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Does FDI Work for Africa? Assessing Local Spillovers in a World of Global Value Chains

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The extent to which developing countries benefit from foreign direct investment (FDI) depends on whether they are able to realize the productivity-enhancing benefits of knowledge and technology spillovers from foreign investors. To date, the experiences in Sub-Saharan Africa have been largely disappointing. This is perhaps not surprising, bearing in mind the complex interplay of factors needed for spillovers to emerge. On top of the challenges of supply side capacity and the host country's policy environment, the willingness and capacity of foreign investors to support spillovers vary hugely across sectors and firms, and are shaped by the dynamics of the global value chains (GVCs) in which they operate. This note summarizes the main findings from the new World Bank book Making Foreign Direct Investment Work for Sub-Saharan Africa and discusses the implications for policy makers hoping to harness the potential of FDI for better development outcomes.

FDI to low- and middle-income countries expanded 30-fold in the last 20 years, almost 6 times faster than in high-income countries and nearly 10 times faster than global gross domestic product (GDP). This rapid growth resulted partially from liberalization in global trade and investment regimes and partially from advances in transport and communications, which together allowed multinational firms to extend their market reach and expand the scale and scope of offshoring in GVCs.

For recipient countries, FDI delivers immediate investment, employment, and foreign exchange. However, the most valuable contribution that FDI can make to growth and development comes from its contribution to aggregate productivity growth over the longer term. This contribution results from “spillovers”—the diffusion of knowledge, technology, and work practices from foreign investors operating near the global frontier to local firms and workers. Spillovers can take place within the same industry (intraindustry, or horizontal spillovers) or in another industry (interindustry, or vertical spillovers). In the latter case, they can affect local inputs or services suppliers in upstream sectors (backward spillovers) and local customers in downstream sectors (forward spillovers).

Substantial research has been conducted on the existence and direction of spillovers from FDI, but questions remain, many concerning the underlying mediating factors and transmission channels facilitating FDI spillovers. Moreover, there has been limited exploration of spillovers in the context of low-income countries (LICs) and in Sub-Saharan Africa, particularly outside the manufacturing sector. Finally, the emergence of GVCs raises new questions about spillovers in developing countries. On one hand, GVCs create opportunities by allowing developing countries to integrate rapidly into global networks. But at the same time, both value chain structures and supply side barriers may make it difficult for these spillover opportunities to be realized.

This note summarizes the main findings from *Making Foreign Direct Investment Work for Sub-Saharan Africa* (Farole and Winkler 2014), which aims to address some of these questions through a combination of quantitative analysis and survey-based field research in eight countries (including five in SSA) across three sectors: agribusiness, apparel, and mining.

A Conceptual Framework

Based on the existing literature and empirical evidence, figure 1 outlines a conceptual framework for exploring the determinants of spillovers from FDI. The framework is built on an understanding of the mediating factors that shape the nature and extent of spillovers, specifically: (i) the spillover potential of foreign investors; (ii) the absorptive capacity of local agents (firms and workers); (iii) and how these two factors interact within specific host country institutional environment and the transmission channels.

The transmission channels through which FDI spillovers can be generated include: (i) supply chains, (ii) labor turnover, and (iii) changing market forces. In short, multinationals tend to demand higher-quality inputs, which gives local suppliers

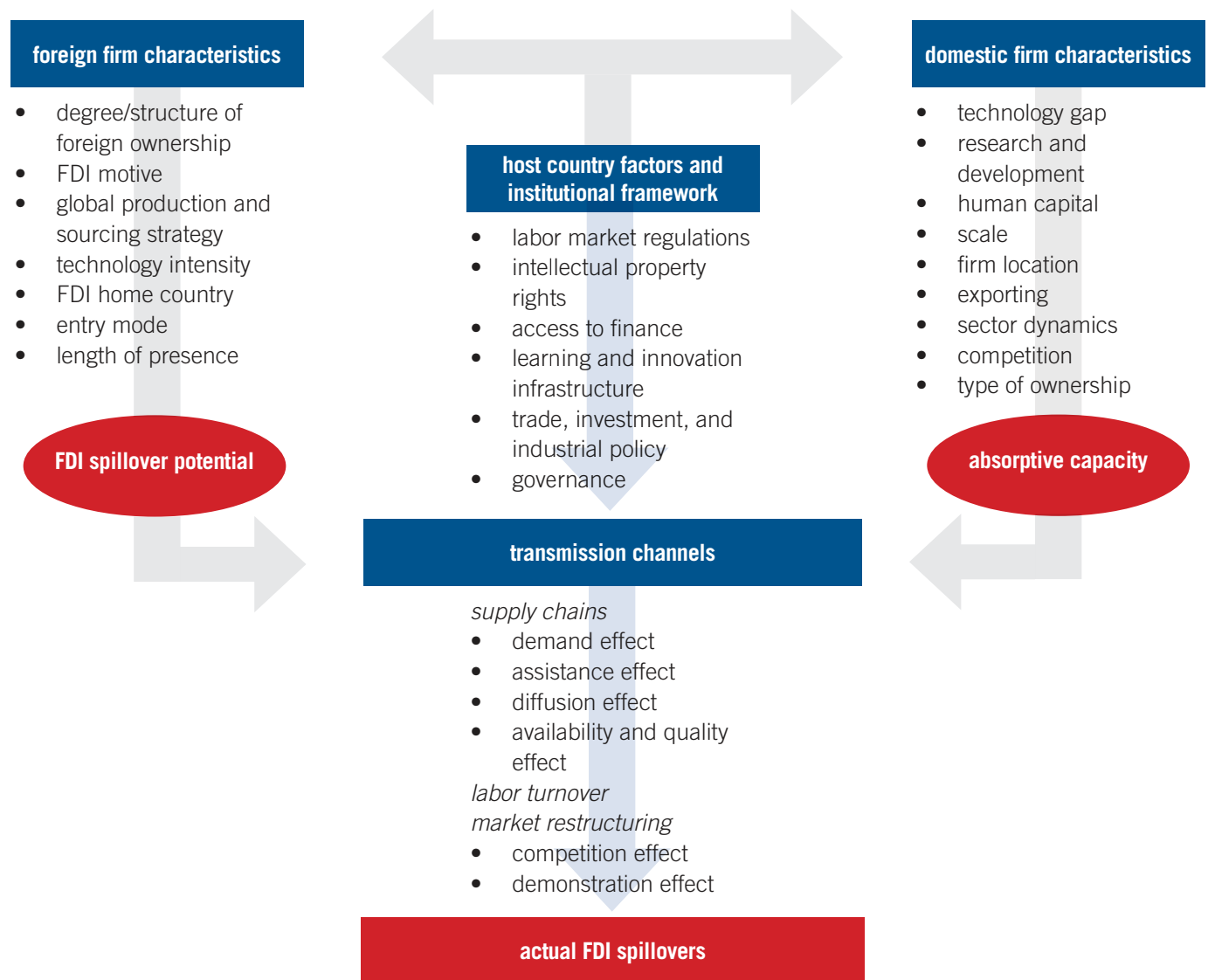
incentives to upgrade their technology and may also diffuse knowledge to local firms. In addition, the multinationals may provide higher-quality inputs to domestic customers. Competition between local firms may increase and local firms may try to imitate the multinational's products and practices. In addition, knowledge embodied in labor can transmit from foreign to local firms through labor turnover.

This note summarizes the key findings of the research, built around the three transmission channels: supply chains; labor markets; and the market forces of competition, demonstration, and collaboration.

Supply Chain Links

Local sourcing is the critical channel for delivering positive spillovers. Supply chains, particularly backward links

Figure 1. The Role of Mediating Factors for FDI Spillovers: A Conceptual Framework



Source: Farole, Staritz, and Winkler (2014, 24), extending the framework of Paus and Gallagher (2008).

through local sourcing, appear to offer the most direct channel for short- and long-term gains from FDI spillovers. They also tend to be the most visible and easiest to quantify, which increases their importance for policy makers. In the mining sector, for example, one-third of all surveyed local suppliers of foreign investors in Ghana and 42 percent in Chile started to export directly as a result of supplying foreign investors. And behavior within the supply chain matters: assistance of foreign investors to local supply chain partners has an important impact on spillover outcomes (table 1).

The experience of supply chain links has been generally poor in LICs, but evidence suggests it is possible to build meaningful links over time. Evidence from surveys and case studies indicates low levels of purchasing of goods and services from local suppliers in developing countries, particularly in African countries and in the apparel sector. However, Ghana's experience in the mining sector, for example, shows that it is possible to develop some local presence in foreign supply chains over time by establishing the right conditions and market incentives and building on existing local capacity. A clear finding from the surveys is that foreign investors would much prefer to not have to rely on importing goods and services, but would rather have suppliers with whom they can interact on a face-to-face basis and that can respond quickly when needed.

Global supply chain management trends are reducing opportunities for local supply participation. Across all value chains reviewed in the study, there is a clear trend toward global supply chain management, which tends to result in the most strategic and high-value purchases being coordinated on a global or regional level. This could potentially create opportunities in countries that may be regional source markets. However, for most LICs, it will impose significant limits on spillovers through domestic supply links. Moreover, foreign investors are less likely to give assistance to local suppliers when supply contracts are ad hoc (rather than formalized and long term).

Short-term opportunities come through outsourcing of noncore services. But there is a trade-off, because these activities are less likely to deliver spillovers. For example, in Lesotho and Swaziland, the most common activity provided by domestic suppliers was security services—beyond these were cleaning, basic maintenance, and catering. But across countries, findings show that provision of assistance to local suppliers was much more likely when the goods and services they provide are core parts of the upstream value chain. For example, in the agribusiness sectors, local firms that provide raw materials for agriprocessing are most likely to receive assistance, and in the apparel sector, cut-make-trim subcontractors are most likely to receive assistance.

Assistance effects in supply chains tend to be limited and narrow in their focus, but emphasis on quality and standards still represents an important area of potential for upgrading for domestic firms. Overall, the level of assistance provided from FDI to local suppliers was found to be low across countries and sectors. Moreover, these efforts are concentrated on issues that are related to their specific needs—for example, financial support would focus on meeting short-term working capital (to avoid delays in production and delivery), but not on longer-term finance, which would enable suppliers to invest in improving productivity and embedding spillover benefits. Support tends to be linked to compliance issues, such as health, safety, and environmental and quality. However, even when quality and standards are firm specific, they are often built on

Table 1. The Effect of Factors within Supply Chains on Suppliers' Probability of Starting to Export, Probit

Dependent variable: exp_start_{isc}						
	(1)	(2)	(3)	(4)	(5)	(6)
$audit_{isc}$	0.8551** (0.049)					0.9166* (0.071)
$impr_{isc}$		0.3366 (0.468)				-0.1203 (0.827)
$assist_{isc}$			1.3256*** (0.008)			1.4075*** (0.008)
dev_{isc}				1.2506*** (0.006)		0.8537 (0.138)
$license_{isc}$					1.2387** (0.014)	0.8975 (0.105)
$constant_{isc}$	-6.9418*** (0.000)	-6.4233*** (0.000)	-6.0867*** (0.000)	-7.3373*** (0.000)	-6.0867*** (0.000)	-7.7367*** (0.000)
Country-sector FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2 ^a	-0.219	-0.267	-0.161	-0.172	-0.197	-0.121
Observations	55	55	55	55	55	55

Source: Winkler (2014, 105).

Note: All regressions control for country-sector fixed effects. Standard errors are robust to heteroscedasticity. FE = fixed effect. Subscripts i, s, and c refer to supplier, sector, and country. *p < 0.1, **p < 0.05, ***p < 0.01 (p values in parentheses). a. McFadden's adjusted pseudo R2.

Dependent variable: Probability of starting to export as a result of supplying to a foreign investor (exp_start).

Explanatory variables: Dummy taking the value of 1 if supplier received technical audits ($audit$), if the foreign customer required the supplier to make improvements ($impr$), if supplier received assistance from the foreign customer to meet any requirements ($assist$), if supplier developed product jointly with the foreign customer (dev), if supplier licensed technology from the foreign customer ($license$), and 0 otherwise.

global foundations and have the potential to upgrade the capacities of local suppliers, enabling them to serve other investors or to start exporting.

Labor Market Links

Foreign investors make relatively greater use of local skilled staff than they do of local suppliers in developing countries, but this varies significantly across countries. In Chile's mining sector, for example, 70–80 percent of workers in skilled positions are local, while across surveyed African countries, the share ranges from 30 to 50 percent. In agribusiness, 75–85 percent of management, supervisory, and technical workers in Kenya and Vietnam were local, while the figures were 10–15 percentage points lower in Ghana and Mozambique. Finally, in apparel, while more than two-thirds of management and technical staff are local in Kenya, less than 20 percent are local in Swaziland.

Localizing skilled positions is constrained by supply. Survey results indicate that by far the biggest constraint perceived by foreign investors to hiring more local staff in technical and managerial positions was the lack of skilled labor. There are, however, some caveats to this finding. Foreign investors also continue to reserve certain positions for foreign nationals for reasons of corporate culture; when there is a significant language gap between the host country and the foreign investors; or when the costs of supporting foreign workers (including relocation costs) are relatively low.

In developing countries, spillover benefits through labor markets are constrained by limited labor mobility and entrepreneurship. Employment in foreign-owned firms tends to offer significant advantages over domestically owned firms, including higher pay and benefits, opportunities for career advancement, international mobility, and prestige. This can act as a barrier to skilled labor turnover. As a result, diffusion of knowledge tends to be largely restricted within the FDI sector. The situation is aggravated by relatively low levels of entrepreneurialism in many LICs, restricting the potential for diffusion through firm spin-offs.

Training offers an important channel for knowledge diffusion, yet this too is constrained by labor market factors and by an emphasis on firm-specific rather than transferrable skills. While FDI normally covers some training, it tends to focus on company-specific skills, which may limit transferability. Partly for this reason, and also because of labor turnover, foreign investors tend to make limited use of local training facilities, even when they are available at low cost.

Spillovers from Competition, Demonstration, and Collaboration

In LICs, competition effects may result in negative rather than positive short-term spillovers, although this may be due to the fact that positive spillovers take more time to materialize. Findings indicate that negative competition effects are

outstripping positive productivity spillovers from competition and demonstration effects. A large part of the explanation is probably temporal—that is, positive spillover effects take time to emerge, whereas the impacts of negative competition effects can be observed more quickly. But it may also be that LICs' lack of absorptive capacity restricts their potential to benefit from positive competition and demonstration effects.

Demonstration effects are most prominent in tightly organized supply chains, where the local supply base is large and fragmented. Foreign investors have an incentive to promote demonstration where providing individual technical assistance is prohibitive and/or inefficient. This is most apparent in the agribusiness value chain, where foreign investors actively promote demonstration effects by supporting the upgrading of their suppliers through establishment of demonstration plots and nucleus farms.

But spillovers from demonstration are constrained by limited collaboration between foreign investors and domestic firms in the same sector. Findings indicate that in most countries sector collaboration is weak, particularly between foreign-owned and domestic firms. Of the three sectors studied, only agribusiness showed any significant levels of collaboration between foreign firms and the domestic sector, particularly through links with national training centers and research institutes.

While setting standards is important, direct technical assistance appears to be most critical for supporting spillovers. Survey evidence indicates that demand effects alone—for example, requiring that local suppliers make specific changes to products or processes—may have limited impact on spillovers in LICs. Instead, technical assistance, with or without corresponding requirements of suppliers, resulted in greater spillovers (table 1). This suggests that while the proliferation of global standards within GVCs may create an opportunity for firm upgrading, most firms in LICs will require active support in order to take advantage of the opportunity.

Policy Implications

Finally, some of the main policy implications concerning FDI spillovers impacts on supply chains are organized around three sequential areas of policy: (i) attracting the “right” foreign investors; (ii) promoting FDI–local economy links; and (iii) establishing an environment that maximizes the absorption potential of local actors.

Attracting the “right” foreign investors

Mediating factors matter—not all foreign investors are the same when it comes to their potential to deliver spillovers (see figure 1). Therefore, given the increasing priority being placed on generating spillovers from FDI, governments need to take into account the optimization of spillovers more explicitly when developing investment promotion strategies and policies. Some factors to consider include:

- *The best spillovers policy is a good business climate.* Policies to attract strategic GVC-oriented FDI should focus on ensuring an attractive *general* investment climate, not just for foreign investors, but also for domestic firms.
- *Recognize the diversity in spillover potential.* Investment policy, promotion, and linkage programs should specifically consider the nature of investment and the motivations of FDI, as their potential for spillovers will vary.
- *Assess technology contribution as an element of the FDI evaluation process.* This could include a focus on the degree to which the technologies that investors may bring are likely to be absorbed into the economy, given current capacity.
- *Avoid bidding away the benefits of spillovers by excessive incentives.* Incentives tend to be most commonly associated with attracting export-platform investment (given its footloose nature), but this type of investor may be the least likely to deliver spillovers.
- *Facilitate joint ventures (JVs), but avoid coercion.* JVs appear to be an effective channel for facilitating spillovers, particularly of older technologies. However, this should not be misread to argue for attempting to force investors to engage in JVs with local partners. The correlation clearly depends on the FDI motive, and demand-led JVs are more likely to involve open knowledge sharing than forced partnerships.
- *Use industrial policy in a light-handed way.* Weaknesses in institutions, in private sector capacity and organization, and in skills and absorptive capacity raise an array of challenges to fostering links in LICs. The trick is to focus on overcoming market failures or capturing coordination externalities, including packages of infrastructure and public-private vocational training initiatives.
- *Introduce local content regulations only under the right conditions and when defined clearly.* The focus should be on encouraging in-country value addition rather than in-country ownership. But regulations can only be effective when the domestic supply side is actually up to the task of being a competitive supplier, otherwise they may simply weaken the competitiveness of investors, undermining the overall objectives. In any case, setting strict local content targets can be counterproductive and difficult to enforce. Instead of rigid local content requirements, the focus should be on collaborative development of flexible localization plans where investors come up with their own proposals on how they will deliver spillovers to the local economy (box 1).
- *Establish a comprehensive framework for supporting the upgrading of domestic firms.* This includes bridging information gaps by facilitating exchange of information on investor needs and local supplier capacity, as well as addressing gaps in domestic contract enforcement and other barriers to formal contracting with local suppliers.
- *Establish incentives for foreign investors to engage in collaboration with local universities, research institutes and training institutes, such as the creation of research funds, matching grant programs, or fiscal incentives (for example, tax deductions) for conducting research and development in the host country.* It may also include supporting internships, outplacements, and joint training and curriculum development.

Promoting FDI–local economy links

Having brought foreign investors into the country, the next set of policy considerations involves integrating them into the domestic economy. The logic here is that strong links—through supply chains, labor markets, and other forms of collaboration—should result in greater diffusion of knowledge, technology, and know-how from foreign investors. Policies can include the following:

- *Ensure the incentives used to attract investors do not create a bias against local integration,* for example, by giving foreign investors privileged access to import tax and duty concessions or duty drawbacks. Similarly, avoid reserving export-processing zone access to foreign-owned companies, which can create barriers to supply by domestic firms.
- *Leverage the power of incentives to promote actions that support spillovers* by requiring investors to engage in activities to support spillovers as a condition of receiving fiscal incentives. Such activities may include local supplier development, provision of technical assistance, training of workers, joint research, and others.

Establishing an environment that maximizes the absorption potential of local actors

Attracting investors and integrating them into the domestic economy should create optimal conditions for local firms and workers to benefit from spillovers of knowledge and technology. But the degree to which local firms and workers ultimately benefit depends crucially on the absorptive capacity of domestic actors (see figure 1). This is the area of spillover policy where government has the most important role to play, by building the absorptive capacity of firms and workers and helping them to access opportunities.

- *Focus supply side capacity-building efforts on high-potential, high-capability firms.* Government programs should focus on upgrading technical capacity of the firms in the best position to serve FDI markets and outline clear requirements for firm participation.
- *Combine supply side efforts to address technical and business upgrading.* Building absorptive capacity of local firms requires investments to upgrade technical capacity and achieve quality standards, including technology licensing. The biggest gap in support, however, is likely to be in basic business and financial management areas.

Box 1. Newmont Ghana's Local Procurement Policy

Newmont ran the successful Ahafo links program in Ghana from 2007 to 2010, which trained 53 local suppliers in the area immediately surrounding the Ahafo mine, resulting in US\$14 million in local procurement. More recently, Newmont has rolled out a broader local procurement policy in Ghana, which outlines areas of support and preferences to be given to various categories of companies based on geographical location and level of Ghanaian ownership. Under the local content policy, Newmont aims to increase local expenditure each year, with a higher share of this going to Ghanaian firms with highest local value added. Some of the support areas include:

- *Increasing Newmont's awareness of goods manufactured in Ghana* through formal supplier registration and identifying local products currently being purchased by other mining companies.
- *Broadening access to opportunities for potential suppliers through:* (i) supplier open days; (ii) greater use of open tendering; (iii) advertising available contracts via the Internet; and (iv) publishing data on the local spend profile on a quarterly basis.
- *Applying preference in assessing tenders*, in the following order (all else being equal): "local-local" companies; Ghanaian-owned; Ghanaian participation; Ghana-registered; and international.
- *Building capacity of local companies* through the development of collaborative partnerships between industry, nongovernmental organizations, and existing foreign- and Ghana-registered companies.

Source: Kaiser Economic Development Partners (2014, 140), based on Newmont Ghana (2010).

- *Invest in education and skills for short- and long-term results.* Both industry-specific and general education policy are critical to achieving spillovers in the long term—reducing the technical and managerial skills gap with FDI should be a priority. This includes active engagement of universities and research institutes to embed spillovers.
- *Openness is critical for localization in the long term.* A policy of openness, not only on access to imported goods and services, but, more controversially, on access to (imported) skilled workers, is likely to pay off in the long run by improving the sophistication and competitiveness of local firms.

Conclusion

In a world of integrated GVCs, exports and FDI are becoming increasingly interconnected. This creates significant opportu-

nities for developing countries. But simply attracting FDI is not enough. The real benefits lie in taking advantage of the productivity-enhancing potential of FDI, which in turn relies on greater integration of FDI and local economies. But making this work in practice is difficult. Governments need to be realistic about the degree of spillovers that can be achieved in the short term and the degree of leverage they have to make it happen. But government does have an important role to play, as a policy maker, a regulator, and a facilitator. With the right approach, over time, government can help leverage the power of FDI for development.

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