voids in developing countries see Khanna and Palepu, 1997; and Khanna, Palepu, and Sinha, 2005). As a result, countries with the same level of development but different levels of structural reforms have different amounts of OFDI. We also extend theory by proposing that institutional reforms require a minimum level of institutional development to bear fruit. When the institutional voids are too large, firms are not able to reap the rewards of structural reforms in terms of their multinationalization strategy, as is the case with LDC firms.

Finally, the paper contributes to the globalization debate (e.g., Bhagwati, 2004; Guillen, 2001; Henisz, Zelner, and Guillen, 2005; Stiglitz, 2002) by highlighting how one important aspect of globalization - structural reforms - is beneficial for firms from developing countries, because it helps them become internationally competitive, but not for LDC firms. The paper

counters the argument of detractors of globalization, who contend that developed countries are the sole beneficiaries of structural reforms (e.g., Mander and Goldsmith, 1996), by indicating that developing countries benefit more from structural reforms – in terms of the foreign expansion of their firms – than developed countries. At the same time, it indicates that LDC firms are the least to benefit from structural reforms. As a result, the paper suggests that proponents and detractors of globalization need to examine who benefits from globalization rather than simply discuss whether it is beneficial or not.

STRUCTURAL REFORMS AND MULTINATIONALIZATION STRATEGY

Structural Reforms

Structural reforms consist of a transformation of institutional frameworks and regulations required for markets to function properly (IMF, 2004: 105). Structural reforms involve not only economic liberalization in the form of deregulation of markets, liberalization of prices, and privatization of state-owned firms, as some critics believe, but also improvements in national governance in the form of flexible and targeted regulations that limit market imperfections. This does not mean that the government ceases to play a role in the economy. It means that the government changes its role from an active participant to a provider of the basic infrastructure, law and order, rules, and public goods needed to undertake economic relationships and limit market imperfections (World Bank, 1995). The intellectual base of structural reforms is commonly traced back to Adam Smith (1776), who proposes that limitations on governments facilitate growth by allowing the ingenuity and entrepreneurial spirit of individuals to flourish. This idea is further developed by writers of the Austrian School, such as Hayek (1944), and the Chicago School, such as Friedman (1962).

Although in current times the majority of countries have undertaken structural reforms and reduced the influence of the government in the economy, during most of the 20th century governments maintained a very active role in the economy. In capitalist developed countries – then known as the First World – governments followed the ideas of Keynes (1936) and highly regulated the market economy. In communist countries – then known as the Second World – governments applied the principles of Marx (1867) and implemented a communist economic system composed of central planning of prices and quantities and state ownership of means of production. In developing countries – then known as the Third World – governments followed a middle path, using a capitalist economic system composed of a price system to allocate goods and services and private property, but also high levels of government regulation, state ownership of firms, and price controls (Sachs and Warner, 1995).

Structural reforms in the last quarter of the 20th century transformed the influence of the government in the economy. In developed countries, structural reforms started in the early 1980s in the UK under Prime Minister Thatcher and in the US under President Reagan, later expanding to other developed countries. Governments reduced their influence in the economy through deregulation and privatization of state-owned enterprises (Peltzman, 1989; Winston, 1993). In communist countries – now called transition economies, given their movement toward capitalism – structural reforms started in the early 1980s in China, and were then implemented in the former Soviet Union and Eastern Europe in the late 1980s. They involved the dismantling of the communist economic system and its replacement by a capitalist system, resulting in a deep transformation of the economy (Blanchard, 1997). In developing countries, structural reforms started in the mid 1970s in Chile and spread to other developing countries in the mid 1980s. It involved economic liberalization in the form of deregulation of industries, liberalization of

prices, and privatization of state-owned firms, and governance improvements in the form of a strengthening of the rule of law (Rodrik, 1996, 2006; Williamson, 1990).

Although structural reforms have resulted in economic growth, by the late 1990s doubts about the benefits of structural reforms began to emerge, resulting in an intense debate. Structural reforms have tended to enable developing countries to achieve macroeconomic stability and growth, but progress has been slow (Fraga, 2004; Katz, 2004; Lora, 2001; Rodrik, 2006). Defenders of structural reforms argue that the lack of adequate progress originates in the inconsistent application of policies (Fraga, 2004; Kuczynski and Williamson, 2003). Critics of structural reforms, on the other hand, argue that structural reforms are designed to favor developed nations and their MNEs at the expense of developing countries and their firms (Mander and Goldsmith, 1996).

Structural Reforms and Multinationalization Strategy

We contribute to the debate on the benefits of structural reforms by studying its impact on the multinationalization strategy of firms. We focus on the emergence of MNEs as an indirect indicator of the success of firms. Firms face large difficulties in their internationalization (Hymer, 1976; Zaheer, 1995; for a recent review see Cuervo-Cazurra, Maloney, and Manrakhan, 2007). Companies that become MNEs are able not only to overcome these difficulties, but also to have sources of competitive advantage that enable them to compete across borders (Caves, 2007; Hymer, 1976; for a review of advantages, see Tallman and Yip, 2001). Hence, becoming a MNE is an indirect indicator that a firm has achieved a level of international competitiveness and is potentially a successful firm.

We build on institutional economics (North, 1981, 1990; North and Thomas, 1973) to explain the impact of structural reforms on the growth of developing-country MNEs. This

theoretical approach argues that firm behavior is affected by the institutional environment in which it operates³. North (1981: 201-202) defines institutions as “a set of rules, compliance procedures, and moral and ethical behavioral norms designed to constrain the behavior of individuals in the interests of maximizing the wealth or utility of principals.” Societies create and diffuse institutions to reduce uncertainty, to simplify a complex reality, and to provide structure to societal relations. This theory is built on the assumptions of imperfect markets, opportunism, bounded rationality, and profit maximization.

A widely-discussed explanation of the growth of MNEs can be found in the investment development cycle model (Dunning, 1981, 1986; Narula and Dunning, 1996). The model argues that FDI inflows and outflows in a country evolve with its level of development. A developing country offers opportunities for accessing low-cost factors of production and thus becomes an attractive location for foreign firms, resulting in large FDI inflows. At the same time, the lack of development of the country is associated with domestic firms that are not internationally competitive and face large limitations in their ability to become MNEs, resulting in low FDI outflows. As the country develops, its relative cost advantage is eroded, resulting in large but lower FDI inflows. At the same time, domestic firms improve their competitiveness as they learn how to satisfy the needs of more demanding local customers, resulting in higher FDI outflows. Once the country becomes developed, it receives lower FDI inflows while its firms achieve levels of international competitiveness that result in large FDI outflows. Although the model predicts that development explains the net FDI flows of the country, with countries changing from being net recipients of FDI to becoming net sources of FDI as they develop, it implicitly

³ In addition to institutional economics, Campbell (2004) identifies two other schools that analyze the influence of institutions on firms: organizational institutionalism or neo-institutionalism (e.g., Scott, 1995) and historical institutionalism (e.g., Granovetter, 1985). We do not build on these two other schools because their assumptions are largely incompatible with those of institutional economics (Campbell, 2004).

explains the growth of developing-country MNEs. Developing-country firms do not become MNEs when the country is less developed; rather, they start becoming MNEs as the country develops and become large foreign investors once the country reaches developed-country status.

Structural Reforms and the Multinationalization Strategy of Firms. We complement this explanation by arguing that structural reforms help firms accelerate their multinationalization strategy beyond the level of economic development through two main avenues: economic liberalization and national governance improvements. The first broad dimension of structural reforms is economic liberalization, whereby the government retreats from the economic arena through price liberalization, industry deregulation, and privatization, thus increasing the opportunities and activity-set available to firms. As a result of economic liberalization, firms are able to select optimal actions and strategies that support their international competitiveness, enabling them to overcome the challenges of expanding abroad and become MNEs.

Economic liberalization helps firms improve their competitiveness to international levels through three mechanisms: the implementation of activities in a more optimal manner, the availability of better inputs, and the pressures of competition. The first two enable firms to improve their competitiveness, while the third forces them to do so. First, economic liberalization allows firms to undertake new activities and conduct their operations in a more optimal manner, enabling them to improve their efficiency and competitiveness. The deregulation of industries, price liberalization, and privatization of state-owned firms that accompany economic liberalization enable companies to have more freedom of action and to participate in activities from which they were previously excluded (Kuczynski and Williamson, 2003). Firms can operate in industries and control assets that were reserved for the state, modify

prices to reflect market conditions, and hire and fire workers as needed for their operations. As a result, companies have a wider set of actions at their disposal, enabling them to undertake optimal investments and actions that help them achieve efficiency.

Second, as a result of economic liberalization, firms can have access to different and better inputs that enable them to improve their efficiency and competitiveness. Structural reforms increase competition within the supplier industries and facilitate the import of inputs (Toulan, 2002). Companies can obtain lower price or higher quality inputs from foreign firms. Additionally, the deregulation of the suppliers' industries forces local suppliers to improve and provide better inputs. Thus, the access to better foreign and domestic inputs reinforces the competitiveness of firms.

Third, economic liberalization not only enables firms to be more efficient and competitive, but also forces them to be so. Economic liberalization is accompanied by increases in competition. The liberalization of trade and foreign investment and the deregulation of markets and industries result in new competitors in the country, both foreign firms (Blomstrom, 1986) and new domestic entrants. New foreign and domestic entrants bring new managerial and organizational techniques and new technologies that previously were not available in the industry. These induce firms to revamp the manner in which they operate to improve their technologies and increase efficiency (Eslava *et al.*, 2004), helping firms achieve the levels of international competitiveness that support their multinationalization strategy.

In addition to supporting a firm's efficiency and international competitiveness, economic liberalization helps firms become MNEs through the reduction of barriers to international trade and investment. As part of the import substitution regime, some countries established tariffs and regulations in order to force domestic companies to sell their products and invest domestically

(Bruton, 1998). Economic liberalization lifts these tariffs and barriers (Edwards, 1993) and leads countries to reduce the bureaucratic controls needed to trade and invest internationally (Djankov *et al.*, 2002). The lifting of barriers and controls reduces the costs of investing abroad. As a result, firms that did not find it profitable to become MNEs or to increase their multinational presence when the barriers were in place can do so profitably after the barriers are lifted. Moreover, economic liberalization may, in some cases, force firms to seek foreign markets as their domestic market becomes saturated. Industry deregulation, international trade, and international investment result in a greater number of new domestic and foreign competitors. This may increase competition in the country to the point where incumbent firms do not have enough opportunities to sell within the domestic market, thereby being forced to seek foreign markets as outlets for their production (Leonidou *et al.*, 2007), hence becoming MNEs.

The second broad dimension of structural reforms is governance improvements, whereby the government reforms the basis for the economic relationships, improving both regulations and their implementation. These governance improvements reduce the transaction costs of establishing economic relationships by improving the establishment, monitoring, and solution of contractual relationships, thus helping firms become more efficient and internationally competitive and supporting their multinationalization strategy.

Governance improvements help reduce transaction costs and improve efficiency, which allow for more swift and transparent resolutions of contractual conflicts, through two mechanisms: the reduction and improvement of rules and regulations that lower the costs of doing business in the country, and the better implementation of those rules and regulations. First, governance improvements involve not only decreased regulation, but also better regulation. As part of the transformation of the role of the government, there is a focus on creating regulation

that helps firms conduct their operations more efficiently: reducing regulations that constrain market operations, developing new regulations that support market relationships, and providing a clear and predictable framework for economic interactions (World Bank, 1995). As a result, firms face not only lower transaction costs in terms of the rules they have to follow, but also lower uncertainty in the application of such rules, further lowering transaction costs and helping them achieve efficiency.

Second, governance improvements also entail a better implementation of regulations, helping realize the reduction in transaction costs. Improvements in governance involve reforming the monitoring and enforcement mechanisms required to ensure the proper implementation of the rule of law. This reduces transaction costs because contractual relationships no longer need to introduce additional monitoring mechanisms or be internalized by firms; it is now possible to solve conflicts using the court system. Additionally, governance improvements reduce the discretion of government officials, limiting opportunities for corruption. This control of corruption further reduces transaction costs as both the uncertainty and cost of bribery are constrained (Shleifer and Vishny, 1993), helping firms become more efficient and competitive.

In sum, we argue that structural reforms allow firms to accelerate their multinationalization beyond the level achieved through economic development. Structural reforms reduce transaction costs and barriers to international expansion. This enables firms to achieve levels of efficiency and competitiveness needed to become MNEs, and in many cases are also induced to become MNEs. Formally, we hypothesize that:

Hypothesis 1: Structural reforms have a positive impact on the multinationalization of firms.

Structural Reforms and the Multinationalization Strategy of Developed, Developing, and Least-Developed Country Firms. We also argue that structural reforms have a differential

impact on the multinationalization strategy of firms depending on the level of institutional voids in the country. We distinguish between three types of countries – developed, developing, and least-developed – and focus not on their level of economic development but on their level of institutional development or degree of institutional voids. In this paper we separate countries into three mutually exclusive categories: 1) Developed countries are those that have well-established institutions and governance that allow their markets to operate efficiently with relatively low transaction costs. 2) Developing countries are those that have a functional institutional system and functional markets but suffer from institutional voids (Khanna and Palepu, 1997), that is, they do not have well-established institutions and governance, which leads to higher transaction costs in market operations. 3) Least-developed countries (LDCs) are those that have deep seated institutional voids, vulnerable institutions, and poor national governance (UNCTAD, 2004), which in turn increase transaction costs in market operations and impair market functioning. Although traditionally the term developing country has been used to encompass the least developed countries, in this paper we separate developing and least developed countries into mutually exclusive categories in order to ascertain the differential impact of structural reforms on countries with vastly different levels of institutional development

We propose that structural reforms have the highest positive impact on the multinationalization strategy of developing-country firms, followed by developed-country firms, and then by LDC firms. Specifically, first, we argue that structural reforms increase the multinationalization strategy of developing-country firms more than it does for their developed-country counterparts. This is because structural reforms significantly reduce the institutional voids of developing countries, institutional voids that developed countries do not suffer, further contributing to the improvement in the international competitiveness of developing-country

firms. As a result, developing-country firms are able to accelerate their multinationalization strategy to a greater extent than their developed-country counterparts. Second, we also argue that structural reforms do not have such an accelerative influence on the multinationalization strategy of LDC firms, because countries have to be above a threshold of institutional development for their firms to fully benefit from structural reforms. In the case of LDC firms, structural reforms do not solve the institutional voids and associated constraints but, at the same time, increase the exposure of firms to international competition. As a result, these firms are unable to improve their international competitiveness and multinationalize as much as other firms. In sum, we argue that structural reforms reduce the gap in the multinationalization between developed and developing-country firms, but increase the gap between LDC firms and those from more developed countries. In the following paragraphs we discuss these ideas theoretically in more detail.

Although a commonly held view of developing and least-developed countries is that they have location advantages in the form of lower-cost factors of production, especially labor, these countries suffer from location disadvantages in the form of institutional voids (Khanna and Palepu, 1997, 2000; Khanna, Palepu, and Sinha, 2005) that result in a lack or underdevelopment of intermediate markets for inputs and products, lack of sophisticated factors of production, and lack of institutions that support contracting. These voids lead to lower levels of competitiveness for developing and least-developed country firms. The companies have to internalize the development of inputs that are otherwise provided by the government or suppliers in developed countries, even having to invest in the development of infrastructure (Fisman and Khanna, 2004; Ghemawat and Khanna, 1998). As a consequence of the lack of development of intermediate markets, firms become highly diversified (Khanna and Palepu, 1997, 2000).

In developing countries structural reforms reduce these institutional voids, enabling developing-country firms to greatly increase their international competitiveness and multinationalize. This occurs primarily in two ways. First, economic liberalization results in the growth of intermediate markets for inputs, increasing efficiency by reducing the need for firms to invest in the development of these inputs. The deregulation of input industries increases the availability of more and better inputs as new entrants are allowed to operate in the country. These new entrants put competitive pressures on incumbent firms, resulting in international competitive suppliers of supporting activities (Porter, 1990). As a result, developing-country firms no longer have to internalize the creation of inputs and instead can rely on external providers, unlike the case of developed-country firms that are able to rely on well developed supplier markets. Moreover, the opening of input industries to imports and foreign firms ensures that the quality of such inputs meets international levels of competitiveness, further helping domestic firms outsource their inputs and improve their efficiency (Stigler, 1951; Toulan, 2002; Young, Huang, and McDermott, 1996).

Second, governance improvements further support the development of intermediate markets, contributing to the multinationalization strategy of developing-country firms. The establishment of the rule of law and the protection of property rights, which already exist in developed countries (Djankov *et al.*, 2002; Kaufmann, Kraay, and Mastruzzi, 2003), helps developing-country firms further improve their competitiveness by reducing additional monitoring and enforcement costs in contracts. Additionally, governance improvements help with the development of intermediary markets, particularly financial markets relying on institutions that support contracts to generate sophisticated instruments and markets (Booth *et al.*, 2001).

However, this is not the case for LDC firms. LDCs are characterized not only by their underdeveloped economies, but also by their underdeveloped institutions and vulnerable conditions (UNCTAD, 2004). Structural reforms in these countries are typically not able to fully resolve the institutional voids, but expose domestic firms to foreign competition. As a result, domestic firms are still constrained by institutional voids and face new competitive pressures, further limiting their international competitiveness and multinationalization.

First, governance improvements tend to be largely ineffective in LDCs, resulting in firms that are still constrained in their competitiveness by institutional voids. Structural reforms in LDCs tend to have a limited impact on governance improvements because of the lack of institutions in place (UNCTAD, 1999: 124); many LDCs even lack a government powerful enough to implement and enforce its own rules. The government may have disintegrated (like in the case of Haiti) or is embroiled in civil war (like in the case of Congo), resulting in social and economic regress (UNCTAD, 1997: 125-148).

Even in the cases when governance improvements are effectively implemented and enforced in LDCs, this tends to have a negative effect on the competitiveness of domestic firms. Many LDC firms rely on connections with the government and other power players to operate because of institutional voids, such as the lack of institutions that would protect contracts (Krueger, 1974). With governance improvements comes the establishment of controls on the discretion of government officials, which harms the competitiveness of firms by reducing the value of their relationships with such officials (Fisman, 2001). Moreover, the connections to the government on which they rely at home are not valuable in other countries because different governments operate there. As a result, LDC firms are not able to benefit from governance improvements and multinationalize as much as other firms.

Second, economic liberalization increases inward FDI for LDCs, which dramatically intensifies the competition for domestic firms, firms that are typically unable to compete with foreign firms. Domestic firms in LDCs are quite weak; they lack entrepreneurial, managerial, marketing and technical skills, as well as experience in producing for international markets (UNCTAD, 1996: 48). As a result, these firms are far from the levels of international competitiveness needed to become MNEs. Savings rates are low, limiting the ability of domestic firms to obtain funds for investment. Exporters lack not only trade finance, but also needed support services such as information and marketing services and storage facilities because domestic production is too small to result in the provision of such services without public support (Cosgrove, 1994). Structural reforms in LDCs do not fully resolve these disadvantages and in many cases exacerbate the challenges for domestic firms. Economic liberalization increases competition through imports and foreign firms establishing operations in LDCs. Domestic firms are unable to face imports and foreign companies, becoming further marginalized. Although consumers in LDCs may well benefit from economic liberalization, domestic firms suffer from economic liberalization as they are unable to improve their competitiveness and multinationalize (UNCTAD, 1996: 50).

In sum, structural reforms provide developing-country firms with an additional support to their international competitiveness by reducing their institutional voids. These firms can then fully benefit from the location advantages that their countries provide in the form of lower-cost factors of production, enabling them to accelerate their multinationalization strategy. Developed-country firms, in contrast, do not enjoy this additional boost in competitiveness because their countries do not suffer from significant institutional voids. Lastly, LDC firms do not benefit as much from structural reforms, because structural reforms in these countries are typically not able

to fully resolve their institutional voids, while simultaneously exposing domestic firms to increased foreign competition. Formally, we hypothesize that:

Hypothesis 2: Structural reforms have the largest positive impact on the multinationalization of developing-country firms, followed by that of developed-country firms, and finally by that of LDC firms.

RESEARCH DESIGN

Sample and Data Sources

We test these hypotheses using a database of 123 countries from 1995-2007; we include all countries for which we have data for all the variables. Data on OFDI come from the United Nations Conference on Trade and Development (UNCTAD) website (UNCTAD, 2008). Data on structural reforms come from the Heritage Foundation/Wall Street Journal Index of Economic Freedom (Holmes, Feulner, and O'Grady, 2008), which is available annually from 1994 to 2007. Data for the control variables come from the World Bank's World Development Indicators Online database (World Bank, 2008). Countries are classified into three mutually-exclusive categories as developed, developing, and least-developed according to the UNCTAD (1995) classification⁴ (see Appendix A for a list of the countries included in each category).

Variables and Measures

Table 1 describes the variables and measures used in this study⁵. The dependent variable is multinationalization, which we measure with the natural logarithm of OFDI flows as is commonly done in the literature (e.g., Barnard, 2008; Buckley *et al.*, 2007). OFDI captures the

⁴ We use the UNCTAD (1995) classification of countries because the database we use for this paper starts in 1995. We also use alternate classifications as we discuss in the robustness test section of the paper.

⁵ Note that we also use several alternate dependent variables, independent variables of interest, and control variables, as we discuss in the robustness test section of the paper.

aggregate strategic response of firms from a given country to become MNEs and to increase their multinational presence.

*** Insert Table 1 about here ***

The independent variable of interest is structural reforms. We measure it with the Index of Economic Freedom (Holmes *et al.*, 2008). This measure covers the period 1994-2007⁶. This index captures the shift that countries have displayed from high state intervention and domestic market protectionism to policies geared toward efficiency, better market functioning, and a reduction in state influence on economic activities. As such, it captures both the economic liberalization of these countries and the improvements in national governance. The index ranges from 0 to 100, with higher values representing higher levels of structural reforms. In addition, as part of our robustness tests, we use each of the reforms that make up the structural reforms composite measure individually, in order to have a better understanding of which particular reforms affect OFDI.

To test the argument that structural reforms have the largest positive impact on firms from developing countries, followed by those from developed countries, and then by those from LDCs, we classify countries into three mutually-exclusive categories: developed, developing, and least-developed, following the UNCTAD (1995) classification. Only two indicators are required to capture a three-category categorical variable such as this one, so we only include dummy variables for developing country and LDC in the analyses. We use developed country as our baseline category and it is therefore omitted from the models. We do so in order to more easily ascertain the differential impact of structural reforms on developing and least-developed country firms vis-à-vis developed-country firms. Once we construct the developing and least-

⁶ Although the Heritage Foundation's measures (Holmes *et al.*, 2008) are designated as spanning the period 1995-2008, in fact each year is a measure for the previous calendar year. That is, the measures designated as being for 1995 provide information for 1994 and so on.

developed indicators, we multiply each of them by the measure of structural reforms in order to construct interaction terms. These interactions capture the moderating effect that the categorization of country by level of development has on the relationship between structural reforms and OFDI.

We control for other factors that affect OFDI. First, we control for the size and growth of an economy with the gross domestic product (GDP) and GDP squared, to take into account the predictions of the investment development cycle model (Dunning, 1981, 1986; Narula and Dunning, 1996). Second, we control for the cost of capital by using the real interest rate, because firms from countries that may access capital more easily may have an advantage in terms of their multinationalization strategy. Third, we control for the number of bilateral treaties that a country has, because countries with more treaties make it easier for their home firms to become MNEs and expand their multinational operations. Fourth, we control for any specific events (e.g., economic crises, drastic changes in political regimes) that occurred in a given year that could affect the results. We use an indicator of the year of analysis. Fifth, we control for the economic development of a country with the indicators for whether a country is classified as developed, developing, or least-developed. Sixth, we control for other unobserved country-specific factors by using panel models that account for the country.

We follow the guidelines for testing models in the presence of categorical moderators presented in Frazier, Tix, and Barron (2004)⁷. In order to reduce potential multicollinearity problems inherent in models with interaction terms and to increase interpretability, we center and standardize the continuous variables (Frazier *et al.*, 2004; Hofmann and Gavin, 1998).

⁷ Frazier, Tix, and Barron (2004) caution that, in the presence of unequal error variance across groups (in this case across countries) the results of multivariate analyses may be unreliable. We therefore test for unequal error variance across groups. Bartlett's test indicates homogeneous error variance, and James' and Alexander's tests indicate the presence of a moderating effect, suggesting the data is suitable for multivariate analysis with a categorical moderator.

Furthermore, as it is commonly done in the literature, we lag our independent variables by one year in order to ascertain the impact of structural reforms and the other variables in a given year on OFDI in the following year.

Method of Analysis

We use a cross-sectional time-series random effects generalized least squares (GLS) model with correction for panel-specific AR(1) autocorrelation, heteroskedasticity, and cross-sectional correlation. This model addresses the most common issues that are typically inherent in the error structure of panel data. As such, compared to a basic time-series regression, the GLS is a much more adequate and robust method for testing this type of model.

To test Hypothesis 1, we do not include the interaction terms because we are interested in the general impact of structural reforms on OFDI for all countries in the sample. We thus use the following model specification to test the first hypothesis:

$$\ln OFDI_{kt} = \beta_0 + \beta_1 * \text{Structural reforms}_{kt-1} + \beta_2 * GDP_{kt-1} + \beta_3 * GDP \text{ squared}_{kt-1} + \beta_4 * \text{Cost of capital}_{kt-1} + \beta_5 * \text{Bilateral investment treaties}_{kt-1} + \beta_i * Year_{t-1} + \varepsilon$$

Without the interaction terms, the coefficient for the structural reforms variable (β_1) captures the impact of structural reforms on OFDI. Hypothesis 1 is supported if β_1 is positive and statistically significant.

To test Hypothesis 2, we use a model in which we separate countries by their type and interact these indicators with the measure of structural reforms to capture the different impact that structural reforms have on the OFDI of each type of country. The specification of the model we use is as follows:

$$\ln OFDI_{kt} = \alpha_0 + \alpha_1 * \text{Structural reforms}_{kt-1} + \alpha_2 * \text{Structural reforms}_{kt-1} * \text{Developing country}_{kt-1} + \alpha_3 * \text{Structural reforms}_{kt-1} * \text{Least-developed country}_{kt-1} + \alpha_4 * \text{Developing country}_{kt-1} + \alpha_5 *$$

$$\begin{aligned} & \text{Least-developed country}_{kt-1} + \alpha_6 * \text{GDP}_{kt-1} + \alpha_7 * \text{GDP squared}_{kt-1} + \alpha_8 * \text{Cost of capital}_{kt-1} + \alpha_9 \\ & * \text{Bilateral investment treaties}_{kt-1} + \alpha_i * \text{Year}_{t-1} + \mu \end{aligned}$$

We focus on α_1 , α_2 , and α_3 . That is, we focus on the coefficient of structural reforms and those of the two interaction terms. The results of multivariate studies with categorical moderator variables should be interpreted differently than other models because the results are conditional (Frazier *et al.*, 2004: 121). Namely, the results should be interpreted relative to the baseline category, which in this case is developed country. First, α_1 captures the influence of structural reforms on OFDI for developed countries, the baseline category. If α_1 is positive (negative) and statistically significant, that indicates that structural reforms tends to increase (decrease) OFDI for developed countries. Second, α_2 captures the impact of structural reforms on OFDI for developing countries relative to the impact on developed countries. That is, α_2 indicates how much more (or less) of an impact structural reforms have on OFDI from developing countries than on OFDI from developed countries. If α_2 is positive (negative) and statistically significant, that suggests that the impact of structural reforms on OFDI is larger (smaller) for developing countries than for developed countries. In order to ascertain the impact of structural reforms on developing countries, we add α_1 and α_2 . This sum is also referred to as the marginal effect. If the sum is positive (negative) and statistically significant, the impact of structural reforms on OFDI is positive (negative) for developing countries. Third, α_3 captures the impact of structural reforms on OFDI for LDCs relative to the impact on developed countries. That is, α_3 indicates how much more (or less) of an impact structural reforms have on OFDI from LDCs than on OFDI from developed countries. If α_3 is positive (negative) and statistically significant, the impact of structural reforms on OFDI is larger (smaller) for LDCs than for developed countries. In order to ascertain the impact of structural reforms on LDCs, we add α_1 and α_3 . If the sum is positive

(negative) and statistically significant, the impact of structural reforms on OFDI is positive (negative) for LDCs⁸. Hypothesis 2 is expressed in relative terms, that is, its support depends on the relative size of the coefficients. Therefore, Hypothesis 2 is supported when, at statistically significant levels, α_1 is positive, α_2 is positive, and α_3 is negative.

RESULTS

Table 2 provides the summary statistics and correlation matrix. The table suggests that 19% of the countries covered are classified as developed countries, 66% as developing countries, and 15% as LDCs (UNCTAD, 1995). We tested for multicollinearity using variance inflation factors (VIF) and obtained a mean value of 2.84 and values for all the coefficients well below the commonly used cutoff value of 10 (Kutner *et al.*, 2004: 409). This suggests that multicollinearity is not an important concern in these models.

*** Insert Table 2 about here ***

Table 3 presents the results of the analyses of the influence of structural reforms on OFDI. Models 3a through 3d are incremental models in which the first only includes the control variables; the second adds the two indicators that classify countries into developing, developed, and least-developed; the third adds structural reforms; and the fourth is the full model with the interaction terms. We present partial models to show that the coefficients are relatively stable in sign and significance across models, and as a further illustration that the results are not caused by multicollinearity. Model 3c, the model without the interaction terms, allows us to test the impact of structural reforms on OFDI for all countries in the sample, regardless of whether they are categorized as developed, developing, or least-developed. Model 3d, the full model, allows us to

⁸ Another way of testing the impact of structural reforms on developing country and least-developed country OFDI is simply to change the baseline category from developed country to each of the other two categories. The resulting models provide equivalent information but should be interpreted relative to the respective baseline category. We report the results from these analyses in the robustness test section of the paper.

test the differential impact of structural reforms on OFDI for developed, developing, and least-developed countries.

*** Insert Table 3 about here ***

The results of Model 3c (which does not include the interaction terms) support Hypothesis 1. The coefficient of structural reforms is positive and statistically significant. This suggests that countries with higher levels of structural reforms tend to generate more MNEs.

The results of Model 3d (which does include the interaction terms) support Hypothesis 2. The coefficient of structural reforms is positive and statistically significant, the coefficient of the interaction between structural reforms and the indicator of developing country is positive and statistically significant, and the coefficient of the interaction between structural reforms and the indicator of LDC is negative and statistically significant. Furthermore, the sum between the coefficients of structural reforms and the first interaction term is positive ($0.39 + 0.91 = 1.30$) and statistically significant (at $\alpha = 0.001$; the standard error is 0.09). This sum represents the impact of structural reforms on the OFDI of developing countries, which is positive and significant. This in turn suggests that the impact of structural reforms on OFDI is positive for both developed and developing countries, but the impact is greater for developing countries. In other words, structural reforms have a larger positive impact on the growth of developing-country MNEs than on those from developed countries.

Surprisingly, we also find that the impact of structural reforms on LDCs is negative and significant. We calculate this by adding the coefficients of structural reforms and the second interaction term. We find that their sum is negative ($0.39 + [-0.82] = -0.43$) and statistically significant (at $\alpha = 0.001$; the standard error is 0.09). This sum represents the impact of structural reforms on the OFDI of LDCs, which in turn suggests that structural reforms reduce

the OFDI of these countries. This could be because structural reforms increase inflows of foreign MNEs into these countries and local firms find that they have to retrench their internationalization efforts as a result of this increased source of competition.

Some of the controls included in the models are statistically significant. First, GDP is positive and significant and GDP squared is negative and significant in all models. This supports the investment development cycle model (Dunning, 1981), which argues that as countries develop, their firms become MNEs. Also, as GDP accounts for the size of the country, the fact that its coefficients are positive and significant supports the idea that larger countries provide more scope for firms to specialize, improve their competitiveness, and become MNEs. Second, cost of capital is negative in all of the models, but not significant once we account for the impact of structural reforms, which suggests that this variable is not an important predictor of OFDI in the presence of reforms. Third, the coefficient for the number of bilateral investment treaties is positive in all of the models and significant in models 3c and 3d, which suggests as expected that countries with more treaties tend to have more OFDI. Fourth, the coefficients of developing country and of LDC are negative and statistically significant. Furthermore, the difference between these two coefficients ($-4.01 - [-7.70] = 3.69$) is positive and statistically significant (at $\alpha = 0.001$; the standard error is 0.11). As expected, these findings suggest that, if we do not consider the level of structural reforms, developed countries tend to generate more OFDI than developing countries, and these in turn tend to generate more than LDCs. This is in line with other studies that have found that the largest foreign investors come from developed countries (e.g., Cuervo-Cazurra and Genc, 2008).

In sum, we find that structural reforms tend to accelerate the multinationalization of firms beyond the general impact of a country's development level. However, we also find that

structural reforms benefit the multinationalization of developing-country firms more than developed-country firms, and that they have a detrimental effect on the multinationalization of LDC firms.

These findings are important and novel. They complement the argument of the investment development cycle model by supporting the idea that structural reforms accelerate the multinationalization of firms beyond the general impact of the level of the country's development. They also provide support for the notion that structural reforms further accelerate the multinationalization of developing-country firms in comparison to developed-country firms. The reduction in the location disadvantages that accompany structural reforms in developing countries provides an additional boost to the competitiveness of local firms that further accelerates their multinationalization.

Alternative Explanations and Robustness Tests

We run several additional analyses to verify that the findings are not capturing other explanations and to corroborate the robustness of the results. We find that the alternative explanations are not supported. Each of these analyses shows a very similar pattern of results and provides comparable support for the hypotheses in terms of signs and significance. We present the results of these analyses in table 4 and discuss each of the resulting models below.

*** Insert Table 4 about here ***

A first alternative explanation is that the measures used for the dependent variable account for the results. However, this idea is not supported because we run additional analyses using different measures and find similar results. First, we use the log of the number of MNEs generated by a country as our dependent variable instead of the log of a country's OFDI flows (see model 4a). UNCTAD provides this data in its annual World Investment Report (UNCTAD,

various years). Second, we run the analyses using the log of outward FDI stock as our dependent variable instead of OFDI flows (UNCTAD, 2008; see model 4b). Although these models cover a different number of observations, given the data availability, the results are consistent with those of our primary analyses and provide equivalent support for the hypotheses.

A second alternative explanation is that the categorization of countries by level of development that we use could be the reason for the results. However, this idea is not supported based on the additional analyses. First, we use the IMF (1995) categorization of countries into developed and developing, instead of the one by UNCTAD (1995) that we used in the main analyses (see model 4c). The main difference between these classifications is that IMF categorizes Israel and South Africa as developing countries, whereas UNCTAD categorizes them as developed countries⁹. Note that we maintain the category LDC unchanged because that categorization is only provided by UNCTAD. Second, we remove transition economies (i.e., former communist economies) from our sample, because they may have a different institutional dynamic in response to structural reforms (see model 4d). The results of these analyses once again provide equivalent support for the hypotheses.

A third alternative explanation is that the measures we use for structural reforms and the control variables account for the results. However, this idea is not supported based on the following analyses. First, we run the analyses using an independently generated alternative measure of structural reforms: the Index of Economic Freedom measure from the Fraser Institute (Gwartney, Lawson, and Easterly, 2006), calculated every five years from 1970 to 2000 and annually thereafter (see model 4e). Fourth, we add GDP growth as a control variable, because this may have an impact on the OFDI that is generated by a nation (see model 4f). We do not include it in the main analyses because it is somewhat redundant with GDP and GDP squared.

⁹ Another country that is classified differently is Gibraltar, but it is not covered in our database.

Fifth, we control for GNI and GNI squared in place of GDP and GDP squared (see model 4g). Sixth, we control for the lending interest rate as our measure of the cost of capital, instead of the real interest rate (see model 4h). None of these alternative models change the conclusions.

A fourth alternative explanation is that the period of analysis could be affecting the results, given the large increment in FDI worldwide in the year 2000. We therefore separate the panel into two periods, 1995-2000 and 2001-2007, and rerun the analyses (see models 4i and 4j). The results provide equivalent support for the hypotheses.

A fifth alternative explanation is that the baseline category we use in the models - developed country - may have affected the results. We therefore rerun the analyses with LDC as the baseline category (see model 4k) and with developing country as the baseline category (model 4l), and obtain equivalent results¹⁰.

Finally, as a robustness test, we test the impact on OFDI of each individual reform that makes up the structural reforms measure. There are nine individual reforms (sub-indices): foreign investment reform, trade reform, business reform, monetary reform, financial policy reform, fiscal reform, government size, property rights protection, and corruption reform. We describe these in Table 1. We use these names for the variables, as opposed to the names Holmes *et al.* (2008) use, in order to make them more intuitive. Each measure ranges from 0 to 100, with larger values representing a greater degree of reform implementation. Two of the reforms have a different direction: larger values for government size and corruption reform indicate smaller government and less corruption, respectively. As we noted before, we standardized each of these variables. Moreover, as many of these variables are highly correlated (see Table 2), we do not

¹⁰ Although these two models are statistically equivalent to model 3d, we also provide them in order to make it easier for the reader to see the impact of structural reforms on the OFDI of each of the three categories of countries.

include all of the reforms simultaneously in a model. Instead, we run a separate model for each reform.

Table 5 presents the results for the individual reforms (sub-indices) that make up the structural reforms measure. Once again, we calculate the marginal effects in order to ascertain the impact on each of the three categories of countries. First, the results suggest that all reforms but government size (which does not have a significant impact) have a positive impact on OFDI from developing countries. This suggests that in countries with weak but functional institutional systems, structural reforms in general tend to help them to increase the multinationalization of their firms. Second, the results indicate that some of the reforms are positive and beneficial for developed countries, but others are not. More specifically, monetary reform, financial reform, property rights protection reform, and corruption reform have a positive and significant impact on the OFDI of developed countries, whereas the others do not. The fact that some of the reforms do not have a significant effect suggests that once countries reach a certain level of institutional development, further institutional improvements provide relatively little additional improvement. Third, the results suggest that the impact of most of the reforms on the OFDI of LDCs is negative and significant, but that the impact of three reforms (trade reform, fiscal policy reform, and government size) is positive. This suggests that the OFDI of the countries with the weakest institutional development may suffer with many of the reforms. Together, these findings imply that structural reforms tend to benefit the multinationalization strategy of developing-country firms most of all, followed by that of developed-country firms, and then of LDC firms. That is, in general the results tend to be consistent with those presented. These are interesting results which require more careful analysis in future research, because in each of these analyses we are not controlling for the influence of the other reforms.

*** Insert Table 5 about here ***

CONCLUSIONS

In this paper we analyzed the impact of structural reforms on the multinationalization strategy of developed, developing, and least-developed country firms. The benefits of structural reforms are under debate. We argued that structural reforms allow firms to accelerate their multinationalization beyond the level of development of their home country because structural reforms help and induce domestic firms to improve their competitiveness to international levels. However, we also argued that developing-country firms benefit more from structural reforms because they reduce the institutional voids that constrained the international competitiveness of these firms; this is an additional benefit that developed-country firms do not enjoy. Moreover, we proposed that firms in the least-developed countries do not enjoy this accelerated multinationalization because structural reforms do not fully resolve their institutional voids, while domestic firms are exposed to additional foreign competition.

This analysis of the impact of structural reforms on the multinationalization strategy of firms is important and novel. It highlights the benefits of integrating the analysis of institutions with strategic management thinking to enrich the understanding of the behavior of firms in their environment (e.g., Henisz, 2000; Peng, 2002). Rather than analyzing how institutions in the host country induce foreign MNEs to invest, which has been the focus of the vast majority of the literature, the paper focuses on how changes in the institutions of a home country lead domestic firms to become MNEs and increase their multinational presence. As such, it complements the previous explanations of the multinationalization of firms based on the investment development cycle model (Dunning, 1981, 1986; Narula and Dunning, 1996) by proposing that structural reforms accelerate the multinationalization of firms beyond the level of development of their

home country. To do so the paper builds on the institutional voids literature (Khanna and Palepu, 1997, 2000; Khanna, Palepu, and Sinha, 2005), providing additional depth to the concept and highlighting its importance as an explanation of the different behavior of firms in developed, developing, and least-developed countries. Institutional voids not only affect a firm's diversification (Khanna and Palepu, 1997), but also its internationalization. Moreover, institutional voids may be solved through structural reforms. However, in some countries these voids may be so great that structural reforms may not fully achieve their intended effects.

The arguments presented in the paper also contribute to a better understanding of developing-country MNEs, a topic that is receiving increased attention (e.g., Aulakh, 2007; Gammeltoft, 2008; Luo and Tung, 2007; Ramamurti and Sigh, 2008). The paper provides an explanation for the recent growth of developing-country MNEs, thus complementing other studies that have focused on the location of firms' international expansion (e.g., Cuervo-Cazurra and Genc, 2008; Del Sol and Kogan, 2007).

Finally, these arguments and findings are important because they contradict the critics of structural reforms in particular and globalization in general (Mander and Goldsmith, 1996), who propose that developed-country firms are the only beneficiaries of structural reforms, often to the detriment of their developing-country counterparts. We posit and find that developing-country firms are the main beneficiaries of structural reforms. However, we also propose and find that firms from the least-developed countries do not benefit from structural reforms. As such, these arguments and findings redirect the debate on the benefits of structural reforms towards the analysis of who benefits from structural reforms, rather than whether they are beneficial.

This paper has important implications for politicians and managers in developing countries. First, policy-makers in developing countries may consider structural reforms as a

means of strengthening not only the economy but also domestic firms because it allows these firms to accelerate their multinationalization. Politicians may likewise use the findings to defend structural reforms and counter criticism. Moreover, policy-makers in the least-developed countries may need to be more cautious when implementing structural reforms, because indigenous firms may have a great deal of difficulty in coping with these institutional changes and may in turn decrease their multinationalization efforts. Second, the study allows managers to better understand how beneficial structural reforms may be for their companies and how to respond to the degree of structural reforms in a given country. Managers may thus choose to lobby their national governments for additional or fewer structural reforms to help their companies improve and accelerate their multinationalization depending on the level of national institutional development.

In sum, the paper highlights how structural reforms accelerate the multinationalization strategy of developing-country firms, but not of LDC firms. As such, the study explains and provides a theoretical explanation and additional empirical evidence for the benefits of globalization, while at the same time indicating that countries benefit differently. Future theoretical discussions and policy debates need to move away from discussing whether globalization is beneficial, and discuss instead who benefits from it.

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Table 1
Variables, measures, and sources of data

Variable	Measure	Value	Source
1. Outward FDI (ln)	Natural log of the total outward foreign direct investment flows from a country in a given year	Continuous	Computed using data from UNCTAD (2008)
2. Developing country (DC)	Dummy variable indicating that a country is not categorized as a developed nor as a least developed country	0 or 1	Based on World Investment Report UNCTAD (1995) classification
3. Least developed country (LDC)	Dummy variable indicating that a country is categorized as a least developed country	0 or 1	Based on World Investment Report UNCTAD (1995) classification
4. Structural reforms index	Composite (mean) of the nine reforms below ^a , indicating the total level of structural reform undertaken in a country	0 to 100	Obtained from the Holmes et al. (2008) index of economic freedom
5. Foreign investment reform	Degree of ease of inward and outward flow of capital	0 to 100	Obtained from the Holmes et al. (2008) measure of investment freedom
6. Trade reform	Degree of tariff & non-tariff barriers for imports and exports	0 to 100	Obtained from the Holmes et al. (2008) measure of trade freedom
7. Business reform	Ease of creating and running a company	0 to 100	Obtained from the Holmes et al. (2008) measure of business freedom
8. Monetary reform	Degree of price stability and price controls	0 to 100	Obtained from the Holmes et al. (2008) measure of monetary freedom
9. Financial policy reform	Banking security and independence	0 to 100	Obtained from the Holmes et al. (2008) measure of financial freedom
10. Fiscal reform	Measure of degree of taxation	0 to 100	Obtained from the Holmes et al. (2008) measure of fiscal freedom
11. Government size	Captures the total government expenditures	0 to 100	Obtained from the Holmes et al. (2008) measure of government size
12. Property rights protection	Strength of regulations protecting property rights	0 to 100	Obtained from the Holmes et al. (2008) property rights measure
13. Corruption reform	Degree of corruption	0 to 100	Obtained from the Holmes et al. (2008) measure of freedom from corruption
14. GDP	Gross domestic product	Positive	Computed using data from World Development Indicators, World Bank (2008)
15. Cost of capital	Real interest rate	Continuous	Computed using data from World Development Indicators, World Bank (2008)
16. Bilateral investment treaties	Number of investment treaties that a country has with other countries	Positive integer	Computed using data from World Development Indicators, World Bank (2008)
17. Year	Indicator of the year of analysis	Categorical, 1995-2007	-

^a The Holmes et al. (2008) index of economic freedom is composed of 9 subindices until 2004 and 10 subindices thereafter. For the sake of consistency, we remove the tenth subindex from the calculation of the structural reform aggregate measure. The tenth subindex, which is a measure of labor reform, unfortunately does not have sufficient observations in common with the other variables we use in the analyses. Therefore, we are unable to analyze the impact of this particular reform on outward FDI.

Table 2
Descriptive statistics and correlation matrix

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Outward FDI (ln)	4.75	3.97															
2. Developing country	0.66	0.46	-0.27														
3. Least developed country	0.15	0.29	-0.39	-0.49													
4. Structural reforms index	0.00	1.00	0.49	-0.14	-0.34												
5. Foreign investment reform	0.00	1.00	0.28	-0.16	-0.21	0.69											
6. Trade reform	0.00	1.00	0.43	-0.16	-0.31	0.62	0.36										
7. Business reform	0.00	1.00	0.49	-0.14	-0.36	0.78	0.53	0.46									
8. Monetary reform	0.00	1.00	0.32	-0.19	-0.17	0.59	0.29	0.27	0.41								
9. Financial policy reform	0.00	1.00	0.33	-0.09	-0.28	0.76	0.59	0.50	0.54	0.38							
10. Fiscal reform	0.00	1.00	-0.22	0.47	0.04	0.13	-0.10	-0.01	-0.11	-0.02	0.02						
11. Government size	0.00	1.00	-0.29	0.41	0.13	-0.04	-0.20	-0.28	-0.23	-0.08	-0.19	0.58					
12. Property rights protection	0.00	1.00	0.54	-0.35	-0.28	0.78	0.59	0.47	0.73	0.38	0.54	-0.29	-0.40				
13. Corruption reform	0.00	1.00	0.59	-0.41	-0.31	0.76	0.49	0.53	0.71	0.45	0.52	-0.30	-0.47	0.82			
14. GDP	0.00	1.00	0.41	-0.23	-0.11	0.16	0.03	0.10	0.16	0.13	0.07	-0.13	-0.04	0.20	0.20		
15. Cost of capital	0.00	1.00	-0.16	0.09	0.02	0.07	0.11	-0.05	-0.05	0.08	0.06	0.22	0.21	-0.05	-0.12	-0.05	
16. Bilateral investment treaties	0.00	1.00	0.16	0.03	-0.17	0.00	0.06	-0.03	0.10	-0.07	0.03	-0.15	-0.13	0.10	0.08	0.05	-0.06

n = 1069. Correlations greater than or equal to |0.06| are significant at the 0.05 level (2-tailed).

Correlations for the year categorical variables are omitted in the interest of brevity.

The continuous independent variables are centered and standardized and thus show a mean of 0 and standard deviation of 1.

Table 3

Hypothesis tests: Results of the random-effects GLS analyses with correction for heteroskedasticity and panel-specific autocorrelation of the impact of structural reforms on OFDI flows

Variables^a	Model 3a	Model 3b	Model 3c	Model 3d
Intercept	3.87 *** (0.12)	9.48 *** (0.13)	6.77 *** (0.16)	9.03 *** (0.18)
GDP	3.85 *** (0.15)	2.10 *** (0.12)	2.17 *** (0.13)	2.24 *** (0.13)
GDP Squared	-0.13 *** (0.02)	-0.09 *** (0.01)	-0.11 *** (0.01)	-0.11 *** (0.01)
Cost of capital	-0.05 (0.04)	-0.09 ** (0.04)	-0.03 (0.04)	-0.02 (0.04)
Bilateral investment treaties	0.04 (0.03)	0.04 (0.02)	0.06 ** (0.02)	0.07 ** (0.02)
Year control ^b	Included	Included	Included	Included
Developing country ^c	---	-4.39 *** (0.12)	-3.36 *** (0.16)	-4.01 *** (0.16)
Least developed country	---	-7.73 *** (0.12)	-6.23 *** (0.18)	-7.70 *** (0.18)
Structural reforms index	---	---	1.02 *** (0.08)	0.39 ** (0.13)
Structural reforms index x Developing country	---	---	---	0.91 *** (0.16)
Structural reforms index x Least developed country	---	---	---	-0.82 *** (0.15)
Observations (n)	1069	1069	1069	1069
Countries (groups)	123	123	123	123
Wald χ^2	1053.86 ***	13449.14 ***	14617.74 ***	11449.59 ***

^a Countries are classified into three mutually exclusive categories: developed, developing, and least developed.

The models include the categories developing country and least developed country as independent variables.

Developed country is the baseline category and is therefore omitted. The results should be interpreted relative to that category.

^b Indicators for each of the 13 years (1995-2007) are included in the models but not reported for the sake of brevity.

^c Indicator for whether a country is classified as a developing country but not as a least developed country.

Standard errors appear in parentheses. Significance levels (2-tailed): [†]p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Table 4

Robustness tests: Results of the random-effects GLS analyses with correction for heteroskedasticity and panel-specific autocorrelation

	Model 4a	Model 4b	Model 4c	Model 4d	Model 4e	Model 4f
Variables	Alternate dependent variable: Number of MNEs generated by a country	Alternate dependent variable: OFDI Stock	Alternate country classification: IMF	Alternate country classification: No transition economies	Alternate measure of structural reform: Fraser Institute's index of economic freedom	Additional control variable: GDP growth
Intercept	5.78 *** (0.13)	10.49 *** (0.07)	9.35 *** (0.18)	7.57 *** (0.17)	8.59 *** (0.16)	7.44 *** (0.17)
GDP	1.85 *** (0.06)	2.23 *** (0.08)	2.06 *** (0.12)	2.01 *** (0.11)	1.85 *** (0.12)	2.25 *** (0.13)
GDP Squared	-0.16 *** (0.01)	-0.09 *** (0.01)	-0.10 *** (0.01)	-0.11 *** (0.01)	-0.08 *** (0.01)	-0.11 *** (0.01)
Cost of capital	0.10 * (0.05)	-0.02 * (0.01)	0.00 (0.04)	-0.04 (0.05)	-0.04 (0.05)	-0.03 (0.04)
Bilateral investment treaties	0.16 *** (0.03)	0.02 * (0.01)	0.06 ** (0.02)	0.06 * (0.02)	0.03 (0.03)	0.06 ** (0.02)
GDP growth	---	---	---	---	---	0.01 (0.03)
Year control ^a	Included	Included	Included	Included	Included	Included
Developing country	-2.26 *** (0.11)	-3.79 *** (0.07)	-4.29 *** (0.17)	-4.15 *** (0.17)	-3.21 *** (0.13)	-4.03 *** (0.17)
Least developed country	-3.67 *** (0.11)	-7.16 *** (0.15)	-7.57 *** (0.27)	-7.78 *** (0.18)	-6.99 *** (0.16)	-7.68 *** (0.18)
Structural reforms index	0.24 ** (0.09)	0.34 *** (0.05)	0.24 * (0.12)	0.38 ** (0.12)	0.68 *** (0.11)	0.38 ** (0.13)
Structural reforms index x Developing country	1.14 *** (0.10)	0.17 * (0.07)	0.95 *** (0.15)	0.97 *** (0.16)	0.31 * (0.14)	0.90 *** (0.16)
Structural reforms index x Least developed country	-0.54 *** (0.14)	-0.38 *** (0.08)	-0.41 * (0.19)	-0.67 *** (0.14)	-0.60 *** (0.13)	-0.79 *** (0.15)
Observations (n)	302	1128	1069	902	925	1069
Countries (groups)	82	117	123	105	100	123
Wald χ^2	15229.65 ***	10653.07 ***	17135.07 ***	12960.16 ***	25596.51 ***	11373.44 ***

^a Indicators for each of the 13 years (1995-2007) are included in the models but not reported for the sake of brevity.

Standard errors appear in parentheses. Significance levels (2-tailed): †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Table 4 (continued)

Robustness tests: Results of the random-effects GLS analyses with correction for heteroskedasticity and panel-specific autocorrelation

Variables	Model 4g	Model 4h	Model 4i	Model 4j	Model 4k	Model 4l
	Alternate control variable: GNI	Alternate control variable: Lending interest rate	Separate panel into two parts - Part 1: 1995-2000	Separate panel into two parts - Part 2: 2001-2007	Alternate baseline category: LDC as baseline	Alternate baseline category: DC as baseline
Intercept	7.22 *** (0.18)	8.96 *** (0.17)	7.33 *** (0.22)	7.22 *** (0.27)	1.33 *** (0.12)	5.04 *** (0.12)
GDP	---	2.30 *** (0.13)	3.05 *** (0.16)	2.29 *** (0.15)	2.24 *** (0.13)	2.24 *** (0.13)
GDP Squared	---	-0.12 *** (0.01)	-0.29 *** (0.02)	-0.10 ** (0.03)	-0.11 *** (0.01)	-0.11 *** (0.01)
GNI	1.83 *** (0.18)	---	---	---	---	---
GNI squared	-0.08 *** (0.01)	---	---	---	---	---
Cost of capital	-0.05 (0.05)	-0.12 ** (0.05)	-0.13 *** (0.02)	-0.52 *** (0.06)	-0.02 (0.04)	-0.02 (0.04)
Bilateral investment treaties	0.07 ** (0.03)	0.07 ** (0.02)	0.13 *** (0.02)	0.15 *** (0.03)	0.07 ** (0.02)	0.07 ** (0.02)
Year control ^a	Included	Included	Included	Included	Included	Included
Developing country	-3.87 *** (0.18)	-4.00 *** (0.14)	-3.99 *** (0.23)	-3.59 *** (0.28)	3.69 *** (0.11)	---
Least developed country	-7.78 *** (0.19)	-7.68 *** (0.17)	-6.89 *** (0.24)	-7.44 *** (0.30)	---	-3.71 *** (0.10)
Developed country	---	---	---	---	7.70 *** (0.18)	4.00 *** (0.16)
Structural reforms index	0.51 *** (0.16)	0.40 *** (0.12)	0.52 *** (0.16)	0.72 *** (0.16)	-0.43 *** (0.09)	1.27 *** (0.09)
Structural reforms index x Developing country	0.60 *** (0.18)	0.86 *** (0.15)	0.80 *** (0.17)	0.74 *** (0.18)	1.72 *** (0.12)	---
Structural reforms index x Least developed country	-1.00 *** (0.18)	-1.15 *** (0.14)	-0.70 *** (0.16)	-1.90 *** (0.18)	---	-1.78 *** (0.13)
Structural reforms index x Developed country	---	---	---	---	0.82 *** (0.15)	-0.88 *** (0.16)
Observations (n)	1069	1069	434	624	1069	1069
Countries (groups)	123	123	107	113	123	123
Wald χ^2	9243.46 ***	13410.24 ***	14483.82 ***	19824.36 ***	11449.59 ***	13378.72 ***

^a Indicators for each of the 13 years (1995-2007) are included in the models but not reported for the sake of brevity.

Standard errors appear in parentheses. Significance levels (2-tailed): †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Table 5

Robustness tests: Results of the random-effects GLS analysis with correction for heteroskedasticity and panel-specific autocorrelation of the impact of each structural reform on OFDI flows

Variables ^a	Model 5a	Model 5b	Model 5c	Model 5d	Model 5e	Model 5f	Model 5g	Model 5h	Model 5i
Intercept	9.66 *** (0.19)	8.86 *** (0.28)	7.66 *** (0.15)	8.53 *** (0.21)	9.27 *** (0.16)	7.80 *** (0.16)	8.81 *** (0.20)	8.56 *** (0.17)	8.69 *** (0.17)
GDP	2.05 *** (0.13)	2.25 *** (0.13)	2.25 *** (0.12)	2.11 *** (0.13)	2.19 *** (0.16)	2.08 *** (0.13)	2.08 *** (0.13)	1.95 *** (0.12)	1.97 *** (0.11)
GDP Squared	-0.10 *** (0.01)	-0.10 *** (0.01)	-0.11 *** (0.01)	-0.09 *** (0.01)	-0.09 *** (0.01)	-0.09 *** (0.01)	-0.09 *** (0.01)	-0.10 *** (0.01)	-0.10 *** (0.01)
Cost of capital	-0.04 (0.04)	-0.02 (0.04)	-0.07 † (0.04)	-0.04 (0.04)	-0.05 (0.04)	-0.07 † (0.04)	-0.08 * (0.04)	-0.08 † (0.04)	-0.06 (0.04)
Bilateral investment treaties	0.06 * (0.02)	0.02 (0.03)	0.04 (0.03)	0.04 † (0.03)	0.03 (0.03)	0.04 † (0.02)	0.03 (0.03)	0.09 *** (0.03)	0.05 * (0.03)
Year control ^b	Included								
Developing country (DC) ^c	-4.45 *** (0.17)	-3.84 *** (0.25)	-4.55 *** (0.14)	-3.41 *** (0.20)	-3.97 *** (0.15)	-4.25 *** (0.16)	-3.52 *** (0.19)	-2.98 *** (0.17)	-3.15 *** (0.16)
Least developed country (LDC)	-8.29 *** (0.20)	-7.32 *** (0.28)	-9.14 *** (0.19)	-7.08 *** (0.20)	-7.67 *** (0.16)	-8.19 *** (0.17)	-7.78 *** (0.27)	-7.53 *** (0.25)	-7.87 *** (0.20)
Foreign investment reform	0.05 (0.11)								
Foreign investment reform x DC	0.30 * (0.13)								
Foreign investment reform x LDC	-1.09 *** (0.16)								
Trade reform		0.29 (0.23)							
Trade reform x DC		0.14 (0.24)							
Trade reform x LDC		0.32 (0.25)							
Business reform			-0.15 (0.10)						
Business reform x DC			1.09 *** (0.13)						
Business reform x LDC			-1.27 *** (0.19)						
Monetary reform				1.38 *** (0.25)					
Monetary reform x DC				-1.14 *** (0.26)					
Monetary reform x LDC				-2.39 *** (0.26)					
Financial policy reform					0.40 *** (0.10)				
Financial policy reform x DC					0.04 (0.12)				
Financial policy reform x LDC					-0.65 *** (0.12)				
Fiscal reform						-0.16 (0.10)			
Fiscal reform x DC						0.84 *** (0.13)			
Fiscal reform x LDC						1.67 *** (0.16)			
Government size							-0.57 *** (0.09)		
Govt. size x DC							0.46 *** (0.12)		
Govt. size x LDC							1.54 *** (0.23)		
Property rights protection								0.96 *** (0.12)	
Property rights x DC								0.33 * (0.14)	
Property rights x LDC								-2.46 *** (0.24)	
Corruption reform									0.63 *** (0.09)
Corruption reform x DC									0.33 ** (0.13)
Corruption reform x LDC									-1.91 *** (0.17)
Observations (n)	1069	1069	1069	1069	1069	1069	1069	1069	1069
Countries (groups)	123	123	123	123	123	123	123	123	123
Wald χ^2	5648.8 ***	16197.7 ***	24193.9 ***	21722.5 ***	12312.3 ***	33330.9 ***	17603.8 ***	10723.3 ***	31751.6 ***

^a Countries are classified into three mutually exclusive categories: developed, developing, and least developed. The models include the categories developing country and least developed country as independent variables.

Developed country is the baseline category and is therefore omitted. The results should be interpreted relative to that category.

^b Indicators for each of the 13 years (1995-2007) are included in the models but not reported for the sake of brevity.

^c Indicator for whether a country is classified as a developing country but not as a least developed country.

Standard errors appear in parentheses. Significance levels (2-tailed): †p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Appendix A

Countries included in the analyses, classified according to UNCTAD into developed, developing and least-developed ^a

Developed Countries	Developing Countries		Least Developed Countries
Australia	Albania	Kuwait	Angola
Austria	Algeria	Kyrgyz Republic	Bangladesh
Canada	Argentina	Lao PDR	Cambodia
Denmark	Armenia	Latvia	Cape Verde
Finland	Azerbaijan	Lebanon	Central African Republic
France	Bahrain	Libya	Chad
Germany	Belarus	Lithuania	Congo, Dem. Rep.
Greece	Belize	Macedonia, FYR	Equatorial Guinea
Iceland	Bolivia	Malaysia	Guinea
Ireland	Bosnia and Herzegovina	Malta	Haiti
Israel	Botswana	Mauritius	Lesotho
Italy	Brazil	Mexico	Malawi
Japan	Bulgaria	Moldova	Mauritania
Netherlands	Cameroon	Morocco	Mozambique
New Zealand	Chile	Namibia	Rwanda
Norway	China	Nicaragua	Sierra Leone
Portugal	Colombia	Nigeria	Tanzania
South Africa	Congo, Rep.	Oman	Yemen, Rep.
Spain	Costa Rica	Pakistan	
Sweden	Croatia	Panama	
Switzerland	Cyprus	Papua New Guinea	
United Kingdom	Czech Republic	Paraguay	
United States	Dominican Republic	Peru	
	Ecuador	Philippines	
	Egypt, Arab Rep.	Poland	
	El Salvador	Qatar	
	Estonia	Romania	
	Gabon	Russian Federation	
	Georgia	Singapore	
	Guatemala	Slovak Republic	
	Guyana	Slovenia	
	Honduras	Sri Lanka	
	Hong Kong, China	Swaziland	
	Hungary	Syrian Arab Republic	
	India	Thailand	
	Indonesia	Trinidad and Tobago	
	Iran, Islamic Rep.	Ukraine	
	Jamaica	United Arab Emirates	
	Jordan	Uruguay	
	Kenya	Venezuela, RB	
	Korea, Rep.	Vietnam	

^a Inclusion of countries in the analyses is based on the availability of data for each of the variables.