

# FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH: A THEORETICAL FRAMEWORK

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## Abstract

The relationship between FDI and economic growth has attracted considerable attention over the years. Despite the important role played by FDI in economic growth, a number of policy-makers have not fully understood the theoretical linkage between FDI and economic growth. The aim of this paper, therefore, is to review the theoretical literature on the relationship between FDI and economic growth in a stylized fashion. The theoretical literature reviewed in this study shows that FDI is a key contributor to the economic growth of the host country. FDI affects economic growth through two broad channels: (i) FDI can encourage the adoption of new technologies in the production process through technological spillovers; and (ii) FDI may stimulate knowledge transfers, both in terms of labour training and skill acquisition, and also by introducing alternative management practices and better organisational arrangements.

**Key Words:** Foreign Direct Investment, Economic Growth, Technological Transfer

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## 1. Introduction

Since the early 1980s, the world has witnessed a massive increase in the flow of foreign direct investment (FDI). According to UNCTAD (2012) data, global FDI flows grew from US\$50 billion in the early 1980s to US\$1.5 trillion in 2011. This increase in FDI flows has also attracted the attention of academics, who started investigating the impact of FDI on economic growth in the mid-1990s.

FDI is a composite package that includes physical capital, production techniques, managerial skills, products and services, marketing expertise, advertising and business organisational processes (Thirlwall, 1999 and Zhang, 2001b). It is argued that FDI has important growth effects on host economies. In theory, FDI can boost the host country's economy *via* capital accumulation, the introduction of new goods, and foreign technology (according to the Exogenous Growth-theory view). It can also enhance the stock of knowledge in the host country by the transfer of skills, according to the endogenous growth theory (Elboiashi, 2011). Herzer *et al.* (2008) highlight the fact that FDI plays an important function in the host country's economic growth by increasing the amount of investable capital, and by way of technological spill-overs.

The OECD (2002:5) also states that FDI represents a potential source for sustainable growth and development, given its assumed ability to: (i) Generate technology spill-overs; (ii) assist in human

capital formation and development; (iii) help the host to integrate into the global economic trade integration; and (iv) assist in the creation of a more competitive business environment and enhance enterprise development.

This paper aims to review the existing literature on FDI and economic growth, emphasising both the theoretical frameworks and the empirical evidence. Unlike the previous studies, this paper clearly explains the channels through which FDI can affect economic growth. Through this analysis, the paper illustrates why empirical results are mixed.

The paper is divided into four sections. Section two offers a brief overview of the theoretical relationship between FDI and economic growth – using the exogenous and endogenous growth models; while Section three presents channels or mechanisms through which FDI can affect economic growth. Finally, section four presents some concluding remarks.

## 2. FDI and Economic Growth: A Review of the Theoretical Models

### 2.1. Linkages between FDI and growth in the exogenous-growth model

The exogenous-growth theory, usually referred to as the neo-classical growth model or the Solow-Swan growth model, was pioneered by Solow (1956 and 1957). The theory assumes that economic growth is

generated through the accumulation of exogenous factors of production, such as the stock of capital and labour. Empirical studies on economic growth using the exogenous model normally employ the aggregate-production function, as developed by Cobb and Douglas (1928). Following Hicks (1932), the Cobb-Douglas production function, or the aggregate-production function is modelled against: capital input (both domestic and foreign), labour input, and the rate of technological progress, which changes over time<sup>3</sup>.

It has been shown that through this framework, capital accumulation contributes directly to economic growth in proportion to capital's share of the national output. Furthermore, the growth of the economy depends on the augmentation of the labour force and technological progress. According to this theory, FDI increases the capital stock in the host country; and this would, in turn, affect economic growth.

De Jager (2004) explains that if FDI introduces new technology, which leads to increased labour and capital productivity, this would then lead further to more consistent returns on investment, and labour would grow exogenously. Barro and Sala-I-Martin (1995)<sup>4</sup> demonstrated that there is a positive relationship between capital accumulation and output; while Herzer, et al. (2008) have recently established that FDI stimulates economic growth by augmenting domestic investment.

Through the exogenous or neo-classical growth model, it has been shown that FDI can impact economic growth directly through capital accumulation and the inclusion of new inputs and foreign technologies in the production function of the host country. Thus, the neo-classical growth model shows that FDI promotes economic growth by increasing the amount and/or the efficiency of investment in the host country.

## **2.2. Linkages between FDI and growth in the endogenous growth model**

Unlike neoclassical growth models, which assume technological progress to be exogenous, the new growth models<sup>5</sup> postulate that economic growth is driven by two main factors: the stock of human capital and technological changes (Romer, 1986, 1990 and 1994; Lucas, 1988). Nair-Reichert and Weinhold (2001:154) argue that the new endogenous growth models take into account long-run growth as a function of technological progress; and hence they offer a framework in which FDI can perpetually increase the rate of economic growth in the host country *via* technology transfer, diffusion, and spill-over effects.

<sup>3</sup> Following Hicks (1932), a technological innovation is Hicks neutral if the ratio of marginal product of capital to marginal product of labour is unchanged for a given capital-to-labour ratio. That is,  $Y = A^t f(K, L)$

<sup>4</sup> Quoted from Elboiashi (2011).

<sup>5</sup> Commonly referred to as the endogenous growth theory.

Although both the exogenous and endogenous growth theories argue that capital accumulation or formation is an important determinant of economic growth, they differ in their treatment of technological progress. The former treats technological progress as exogenous to the model; while the latter argues that technological progress is improved endogenously – by the increase in knowledge and innovation (Borensztein et al., 1998; de Mello, 1999; Elboiashi, 2011 and Al Nasser, 2010).

FDI by multinational corporations (MNCs) is assumed to bring research and development (R&D), in addition to human capital accumulation, which creates positive or negative externalities (growth spill-overs), which would affect the host country's firms and the economy (Barro and Sala-I-Martin, 1995). These growth factors, or FDI spill-overs, are assumed to arise from tangible capital, human capital, or R&D development expenditures.

The two growth theories and the FDI-economic growth illustration above reveal that FDI can contribute to economic growth through both direct impact and indirect impact. In theory, FDI can boost the host country's economy *via* capital accumulation, the introduction of new goods and foreign technology (according to the exogenous-growth theory view), and also by enhancing the stock of knowledge in the host country by way of the transfer of skills according to the endogenous growth theory (Elboiashi, 2011).

Herzer et al. (2008) highlight the fact that FDI plays an important role in the host country's economic growth – by increasing the amount of investable capital, and by way of technological spill-overs. The OECD (2002:5) further elucidates that FDI represents a potential source for sustainable growth and development, given its assumed ability to: (i) Generate technology spill-overs; (ii) assist in the formation of human capital and development; (iii) help the host to integrate into global economic trade integration; and (iv) assist in the creation of a more competitive business environment and enhance enterprise development.

## **3. Channels through which FDI impacts on economic growth**

The theoretical and empirical literature offer contradictory predictions on the effects of FDI on the host country's economy. Using both the neoclassical (or exogenous) growth models and the new endogenous growth models, scholars have examined the relationship between FDI and growth in four broad ways: (i) The determinants of growth, where FDI is put as one of the explanatory variables; (ii) the determinants of FDI, where GDP is one of the explanatory variables; (iii) channels through which FDI affects growth; and (iv) the causal relation between the two variables.

Seminal studies, which have attempted to investigate all the four fields of study include the

research done by Balasubramanyam et al. (1997, 1999); Borensztein et al. (1998); De Mello (1997, 1999); Hansen and Rand (2006) and Al Nasser (2010), among others.

The first three research areas listed above broadly examine the role, or channel through which FDI affects economic growth, or *vice versa*. A large body of this literature supports the view that FDI has a significant positive impact on growth. These studies show that FDI has a positive effect on the economic growth and welfare of the host country through the benefits it brings, such as increased investible financial resources, new innovation and technology, new managerial skills, skills development, the creation of job opportunities, and an improvement in the working conditions of employees and the development of the industrial sector in the host country, in addition to increased global exposure and restructuring for domestic firms.

FDI is also associated with positive spill-overs or externalities, which can boost the economies of host countries (De Mello, 1997, 1999 and Chowdhury & Mavrotas, 2006).

However, there are other theoretical studies, such as Body and Smith (1992), Aitken and Harrison (1999), Carkovic and Levine (2002), Alfaro (2003), and Alfaro et al. (2004), which have shown conflicting results. For example, the Carkovic and Levine (2002) study, which covered 72 countries over the period 1960-1995, found that the exogenous element of FDI does not have any positive effect on growth; and they found no evidence to support the assertion that FDI, on its own, can influence the host country's economic growth.

Furthermore, Alfaro (2003) used the cross-country data for the period 1981-1999; and this author concluded that FDI has an ambiguous effect on economic growth.

A review of several theoretical studies sheds some light on the contradictory relationship between FDI and economic growth. Liu (2008) explained that the level and rate of effects of spill-overs or externalities can go in opposite directions. As explained below, there are several channels through which FDI affects economic growth. According to the OECD (2002), UNCTAD (1999); Moura and Forte (2010); and various other studies sighted below, the impact of FDI on a host country's economic growth can either be positive or negative. This issue will be further discussed below.

### **3.1. The transfer of new technologies and know-how**

According to de Mello (1999:134), the FDI has the potential to encourage the "incorporation of new inputs and foreign technologies in the production function of the recipient economy". Borensztein, *et al.* (1998) state that FDI is an essential channel for the transfer of technology, and that it contributes

comparatively more to economic growth than does domestic investment. The OECD (2002) further states that technology transfers could be the most important channel through which the presence of MNCs may create positive externalities in the economy of the host country, especially developing countries.

This is based on the assumption that MNCs are mainly from the developed countries, and that they invest hugely in R&D and innovation, which can generate substantial technological spill-overs in the economy of the host country. Studies by Borensztein *et al.* (1998) and Ford, *et al.* (2008) reveal that MNCs are responsible for nearly all the global expenditure on R&D; and they are the major sources of technology diffusion, owing to their presence in different countries of the world.

Infusion of FDI technology into the economy can happen through four main channels, namely: "Vertical linkages with suppliers or purchasers in the host countries; horizontal linkages with competing or complementary companies in the same industry; the migration of skilled labour; and the internationalisation of R&D" (OECD, 2002:13).

By using a panel of Chinese manufacturing firms, Liu (2008:176) showed that backward linkages are the most significant channel through which spill-overs can occur.

The impact of this technological transfer can be positive or negative. The positives can be in the form of a reduction of R&D costs of local firms, which helps them to become more competitive (Berthélemy and Démurger, 2000); an increase in productivity by local firms (Moura & Forte, 2010); an increase in demand for local products, as the MNCs purchase raw materials and intermediate products (Moura & Forte, 2010); and the linkages with local research institutions, for example universities and other higher institutions of learning (Kottaridi, 2005).

Sen (1998) argued that FDI can be the source of negative technological spill-overs by MNCs, as they transfer inappropriate know-how – with the intention of holding onto the technological advantages of local firms. Thirlwall (1999:400) criticized FDI, and stated that it can bring inappropriate technology, which could impede the development of the host country's capital-goods industries. Furthermore, by adapting to MNCs' technology, local firms might become dependent on MNCs; which could retard their long-term development (Vissak and Roolah, 2005). Thirlwall (1999) and Todaro (1985) further argue that FDI can stifle local entrepreneurship.

### **3.2. Formation of the human resources**

De Mello (1999:134) states that FDI not only enhances economic growth through capital accumulation, but also by way of knowledge transfer. The study argues that the FDI enhances the existing stock of knowledge in the host country through

training, the bringing in of skilled personnel from abroad, and the introduction of new management techniques, and modern business-management skills. Borensztein *et al.* (1998) found that FDI can only contribute to economic growth once the host country has attained a specific level of human-capital development. Li and Liu (2005) show that FDI affects economic growth – both directly and indirectly – through the human-capital channel.

This human resource development can occur through formal training (De Mello, 1999), or through informal training – by way of observation (Moura & Forte, 2010). The OECD (2002) states that MNCs are credited for enhancing the development of skills through training; highlighting and demonstrating the need to have a qualified and skilled workforce in host countries.

Other positive externalities are generated when the entrance of MNCs leads to a general increase in wages in the host country. Domestic firms may respond positively by improving their production processes, thereby becoming more efficient (Jordaan, 2012). According to Lipsey and Sjöholm (2004), local firms can also benefit if a worker changes employment from an MNC to join a domestic firm. This worker brings skills and knowledge, which the domestic firm might otherwise have taken years to acquire (Gershenberg, 1987).

On the negative side, it is argued that the introduction of new technology by MNCs can lead to job losses – and consequently an increase in unemployment (OECD, 2002). Some host governments might take advantage of MNCs training, and use the resources for other priorities – to the detriment of local firms (Ford, *et al.*, 2008). The OECD (2002) further argues that MNCs focus on their own in-house skills and technical knowledge for their own competencies, but not for the development of local firms.

Furthermore, the newly trained workers become marketable internationally; and they might decide to leave the country, leading to a brain-drain in the host country (Vissak and Roolaht, 2005).

### **3.3. Integration into the global economy**

Mencinger (2003) maintains that there is a positive relationship between the increase in FDI and the speed of integration of the host country into the global market. Thirlwall (1999:400) notes that the greater proportion of FDI is invested in the tradable goods sector of the host countries, which improves their export performance, and brings in much-needed foreign exchange. The OECD (2002) argues that the host countries, in their bid to produce higher value-added products and boost exports, can tap into networks of MNCs. Beyond the already-established networks, MNCs have considerable expertise in advertising, promotion, and the development of international lobby groups (Moura & Forte, 2010).

UNCTAD (2002) finds that MNCs can help enhance and sustain the export competitiveness of the host country. This can be done through a diversification of the export basket, maintaining higher rates of export growth over time, improving the technological and skill content of export activity (through beneficiation and value-addition), and enlarging the capacity of local firms to be able to compete globally. The same report stressed that, in order for this to happen; the local government should develop coherent and consistent policies and strategies that would ensure the attraction of export-oriented MNCs.

According to Aitken *et al.* (1997), the entrance of FDI through MNCs can help local firms in terms of their reduction in foreign markets entry costs. This becomes possible through the increased opportunities available for the local firms to imitate the export processes of MNCs and to gain access to MNCs' distribution networks, delivery infrastructure, and international marketing knowledge (Clark, *et al.* 2011:4).

The other benefits to local firms and the host economy are through local firms becoming suppliers or subcontractors to MNCs (Moura and Forte, 2010; Jordaan, 2012), as well as the introduction of local firms to international trade associations, and the ability to sell their goods through a well-established MNC brand (Zhang, 2001a). There are also further benefits accruing to the local firms from an increase in exports and global integration in the form of increase in productivity, improvement in capacity utilisation, and access to economies-of-scale (Makki and Somwaru, 2004).

However, FDI-induced global integration can have negative consequences for the host country's economy, such as an increase in net imports (Mencinger, 2003), leading to current account deficits. Vissak and Roolaht (2005) argue that FDI can be the conduit in spreading global economic challenges to the now open host country economies.

### **3.4. Increased competition in the host country**

Moura and Forte (2010) state that the entry of FDI into the local economy creates competition. The MNCs bring in new capital and production methods, which tend to lower the cost of capital and the general cost of production. Pessoa (2007), OECD (2002) and Jordaan (2012) argue that local firms might react to this new competition by improving their productivity, improved performance, reducing prices, and moving to a more efficient resource-allocation mechanism.

This increase in competition might cause local firms to increase in R&D spending and to an improvement in the quality of products, as the local firms position themselves to become MNCs suppliers or sub-contractors (Moura and Forte, 2010). Clark *et al.* (2011:3) have argued that “competition will force

domestic firms to use resources more efficiently and adopt advanced productive technologies, leading to productivity gains”.

On the other hand, the increase in competition as a result of the entry of MNCs, might lead to the closure of local firms, which could have the unintended consequence of the creation of monopolies or oligopolies dominated by foreign-owned companies (Ram and Zhang, 2002). The OECD (2002) notes that the entry of MNCs may increase the levels of concentration in host-country markets, which could actually reduce the level of competition. This leads to an anti-competitive environment. MNCs could also outperform local firms in the local labour market, and attract skilled workers through better pay and career prospects (Sylwester, 2005). The other negative association between MNCs and domestic firms is where such MNCs take away part of the market share from the local firms.

As explained by Jordaan (2012:43), “this market stealing can lower the level of productivity or efficiency of the domestic firms, if their production process is subject to scale economies”. Clark *et al.* (2011:3) also echoed the same point; arguing that if a reduced market share leads to a reduction in the capacity utilisation, or the use of smaller production facilities, then local businesses would be forced to operate on a less efficient scale.

Instead of limiting the flow of FDI as a way of guarding against anti-competitive behaviour and the protection of local firms, the OECD (2002) advises the host governments to expand their markets through opening up to foreign trade, together with the tightening of domestic competitive policies and regulations.

### **3.5. The development and restructuring of firms**

The OECD (2002) points out that the entry of FDI through MNCs affects the enterprise development of direct (targeted) firms and unrelated firms. The targeted firms are those who are acquired by the MNCs. They benefit through improved efficiency, as they become members of a bigger entity with proven governance and management practices (OECD, 2002). Other firms in the host country can also benefit from the new MNCs through demonstration and imitation effects (Jordaan, 2012), and other spillovers similar to those that lead to technological and human-capital spillovers, as discussed above. According to Clark *et al.* (2011), domestic firms would be forced to adapt, and even those who are reluctant would be compelled, if they see technology being successfully used by MNCs.

According to Hansen and Rand (2006), MNCs can be a source of change in the host country’s economic landscape. They argue that MNCs’ superior know-how helps them enter into industries with

prohibitive entry barriers, in terms of domestic firms. Thus, the entrance of MNCs could help the country break existing monopolies and cartels, which would transform the economic structure of the host country.

Zhang (2001b) notes the changes to the Chinese business environment due to the influence of MNCs, as privatization has taken the place of previously publicly owned enterprises, change of economic policy from command to a more-open market economy, and the adoption of policies and procedures to improve of the ease of doing business.

### **3.6. Difficulty in the implementation of economic policies**

Todaro (1985:439) argues that MNCs may use their economic power to sway government policies in the directions unfavourable to the host country’s development. UNCTAD (1999:155) clearly articulated the divergence in motives between the MNCs and the host government. It states that “governments seek to spur development within a national context...TNCs seek to enhance their competitiveness in an international context”<sup>6</sup>. The OECD (2002) concurs, and states that some MNCs are huge in size, such that their decisions (such as downsizing) can impact the socio-economic status of a significant portion of the country’s economy. This downsizing, for example, can be announced when the host country’s government is pushing policies on economic expansion and job creation, thereby causing friction between MNCs and their host governments.

Other challenges to the economic policies of host countries include: significant inflows of funds – at a time when the country is practising contractionary<sup>7</sup> policies (Sen, 1998), resulting in a decrease in the local authorities’ autonomy and sovereignty (Duttaray *et al.*, 2008), and influence in the political decisions of the host country governments (Zhang 2001b).

### **3.7. Increase in capital for investment**

De Mello (1999) argues that FDI can be regarded as a stimulus for domestic investment. MNCs, because of their wide networks and global market exposure, have greater access to both international and host-country finance. Thirlwall (1999:400) further argues that this can be a catalyst for domestic investment, especially in the same or a related sector of the economy. MNCs are credited for quickly responding to investment opportunities and incentives – compared with local firms (Caves, 1996:159). Furthermore, MNCs can also undertake bigger projects, which domestic firms might not have the capacity to take on, or projects that are deemed too risky for local

<sup>6</sup> UNCTAD (1999:155). Please note that the abbreviation TNCs and MNCs are used interchangeably in this study.

<sup>7</sup> See the subsection below, on Increase in Capital Formation.

firms (UNCTAD, 1999). According to Dupasquier and Osakwe (2005), FDI complements domestic savings by bringing in foreign savings. Ndoricimpa (2009:34) further argues that FDI fills the funding gap between local savings and investment requirements; and it can also augment the host country's balance-of-payment receipts.

UNCTAD (1999) argues that FDI is a more stable source of funding, as it is based on a longer-term view of the recipient country's growth potential, raw-material accessibility, and easier access to markets, among other factors.

Although FDI can contribute to economic growth directly by increasing the aggregate investment in a host country, there is the potential problem of 'crowding in and/or crowding out' of domestic investment. Empirical studies have been conducted testing whether FDI and domestic investment are complements or substitutes. Borensztein *et al.* (1998) investigated the impact of FDI on domestic investment for developing countries over the period 1970-1989; and the authors found that FDI stimulates total investment. Thus, the result suggests that FDI crowds in domestic investment.

Eragha (2011) conducted a study on the linkages between FDI and domestic investment in the Economic Community of West African State (ECOWAS) countries, and found that FDI inflow substitutes for domestic investment. A second drawback is that massive investments by MNCs through injection of new capital from abroad and retained earnings can act against host governments' contractionary fiscal and monetary policies (UNCTAD, 1999). Thirdly, there is the possibility of a deterioration of the host country's balance-of-payments, as MNCs repatriate their profits (Ndoricimpa, 2009). Lastly, (UNCTAD, 1999:161) states that FDI seems to be a costly source of foreign finance, compared to other sources, as the rates of profit of MNCs usually surpass the rate of interest on government and other types of loans.

Ram and Zhang (2002) have demonstrated that in the long-run, repatriated profits are greater than the positive impact of the original investment.

#### 4. Conclusion

This paper has discussed the theoretical link between FDI and economic growth. The theoretical explorations reviewed in this paper show that FDI is a key contributor to the economic growth of the host country. Through exogenous and endogenous growth analysis, it was noted that FDI contributes directly and indirectly to economic growth, and that the host country's growth may attract more FDI. It was also observed that FDI affects economic growth through two broad channels: (i) FDI can encourage the adoption of new technologies in the production process through technological spillovers; and (ii) FDI may stimulate knowledge transfer, both in terms of

labour training and skill acquisition, and additionally by introducing alternative management practices. The study also found that the overall impact of FDI on economic growth is dependent on the socio-economic conditions of the host country. Specifically, the literature review in this paper shows that FDI can bolster the economy of the host country through increased capital and technological diffusion. However, its impact is dependent on the host country's conditions, such as the level of technology diffusion, education and competency. Also important are the economic, political, social and cultural conditions.

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