

Article

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Increasing Africa's Share of Vertical Investments through Single Window Systems

Abstract: The growth of international trade in recent years has highlighted the importance of customs authorities as the gateway to the global market. However, border delays and inefficiencies resulting from cumbersome documentation requirements have disrupted the flow of goods and acted as a non-tariff barrier to international trade in many African countries. Additionally, these same deficiencies have interrupted the inward flow of vertical Foreign Direct Investment (FDI). When searching for suitable locations to establish manufacturing plants, foreign investors place emphasis on a number of factors such as the cost of exporting, expediency of importing time sensitive production inputs and distance to target markets. Customs efficiency plays a major role in positively influencing these factors and hence forms a crucial part of any investment decision. This article examines the negative impact of inefficient border procedures on vertical FDI inflows to Africa. The article recommends the implementation of single window systems as an investment facilitation tool.

Keywords: export-oriented FDI, economic development, customs processes, single window systems

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1 Introduction

In today's globalized economy, Multinational Corporations (MNCs) play an important role in the international flow of capital.¹ The share of cross-border capital flows contributed by Foreign Direct Investment (FDI) of MNCs has been

1 G. Hanson, R. Mataloni and M. Slaughter, "Expansion Strategies of U.S. Multinational Firms", in S. Collins and D. Rodrik (eds.), *Brookings Trade Forum 2001* (Washington, DC: Brookings Institution Press, 2001), pp. 245-246.

increasing in recent years, with developing countries being the main beneficiaries.² A popular form of investment is vertical/export-oriented FDI, which involves the establishing of “production capacity for export markets.”³ With vertical FDI, MNCs launch manufacturing industries in developing countries which offer them comparative advantages and export the intermediate or final products to the other markets.⁴ Besides expanding domestic exports, this form of FDI also potentially offers other externalities which can generate economic development and enable the host country to successfully integrate into the global economy.⁵

Nonetheless, many African countries have not benefitted from the flow of such investments. The share of African exports globally is minimal compared to Asian developing countries that have been able to attract export-oriented investors. According to 2011 statistics, Africa’s leading exporting countries were South Africa which exported manufactures⁶ worth US\$36.9 billion, Tunisia US\$13.4 billion, Morocco US\$13.2 billion, Egypt US\$12.9 billion and Botswana US\$5.1 billion.⁷ China’s manufactured exports added up to US\$1,771.8 billion, India – US\$187.8 billion, Thailand – US\$159.2 billion, Malaysia – US\$ 140.8 billion, Brazil – US\$84 billion and Indonesia – US\$68.4 billion. In total, Africa exported manufactures worth US\$110.3 billion globally, compared to US\$4,284.7 billion generated by Asia.⁸

2 In 2012 FDI flows to developing economies reached US\$680 billion, surpassing flows to developed countries by US\$130 billion. United Nations Conference on Trade and Development (UNCTAD), *Global FDI Recovery Derails*, Global Investment Trends Monitor, No. 11, UNCTAD (23 January 2013), available at: <http://unctad.org/en/PublicationsLibrary/webdiaeia2013d1_en.pdf>, accessed 1 February 2013.

3 M. Engman, “The Economic Impact of Trade Facilitation”, in Organisation for Economic Co-operation and Development, *Overcoming Border Bottlenecks: The Costs and Benefits of Trade Facilitation* (OECD, 2009), p. 92.

4 *Ibid.*, p. 103.

5 M. McMillan, S. Pandolfi and B. L. Salinger, *Promoting Foreign Direct Investment in Labor-Intensive, Manufacturing Exports in Developing Countries*, Research Report, Consulting Assistance on Economic Reform II (14 June 1999), 1, available at: <http://pdf.usaid.gov/pdf_docs/PNACF585.pdf>, accessed 1 February 2013.

6 As per the statistics manufactures covers: iron and steel, chemicals, other semi-manufactures, machinery and transport equipment, textiles, clothing and other manufactures. World Trade Organisation, *World Commodity Profiles*, available at: <http://www.wto.org/english/res_e/statis_e/world_commodity_profiles11_e.pdf>, accessed 1 February 2013.

7 World Trade Organisation, *International Trade and Market Access Data*, available at: <[**8** *Ibid.*](http://www.wto.org/english/res_e/statis_e/statis_bis_e.htm?solution=WTO&path=/Dashboards/MAPS&file=Map.wcdf&bookmarkState={%22impl%22:%22client%22,%22params%22:{%22langParam%22:%22en%22}}>>, accessed 1 February 2013.</p>
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There is abundant research on the barriers to FDI inflows to Africa.⁹ However, one key barrier that has received little scholarly attention has been customs efficiency. Generally, the availability of a swift, transparent and predictable customs service is crucial in ensuring that the manufactures are exported to global markets efficiently.¹⁰ This article analyses the role of customs in influencing the flow of vertical FDI. The aim is to demonstrate that the modernization of border processes through implementation of single window systems would improve African countries' competitiveness in attracting export-oriented investors, and thereby gain from the economic benefits attached to such kind of investments.

The rest of this article has been divided into four parts. Section 2 discusses the modern structure of vertical FDI and evaluates the potential economic benefits Africa stands to gain from such investment, with particular focus on how such investments promote employment, technology transfer and export-led growth (ELG). Section 3 analyses the role played by customs in attracting export-oriented investors to African countries. Section 4 discusses how the modernization of border processes through implementation of single window systems would improve African countries' competitiveness in attracting export-oriented investors. Section 5 concludes the article.

2 Global structure and benefits of vertical FDI

Vertical FDI involves the distribution of various parts of an MNC's "value chain" to countries that afford them the best location advantage for each particular activity.¹¹ This form of FDI is export-oriented and typically involves an MNC geographically fragmenting its production processes, whereby intermediate

⁹ Some of the main factors that have affected Africa's capacity to attract investors include: poor infrastructure, inefficient and corrupt institutions, political instability, small size of local markets and the lack of effective trade regulatory framework. See O. Ajakaiye and M. Ncube, *Infrastructure and Economic Development in Africa: An Overview*, 19 *Journal of African Economies*, Supplement 1 (2010), 13-112; E. Laryea, *Facilitating Expansion of African International Trade through Information and Communication Technologies*, 5 *African Journal of Legal Studies*, no. 3 (2012), 221; E. Asiedu, *Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability*, 29 *The World Economy*, no. 1 (2006), 63-77; E. Asiedu, *On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different?* 30 *World Development*, no. 1 (2002), 107-119.

¹⁰ Engman (2009), *supra* note 3, p. 103.

¹¹ M. Gestrin, *Is Export-Oriented FDI Better?*, paper given at OECD Global Forum on International Investment (Mexico, 26-27 November 2001), p. 5.

goods from a plant in one country will be exported to another plant in a different country for the next processing phase.¹² The integrated international production is aimed at taking “advantage of international factor-price differences.”¹³ The distinguishing feature of vertical FDI is that the MNC’s facilities in host economies serve as part of a production chain for intermediate goods that will ultimately be exported and sold in foreign markets. A similar form of investment is export-platform FDI which involves MNCs establishing production firms in a host country in order to serve its regional markets, and thus take advantage of reduced tariffs and other benefits enshrined in intra-regional trade agreements.¹⁴ For the purposes of this article, both export-platform and vertical FDI shall be classified as one, since both of them are export-oriented in nature.

Vertical FDI has propelled the global economy into a new era defined by global value chains (GVCs), internationalization of capital and the increasing involvement of developing countries in the flow of trade and investments.¹⁵ The current GVC system is an integrated system of global trade and production that includes a range of activities by which capital, technology and labour are combined to bring a product from its start to its end use.¹⁶ Such activities include production, marketing and distribution.¹⁷ The existing production process used by MNCs has been extensively fragmented. Fragmentation refers to “the physical separation of different parts of a production process.”¹⁸ Thus, previously integrated goods are now broken down into their integral parts, components and accessories, which are produced separately and assembled at a later production stage.¹⁹

¹² *Ibid.*, 6.

¹³ Hanson, Mataloni and Slaughter (2001), *supra* note 1, p. 246.

¹⁴ The output in Export platform FDI is mostly sold to third markets and not the host country. K. Ekholm, R. Forslid and J. Markusen, *Export-Platform Foreign Direct Investment*, Working Paper No 9517, National Bureau of Economic Research (February 2003), p. 1, available at: <http://www.nber.org/papers/w9517.pdf?new_window=1>, accessed 1 February 2013.

¹⁵ E. Rugraff, D. Sanchez-Ancochea and A. Sumner, “How Have TNCs Changed in the Last 50 Years”, in E. Rugraff, D. Sanchez-Ancochea and A. Sumner (eds.), *Transnational Corporations and Development Policy: Critical Perspectives* (New York: Palgrave Macmillan, 2009b), p. 13.

¹⁶ G. Gereffi, J. Humphrey and T. Sturgeon, *The Governance of Global Value Chains*, 12 *Review of International Political Economy*, no. 1 (2005), 79.

¹⁷ *Ibid.*

¹⁸ *Ibid.*, 79-80.

¹⁹ R. Rajan, *Economic Globalization and Asia: Trade, Finance and Taxation*, Discussion Paper No 0150, Centre for International Economic Studies and School of Economics (December 2001), p. 3, available at: <<http://www.adelaide.edu.au/cies/papers/0150.pdf>>, accessed 1 February 2013.

The present manufacturing system is both international and global. Internationalization refers to “the geographical spread of economic activity across national boundaries,”²⁰ while globalization “implies a degree of functional integration between these internationally dispersed activities.”²¹ Fragmentation has allowed MNCs to distribute their production process across different countries on the basis of factor – price differences.²² This has enabled many developing countries which are able to provide low-cost labour to gain comparative advantage in lower-end light industries as well as lower-end production stages of higher-tier industries, while concurrently ensuring that developed countries, with more advanced technology, are able to gain facilities in the higher end of the value chain.²³

The harmonization of the fragmented GVC production may be coordinated through buyer-driven or producer-driven commodity chains.²⁴ Buyer-driven commodity chains work well in industries that manufacture standard products, since they can be priced and are easy to describe.²⁵ These include consumer goods industries like garment, footwear and household products.²⁶ In such cases, the main merchandisers of these products mainly design and market the product but do participate in its manufacture.²⁷ Due to the nature of the product, the core company is able to decentralise production by outsourcing the manufacture to a network of third world contractors.²⁸ The core company will thereby maintain an arms-length coordination of the value chain by overseeing that all the production pieces “come together as an integrated whole.”²⁹ Producer-driven/in-house commodity chains are common in industries that deal with customized products like automotive, aircraft, computers and electric machinery.³⁰ The complexity of these products and their designs demands a lot

20 G. Gereffi, “Capitalism, Development and Global Commodity”, in Leslie Sklair (ed.), *Capitalism and Development* (New York: Routledge, 1994), p. 215.

21 *Ibid.*

22 Gereffi, Humphrey and Sturgeon (2005), *supra* note 16, pp. 79-80.

23 R. Rajan, *Production-Sharing in East Asia: Implications for India*, 38 Economic and Political Weekly, no. 36 (2003) 3770.

24 Gereffi (Capitalism) (1994), *supra* note 20, p. 215.

25 Gereffi, Humphrey and Sturgeon (2005), *supra* note 16, p. 80.

26 Gereffi (Capitalism) (1994), *supra* note 20, p. 216.

27 *Id.*, p. 218.

28 Standard products are generally easy to describe and this makes it easy for the core company to form a specific contract for production with third parties, and in addition to this such products can be produced for stock and supplied when required. See Gereffi, Humphrey and Sturgeon (2005), *supra* note 16, p. 80.

29 Gereffi (Capitalism) (1994), *supra* note 20, p. 218.

30 *Id.*, p. 216.

of intense interaction between manufacturers, hence would be better served through vertical integration rather than outsourcing arrangements.³¹ Any outsourcing arrangement would require numerous safeguards to ensure that the contractors do not use the core manufacturer's design for their own purposes. The cost of implementing such safeguards would render outsourcing arrangements expensive and unsuitable.³² Consequently, the central MNC coordinates the production (both backward and forward linkages) across its overseas production networks.³³ Despite their different coordination strategies, both economic networks influence the instituting of export manufacturing facilities in various developing countries.

2.1 Economic benefits of vertical FDI

There has been a widespread belief among policy makers that FDI promotes economic growth in developing and transitional countries.³⁴ However, empirical literature on the subject has over the years produced varying results. Proponents of this theory have utilised various statistical approaches in arguing a positive correlation between FDI inflow and economic growth. For instance, using cross-country analysis, Borensztein et al.³⁵ sampled 69 developing countries over the period of 1970–1989 and found that an increase in the ratio of FDI to gross domestic product (GDP) increased the host country's rate of per capita growth.³⁶ A similar strategy was used by Ram and Zhang,³⁷ who focused on data from the 1990s and concluded that there is a positive nexus between FDI and a host country's economic growth.³⁸ Several scholars who have focused on single country analysis have also come to the same conclusion. Sun³⁹ found that over the period of 1983–1995, FDI accounted for 17% of China's economic

31 Gereffi, Humphrey and Sturgeon (2005), *supra* note 16, p. 80.

32 *Id.*

33 Gereffi (Capitalism) (1994), *supra* note 20, p. 219.

34 L. Alfaro et al., *Does Foreign Direct Investment Promote Growth? Exploring the Role of Financial Market Linkages*, 91 *Journal of Development Economics*, no. 2 (2010), 242.

35 E. Borensztein, J. De Gregorio and Jong-Wha Lee, *How Does Foreign Direct Investment Affect Economic Growth?* 45 *Journal of International Economics*, no. 1 (1998), 115-135.

36 *Ibid.*, 124-126.

37 R. Ram and H. K. Zhang, *Foreign Direct Investment and Economic Growth: Evidence from Cross-Country Data for the 1990s*, 51 *Economic Development and Cultural Change*, no. 1 (2002), 205-215.

38 *Ibid.*

39 H. Sun, *Macroeconomic Impact of Direct Foreign Investment in China*, 21 *The World Economy*, no. 5 (1998), 675-694.

growth.⁴⁰ Chan⁴¹ similarly found a causal link from FDI to growth in Taiwan between the periods of 1962 and 1996.⁴²

Despite the strong evidence supporting the hypothesis, contradictory results have been realized in other studies. Singh⁴³ did a cross-country analysis of MNCs investment for the period starting from 1960 to 1980 and found that FDI inflow had little or no effect on growth in developing countries.⁴⁴ Several other economic studies have come to a similar conclusion.⁴⁵ A country-specific approach was used by Aitken and Harrison⁴⁶ who also found that FDI had a negative effect on Venezuela's domestic economy.⁴⁷

Nonetheless, the lack of consensus among economists does not necessarily denote that all forms of FDI would have an inconclusive effect on growth. On the contrary, most of the econometric studies discussed above have been criticized for being too general and focusing on statistics related to "traditional forms" of FDI while failing to account for the "new forms" of international investments which have taken shape in the recent decade.⁴⁸ By ignoring the heterogeneity of MNC activity, these studies have come to conclusions that ignore mechanisms through which MNCs may benefit host economies.⁴⁹ Principally, these studies have failed to distinguish between

40 *Ibid.*, 682.

41 Vei-Lin Chan, "FDI and Economic Growth in Taiwan's Manufacturing Industries", in A. Krueger and T. Ito (eds.), *The Role of Foreign Direct Investment in East Asian Economic Development* (Chicago IL.: University of Chicago Press, 2000), pp. 349-366.

42 *Ibid.*

43 R. Singh, *The Multinationals' Economic Penetration, Growth, Industrial Output, and Domestic Savings in Developing Countries: Another Look*, 25 *Journal of Development Studies*, no. 1 (1988), 55-82.

44 *Ibid.*

45 Studies that have found that FDI has no effect on growth include: S. Hein, *Trade Strategy and the Dependency Hypothesis: A Comparison of Policy, Foreign Investment, and Economic Growth in Latin America and East Asia*, 40 *Economic Development and Cultural Change*, no. 3 (1992), 495-521; M. Carkovic and R. Levine, "Does Foreign Direct Investment Accelerate Economic Growth?" in Theodore Moran, Edward Graham and Magnus Blomstrom (eds.), *Does Foreign Direct Investment Promote Development?* (Washington, DC: Institute for International Economics, Center for Global Development, 2005), pp. 195-220.

46 B. Aitken and A. Harrison, *Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela*, 89 *American Economic Review*, no. 3 (1999), 605-618.

47 *Ibid.*

48 E. Rugraff, D. Sanchez-Ancochea and A. Sumner, "What Do We Know about the Developmental Impacts of TNCs?" in E. Rugraff, D. Sanchez-Ancochea and A. Sumner (eds.), *Transnational Corporations and Development Policy: Critical Perspectives* (New York: Palgrave Macmillan, 2009a), p. 32.

49 S. Feinberg and M. Keane, "Intrafirm Trade of US MNCs: Findings and Implications for Models and Policies Toward Trade and Investment", in T. Moran, E. Graham and M. Blomstrom (eds.), *Does Foreign Direct Investment Promote Development?* (Washington, DC: Institute for International Economics, Center for Global Development, 2005), p. 246.

the modern MNCs that are structured around Intra-Firm Trade (IFT) with those that do not conduct any form of IFT. IFT encompasses the international movement of goods and services between parent companies and their affiliates or among the affiliates, as opposed to trade between unrelated parties (inter-firm trade). The emergence of GVCs has increased IFT as opposed to the traditional market seeking FDI where there is no form of IFT.⁵⁰

MNCs that are structured around IFT vary from their non-IFT counterparts in several respects.⁵¹ First, MNCs engaged in IFT have been found to be more technologically dynamic than their counterpart.⁵² Second, the extensive communication and exchanges involved in IFT usually promotes and strengthens the parent–affiliate relationship between firms.⁵³ This has the potential of translating into economic benefits through the systematic transfer of knowledge, skills and best practices from one jurisdiction to another.⁵⁴ These differences highlight the importance of distinguishing export-oriented FDI from previous research that found no positive link between FDI and economic growth.

Today's export-oriented FDI does have specific economic benefits attached to it. These forms of FDI have the potential of creating employment, introducing new technology and promoting ELG in Africa and other developing regions.

2.1.1 Employment creation

Employment creation is generally viewed as a critical component for development.⁵⁵ In particular, the “employment solution” bears greater significance to Africa and other developing regions that ordinarily lack effective welfare mechanisms for the poor and unemployed. The recent global financial crisis has exacerbated the situation by raising the number of unemployed to over 200 million globally by 2012.⁵⁶ However, despite the problem being global, its impact

⁵⁰ See, R. Lanz and S. Miroudot, *Intra-Firm Trade: Patterns, Determinants and Policy Implications*, OECD Trade Policy Working Papers No. 114 (2011), available at: <http://www.oecd-ilibrary.org/trade/intra-firm-trade_5kg9p39lrwnn-en>, accessed 1 February 2013.

⁵¹ Feinberg and Keane (2005), *supra* note 49, p. 247.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.*, pp. 247-248.

⁵⁵ United Nations Conference on Trade and Development, *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development* (New York and Geneva United Nations, 1999), p. 257.

⁵⁶ International Labour Office, *Global Employment Trends 2012: Preventing a Deeper Jobs Crisis* (Geneva: International Labour Organisation, 2012), p. 31.

on emerging and developing countries appear to be greater than developed countries, with regions like Central and South Eastern Europe (non-EU), Middle East and North Africa recording some of the highest unemployment rates in the world.⁵⁷

Traditionally, unemployment in Africa and other developing regions has always been associated with the regions' numerous unskilled and low-skilled labourers who mostly are uneducated youths living in poverty.⁵⁸ However, over the past two decades, there has been an exodus of skilled workers from such countries to developed and higher income transitional countries, mainly occasioned by the lack of employment opportunities.⁵⁹ The poor economic situation in such countries has left many of their graduates without any job prospects or alternatively with low-paying jobs coupled with poor working conditions.⁶⁰ Consequently, these graduates find it almost impossible to resist the lure of better paying jobs being offered in developed countries that seek to increase their skilled labour force.⁶¹ This international migration of skilled workers could have grave repercussions on Africa's human capital stock. The loss of skilled human capital decreases such workers' expected contribution to the national output, and these costs are eventually borne by domestic taxpayers who funded the educational facilities that trained the graduates.⁶²

Resolving unemployment in Africa necessitates both increasing employment opportunities and raising the quality of employment in the continent. The two factors, that is, quantity and quality of employment, are complementary and should be balanced out in the employment creation process.⁶³ Increasing employment demands the creation of more industries and promotion of self-employment opportunities. While advancing employment quality usually

⁵⁷ According to recent reports Central and South Eastern Europe (non EU) recorded an unemployment rate of 10.4%, Middle East had 10.3% and North Africa had 9.8%, see International Labour Office, *Global Employment Trends 2011: The Challenge of a Jobs Recovery* (Geneva: International Labour Organization, 2011), pp. 27-57.

⁵⁸ A. Wood, *Openness and Wage Inequality in Developing Countries: The Latin American Challenge to East Asian Conventional Wisdom*, 11 World Bank Economic Review, no. 1 (1997), 34.

⁵⁹ R. Skeldon, *Of Skilled Migration, Brain Drains and Policy Responses*, 47 International Migration, no. 4 (2009), 4.

⁶⁰ United Nations Conference on Trade and Development, *The Least Developed Countries Report 2007: Knowledge, Technological Learning and Innovation for Development* (New York and Geneva: United Nation, 2007), p. 140.

⁶¹ Countries like Canada, Australia, France, Germany, the United Kingdom and the U.S. have been making efforts to attract "the best and brightest" by modifying their immigration policies to open up channels for skilled migrants. See, Skeldon (2009), *supra* note 59, p. 4.

⁶² United Nations Conference on Trade and Development (2007), *supra* note 60, p. 141.

⁶³ United Nations Conference on Trade and Development (1999), *supra* note 55, p. 258.

involves investing in human capital through skills and education creation that improve on production ideas thereby increasing productivity.⁶⁴

Export-oriented FDI can potentially contribute to resolving Africa's unemployment problem. The globalization of international production has created an avenue for MNCs to generate employment and build up skills in their host countries.⁶⁵ The specific impact that MNCs will have on the employment sector depends on a number of factors, the main ones being the nature of the industry, its activity and size.⁶⁶ A typical production MNC may be grouped into a low-technology, medium-technology or high-technology industry. Most low- and medium-technology industries, like garment and automotive industries, engage in labour-intensive production; while high-technology industries, like electronics, heavily rely on knowledge-intensive production.⁶⁷ Both types of production require different classes of workers, the latter demanding more skilled labourers. Alternatively, the size of the MNC will determine the number of workers that can be employed by the firm. In addition, MNCs can also indirectly contribute to employment in their host countries through their engagement with domestic firms. MNCs often hire or subcontract domestic firms to provide them with certain services like input provision or transport, thus their presence could indirectly lead to employment creation in other local enterprises.⁶⁸

Export-oriented investments have contributed to employment creation in many regions of the world.⁶⁹ FDI in labour-intensive manufacturing has employed a number of low-skilled workers in various developing regions, a salient example being India's State of Tamil Nadu. Since the late 1940s Tamil Nadu has emerged as an attractive destination for MNCs engaged in the automotive industry with reputable automotive manufacturers like Mitsubishi, Hyundai and Ford all establishing assembly lines in the region, thereby earning it the nickname the "Detroit of India".⁷⁰ The engineering based auto-industry sector employs different categories of workers, ranging from highly skilled

⁶⁴ *Ibid.*

⁶⁵ *Ibid.*

⁶⁶ Other factors that have been known to have an effect on the manner in which MNCs impact employment include: the strategy MNCs adopt, the host country conditions and the policies that the host country have adopted towards FDI. *Ibid.*

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*, p. 261.

⁶⁹ Early experience of East and South-East Asia and in China show that simple export processes controlled by foreign affiliates created a lot of jobs for the locals. *Ibid.*, p. 263.

⁷⁰ T. Meera, "Does FDI Reduce Poverty? Case Studies from India", in E. Rugraff, D. Sanchez-Ancochea and A. Sumner (eds.), *Transnational Corporations and Development Policy: Critical Perspectives* (New York: Palgrave Macmillan, 2009), p. 208.

engineers and personnel managers to low-skilled labourers.⁷¹ Nonetheless, the bulk of employees comprises of intermediate- and low-skilled labourers. The assembly plants hire numerous workers with basic vocational training and diplomas and also low-skilled labourers who typically have secondary education and receive on-the-job training.⁷² Accordingly, unskilled and rural workers have been able to find opportunities in the auto-industry, and this has facilitated the absorption of a wider section of the region's domestic human capital into the productive process.⁷³ The industry's insistence on engineering skills rather than oral and written fluency has further helped it tap into the region's unemployment pool by giving the semi-skilled and unskilled workers a chance at being "vocationally trained without the stringent linguistic and specialised structured training requirements."⁷⁴

The investors in Tamil Nadu have also indirectly increased employment through outsourcing the supply of products from small local suppliers. The foreign affiliates have propelled the expansion of small local suppliers in the region, and with it, increased job opportunities for local diploma holders and vocationally trained workers.⁷⁵

Knowledge-intensive export-oriented investments have also played a part in creating employment opportunities in developing countries. The global growth in the electronics and digital technologies industry has propelled many MNCs to shift their affiliates to developing countries in order to take advantage of their low-cost educated and skilled workers.⁷⁶ An example of this has been with the Information Technology (IT) and software industries in India's State of Karnataka. Its capital city, Bangalore, commonly referred to as the "Silicon valley of India", holds the largest concentration of software development firms with over 75 MNCs and 100 local firms, thus making it the focal point of India's IT industry.⁷⁷ Karnataka's software industry is largely export-oriented with about 65% of the total software revenue being generated through exports.⁷⁸ Most of the firms in the industry comprise of software development companies and Business Process Outsourcing (BPO)/call centres. These technical firms require highly skilled workers with a reasonable standard of English.⁷⁹ The workers consist

71 *Ibid.*, p. 216.

72 *Ibid.*, p. 217

73 *Ibid.*

74 *Ibid.*, p. 218.

75 *Ibid.*, p. 217.

76 United Nations Conference on Trade and Development (1999), *supra* note 55, p. 260.

77 Meera (2009), *supra* note 70, p. 157.

78 *Id.*

79 *Id.*, p. 210.

of graduates with computing degrees attained from several top Indian institutes of technologies and management personnel with credentials from Indian institutes of management and overseas degrees.⁸⁰ The specialised nature of skill and English fluency required by the firms makes them urban focused and only accessible to skilled workers. Consequently, they have greatly contributed to reducing India's brain drain. Prior to expansion of this sector a large number of skilled workers had migrated to Silicon Valley in the U.S.⁸¹ Moreover, such opportunities have indirectly contributed to expansion of low-skilled jobs for workers who service the offices and domestic homes of the skilled personnel.⁸²

The creation of employment opportunities for both unskilled and highly skilled workers formed part of the key factors that contributed to poverty reduction in both Indian States. Between 1991 and 2001 Karnataka's percentage of urban people living below the poverty line reduced from 40% to 25%, while Tamil Nadu's reduced from 40% to 23%.⁸³

In summary, export-oriented FDI can advance the quality and quantity of employment being generated in Africa. Foreign affiliates are usually larger and have a reputation of generating high-quality employment when compared to similar domestic firms.⁸⁴ Hence, the investing of MNC plants in African countries is likely to create job opportunities for both skilled and unskilled workers and consequently contribute to the region's economic development. Nonetheless, the expansion and sustainability of the jobs being generated by MNCs will largely depend on how these firms upgrade their activities in tune with changing labour market conditions and foreign demand for their manufactures.⁸⁵ Moreover, there is a need to improve on workers' skill, if they are to adapt to changes in global production and technology intensities. Thus, both MNCs and domestic educational and skills building systems need to play an active role in human resource training and development.⁸⁶

80 The sector's lowest grade of workers are employees with degrees or diplomas in computer science from National Institutes of Technology, while in the call centres they comprise of graduates from urban universities. However, despite these workers being lowly ranked in their specific firms, they do command higher wages when compared to the general domestic job market. *Id.*, pp. 214-215.

81 *Id.*, pp. 215-216.

82 *Id.*, pp. 214-215.

83 *Id.*, p. 210.

84 United Nations Conference on Trade and Development (1999), *supra* note 55, p. 277.

85 *Id.*

86 *Id.*

2.1.2 Technology transfer

FDI has been recognised as being one of the most important vehicles for international technology transfer.⁸⁷ This notion is grounded on the fact that MNCs undertake a great deal of private Research and Development (R&D) work and hence own, produce and control some of the world's most advanced technologies.⁸⁸ Export-oriented MNCs in particular have been found to be more technologically dynamic than other forms of FDI. MNCs technological superiority is manifested in their productivity.⁸⁹ The general hypothesis is that due to their technological superiority, MNC affiliates are more efficient than domestic firms and hence possess some productivity advantages that might spill over to their domestic counterparts.⁹⁰ Several empirical studies have tested and confirmed this hypothesis. Chuang and Lin⁹¹ randomly sampled manufacturing firms in Taiwan and came to the conclusion that foreign-owned firms experienced higher labour productivity than domestic ones.⁹² Cotton et al.⁹³ did a survey of over 392 firms in Uganda for the period 2002–2003 and found that foreign firms produced more per worker than domestic firms.⁹⁴ Fukao and Murakami⁹⁵ compared the corporate performance of foreign-owned and domestically-owned firms in Japan's manufacturing sector during the years 1994–1998 and found that foreign-owned firms enjoyed a 10% higher productivity as well

87 M. Blomstrom and A. Kokko, *Human Capital and Inward FDI*, Working Paper No 167, European Institute of Japanese Studies, Stockholm School of Economics (January 2003), p. 3, available at: <<http://swopec.hhs.se/eijswp/abs/eijswp0167.htm>>, accessed 1 February 2013.

88 *Ibid.*

89 R. Lipsey, *Home and Host Country Effects of FDI*, Paper given at the ISIT Conference on Challenges to Globalization (Sweden, 24–25 May 2002), p. 36, available at: <<http://www.cepr.org/meets/wkcn/2/2316/papers/lipsey.pdf>>, accessed 1 February 2013.

90 *Id.*

91 The research found that foreign-owned firms were also much larger and more capital intensive. See Yih-Chyi Chuang and Chi-Mei Lin, *Foreign Direct Investment, R&D and Spillover Efficiency: Evidence from Taiwan's Manufacturing Firms*, 35 *Journal of Development Studies*, no. 4 (1999), 117-137.

92 The research found that foreign-owned firms were also much larger and more capital intensive. *Id.*

93 L. Cotton, *Competing in the Global Economy: An Investment Climate Assessment for Uganda*, Research Report, World Bank Regional Program on Enterprise Development (RPED) (August 2004), available at: <<http://siteresources.worldbank.org/EXTAFRUMAFTPS/Resources/ICA002.pdf>>, accessed 1 February 2013

94 The output per worker for foreign firms was \$2,747 while for domestic firms it added to \$1,182. *Ibid.*, p. 29.

95 K. Fukao and Y. Murakami, *Do Foreign Firms Bring Greater Total Factor Productivity to Japan?* 10 *Journal of the Asia Pacific Economy*, no. 2 (2005), 237-254.

as higher returns on capital than the latter.⁹⁶ Thus, the technological superiority of foreign firms is evidenced in the fact that their productivity, measured by value per worker, is higher than local firms.

Generally, when a MNC establishes a subsidiary in a new region, the subsidiary gains some “proprietary technology” that is attached to the parent company.⁹⁷ This is often the technology that gives the parent firm its specific advantages that distinguish it from other MNCs. However, not all subsidiaries receive the parent company’s technology, as there are situations where such technology may not offer any advantages under the new market conditions. Nonetheless, when such technology is transferred from parent to subsidiary, it is done so with the intention of both maintaining the MNC’s global image by ensuring the new region receives the same standard services and products that are synonymous with the parent company and affording the subsidiary some competitive advantage that will enable it to challenge domestic firms that better understand the local markets, customer preference and business practices.⁹⁸ Hence, the global spread of MNCs essentially leads to a geographical diffusion of technology. However, this does not necessarily guarantee that such technology will spread beyond the boundaries of the MNC and its affiliates.

The manner in which developed world MNC technology will get absorbed by developing world domestic firms has been explained under the convergence hypothesis. This hypothesis states that when the productivity level of one (or several) country(ies) is substantially superior to that of a number of other economies, largely as a result of differences in their productivity techniques, those laggard countries that are not too far behind the leaders will be in a position to embark on a catch-up process.⁹⁹ This process will continue as long as the economies that are approaching the leader’s performance continue to be able to learn from the leader. As the distance between the two groups narrows, the stock of unabsorbed knowledge will grow smaller and approach exhaustion. The catch-up process consequently terminates unless some supplementary and unrelated influence fortuitously comes into play.¹⁰⁰ The application of this hypothesis to MNC technology would mean that establishing affiliates in

⁹⁶ *Id.*

⁹⁷ Blomstrom and Kokko (2003), *supra* note 87, p. 3.

⁹⁸ *Id.*

⁹⁹ M. Blomstrom and E. Wolff, “Multinational Corporations and Productivity Convergence in Mexico”, in W. Baumol, R. Nelson and E. Wolff (eds.), *Convergence of Productivity: Cross-National Studies and Historical Evidence* (New York: Oxford University Press, 1994), p. 264.

¹⁰⁰ *Ibid.*

African countries could give their domestic firms the opportunity to gradually learn and adopt the MNC's technology.

The convergence of technology to domestic firms primarily occurs through three methods: business arrangement, competition and transfer of employees. First, most MNC technology is embodied in items like machinery, patent rights and equipment which can be transferred to the domestic firms through commercial arrangements like franchising, licensing, marketing contracts, management contracts and technical service contracts.¹⁰¹ Alternatively, MNC affiliates can further enter into commercial arrangements with domestic firms for provision of support or delivery services and compel them to meet certain minimum standards and efficiency requirements, thereby inducing them to adopt new technologies and productivity methods so as to retain their commercial interest.¹⁰² Second, the entrance of foreign MNC affiliates into a domestic market generally increases competition which may force inefficient local firms to invest in human capital, physical capital and technology, in order to maintain or surpass the foreign subsidiaries' productivity levels.¹⁰³ Third, trained foreign MNCs' employees who have been exposed to their technology and productivity methods could move to other domestic firms or start their own local businesses and, thus, transfer their knowledge to their new environment.¹⁰⁴

The transfer of technology can occur on either an inter-industry or an intra-industry basis. Intra-industry spillovers occur where domestic firms engaged in the same industry as the foreign affiliates adopt the technology.¹⁰⁵ This is very common in situations where the technology convergence was brought on by competition. There is evidence to suggest that the entrance of MNC affiliates in developing countries can boost productivity growth within the relevant industry.¹⁰⁶ Alternatively, technology could be transferred inter-industry where the MNCs would influence the transfer of technology to other sectors outside their industry.¹⁰⁷ This is common where MNC affiliates enter into business arrangements with domestic firms in other sectors and demand minimum standards and efficiency requirements from them. Likewise, several studies have confirmed

101 Blomstrom and Kokko (2003), *supra* note 87, p. 11.

102 Blomstrom and Wolff (1994), *supra* note 99, p. 265.

103 *Ibid.*

104 Blomstrom and Kokko (2003), *supra* note 87, pp. 11-12.

105 Lipsey (2002), *supra* note 89, p. 40.

106 Such evidence was found in Indonesia. See F. Sjöholm, *Productivity Growth in Indonesia: The Role of Regional Characteristics and Direct Foreign Investment*, 47 *Economic Development and Cultural Change*, no. 3 (1999), 573.

107 Blomstrom and Kokko (2003), *supra* note 87, p. 7.

MNCs' and their affiliates' capacity to influence inter-industry technology transfer through various linkages such as the one mentioned above.¹⁰⁸

The adoption of new technology by domestic firms does not occur evenly across all jurisdictions and sectors. As per the convergence hypothesis, countries that are too far behind the leaders may find it somewhat difficult to absorb the leaders' knowledge.¹⁰⁹ This implies that African states may find it difficult to absorb highly-advanced technologies emanating from developed countries. In practicality, the rate at which technology diffuses into the domestic sectors depends on a number of factors such as: the market structure in which the foreign and domestic firms are operating, the terms of the licensing agreement, the education level of the local labour force and patent laws.¹¹⁰ Moreover, domestic firms have to play an active role in the absorption process as the realization and sustenance of any potential technology spillovers depends on their investment in learning or R&D activities intended to decodify the spilled knowledge.¹¹¹ Ultimately, with the right conditions and determination, African firms will be able to absorb new technologies introduced by foreign affiliates.

In summary, the introduction of foreign firms in developing countries has the potential of leading to intra- and inter-industry transfer of technology to the domestic firms. These technologies will make the industries more productive, thereby promoting economic development.

2.1.3 Export-led growth

Neoclassical economists have argued that exports greatly contribute to economic development.¹¹² This belief forms the foundation of the ELG hypothesis, which holds exports to be an engine of growth.¹¹³ Proponents of this hypothesis argue that besides increasing labour and capital, countries have to expand their exports in order to attain economic growth.¹¹⁴ The rationale behind their

108 *Id.*

109 Blomstrom and Wolff (1994), *supra* note 99, p. 264.

110 R. Findlay, *Relative Backwardness, Direct Foreign Investment, and the Transfer of Technology: A Simple Dynamic Model*, 92 *The Quarterly Journal of Economics*, no. 1 (1978), 5-6.

111 V. Kathuria, *Productivity Spillovers from Technology Transfer to Indian Manufacturing Firms*, 12 *Journal of International Development*, no. 3 (2000), 364.

112 R.K. Dash, *Revisited Export-Led Growth Hypothesis: An Empirical Study on India*, 10 *South Asia Economic Journal*, no. 2 (2009), 305-306.

113 E. Medina-Smith, *Is the Export-Led Growth Hypothesis Valid for Developing Countries? A Case study of Costa Rica* (New York and Geneva: United Nations, 2001), p. 1.

114 *Ibid.*

argument is centred on the capacity of exports to generate several positive externalities for the domestic economy such as ensuring production plants that are utilised to full capacity, fostering specialisation; generating greater economies of scale by exposing manufactures to external markets, influencing productivity across industries, improving the allocation of scarce resources and generating foreign currency.¹¹⁵

Several models have been used to test the ELG hypothesis, the most common approach being the Granger causality test which analyses the causality between export and economic growth.¹¹⁶ Under this test, “a variable X is said to cause another variable Y, with respect to a given information set that includes X and Y.”¹¹⁷ The basis of the test is intended to create predictability, as the present value of Y can be envisaged better by using past values of X.¹¹⁸ Applying this test to ELG hypothesis assesses whether export performance leads to GDP growth in various jurisdictions. Most of the studies that have focused on this test have revealed the existence of a causal relationship running from exports to GDP growth.¹¹⁹

The success of export promotion strategies in Hong Kong SAR (China), Taiwan, Singapore and South Korea in the 1960s further strengthened the ELG hypothesis.¹²⁰ In particular, the manner in which export expansion was able to successfully turnaround collapsing economies helped re-affirm the role of exports as an engine of growth. For instance, in the late 1950s, South Korea's economy faced a huge current account deficit that was largely financed by

115 *Ibid.*, p. 4; Dash (2009), *supra* note 112, pp. 305-306.

116 J. Yang, *An Analysis of So-Called Export-led Growth*, Working Paper, International Monetary Fund (September 2008), p. 8, available at: <<http://www.imf.org/external/pubs/ft/wp/2008/wp08220.pdf>>, accessed 1 February 2013.

117 A. Boltho, *Was Japanese Growth Export-Led?* 48 Oxford Economic Papers (1996), 418.

118 *Ibid.*

119 Studies that found a positive Granger-causal relationship from exports to real GDP growth include; J. Thornton, *Cointegration, Causality and Export-led Growth in Mexico 1895–1992*, 50 *Economic Letters*, no. 3 (1996), 413-416; M. Michaely, *Exports and Growth: and Empirical Investigation*, 4 *Journal of Development Economics*, no. 1 (1977), 149-153; B. Bela, *Exports and Economic Growth: Further Evidence*, 5 *Journal of Development Economics*, no. 2 (1978), 181-189; W. Tyler, *Growth and Export Expansion in Developing Countries: Some Empirical Evidence*, 9 *Journal of Development Economics* (1981), 121-130; P. Chow, *Causality between Export Growth and Industrial Performance: Evidence from NICs*, 26 *Journal of Development Economics*, no. 1 (1987), 55-63; M. Bahmani-Oskooee and J. Alse, *Export Growth and Economic Growth: An Application of Cointegration and Error-Correction Modeling*, 27 *Journal of Developing Areas*, no. 4 (1993), 535-542; E. Doyle, *Export-output Causality: The Irish case 1953–93*, 26 *Atlantic Economic Journal*, no. 2 (1998), 147-161; Z. Xu, *On Causality between Export Growth and GDP Growth: An Empirical Reinvestigation*, 4 *Review of International Economics*, no. 2 (1996), 172-184.

120 Medina-Smith (2001), *supra* note 113, p. 2.

foreign aid.¹²¹ However, the adoption of the export promotion policy in the 1960s lead to an increased return on exports which drastically enhanced South Korea's growth rates to the double digit range.¹²² Similarly, Taiwan's adoption of the strategy also transformed it "from a high-inflation, inner-oriented, aid-dependent economy to a major exporting economy."¹²³ The success of the Asian tigers ensured that the validity of the ELG hypothesis received wide acceptance among policy makers and researchers by the early 1980s.¹²⁴

However, the ELG hypothesis has attracted several criticisms. Neoclassical proponents of the Growth-Led Exports (GLE) hypothesis advance a contrary notion, arguing that increase in GDP is what leads to corresponding growth in trade and exports.¹²⁵ The GLE orthodoxy suggests that output growth is caused by non-export-related factors like productivity growth and primary input growth.¹²⁶ The resulting GDP growth leads to improvement of skills and technology and, with this, increased efficiency that creates a comparative advantage for a country to raise its export capacity.¹²⁷ Other criticisms have focused on the method used to demonstrate the ELG hypothesis. It has been contended that a number of ELG-supporting research have relied on a bivariate correlation – the spearman rank correlation test, which may be misleading in some circumstances.¹²⁸ The spearman rank correlation analysis which is centred on a two-variable framework, where economic growth is explained in relation to export expansion alone, often does not produce accurate results when applied in a cross-country framework.¹²⁹ Studies that have utilised the test on cross-country data have implicitly assumed that developing countries share common economic structures, characteristics and production technologies.¹³⁰ This assumption may give a false perception as many of these countries differ in terms of economic, political and institutional structures.¹³¹

121 A. Krueger, *Trade Policy and Economic Development: How We Learn*, 87 *The American Economic Review*, no. 1 (1997), 9.

122 *Ibid.*

123 *Ibid.*

124 Dash (2009), *supra* note 112, p. 306.

125 *Id.*, p. 307.

126 *Id.*

127 *Id.*

128 *Id.*, p. 308.

129 Medina-Smith (2001), *supra* note 113, p. 5.

130 Dash (2009), *supra* note 112, p. 308.

131 A. Hatemi-J and M. Irandoust, *Time-Series Evidence for Balassa's Export-Led Growth Hypothesis*, 9 *Journal of International Trade and Economic Development*, no. 3 (2000), 356.

Despite the mixed findings, it is the author's view that the ELG hypothesis can hold its ground. The recent growth experienced by China strongly supports the view that export expansion has the capacity to jumpstart stalled economies. Over the past three decades China has aggressively pursued an export-led industrialisation policy that has successfully transformed it from a "planned economy" to a market economy with an annual GDP growth rate of 9.8%.¹³² Touted as the "world factory", China's exports grew at an annual average rate of 26.5% from 2004 to 2007 thereby making it the world's largest exporter.¹³³ China's high dependency on exports has helped it industrialise to levels that are above average for any emerging economy.

Though China's export-led industrialisation success is far from being a universal norm, it suggests that exports have the potential to promote GDP growth. Perhaps, the only problem with China's export policy that can be regarded as a failure of the ELG hypothesis is that such growth cannot be sustained. China's ELG has not been conducive to the creation of internal demand and development of its domestic service economy. These shortcomings were exposed during the recent global economic recession. The 2007–2010 financial crisis set off an international trade meltdown with increased consumer uncertainty that drastically reduced export demands.¹³⁴ In 2008, China's export growth rate dropped to 17.2% which was the lowest rate it had experienced since 2004.¹³⁵ Subsequently, employment pressure increased in China's numerous export-oriented industries and the government was forced to implement a string of measures intended to stimulate domestic demand.¹³⁶ Nonetheless, the recent growth experienced by China has strongly supported the view that export expansion has the capability to jumpstart stalled economies.

Though econometric studies on ELG have produced mixed findings, the strong impact that export promotion policies have had on several developing countries cannot be ignored. At best ELG has the potential of jumpstarting stalled economies as experienced by the Asian tigers and China. Therefore, attracting export-oriented investors to African countries could help in the expansion of exports and, therefore, lead to ELG. However, such growth cannot be

132 Y. Xu, *China's Export-led Growth Strategy: An International Comparison*, 18 *China and World Economy*, no. 4 (2010), 18.

133 China's export grew at an annual rate of 35.7% in 2004, 23.2% in 2005, 23.8% in 2006, and 23.5% in 2007. See L. Li, "The Chinese Economy After the Global Crisis", in N. Verma (ed.), *Recession and Its Aftermath: Adjustments in the United States, Australia and the Emerging Asia* (India: Springer, 2013), p. 82.

134 Xu (2010), *supra* note 132, p. 28.

135 Li (2013), *supra* note 133, p. 82

136 Xu (2010), *supra* note 132, p. 28.

sustained over long periods without attending to other economic factors, such as fostering domestic demand.

3 The impact of border inefficiencies on vertical FDI inflows

3.1 Customs inefficiency disrupting vertical FDI flows to Africa

One key barrier to the flow of vertical FDI into Africa is the inefficient customs practices experienced at many of the continent's state borders. Though the role of customs in attracting FDI has been overlooked in most investment incentive research, its importance cannot be understated.¹³⁷ While a number of developed countries have streamlined their border processes and reduced their documentation requirements, the customs agencies of many African countries still demand a host of documentation to process imports and exports. Moreover, such paperwork is usually repetitive, as the documents and data have to be rewritten several times during preparation and processing. A number of customs administrations in sub-Saharan Africa also insist on carrying out intrusive manual inspections of a large number of containers.¹³⁸ All these cumbersome processes have resulted in clearance delays. For instance, countries like Singapore and Honk Kong SAR (China) require exporters to submit four documents which take an average of 2 days to prepare and clear through customs and technical control, while Angola and Congo Republic, both of which require the submission of 11 documents, take an average of 30 and 40 days, respectively, for such preparation and clearance.¹³⁹ Generally, it takes an average of

137 Most investment studies looking at the economic, political and institutional factors affecting FDI inflow have failed to examine the role of customs. A. Wint and D. Williams, *Attracting FDI to Developing Countries: A Changing Role for Government?* 15 *The International Journal of Public Sector Management*, no. 5 (2002), 362-364.

138 A. Geourjon et al., "Inspecting Less to Inspect Better: The Use of Data Mining for Risk Management by Customs Administrations", in T. Cantens, Robert Ireland and G. Raballand (eds.), *Reform by Numbers: Measurement Applied to Customs and Tax Administrations in Developing Countries* (Washington, DC: The World Bank, 2013), p. 84.

139 The countries selected have seaports and the delay period is mostly attributed to preparation and clearance. See The World Bank, *Trading Across Borders* (2012), available at: <<http://www.doingbusiness.org/data/exploretopics/trading-across-borders>>, accessed 1 February 2013.

20 days to clear exports through customs and technical control in sub-Saharan Africa, compared to 6 days in the developed countries.¹⁴⁰

The delay occasioned by the manual processes, bulky paperwork and duplication of information has an impact on Trade Transaction Costs (TTCs). Generally, the slow processing of documentation results in stalling of the imported or exported cargo at border points. Such interruptions in trade flow would affect the cost and value of the cargo in several ways. First, if the goods at the port are perishable, the hold-up in clearance may generate product losses or other additional costs intended to keep the goods in consumable condition, such as extra-cost of refrigeration or cost of adding preservative chemicals.¹⁴¹ Second, carriers would demand container demurrage for delays experienced in releasing the goods from their container.¹⁴² Finally, if the cargo being imported/exported has a limited shelf time, the prolonged delays may completely push the product out of the market thereby resulting in the loss of a business opportunity.¹⁴³ The increased TTCs are further reflected in container costs. The World Bank has noted higher container costs in countries that experience longer preparation and clearance periods. For instance, the cost of exporting a standard container from Singapore is estimated at US\$456, whereas in Angola it costs US\$1,850.¹⁴⁴

Thus, the reliance on paper documents and manual clearance processes has resulted in border inefficiency in many African countries. These inefficiencies act as a barrier to export-oriented FDI by increasing export costs, disrupting Just in Time (JIT) processing, limiting the quantity of manufactured goods and disrupting access to investors markets.

3.1.1 Increased export costs

As noted above, delays associated with inefficient customs processes increase the TTCs of manufactured exports. Such costs affect investors by increasing the

140 The data selected only includes time for document preparation, customs clearance and technical control. It compares Africa and OECD countries. See World Bank, *Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises* (Washington, DC: World Bank, 2012), p. 89.

141 Engman (2009), *supra* note 3, p. 92.

142 S. Beecher, *Can the Electronic Bill of Lading Go Paperless?* 40 *International Lawyer* (2006), 634.

143 Engman (2009), *supra* note 3, p. 92.

144 The figures take into account the costs associated with all procedures required to export goods. They include: documentation costs, administrative fees for customs clearance and technical control, customs broker fees, terminal handling charges and inland transport. See The World Bank (2012), *supra* note 139.

price of the manufactured goods, thereby affecting their price difference as against rival products. This defeats the whole purpose of export-oriented investment, as the exports become less competitive in international markets. Hence, investors determined to establish manufacturing facilities in developing countries would likely steer clear of countries that have inefficient border management practices.

3.1.2 Disrupting just in time processing

Border inefficiencies affect not only exports but also imports. Imports play a major role in today's GVC framework, as JIT processing has dominated the business environment with over 60% of global production and sales being processed directly to order.¹⁴⁵ Consequently, manufacturers expect uninterrupted delivery of inputs and cannot afford to have them "tied up at the border because of unnecessary or over-complicated customs procedures."¹⁴⁶ Any unreliability in the input delivery process would force MNCs to maintain higher levels of stock, which ultimately increases production costs.¹⁴⁷ Therefore, border inefficiencies could discourage potential investors or influence them to move their facilities elsewhere. Such a situation occurred in Ontario, Canada. After the dreadful events of September 11, 2001, the Canadian government heightened its border security measures.¹⁴⁸ These drastic changes combined with insufficient staffing led to increased border delays and congestion, with Ontario's average length of delay increasing by 1–2 hours.¹⁴⁹

The delays disrupted Ontario's car manufacturing industry which was largely dependent on imports of parts from the U.S.¹⁵⁰ It is estimated that about 80%

145 K. Mbekeani, *Infrastructure, Trade Expansion and Regional Integration: Global Experience and Lessons for Africa*, 19 *Journal of African Economies*, Supplement 1 (2010), i92.

146 United Nations Economic Commission for Africa (UNECA), *Assessing Regional Integration in Africa IV: Enhancing Intra-African Trade* (Addis Ababa, Ethiopia: United Nations Economic Commission for Africa, 2010), p. 197.

147 It has been estimated that many manufacturing companies in developing countries have inventory holdings that are 200–500% higher than in the United States and that halving these inventories could lower unit production costs by 20%. *Ibid.*, p. 202.

148 Ontario Chamber of Commerce Borders and Trade Development Committee, *Cost of Border Delays to Ontario*, Ontario Chamber of Commerce Report (2004), pp. 5-6.

149 *Ibid.* For more reading on the policy changes that resulted in Ontario's border delays see B. Anderson, *The Border and The Ontario Economy*, Cross-Border Transportation Centre Report, University of Windsor (2012), pp. 14-15.

150 Ontario is U.S.'s fourth largest trading partner after China, Mexico and Canada. It is estimated that over CND \$ 1 billion pass through the Canadian – U.S. border every day, of which 60% goes through Ontario. *Ibid.*, p. 3.

of all of Canada's automotive inputs came from the U.S.¹⁵¹ Canadian manufacturers had subsequently adapted to the situation by relying on JIT logistics systems.¹⁵² The guaranteed timely arrival of necessary components enabled manufacturers to hold small inventory. This greatly benefitted the automotive industry, as their components are quite large and costly to store. It is estimated that an hour's inventory carrying cost at an assembly plant was approximately CND\$ 1,056,000.¹⁵³ Thus, the JIT logistics proved to be an excellent way of reducing site inventory and minimizing costs.

However, the resulting border delays forced some manufacturers to revert to keeping large inventories thereby incurring costs.¹⁵⁴ For others who did not want to increase their inventories, the delays at the border meant a delay in output resulting in loss of sales.¹⁵⁵ This affected Ontario's capacity to attract new investment as well as maintain existing ones. The disruption of JIT reduced the incentive for manufacturers to establish new assembly plants in Canada and American manufacturers started de-sourcing from Canadian component manufacturers in favour of U.S. suppliers.¹⁵⁶

3.1.3 Limiting quantity of manufactured goods

Customs inefficiencies further hamper a firm's ability to export the desired quantity of goods. It has been argued that customs delays have a negative impact on Total Factor Productivity (TFP).¹⁵⁷ TFP is a variable used to measure the "portion of output not explained by the amount of input used in production."¹⁵⁸ Traditionally, a firm's productivity was "measured as a ratio of output

151 The heavy import reliance resulted from a lack of input parts within Canadian borders. *Ibid*, p. 15.

152 This system was centred on the proficient and timely delivery of inputs into an assembly plant when required, instead of stockpiling them in inventory. *Ibid*, pp. 17-18.

153 *Ibid*.

154 *Ibid*.

155 It is estimated that a 1 hour loss of output costs the automotive industry approximately CND \$80,000. *Ibid*, p. 18.

156 *Ibid*, p. 19.

157 U. Subramanian, W. Anderson and K. Lee, *Measuring the Impact of the Investment Climate on Total Factor Productivity: The Cases of China and Brazil*, Policy Research Working Paper No 3792, World Bank (December 2005).

158 D. Comin, "Total Factor Productivity", in S. Durlauf and L. Blume (eds.), *The New Palgrave Dictionary of Economics Online* (2nd ed., Palgrave Macmillan, 2008).

to inputs.”¹⁵⁹ However, it was later discovered that the traditional input measurements (that is, labour and capital) failed to explain large portions of output growth.¹⁶⁰ Hence, scholars like Subramanian, Anderson and Lee have attributed a firm’s productivity to be influenced by other non-input factors like its management practices, marketing strategies and the institutional environment in which it operates.¹⁶¹

The measuring of a firm’s output levels forms an important part of the manufacture process, as these logistics are used in determining whether the firm will be able to meet market demands or maintain continuous operations in circumstances where the intermediate output is required for the next production phase. Subramanian, Anderson and Lee found that the number of days used to clear exports through customs had a strong influence on TFP.¹⁶² According to their study, a 1-day reduction in China’s export clearance time would result in more than 6% increase in TFP for consumer goods and a 2% increase for apparels and leather goods.¹⁶³ The same study also found that the TFP for Brazil’s apparel industry would increase by 5% if export clearance time was reduced from 10.3 days to 6.7 days.¹⁶⁴ Hence, customs clearance time, as an investment variable, has an impact on TFP. The translation of these findings to investors would mean that countries with longer customs clearance periods would not form ideal investment locations as the delays would result in lower productivity that would either slow down the MNC’s global production chain or render it incapable of meeting market demand.

3.1.4 Disrupting access to markets

Border efficiency plays a role in determining investors’ access to different markets. In today’s GVC structure, MNCs try to locate their facilities in regions that will allow for efficient movement from one value chain to another. In this regard, access to key markets has been acknowledged to be an essential condition for attracting export-oriented activities.¹⁶⁵ However, customs delays may

¹⁵⁹ I. Nadiri, *Some Approaches to the Theory and Measurement of Total Factor Productivity: A Survey*, 8 *Journal of Economic Literature*, no. 4 (1970), 1138.

¹⁶⁰ *Ibid.*, p. 1139.

¹⁶¹ Subramanian, Anderson and Lee (2005), *supra* note 157, p. 1.

¹⁶² *Ibid.*, p. 22.

¹⁶³ *Ibid.*

¹⁶⁴ *Ibid.*

¹⁶⁵ United Nations Conference on Trade and Development, *World Investment Report 2002: Transnational Corporations and Export Competitiveness Overview* (New York and Geneva: United Nations, 2002), p. 19.

change the dynamics of an investment location being close to the target market. A World Bank report investigating the impact of time delays on export of goods found that a 1-day pre-shipping delay reduced trade by more than 1%.¹⁶⁶ Using a regression equation, the report concluded that each additional day an export was delayed was comparable to a country distancing itself from its trading partners by about 70 km.¹⁶⁷

Practically, this means that though a country may be suitably located close to the target market, any delays in customs clearance may cause goods shipped from a distant location to arrive at the target destination much faster than its own. For instance, the distance from the Kenyan port of Mombasa to London port via the Suez Canal is around 6,222 n.m. (11,523.14 km), while the distance from India's Mumbai port to London, via the same route, is around 6,279 n.m. (11,628.71 km).¹⁶⁸ However, even if the sea distance to the UK from Kenya is much shorter than from India, goods travelling from Mumbai port would be destined to arrive in London faster than goods being shipped from the port of Mombasa if it took the Kenyan customs 2 days longer to clear them. Hence, though Kenya may be the most suitable location for British investors wishing to manufacture and export to their home facilities, the customs delays would discourage them from setting up plants in Kenya and instead take their investments to India.

3.2 Empirical link between border inefficiency and FDI

The inter-link between border inefficiency and FDI has further been underscored in several quantitative studies. For instance, Radelet and Sachs¹⁶⁹ adduce empirical evidence that shows that countries with lower TTCs (here equivalent to shipping costs) have experienced higher economic and manufacturing export

166 The report investigated the export delays caused by factors like poor infrastructure and inefficient customs procedures. The report attributed 75% of export delays to customs related administrative hurdles. See S. Djankov, C. Freund and C. Pham, *Trading on Time*, Policy Research Working paper No WPS 3909, World Bank (May 2006), p. 9, available at: <http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=478060&piPK=64165421&menuPK=64166093&entityID=000016406_20060503112822>, accessed 1 February 2013.

167 *Ibid*, p. 4.

168 Calculations derived from Sea distance, *voyage calculator*, available at <<http://sea-distances.com/>>, accessed 1 February 2013.

169 S. Radelet and J. Sachs, *Shipping Costs, Manufactured Export, and Economic Growth*, Harvard Institute for International Development paper (1998), available at: <<http://admin.earth.columbia.edu/sitefiles/file/about/director/pubs/shipcost.pdf>>, accessed 1 February 2013.

growth over the last 30 years than those with higher TTCs.¹⁷⁰ This view is supported by the fact that the TTCs play a dominant role in the cost-benefits calculations used by MNCs in selecting manufacturing locations.¹⁷¹ A study conducted by Dollar et al.¹⁷² examining 7,302 companies in eight developing countries concluded that customs clearance time was a key determinant of foreign investment inflow.¹⁷³ Another survey conducted by the European Round Table of Industrialists among its member companies found that one-fifth of the companies had “foregone or abandoned investment opportunities or business activities in developing countries because of inefficient border procedures.”¹⁷⁴ The same study also found that four-fifths of the companies were willing to either set up new local investments or increase their business activities in developing countries that made substantial improvements in trade facilitation.¹⁷⁵

Thus, the importance of customs efficiency to FDI inflow is not hypothetical. By streamlining their customs processes, African countries will potentially be able to attract export-oriented investments and thereby reap the economic benefits attached to such FDI.

4 Improving customs efficiency for investment

The inefficiency in border procedures that has disrupted the flow of FDI in many African countries can be resolved through implementation of single window systems. A single window system is essentially “a cross border, ‘intelligence’, facility that allows parties involved in trade and transport to lodge standardised information, mainly electronic, with a single entry point to fulfil all import, export and transit related regulatory requirements.”¹⁷⁶ These systems have the

170 *Id.*

171 Engman (2009), *supra* note 3, p. 103.

172 D. Dollar, M. Hallward-Driemeier and T. Mengistae, *Investment Climate and International Integration*, World Bank Policy Research Working Paper 3323 (2004), available at: <<http://siteresources.worldbank.org/INTINVTCLI/Resources/InvestmentClimateandInternationalIntegration.pdf>>, accessed 1 February 2013.

173 *Ibid.*, pp. 25-26.

174 Engman (2009), *supra* note 3, p. 106.

175 *Ibid.*

176 The WCO prefers to use the term single window environment as single window implementation involves a collection of interdependent facilities, regulative requirements and border agencies business processes. See World Customs Organisation, *Single Window* (2012), available at: <<http://www.wcoomd.org/sw.htm>>, accessed 1 February 2013.

capacity to reduce clearance time in a number of ways. First, the automation of regulatory processes expedites the sorting, matching, filing and reconciling of trade documents. Second, such systems are less prone to errors, and if well engineered would avoid repetition of information and thus eliminate delays occasioned by duplication of information. For example, the introduction of South Korea's uTradeHub enabled seamless linkages with all trade-related agencies, which helped reduce the unnecessary repetitive submission of documents to separate agencies that companies were forced to endure prior to the introduction of the system.¹⁷⁷ Last, such systems have the capacity to streamline border inspection through the introduction of risk management applications. The systems can be computed with statistical targeting techniques that can effectually predict and detect risky consignments, thereby effectively controlling the number of physical inspections. For instance, the introduction of an electronic cargo risk management system that helped in the detection of high risk consignments in the Chilean customs system reduced physical inspections by 5–12%, which reduced delays resulting from cumbersome physical inspection.¹⁷⁸

The introduction of single window systems in a number of jurisdictions has greatly increased processing speed. For instance, the Singapore TradeNet system reduced cargo clearance time from 15–20 days to 15 min.¹⁷⁹ Similarly, the Thailand national single window reduced customs clearance turnaround time for a standard declaration from 3 to 10 days to less than 5 min.¹⁸⁰ These efficiency gains have further reduced TTCs and resulted in cost savings for both exporters and government. For example, the introduction of Dagang Net

177 Byung-Soo Ahn and Min-Chung Han, *A Comparative Study on the Single Window between Korea and Singapore*, 11 *Journal of Korea Trade*, no. 3 (2007), 9.

178 UNCTAD, *ICT Solutions to Facilitate Trade at Border Crossings and in Ports*, Note TD/B/COM.3/EM.27/2 (2006), p. 13, available at: <http://www.unctad.org/en/docs/c3em27d2_en.pdf>, accessed 1 February 2013.

179 Australia Department of Foreign Affairs and Trade and China Ministry of Foreign Trade and Economic Cooperation, *Paperless Trading: Benefits to APEC: The Potential for the APEC Paperless Trading Initiative* (Department of Foreign Affairs and Trade, 2001), p. 3.

180 The turnaround period was for declarations being processed by customs and does not include the period taken by other border regulatory agencies. S. Kiatjanon, *Towards a Single Window Trading Environment: Developing a National Single Window for Import, Export and Logistics in Thailand*, Policy Brief no 8, United Nations Network of Experts for Paperless Trade in Asia and the Pacific (UNNEXt) (August 2012), p. 6, available at: <<http://www.unescap.org/tid/unnext/pub/brief8.pdf>>, accessed 1 February 2013.

in Malaysia reduced the turnaround time for Port Klang from 4 days to 2 days which resulted in cost savings of about US\$ 29 million for the port community.¹⁸¹ The implementation of Japan's NACC system also resulted in benefits to private sector users of about ¥22.7 billion p.a. and benefits to customs of about ¥32.6 billion p.a.¹⁸² Finally, the installation of the South Korea's uTradeHub was estimated to bring savings of about US\$550 million in labour and document management costs and a further US\$2.9 billion in warehousing and inventory management costs.¹⁸³

However, the expedition of border processes facilitated by single window systems carries the risk of undermining border security. This may occur in circumstances where such systems replace 100% manual cargo inspection practices with computed random risk analysis techniques that could create loopholes for smugglers to import illegal goods. Therefore, border agencies have to carefully ensure that their single window systems are backed by effective statistical scoring techniques for measuring risks.¹⁸⁴

Despite their benefits, single window systems are still taking root in many countries. A survey of 181 economies conducted by the World Bank found that only 71 countries had implemented single window systems. Of the 71, only 18 had comprehensive single window systems that linked all government agencies, while 53 had systems that partially linked the relevant agencies.¹⁸⁵ Presently, very few African countries have implemented single window systems, they

181 Z.M. Salleh, *Towards a Single Window Trading Environment: Case of Malaysia's National Single Window*, Policy brief no 4, United Nations Network of Experts for Paperless Trade in Asia and the Pacific (UNNExT) (July 2010), p. 2, available at: <<http://www.unescap.org/tid/unnext/pub/brief4.pdf>>, accessed 1 February 2013.

182 T. Sawafuji, *Towards a Single Window Trading Environment: Japan's Development of a Single Window- Case of NACCS*, Policy Brief no 6, United Nations Network of Experts for Paperless Trade in Asia and the Pacific (UNNExT) (April 2011), p. 4, available at: <<http://www.unescap.org/tid/unnext/pub/brief6.pdf>>, accessed 1 February 2013.

183 Paperless Trade Office of the Korea International Trade Association, Republic of Korea, *Towards a Single Window Trading Environment: Case of Korea's National Paperless Trade Platform – uTradeHub*, Policy Brief no 3, United Nations Network of Experts for Paperless Trade in Asia and the Pacific (UNNExT) (April 2010), p. 4, available at: <<http://www.unescap.org/unnext/pub/brief3.pdf>>, accessed 1 February 2013.

184 For more reading on statistical customs risk management techniques see Geourjon et al. (2013), *supra* note 138, pp. 83-101.

185 World Bank, *Doing Business 2012: Doing Business in a More Transparent World* (Washington, DC: World Bank, 2012), p. 13.

include: Ghana (GCnet system),¹⁸⁶ Mauritius (TradeNet system),¹⁸⁷ Mozambique (MCNet),¹⁸⁸ Senegal (ORBUS)¹⁸⁹ and Nigeria (Nigeria Integrated Customs Information System).¹⁹⁰

Accordingly, other African countries need to modernize their border procedures in order to improve on their border efficiency, which will increase their competitiveness in attracting export-oriented investors.¹⁹¹

5 Conclusion

FDI has always been a major source of capital for many developing economies. In recent years, developing countries have continuously implemented different policies aimed at attracting MNCs, the main drivers of FDI. Nonetheless, the evolution of MNC activity has led to an era where production is fragmented into GVCs. Today's FDI is centred on exports and export-related activity whereby MNCs are interwoven in a network of industrial relations and international trading. These export-oriented investments have the capacity to help African economies grow through creating employment, transferring technology which boosts productivity and fostering ELG. However, the unique nature of these investments has put customs efficiency at the centre of MNC decision making. Inefficient border management practices have limited Africa's capacity to attract investors by increasing export costs, disrupting JIT processing, limiting the quantity of manufactured goods and disrupting access to investors markets. Thus, by improving border efficiency through implementing single window

186 Ghana Community Network Services Limited (GCNet), *About Us*, available at: <http://www.gcnet.com.gh/aboutus/mission_objectives.asp>, accessed 1 February 2013.

187 Mauritius Network Services, *TradeNet*, available at: <<http://mns.mu/tradenet-trade-facilitation.php>>, accessed 1 February 2013.

188 Mozambique Community Network (MCNet), *Introduction to MCNet*, available at: <<http://www.mcnet.co.mz/procedures.aspx?chapter=1&subchapter=1&lang=en-US>>, accessed 1 February 2013.

189 I. Diagne, *Towards a Single Window Trading Environment: Senegal's Transition from a Paper-Based System to a Paperless Trading System*, Policy Brief no 5, United Nations Network of Experts for Paperless Trade in Asia and the Pacific (UNNExT) (July 2011), available at: <<http://www.unescap.org/unnext/pub/brief5.pdf>>, accessed 1 February 2013.

190 Nigeria Customs Service, *NICIS Electronic Trade Platform*, available at: <<https://www.customs.gov.ng/downloads/nicis-brochure.pdf>>, accessed 1 February 2013.

191 It should be noted that there are different technological and legal challenges facing the implementation of single window systems in many African countries. However, discussions on these challenges go beyond the scope of this article.

systems, African countries will be able to improve their competitiveness in attracting export-oriented investments.

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