



# KCG Policy Paper

## **Making Investment Work for Productivity-enhancing, Inclusive and Sustainable Development:**

**What we know, and what we would still like to know**

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## 1 Introduction

Goal 8 of the UN Sustainable Development Goals (SDGs) calls for promoting

*“sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”.*

One driver that may help to achieve this goal is foreign direct investment (FDI). It has the potential to foster productivity growth and generate quality employment, and also – though many globalization critics may disagree – to help moving towards more socially and environmentally sustainable business practices (e.g., Görg, Hanley, Hoffmann, Seric, 2015).

This short note reviews briefly what we do know from recent work using large scale firm level datasets about the potential benefits or costs of foreign direct investment as regards these aspects. It then sets out what else we would want to know, and how to go about collecting this knowledge. Based on this, some policy conclusions are offered.<sup>1</sup>

## 2 Productivity enhancing investment

*What do we know?*

Conceptually, an investment by a foreign-owned multinational enterprise (MNE) can affect productivity in the host country in two ways. First, there is a direct effect. Investing in a previously domestic owned firm (through a merger, acquisition or joint venture) boosts this firms productivity because the foreign investor brings in new technology, management practices or know how which positively affect the firm. This direct effect can also manifest itself in a Greenfield investment, i.e., the setting up of a completely new plant, which may be expected to be more productive than a comparable purely domestic plant for the same reasons.

Second, there is an indirect effect. Domestic firms that do not receive any foreign investment may still be affected by the presence of foreign MNEs in the same or vertically related sectors. Since MNEs are expected to use superior technology, there may be technology transfer because of employees moving from MNEs to domestic firms in the vicinity, or there may be customer-supplier linkages between them which lead to the transfer of knowledge. Furthermore, the presence of MNEs will change competitive pressure in the sector, which forces domestic incumbents to reduce slack and increase efficiency of their operations.

Recent research using firm level data and sophisticated econometric techniques have amassed a body of evidence on both direct and indirect effects. Estimating these effects is not uncomplicated, however, due to some methodological problems, so-called selection problems.

Consider the direct effect first. A simple comparison of productivity between a group of foreign-owned and a group of domestic firms does not indicate that there is such a direct effect whereby a

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<sup>1</sup>This note is by no means intended to be a comprehensive literature survey. For surveys of the literature on the implications of foreign direct investment, see, e.g., Görg and Greenaway (2004), Smeets (2008), Javorcik (2015).

foreign ownership raises productivity. This is because foreign owners may select the most productive domestic firms as targets for their market entry strategy via acquisitions. This is referred to as “cherry picking” – MNEs pick the best domestic firms which change ownership status, and the less productive domestic firms remain in domestic hands.

The most convincing empirical studies of the direct productivity effects of foreign ownership use as their identification strategy so-called “switchers”. That is, they look at initially domestic firms which subsequently receive an influx of foreign investment. These switchers are then compared to purely domestic firms. Since the acquisition is likely to be non random due to cherry picking (selection), studies then use pre-acquisition characteristics in an attempt to match switchers with a control group of comparable domestic firms using propensity score matching (e.g., Arnold and Javorcik, 2009) or an exogenous variable that determines the acquisition decision in an instrumental variables approach (e.g., Girma, Görg and Gong, 2008). Empirical work generally finds substantial productivity premia for foreign compared to domestic firms. Arnold and Javorcik (2009), for example, use firm level data for Indonesia and show that foreign acquired firms have a 13 percent higher productivity than the matched control group of domestic firms.

The economic explanation for this higher productivity is that foreign MNEs use superior technology. Doing so then implies that there is a potential for this technology to “spill over” to domestic firms – the indirect effect alluded to above. Again, there is a methodological problem which makes research a bit more complicated. This may be best illustrated using an example. Let’s say an economy has two sectors, a high tech sector (engineering) and a low tech sector (food). The engineering sector receives large inflows of foreign investment, while the food sector does not. If we now compare productivity levels of domestic firms in the engineering and food sector, and find that the former have higher productivity, does this mean that this is due to higher foreign investment leading to productivity improvements in domestic firms in the engineering sector? It does not, as it is probably the case that even in the absence of foreign investment, domestic firms in the high tech engineering sector are more productive than those in the low tech food sector. And foreign investors are drawn to the high tech rather than low tech sectors (Markusen, 1998). There is, thus, again a selection problem. This time not at the level of the firm, but at the sector level. Foreign investors are attracted to high tech sectors, and these are sectors with comparably high productivity even before the foreign investment takes place. This selection issue is difficult to deal with. Most empirical studies take care of this by assuming that there is a time-invariant aspect of sectoral heterogeneity that can be controlled for using industry dummies (e.g. Javorcik, 2004). A more sophisticated attempt is to try to find a variable that determines the sectoral spread of foreign investment in an instrumental variables approach (e.g., Haskel and Slaughter, 2007; Barrios, Görg and Strobl, 2011). The most recent approach is to use a propensity score matching approach at the sector level (Girma, Gong, Görg, Lancheros, 2015).

Irrespective of the approach taken, empirical results are not clear cut. There is some evidence for positive indirect effects (e.g., Haskel and Slaughter, 2007 for the UK, Javorcik, 2004, for Lithuania) though many studies also find negative effects (e.g., Girma, Gong, Görg, Lancheros, 2015 for China, Aitken and Harrison, 1999, for Venezuela). Intuitively, both findings make sense. Positive effects stem from a transfer of technology which can be implemented by domestic firms to boost their own productivity. Negative effects may occur as new foreign multinationals imply higher competitive pressure, which may steal away business from domestic firms, leading them to reduce their productivity (Aitken and Harrison, 1999).

The ambiguous findings concerning indirect effects therefore likely reflect the fact that not all foreign investment has positive indirect effects in all circumstances. Lipsey and Sjöholm (2005) argue that not all countries may benefit from FDI, as they may not have the necessary ability, know how, or human capital to implement the new technology available from foreign MNEs. Girma, Görg and Pisu (2004) argue that the type of foreign investment matters, as well as the type of domestic firm in the sector. They show that export-oriented MNEs have stronger spillover effects than domestic market oriented ones (which are more in competition with domestic firms), while domestic firms are more likely to benefit if they export as well, and do not just operate on the domestic market. Domestic firms thus need to have the necessary “absorptive capacity”, which may be reflected in their own R&D activity, or having sufficient levels of human capital, to absorb the necessary knowledge (Görg and Greenaway, 2004).

*What would we still like to know?*

While there is some credible evidence that an influx of foreign ownership may boost productivity in acquired firms (direct effect) and in unaffected domestic firms (indirect effect), the exact mechanisms through which these effects take place are still largely unexplored. For the direct effect, technology transfer is the likely explanation, though it is not clear under what circumstances this takes place. Recent work by Perez-Villar and Seric (2015) using UNIDO African Investor Survey data look at the determinants of technology transfer from multinationals in host countries. They show that characteristics of the multinationals as well as of the institutional environment in the host country matter for whether or not technology transfer takes place.

As for the indirect effect, there is some work showing that movement of workers from multinationals to unaffiliated domestic firms can explain some of the positive effects (e.g., Görg and Strobl, 2003 for Ghana). Customer-supplier linkages are also shown to matter, as domestic suppliers to multinationals have been found to improve productivity after starting to supply to multinationals (Javorcik and Spatareanu, 2008). Case study evidence by Moran (2001) provides some more insights into the benefits of such customer supplier relationships.

Still, more work would be needed to fully understand the mechanisms at play. How exactly can workers implement the new technology learned in the multinational in host country firms? How long does it take to do this successfully? What are the crucial arrangements in customer-supplier relationships to ensure that technology transfer takes place? What level of technology is transferred by multinationals to their host country affiliates, and how is it implemented? And are these technology transfers really voluntary (as is usually assumed) or do domestic firms have to pay for the privilege?

The question also remains as to what is the type of foreign firm that has the highest potential for positive direct and indirect effects, and what type of domestic firm is most likely to benefit. This may of course differ across host countries, depending on their sectoral and institutional structure, their position in global value chains, and their “ability” as indicated by, for example, levels of human capital, R&D, technology etc.

Finally, of course, an important question is what role host country policy can have in facilitating positive productivity effects. There is some evidence that “match making” between customers and suppliers can be facilitated by governments, Görg and Seric (2016) provide recent evidence based on the Africa Investor Survey. Is government policy limited to such “light” approaches of providing

information and signals about the location, or are there other options? For example, government incentives such as subsidies or low tax rates may be able to attract foreign multinationals, but can they also be used to select the type of investment that is beneficial for the host economy?

There are many questions that can fruitfully be addressed using some of the approaches taken in the literature listed above, and in some accompanying case studies.

### **3 Inclusive and sustainable investment**

*What do we know?*

One aspect of “inclusive and sustainable” foreign investment is the type of job provided by multinationals. This was the subject of an OECD Report by Hijzen and Swaim<sup>2</sup> as well as a recent paper by Javorcik (2015). The focus of these two studies, and in much of the empirical literature, is on examining whether multinationals exploit local labour by paying lower wages or whether they, in fact, pay even higher wages mainly because of their better technology. Conceptually, this is similar to the direct effect on productivity discussed above, and research is fraught with the same methodological problems (selection!). Work using micro level data and using techniques as described above generally show that multinational firms pay higher wages than otherwise comparable domestic firms, as shown, for example, by Girma and Görg (2007) for the UK or Girma, Görg and Kersting (2016) for China.

While these studies find that foreign firms pay higher wages on average, it does not imply that individual workers enjoy higher wages once their firm is taken over by a foreigner. Using matched employer-employee data, Heyman, Sjöholm and Tingvall (2007) show that there is no such wage premium for individual workers that stay in the firm. This implies that higher wages on average are brought about by changes in the composition of employment, with new hires being paid more than workers that leave the firm. This is consistent with a move towards more skilled employment being provided in the newly acquired multinational firms, and a subsequent increase in the relative demand for skilled workers. This also fits in with technology transfer taking place – and more skilled workers being needed to implement this new technology in the foreign owned MNE.

In addition to the direct effect, there is also an indirect effect on wages. Domestic firms that are now in competition with new foreign firms may be expected to have to adjust their wages. On the one hand, they may have to raise wages in order to not lose workers to the foreign competitors. On the other hand, if they suffer reductions in productivity, this may also have to translate into lower wages in domestic firms. Girma, Görg and Kersting (2016) provide evidence for strong negative indirect wage effects for domestic firms in China. Aitken, Harrison and Lipsey (1996) find some evidence for positive indirect effects in the US, but not in data for Mexico or Venezuela.

Another aspect of “inclusive and sustainable” investment is the environmental or social sustainability of the operations of foreign multinationals. As concerns the latter, apart from the question of wages, there seems to be relatively little work on the social aspects of foreign investment, at least in the

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<sup>2</sup> See

[http://oecdoobserver.org/news/archivestory.php/aid/2767/Do\\_multinationals\\_promote\\_better\\_pay\\_and\\_working\\_conditions.html](http://oecdoobserver.org/news/archivestory.php/aid/2767/Do_multinationals_promote_better_pay_and_working_conditions.html), accessed 29 June 2016

economics literature. An exception is Brown, Deardorff and Stern (2003) who survey the literature and come to the conclusion that there is not much evidence to support the claim that multinationals in general operate “sweat shops” in locations with poor working conditions for local labour. They do, however, acknowledge that there are cases where this does happen, and that policy or public pressure is needed to deal with those.

As regards the environmental aspect, empirical research based on firm level data shows that foreign owned multinationals generally use “cleaner” technology than domestic firms. Of course, the same methodological problem in identifying this direct effect as discussed above applies here. Cole, Elliott and Strobl (2008), for example, show in firm level data for Ghana that foreign owned affiliates have lower energy use, all other things equal, than domestic firms. Dardatti and Saygili (2012) similarly find in Chilean micro data that foreign firms have lower emissions than domestic firms. However, neither paper is able to deal with the selection problem in a convincing way.

On the other hand, there is, however, some evidence that foreign owned firms are prone to locate dirty production in so-called “pollution havens” where environmental regulation is laxer than in their home country (e.g., Cole, Elliott and Fredrikson, 2004). Hence, while multinationals may use cleaner technology than comparable domestic firms in the host country, they may not be as clean as they would have to be if they operated their production in their home country.

*What would we still like to know?*

Coming back to the wage effects of foreign ownership, an important question that needs to be answered is who gets the well paid jobs in multinationals. Is it local workers or expats? This is of paramount concern for policy makers concerned about development effects. If the high wages are paid to employees from abroad, the potential for local development may be less than if they were paid to local workers. Another largely unexplored issue concerns working conditions other than wages. Do multinationals provide better working conditions – holiday entitlements, breaks, hours of work, design of the work place etc.? Do these better (or worse) working conditions have an impact on workers’ well being in terms of health?

In terms of the environment, we would like to know more about the different production stages involved in global value chains. Is there evidence that environmentally unfriendly production stages are systematically located in particular host countries (with, e.g., low environmental standards)? If yes, what type of production stages are these (low value or high value end of the chain)? How does environmentally (or socially) unfriendly production by multinationals affect production processes in domestic owned suppliers, customers or competitors? What role, if any, is there for “certification” of standards, or Corporate Social Responsibility (CSR)?

#### **4 The way forward**

To summarize thus far: there is a lot we know already about the effects of foreign owned multinationals on productivity, inclusiveness and sustainability related issues, but there is still much more we need to know in order to formulate adequate and effective policy responses. What stops us from coming up with answers to these questions? While there may be a lot of reasons, one highly important issue from the point of view of empirical research is availability of data.

It is of paramount importance to have detailed data at the micro level that allows us to model the relationship between multinationals and domestic firms. In particular, and this is where the bottleneck currently is, it is important to have information on the linkages between these two types of firms. What one would like to measure relates to questions like: Where do what types of workers move to – from MNEs to domestic, and vice versa? Who buys from whom and sells to whom, and what? Who uses what technology, and where did this technology come from? Who transfers technology to whom, and at what price?

Information on some of these issues is, of course, available. The Swedish data used by Heyman, Sjöholm and Tingvall (2007) seem to provide a lot of information on the movement of workers between firms. The UNIDO Africa Investor Survey used by, e.g., Görg and Seric (2016), or the World Bank / EBRD BEEPS dataset used by Godart and Görg (2013) have information on suppliers of multinationals. However, this information is very limited, country specific, and in many cases confined to a cross section of firms for a particular year. In order to come up with convincing studies that can identify causal effects, which can then feed in reliable policy advice, much more information is needed.

## **5 Policy conclusions**

From the body of work that is available it is possible to draw some policy conclusions. Multinationals have the potential to boost productivity and wages through a direct effect. They implement new technology in their operations in the host country, which leads to higher productivity in the firm, and higher average wages paid. However, there are also indirect effects, and these are in many cases negative. Given that there is a trade off between positive and negative effects, there is an optimal level of foreign investment in an economy that maximizes the positive implications. This is illustrated in the empirical approach in Girma, Gong, Görg and Lancharos (2015) and Girma, Gong and Kersting (2016) for productivity and wages in China. Host country governments should be aware of this and carefully consider what they may see as an optimal level of foreign investment in their economy.

Another result that emerges from the empirical work is that foreign multinationals do have the potential to contribute to environmentally cleaner and socially sustainable production in the host country, despite all the criticism voiced by globalization critics. However, more work is needed in particular to see how the operations of multinationals affect outcomes in domestic firms.

The final policy conclusion is that voiced frequently by empirically minded researchers: More and better data are needed to evaluate more convincingly the effects of multinationals in the host country, and to come up with reliable policy conclusions.

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