FDI and productivity: facts versus fiction of high growth

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Abstract

Purpose – This paper aims to study the role of foreign direct investment (FDI) channels in improving local firms’ productivity. Two transmission channels of knowledge spillovers are empirically investigated. The study focuses on the role of high-growth firms (HGFs) that are assumed to have a higher absorptive capacity.

Design/methodology/approach – A threshold regression model that considers country and sector fixed effects is applied to investigate 8925 firms across 50 sectors in 12 developing countries in the East Asia and Pacific (EAP) region.

Findings – The author’s findings indicate that first, larger firms with external market linkages are more productive. Second, high-growth enterprises are powerful engines of job creation; however, the firms do not outperform other firms in terms of capacity in absorbing FDI spillovers and do not have higher productivity.

Research limitations/implications – The findings highlight the necessity of rethinking public policy priorities to support firm growth. Policies to maximize the gains from FDI spillovers are discussed.

Originality/value – This is the first study to investigate the strength of FDI spillover channels across different sectors, and the channels’ impact on the productivity of local enterprises in the EAP region. This study also explores the potential role of high-growth firms (HGFs) in this interaction via job creation and improving output growth rate.

Keywords Productivity, Foreign direct investment, FDI spillovers, Contractual linkages, Demonstration effect, High-growth firms, Absorptive capacity

Paper type Research paper

1. Introduction

Foreign direct investment (FDI) promotes employment and economic growth. Economies more open to investment and trade usually grow faster and are more productive (Frankel and Romer, 1999). Governments of developing countries seek to attract FDI to upgrade and diversify the production capabilities of their economies, connect to global value chains, bring in cutting-edge technology and knowledge and create jobs (World Bank, 2020).

One of the added benefits of FDI is the transmission of knowledge between domestic and foreign firms. It can make economic growth more inclusive by improving the productivity of local firms. Therefore, an important factor in the development strategy of a developing country is the impact of FDI spillovers on the performance of indigenous firms.

Depending on whether the performance of domestic enterprises is worsened or improved as a result of the presence of multinationals, the impacts of FDI spillovers on the productivity
of industries can be negative or positive (Alfaro and Chen, 2018). According to World Bank (2020), the overall impact of foreign enterprises on domestic firms is determined by the balance between two forces: FDI can increase the competition in domestic output and input markets and exert a negative impact on the performance of domestic firms. At the same time, sectoral productivity may increase over the long run, because greater competition at the sectoral level leads to the reallocation of factors of production to enterprises with higher productivity levels. Besides, the productivity of local enterprises can be improved by a successful transmission of frontier knowledge and foreign technology to them (Fons-Rosen et al., 2021).

According to World Bank (2018), local firms are benefited from FDI through two main channels: 1- Contractual linkages between local suppliers and foreign enterprises that can help local suppliers to improve their quality and technical standards via the transmission of practices and knowledge of foreign firms. 2- Demonstration effect, in which local enterprises imitate managerial practices and foreign technologies by hiring labors trained by foreign firms or through observation.

Theoretically, only high-growth domestic enterprises can internalize the spillovers of FDI through both demonstration and linkages channels. An average company in a developing country doesn’t necessarily benefit from FDI spillovers (Fons-Rosen et al., 2017; Damijan et al., 2013). High-growth firms (HGFs) have more absorptive capacity because they recognize the value of new knowledge and use it to boost their productivity (World Bank, 2018). HGFs are powerful engines of job creation. In our sample, domestic HGFs make up less than 10% of companies in manufacturing and services, yet they contribute more than 48% to the net change in employment and create more than 37% of all new jobs in these sectors (see Table 6). In addition to their critical role in employment, HGFs may also create positive spillovers by creating networks or knowledge transfer. Being a “supplier to” or a “buyer from” an HGF can improve the performance of firms across a wide range of indicators. On the other hand, they may push down prices by raising competition (Goswami et al., 2019).

Targeting HGFs in an effort to improve economic performance has been an appealing subject for academics and an appealing goal for decision-makers in both developing and developed countries (e.g. Coad et al., 2014; Haltiwanger et al., 2015; Goswami et al., 2019). However, the process of identifying these businesses and making policies to sustain their growth has been mostly art rather than science, especially in developing countries because the literature remains largely limited to developed countries.

There are some key questions in evaluating the effects of FDI inflows in developing countries. How strong are the channels through which horizontal FDI spillovers can be accrued by local enterprises? What difference do HGFs make to the process of job creation and productivity enhancement? What role can governments play to boost the development impact of FDI via HGFs? Motivated by these questions and the aforementioned shortcomings, this research tries to measure the importance of HGFs, FDI channels and their interactions in encouraging productivity in developing countries.

In this context, we use a dataset obtained from the Enterprise Survey collected by the World Bank between 2019 and 2021, which covers firm-level data from top managers and business owners of a sample of private-sector establishments in the East Asia and Pacific (EAP) region. We apply a threshold regression approach to identify the effect of FDI spillovers on the productivity of local enterprises. This approach allows coefficients to differ across two ranges of values of an independent variable identified by a threshold. This helps us find out whether the FDI spillovers-productivity nexus changes over different values of FDI spillovers.

This paper contributes to the existing literature in the following ways: It studies, first, the importance of two main channels through which FDI inflows can influence the productivity of local enterprises; second, the strength of FDI spillover channels across sectors; third, the distribution of HGFs in different size and age categories and their role in job creation and net
change in employment; forth, output and employment growth generated by HGFs across sectors in comparison with the rest of the firms. It is worth mentioning that the identification of HGFs between our sample firms is concentrated exclusively on domestically owned firms to focus on their capacity to absorb the benefits of multinationals’ presence; fifth, the role of HGFs and its interactions with FDI channels in the performance of local businesses; sixth, the importance of “external market linkages” in the interactions between FDI inflows and labor productivity. And finally, it specifically focuses on a sample of developing countries in the EAP region that has not been investigated before.

The rest of this paper is organized as follows: the next section reviews the literature. The data and summary statistics are presented in section 3. Section 4 discusses the empirical analysis and results. Finally, conclusions and policy implications are provided in the last section.

2. Literature review

The impact of FDI on the host economy is an important factor in countries’ development strategies. The current study is related to a broad empirical literature on the direct and indirect impacts of FDI in the host country, particularly, two main strands. First, studies focused on the market reallocation channel which mainly covers the effects of FDI on capital and labor reallocations. Alfaro and Chen (2018) assert market reallocations due to multinational competition are the reason behind the majority of aggregate productivity gains. Harrison and McMillan (2003) report an increase in credit constraints of local firms due to the presence of multinationals. Aitken et al. (1996) and Feenstra and Hanson (1997) prove FDI leads to a significant increase in the wages of local skilled labors. The recent studies that investigate the direct effects of FDI on different aspects of the host economy include Sokhanvar (2019, 2022), and Sokhanvar and Jenkins (2022a, b).

Second, studies focused on spillover channels which mainly cover the effect of FDI on the productivity of local companies through productivity spillover. Extensive evidence indicates negative or insignificant within-industry productivity spillovers (demonstration channel) and significant positive productivity spillovers via vertical production linkages between industries (linkages channel). For example, Javorcik (2004) reports insignificant impacts of multinational production on local firms’ productivity in the same industry, but positive spillovers through backward production linkages.

Among the studies that detect a positive impact of FDI spillovers on the productivity of local firms, Keller and Yeaple (2009) report a positive impact of FDI and imports on local firms’ productivity in the USA. Guadalupe et al. (2012) detect a positive relationship between foreign ownership and acquired plants’ productivity and productivity dispersion within the industry in Spain. Orlic et al. (2018) and Liu et al. (2015) find evidence for a positive impact of FDI spillovers on productivity through increased competition and worker mobility in the case of European transition economies.

The main reason mentioned in the literature for the negative or insignificant effect of demonstration channel on the productivity of local companies within an industry is that the productivity gains of local firms from knowledge spillovers are offset by excessive competition for talented employees as well as a significant decline in the market share (Crespo and Fontoura, 2007; Hiep and Trung, 2022). Foreign firms use higher wages and bonuses to attract talented workforce from local competitors. Besides, the presence of foreign firms forces local firms to produce less and operate on a smaller scale decreasing their relative productivity (Lembcke and Wildnerova, 2020; Kim, 2015).

Among the studies that detect a negative or insignificant impact of FDI spillovers on the productivity of local firms, Aitken and Harrison (1999) assert that the productivity of domestic firms is negatively affected by FDI in Venezuela. Fons-Rosen et al. (2021) use a
cross-country dataset to prove there is no significant relationship between FDI and productivity in related industries within the same sector. The study by Fernandes and Paunov (2012) in the case of Chile does not find any evidence for horizontal spillovers either. Another study that does not detect any significant effect of horizontal FDI on the productivity of local firms is that of Lu et al. (2017) based on a panel dataset from the Annual Census of Enterprises of the Chinese National Bureau of Statistics. Vujanovic et al. (2021) use the firm-level data collected from the firms in Croatia and Slovenia to study the effect of FDI spillovers on productivity during the credit shortages caused by the 2008 financial crisis. Their findings show that if firms face difficulties in accessing external funds, the process of learning through spillovers can be interrupted. Based on this strand of the literature, we hypothesize:

**H1.** FDI spillovers have positive impacts on the productivity of local firms in the EAP region.

In contrast to the ambiguous link reported between the productivity of local firms and FDI, a strand of literature detects a positive relationship between domestic firm productivity and different channels of trade liberalization such as imported intermediate inputs (Topalova and Khandelwal, 2011), export market access (Lileeva and Trefler, 2010; Bustos, 2011) and import competition (Pavcnik, 2002; Bloom et al., 2016).

The evidence provided by Djulius (2017) in the case of the manufacturing sector in Indonesia and by Ebghaei and Akkoyunlu Wigley (2018) in the case of the Turkish manufacturing industry indicates that the positive impact of FDI spillovers on productivity is more pronounced for export-oriented firms. The study of the structure of FDI and export performance of firms in the Japanese manufacturing sector by Wakasugi (2016) shows that exporters are more productive than other domestic firms. Hence, the export performance of domestic firms is considered as one of the determining factors of their productivity in the present study. Accordingly, we propose the following hypothesis:

**H2.** Firms with external market linkages have higher productivity.

Private sector is the key engine of economies’ performance. However, only HGFs that make a smart fraction of that, play a disproportionately significant role in employment generation (Hsieh and Klenow, 2014; Coad et al., 2014; Haltiwanger et al., 2013). Only a small fraction of enterprises achieves high growth and a smaller fraction of them manage to sustain this status for a long time. In realizing the full potential of these firms, first, identification of them and then studying the limitations that hinder their emergence and performance is of great importance (World Bank, 2018).

How do some enterprises manage to grow faster? What are the effective policy interventions to facilitate this process? These are key policy questions, particularly for developing economies. Answers to these questions can improve employment, wages, export performance, tax revenue and productivity. The evidence provided by Haltiwanger et al. (2013, 2015) shows that HGFs have created a robust number of new jobs in the economy of the USA. However, in developing countries, the growth dynamics and the main characteristics of these firms are still unrevealed.

The absorptive capacity of local firms is an important factor that determines whether they can be benefited from the FDI spillovers or not. Roy and Paul (2022) highlight the role of absorptive capacity in the productivity growth of firms in the Indian manufacturing sector. Their findings indicate that industries with significant FDI inflows did not experience higher productivity gains in the same proportion. Behera (2017) uses a firm-level panel dataset covering the Indian manufacturing industries to study the productivity spillovers from FDI to local firms. His results indicate that the local firms with higher absorptive capacity (especially the firms in high-technology industries) are more capable of harvesting the spilled
technology from foreign firms. A study by Moralles and Moreno (2020) reveals the same fact about Brazilian firms.

The above-mentioned studies on first, the importance of the absorptive capacity of local enterprises in the process of productivity gain from FDI and second better performance of HGFs in the economy indicate that the latter could be due to the higher absorptive capacity of HGFs. Therefore, we hypothesize:

\textit{H3.} Among the local firms, HGFs have better performance in absorbing positive FDI spillovers.

The review of available literature in this section suggests that the link between FDI spillovers and productivity at the firm level has been studied in different regions yet the evidence is still unclear. In spite of the widespread interest in developing countries to attract more FDI, the overall effect on the productivity of domestic firms is still inconclusive. The reason behind the mixed results could be (1) the complexity of the different channels through which FDI inflows affect local businesses, (2) the small size of samples in most of the studies (e.g. Moralles and Moreno, 2020; Javorcik and Poelhekke, 2017; Guadalupe et al., 2012) that may lead to bias caused by sampling error. (3) different nature of the relationship in different regions.

Therefore, the policy implications provided by previous research may not be applicable in the case of developing countries in the EAP region. The present study contributes to the above literature by highlighting two main channels through which FDI inflows can influence the productivity of local enterprises in developing countries. Besides, it investigates the role of HGFs and its interactions with those channels in that process. Employing a large, new and reliable dataset collected by the World Bank in this study guarantees the accuracy of our results and policy implications.

3. Data and methodology

The dataset adopted in this study is obtained from the Enterprise Survey collected by the World Bank between 2019 and 2021 [1]. The survey covers a wide range of topics relevant to the business environment as well as performance measures and collects firm-level data from top managers and business owners of a representative sample of private establishments. The standardized format of the data is used to make sure the data on different countries with different characteristics are matched to a standard set of questions.

After removing the outliers, the final dataset on EAP Region includes 8,525 firms in different sectors [2]. The list of 12 developing countries includes Cambodia, China, Fiji, Indonesia, Laos, Malaysia, Mongolia, Myanmar, Philippines, Solomon Islands, Thailand and Vietnam. Given that there are not many surveys of businesses in developing economies and it is usually a challenge to obtain the existing ones, selection of EAP region reflects in large part data availability.

3.1 Empirical model

Equation (1) is used to estimate the impacts of FDI spillovers on the productivity of local firms in the EAP region. The coefficients in this equation are estimated by using threshold regression.

\[
\log(\text{Productivity})_{ijc} = a_\text{Demonstration}_{jc} + b_\text{Linkages}_{jc} + dX_{ijc} + F_c + F_j + \epsilon_{ijc}
\] (1)

In Equation (1), the subscripts \(c, j\) and \(i\) represent country, sector and firm, respectively. To account for unobserved heterogeneities within sector and country dimensions, \(F_c\) and \(F_j\) stand for sector and country fixed effects, respectively. Sector fixed effects are based on International Standard Industrial Classification (ISIC) codes for different economic sectors.
Productivity is defined as sales per worker in USD. It is worth mentioning that the sales figures in the dataset are in local currencies. Hence, we divide them by the annual exchange rate at the year of data collection.

$e_{ijc}$ is the error term. $X_{ijc}$ is the matrix of control variables describing firm-specific attributes including the natural logarithm of Age and “size num”, dummy variables including Exporter (export status), HG (growth status) and interaction terms capturing the interactions between growth status and FDI channels. Between dummy variables, Exporter is equal to 1 if the firm’s direct export is more than 5% of its sales and HG is equal to 1 if the firm is an HGF.

We use threshold regression introduced by Hansen (2000) to estimate Equation (1). Following Girma (2005), we analyze whether the effect of FDI on firm-level productivity depends on the strength of FDI channels. We assume that in order to detect a significant positive effect of an FDI channel on productivity, its strength has to be above a minimum level (threshold). The threshold regression can identify this threshold and compare the FDI-productivity nexus when the strength of FDI channels is below and above this threshold. This method uses the sum of squared residuals (SSRs) for each potential threshold. The threshold value is obtained by minimizing the SSR acquired for all potential thresholds.

Following World Bank (2018), FDI channels (demonstration and linkages) are defined by equations (2) and (3) respectively.

$$\text{Demonstration}_{jc} = \frac{\sum_i output^{fgm}_{ijc}}{\sum_i output^{all}_{ijc}}$$

where $\sum_i output^{all}_{ijc}$ is sales of all firms and $\sum_i output^{fgm}_{ijc}$ is sales of foreign firms in each country and sector.

$$\text{Linkages}_{jc} = \frac{1}{n} \sum_{i=1}^{n} \frac{input^{dom}_{ijc}}{input^{tot}_{ijc}}$$

which indicates the average share of inputs originated domestically in total inputs used by the foreign firms in each sector and country. The country-sectors with no foreign firms are not included in the regression estimation.

4. Empirical results

The descriptive statistics of the primary variables used in this study are presented in Table 1. In this table, “Foreign share” is the percentage owned by private foreign individuals, companies, or organizations. “Export” is Direct Exports as a percentage of sales. “Domestic Input” is the percentage of material inputs and supplies of domestic origin in the last fiscal year. “Establishment” is the year of establishment. We calculate the “age” of each firm as the difference between the data collection year and establishment year. L and L2 are the number of full-time employees at the end of last fiscal year and 2 fiscal years before that respectively. “Size num” is the total number of full-time employees adjusted to temporary workers. “Sales” and “Sales-2” are the real value of sales at the end of last fiscal year and 2 fiscal years before that respectively.

The statistics in Table 1 show that the percentage owned by foreigners, direct Exports as a percentage of sales and the percentage of material inputs and supplies of domestic origin ranges from zero to 100%.

Table 2 presents the number of firms in each country and their average age. Hosting 28.5% of the firms with an average age of 12.8 years, China has the largest and youngest population of firms among the countries of our sample. In contrast, hosting 0.7% of the firms...
with an average age of 25.8 years, Fiji has the smallest and oldest population of firms in our sample.

Table 3 presents the distribution of domestic and foreign firms between the manufacturing and services sectors. Following World Bank (2018), Foreign firms are defined as firms with more than 10% share owned by private foreign individuals or companies. Around 90% of the firms in our sample are domestic firms. Besides, 65% of firms are in manufacturing and the rest are in the services sector.

The identification of HGFs between our sample firms is concentrated exclusively on domestically owned firms to focus on their capacity to absorb the benefits of

<table>
<thead>
<tr>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign share</td>
<td>7.0%</td>
<td>0</td>
</tr>
<tr>
<td>Export</td>
<td>8.9%</td>
<td>0</td>
</tr>
<tr>
<td>Domestic Input</td>
<td>82.9%</td>
<td>0</td>
</tr>
<tr>
<td>Establishment</td>
<td>1997.5</td>
<td>1854</td>
</tr>
<tr>
<td>L</td>
<td>159.7</td>
<td>1</td>
</tr>
<tr>
<td>L2</td>
<td>144.0</td>
<td>1</td>
</tr>
<tr>
<td>size num</td>
<td>271.7</td>
<td>1</td>
</tr>
<tr>
<td>Sales</td>
<td>21,180,348 USD</td>
<td>1,190 USD</td>
</tr>
<tr>
<td>Sales-2</td>
<td>25,819,518 USD</td>
<td>1,190 USD</td>
</tr>
</tbody>
</table>

Note(s): “Foreign share” is the percentage owned by private foreign individuals, companies or organizations; “Export” is Direct Exports as a percentage of sales; “Domestic Input” is the percentage of material inputs and supplies of domestic origin in the last fiscal year and “Establishment” is the year of establishment.

**Table 1. Summary statistics**

<table>
<thead>
<tr>
<th>N</th>
<th>Percent</th>
<th>Mean age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>351</td>
<td>4.1%</td>
</tr>
<tr>
<td>China</td>
<td>2,430</td>
<td>28.5%</td>
</tr>
<tr>
<td>Fiji</td>
<td>63</td>
<td>0.7%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1,222</td>
<td>14.3%</td>
</tr>
<tr>
<td>Laos</td>
<td>244</td>
<td>2.9%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>658</td>
<td>7.7%</td>
</tr>
<tr>
<td>Mongolia</td>
<td>353</td>
<td>4.1%</td>
</tr>
<tr>
<td>Myanmar</td>
<td>541</td>
<td>6.3%</td>
</tr>
<tr>
<td>Philippines</td>
<td>1,026</td>
<td>12.0%</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>126</td>
<td>1.5%</td>
</tr>
<tr>
<td>Thailand</td>
<td>670</td>
<td>7.9%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>841</td>
<td>9.9%</td>
</tr>
<tr>
<td>Total</td>
<td>8,525</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Table 2. Number of firms and their average age in each country**

<table>
<thead>
<tr>
<th>Manufacturing</th>
<th>Services</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>4,794</td>
<td>2,813</td>
</tr>
<tr>
<td>56.20%</td>
<td>33.00%</td>
<td>89.20%</td>
</tr>
<tr>
<td>Foreign</td>
<td>736</td>
<td>182</td>
</tr>
<tr>
<td>8.60%</td>
<td>2.10%</td>
<td>10.80%</td>
</tr>
<tr>
<td>Total</td>
<td>5,530</td>
<td>2,995</td>
</tr>
<tr>
<td>64.90%</td>
<td>35.10%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

**Table 3. Distribution of domestic and foreign firms between sectors**
multinationals' presence. In order to characterize firm growth, the firm-level job creation rate is used in our analysis.

Standard growth rates are biased toward smaller firms because they are a function of the initial size of the firm. Hence, we follow the method suggested by Davis et al. (1998) to calculate employment change relative to the average firm size between the previous fiscal year and the previous two fiscal years. The growth rate of firm $i$ in this method is defined as follows:

$$g_i = \frac{L_i - L_{2i}}{\frac{1}{2}(L_i + L_{2i})}$$

(4)

This growth rate is bounded between $-2$ and $2$ and symmetric around zero. Firms in each country are sorted by their growth rate and those located in the top 10th percentile are considered as HGFs. The main advantage of this approach is that it accounts for specifications that hinder or support the performance of each country’s private sector. Therefore, in each country, firms need to have the specific growth rate of that country to be classified as HGF. This method is known as the best to distinguish HGFs (Coad et al., 2014; Reyes et al., 2017).

Table 4 shows the distribution of domestic firms in percentiles. 10% of the domestic firms are in the 10th percentile and considered as HGFs in our sample. Among 7607 domestic firms in our sample, 760 firms are identified as HGFs. The distribution of HGFs between countries is presented in Table 5. The figures reported for each country include the number of firms and their percentage as a share of all domestic firms in the sample. HGFs constitute around 10% of the domestic firms in each country. HGFs also constitute 10% of the domestic firms in the whole sample.

Table 6 presents domestic HGFs’ contribution to employment generation. HGFs make up less than 10% of firms in manufacturing and services, yet they contribute more than 48% to the net change in employment and create more than 37% of all new jobs in these sectors. Overall, domestic firms have generated 141,352 jobs; however, considering the number of jobs destroyed by these firms, the net change in employment is 109,889 jobs.

The average numbers of Jobs generated or destroyed by domestic firms are presented in Table 7. The third column (Mean L) shows the average number of full-time employees. The average number of jobs generated by each HGF in the services and manufacturing sectors is 35.9 and 92.5 jobs respectively. These numbers are 9.2 and 15.1 for the rest of the firms. Interestingly, the last column (Mean Jobs Destroyed) shows that HGFs have not destroyed

<table>
<thead>
<tr>
<th>Percentile</th>
<th>NHGF</th>
<th>HGF</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,149</td>
<td>1,149</td>
<td>15.1%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1,119</td>
<td>1,119</td>
<td>14.7%</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1,391</td>
<td>1,391</td>
<td>18.3%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>635</td>
<td>635</td>
<td>8.3%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>243</td>
<td>243</td>
<td>3.2%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>375</td>
<td>375</td>
<td>4.9%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>557</td>
<td>557</td>
<td>7.3%</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>667</td>
<td>667</td>
<td>8.8%</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>711</td>
<td>711</td>
<td>9.3%</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>760</td>
<td>760</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6,847</td>
<td>760</td>
<td>7,607</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note(s): HGF: High-Growth Firms
NHGF: Rest of the firms (non-High-Growth Firms)
<table>
<thead>
<tr>
<th>Country</th>
<th>NHGF</th>
<th>HGF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>285</td>
<td>32</td>
<td>317</td>
</tr>
<tr>
<td></td>
<td>3.70%</td>
<td>0.40%</td>
<td>4.20%</td>
</tr>
<tr>
<td>China</td>
<td>2,066</td>
<td>224</td>
<td>2,280</td>
</tr>
<tr>
<td></td>
<td>27.00%</td>
<td>2.90%</td>
<td>30.00%</td>
</tr>
<tr>
<td>Fiji</td>
<td>46</td>
<td>6</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>0.60%</td>
<td>0.10%</td>
<td>0.70%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>98</td>
<td>110</td>
<td>1,098</td>
</tr>
<tr>
<td></td>
<td>13.00%</td>
<td>1.40%</td>
<td>14.40%</td>
</tr>
<tr>
<td>Laos</td>
<td>204</td>
<td>23</td>
<td>227</td>
</tr>
<tr>
<td></td>
<td>2.70%</td>
<td>0.30%</td>
<td>3.00%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>454</td>
<td>57</td>
<td>511</td>
</tr>
<tr>
<td></td>
<td>6.00%</td>
<td>0.70%</td>
<td>6.70%</td>
</tr>
<tr>
<td>Mongolia</td>
<td>479</td>
<td>44</td>
<td>523</td>
</tr>
<tr>
<td></td>
<td>4.00%</td>
<td>0.40%</td>
<td>4.40%</td>
</tr>
<tr>
<td>Myanmar</td>
<td>702</td>
<td>85</td>
<td>787</td>
</tr>
<tr>
<td></td>
<td>6.30%</td>
<td>0.60%</td>
<td>6.90%</td>
</tr>
<tr>
<td>Philippines</td>
<td>64</td>
<td>4</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>0.80%</td>
<td>0.10%</td>
<td>0.90%</td>
</tr>
<tr>
<td>Thailand</td>
<td>572</td>
<td>62</td>
<td>634</td>
</tr>
<tr>
<td></td>
<td>7.50%</td>
<td>0.80%</td>
<td>8.30%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>692</td>
<td>80</td>
<td>772</td>
</tr>
<tr>
<td></td>
<td>9.10%</td>
<td>1.00%</td>
<td>10.10%</td>
</tr>
<tr>
<td>Total</td>
<td>6,847</td>
<td>760</td>
<td>7,607</td>
</tr>
</tbody>
</table>

**Note(s):** HGF: High-Growth Firms  
NHGF: Rest of the firms

<table>
<thead>
<tr>
<th>Firms</th>
<th>Number</th>
<th>%</th>
<th>Net change in employment</th>
<th>Number</th>
<th>%</th>
<th>New jobs</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGF Services</td>
<td>309</td>
<td>9.99%</td>
<td>11,106</td>
<td>48.07%</td>
<td>11,106</td>
<td>37.37%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>451</td>
<td>9.81%</td>
<td>41,714</td>
<td>92.5%</td>
<td>41,714</td>
<td>62.63%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHGF Services</td>
<td>2,504</td>
<td>90.01%</td>
<td>14,537</td>
<td>51.93%</td>
<td>22,929</td>
<td>62.63%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>4,343</td>
<td>9.99%</td>
<td>42,332</td>
<td>92.5%</td>
<td>65,603</td>
<td>62.63%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7,807</td>
<td>100%</td>
<td>109,889</td>
<td>100%</td>
<td>141,352</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 5.**  
Distribution of HGFs between countries

<table>
<thead>
<tr>
<th>Firms</th>
<th>Mean L</th>
<th>Mean jobs generated</th>
<th>Mean jobs destroyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGF Services</td>
<td>75.8</td>
<td>35.9</td>
<td>0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>190.7</td>
<td>92.5</td>
<td>0</td>
</tr>
<tr>
<td>NHGF Services</td>
<td>74.0</td>
<td>9.2</td>
<td>3.4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>162.9</td>
<td>15.1</td>
<td>5.3</td>
</tr>
</tbody>
</table>

**Table 6.**  
Domestic HGFs’ contribution to employment generation

**Table 7.**  
Average number of jobs generated and destroyed by domestic firms

**Note(s):** HGF: High-Growth Firms  
NHGF: Rest of the firms  
L: Number of full-time employees
any jobs, but on average each non-HGF (NHGF) has destroyed 3.4 and 5.3 jobs in the services and manufacturing sectors respectively.

Figure 1 illustrates the share of domestic HGFs in each size category. HGFs are distributed evenly between small, medium and large size firms. This finding about the firms in the EAP region is in contrast with what Reyes (2017) reports about firms in the developing world. He reports that HGFs are small and young. His finding is, however, in line with ours in Figure 2. This figure shows that the share of HGFs between the firms with an age less than 10 years is greater than the other age categories. HGFs represent more than 22% of firms younger than 20 years old.

Figure 1.
Share of HGFs in each size category

Figure 2.
Share of HGFs in each age category
Firm-level output and employment growth across sectors are presented in Table 8. The sector codes are based on revision 3.1 of the International Standard Industrial Classification of all economic activities (ISIC). This table shows that HGFs in the developing countries of the EAP region appear in all sectors but are more concentrated in services. The share of HGFs in the services and manufacturing sectors is 12.3 and 10.3% respectively. HGFs in the services sector are more common in the computer sector and related activities and account for 16% of the firms.

Regarding employment and output growth, Table 8 shows the better performance of HGFs in comparison with the rest of the firms almost in all sectors. Besides, HGFs in the services sector outperform HGFs in the manufacturing sector. During two years, these firms in the services sector increased sales by 143% (versus 88% in the manufacturing sector) and employed 131% more people (versus 110% in the manufacturing sector).

The magnitude of demonstration and linkages channels across sectors are presented in Table 9. Different sectors show different transmission channels of FDI spillovers. On average, both channels are stronger in the manufacturing sector. Foreign firms in this sector source 70% of their inputs locally. This share is only 30% in the services sector. Foreign firms in the manufacturing sector contribute to 30% of sectoral output. This share is 20% in the services sector.

The sole presence of demonstration and linkages channels doesn’t necessarily imply the positive spillovers of FDI for local firms. These firms may be unable to improve their performance via obtained knowledge even if they are suppliers of foreign firms. Besides, if there is no direct link between local and foreign firms, transmission of FDI benefits by means of demonstration channel can be disrupted (World Bank, 2018).

The threshold regression is used to estimate Equation (1). This method uses SSRs for each potential threshold. The threshold value is obtained by minimizing the SSR acquired for all potential thresholds. The estimated thresholds for the FDI channels and the corresponding SSRs are presented in Table 10. The thresholds are 0.31 and 0.19 for the linkages and demonstration channels, respectively. Each estimated threshold divides the sample into two parts. The first part corresponds to the portion of the sample in which the FDI channel is less than the threshold. The second part corresponds to the portion of the sample in which the FDI channel is greater than the threshold. Four regressions are estimated to obtain the average effects of demonstration and linkages channels on the productivity of domestic firms across sectors and countries via the coefficients $a$ and $b$ in Equation (1). These regressions show the effects of FDI spillovers on firm-level productivity when the linkages and demonstration channels are below or above their related thresholds. The results are presented in Tables 11–14.

In all models estimated, Age, Size (number of employees) and Exporting status have a positive impact on productivity. In the other words, experienced larger firms with External market linkages are predicted to be more productive. Therefore, hypothesis 2 is confirmed. The positive effect of age and size on the productivity of local firms detected by our analysis is in line with the findings of Anwar and Sun (2014) and Aitken and Harrison (1999). Larger firms are expected to benefit more from the presence of multinationals because smaller firms usually do not have the required production scale to use the knowledge and imitate technologies introduced by foreign firms. Besides, smaller firms usually do not have access to financial resources and suffer more from price pressures made by multinationals in the market. The positive association between export performance and firm productivity estimated in our study confirms the findings of Ebghaei and Akkoyunlu Wigley (2018), Djulius (2017) and Wakasugi (2016).

The effects of linkages and demonstration channels on productivity are insignificant or significantly negative when they are below the estimated thresholds and significantly positive when they are above those thresholds. Therefore, hypothesis 1 is supported when
<table>
<thead>
<tr>
<th>ISIC codes</th>
<th>Sector</th>
<th>Number of firms</th>
<th>Employment growth (%)</th>
<th>Output growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NHG</td>
<td>HG</td>
<td>NHG</td>
<td>HG</td>
</tr>
<tr>
<td>15</td>
<td>4343</td>
<td>451</td>
<td>10.3</td>
<td>4.1</td>
</tr>
<tr>
<td>16</td>
<td>759</td>
<td>86</td>
<td>10.2</td>
<td>3.1</td>
</tr>
<tr>
<td>17</td>
<td>260</td>
<td>39</td>
<td>13.0</td>
<td>3.7</td>
</tr>
<tr>
<td>18</td>
<td>555</td>
<td>55</td>
<td>9.0</td>
<td>0.9</td>
</tr>
<tr>
<td>19</td>
<td>83</td>
<td>5</td>
<td>5.7</td>
<td>6</td>
</tr>
<tr>
<td>20</td>
<td>99</td>
<td>8</td>
<td>7.5</td>
<td>2.1</td>
</tr>
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<tr>
<td>22</td>
<td>99</td>
<td>10</td>
<td>9.2</td>
<td>5.8</td>
</tr>
<tr>
<td>23</td>
<td>14</td>
<td>1</td>
<td>6.7</td>
<td>13.9</td>
</tr>
<tr>
<td>24</td>
<td>340</td>
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<td>5.4</td>
</tr>
<tr>
<td>25</td>
<td>440</td>
<td>38</td>
<td>7.9</td>
<td>3.4</td>
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<td>26</td>
<td>372</td>
<td>36</td>
<td>8.8</td>
<td>3</td>
</tr>
<tr>
<td>27</td>
<td>127</td>
<td>9</td>
<td>6.6</td>
<td>9.4</td>
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<td>28</td>
<td>375</td>
<td>36</td>
<td>8.8</td>
<td>6</td>
</tr>
<tr>
<td>29</td>
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<td>20</td>
<td>8.5</td>
<td>6.9</td>
</tr>
<tr>
<td>30</td>
<td>1</td>
<td>0</td>
<td>15</td>
<td>1.7</td>
</tr>
<tr>
<td>31</td>
<td>200</td>
<td>33</td>
<td>14.2</td>
<td>4.6</td>
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<td>32</td>
<td>67</td>
<td>7</td>
<td>9.5</td>
<td>4.3</td>
</tr>
<tr>
<td>33</td>
<td>19</td>
<td>1</td>
<td>5.0</td>
<td>7.8</td>
</tr>
<tr>
<td>34</td>
<td>113</td>
<td>5</td>
<td>4.2</td>
<td>11.4</td>
</tr>
<tr>
<td>35</td>
<td>19</td>
<td>0</td>
<td>11.1</td>
<td>62.6</td>
</tr>
<tr>
<td>36</td>
<td>100</td>
<td>13</td>
<td>11.5</td>
<td>1.7</td>
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<tr>
<td>37</td>
<td>34</td>
<td>4</td>
<td>10.5</td>
<td>0.2</td>
</tr>
<tr>
<td>38</td>
<td>2504</td>
<td>309</td>
<td>12.3</td>
<td>6.5</td>
</tr>
<tr>
<td>39</td>
<td>347</td>
<td>46</td>
<td>11.7</td>
<td>4.5</td>
</tr>
<tr>
<td>40</td>
<td>269</td>
<td>34</td>
<td>11.2</td>
<td>7.2</td>
</tr>
<tr>
<td>41</td>
<td>401</td>
<td>57</td>
<td>12.4</td>
<td>6.7</td>
</tr>
<tr>
<td>42</td>
<td>792</td>
<td>86</td>
<td>9.8</td>
<td>5.4</td>
</tr>
<tr>
<td>43</td>
<td>345</td>
<td>35</td>
<td>9.2</td>
<td>5.7</td>
</tr>
<tr>
<td>44</td>
<td>142</td>
<td>21</td>
<td>12.9</td>
<td>8.4</td>
</tr>
<tr>
<td>45</td>
<td>24</td>
<td>2</td>
<td>7.7</td>
<td>15.2</td>
</tr>
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<td>46</td>
<td>6</td>
<td>1</td>
<td>14.3</td>
<td>14.6</td>
</tr>
<tr>
<td>47</td>
<td>48</td>
<td>4</td>
<td>7.7</td>
<td>9.9</td>
</tr>
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<td>48</td>
<td>9</td>
<td>1</td>
<td>10.0</td>
<td>3.2</td>
</tr>
<tr>
<td>49</td>
<td>1</td>
<td>0</td>
<td>17.6</td>
<td>12.5</td>
</tr>
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</table>

Table 8. Firm-level output and employment growth across sectors
<table>
<thead>
<tr>
<th>ISIC codes</th>
<th>Sector</th>
<th>Number of firms</th>
<th>Employment growth (%)</th>
<th>Output growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Share of HGFs in the sector (%)</td>
<td>NHG</td>
<td>HG</td>
</tr>
<tr>
<td>72</td>
<td>Computer and related activities</td>
<td>116</td>
<td>14.8</td>
<td>47.9</td>
</tr>
<tr>
<td>93</td>
<td>Other service activities</td>
<td>1</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>98</td>
<td>Extraterritorial organizations and bodies</td>
<td>1</td>
<td>42.9</td>
<td>9.5</td>
</tr>
</tbody>
</table>

**Note(s):** The Italic values indicate the average or total values for those sectors. All sectors 15 to 37 are included in Manufacturing. All sectors 45 to 98 are included in Services.

<table>
<thead>
<tr>
<th>ISIC codes</th>
<th>Sector</th>
<th>Linkages</th>
<th>Demonstration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>Manufacturing</em></td>
<td>0.7</td>
<td>0.3</td>
</tr>
<tr>
<td>15</td>
<td>Food products and beverages</td>
<td>0.8</td>
<td>0.3</td>
</tr>
<tr>
<td>16</td>
<td>Tobacco products</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>17</td>
<td>Textiles</td>
<td>0.8</td>
<td>0.3</td>
</tr>
<tr>
<td>18</td>
<td>Apparel and fur</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>19</td>
<td>Tanning and dressing of leather</td>
<td>0.6</td>
<td>0.5</td>
</tr>
<tr>
<td>20</td>
<td>Wood and of products of wood and cork</td>
<td>0.4</td>
<td>0.1</td>
</tr>
<tr>
<td>21</td>
<td>Paper and paper products</td>
<td>0.6</td>
<td>0.1</td>
</tr>
<tr>
<td>22</td>
<td>Publishing and printing</td>
<td>0.9</td>
<td>0</td>
</tr>
<tr>
<td>23</td>
<td>Coke, refined petroleum products and nuclear fuel</td>
<td>0.9</td>
<td>0.2</td>
</tr>
<tr>
<td>24</td>
<td>Chemicals and chemical products</td>
<td>0.7</td>
<td>0.3</td>
</tr>
<tr>
<td>25</td>
<td>Rubber and plastics products</td>
<td>0.7</td>
<td>0.3</td>
</tr>
<tr>
<td>26</td>
<td>Other non-metallic mineral products</td>
<td>0.8</td>
<td>0.4</td>
</tr>
<tr>
<td>27</td>
<td>Basic metals</td>
<td>0.6</td>
<td>0.3</td>
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<tr>
<td>28</td>
<td>Fabricated metal products</td>
<td>0.6</td>
<td>0.2</td>
</tr>
<tr>
<td>29</td>
<td>Machinery and equipment</td>
<td>0.8</td>
<td>0.2</td>
</tr>
<tr>
<td>30</td>
<td>Office, accounting and computing machinery</td>
<td>0.6</td>
<td>0.5</td>
</tr>
<tr>
<td>31</td>
<td>Electrical machinery and apparatus</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>32</td>
<td>Radio, television and communication equipment</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>33</td>
<td>Medical, precision and optical instruments</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>34</td>
<td>Motor vehicles, trailers and semi-trailers</td>
<td>0.6</td>
<td>0.2</td>
</tr>
<tr>
<td>35</td>
<td>Other transport equipment</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Furniture</td>
<td>0.7</td>
<td>0.4</td>
</tr>
<tr>
<td>37</td>
<td>Recycling</td>
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<td>0.1</td>
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<tr>
<td>45</td>
<td>Construction</td>
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<td>0.2</td>
</tr>
<tr>
<td>50</td>
<td>Sale, maintenance and repair of motor vehicles</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>51</td>
<td>Wholesale trade and commission trade</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>52</td>
<td>Retail trade</td>
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<td>0.3</td>
</tr>
<tr>
<td>55</td>
<td>Hotels and restaurants</td>
<td>0.7</td>
<td>0.2</td>
</tr>
<tr>
<td>60</td>
<td>Land transport; transport via pipelines</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>61</td>
<td>Water transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Air transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Supporting and auxiliary transport activities</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>64</td>
<td>Post and telecommunications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Renting of machinery and equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>Computer and related activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>93</td>
<td>Other service activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>Extraterritorial organizations and bodies</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note(s):** The Italic values indicate the average or total values for those sectors. All sectors 15 to 37 are included in Manufacturing. All sectors 45 to 98 are included in Services.

Table 8.

Table 9. The magnitude of demonstration and linkages channels across sectors
FDI channels are strong enough in an industry. In other words, the strength of FDI channels plays an important role in capturing productive positive spillovers of FDI by local firms. This finding confirms the results of da Castillo et al. (2014) and Armas and Rodriguez (2017).

Aitken and Harrison (1999), Fernandes and Paunov (2012), Fons-Rosen et al. (2021) and Lu et al. (2017) are the studies that report an insignificant or negative effect of FDI spillovers on productivity. The results of our analysis highlight the asymmetry of the relationship between FDI spillovers and productivity and the importance of employing a method that can capture this asymmetry.

The reason behind the negative impact of FDI on the productivity (sales per worker) of domestic companies detected in our study for the industries with weak FDI channels could be the presence of foreign firms in the domestic market that push down prices by raising competition (Goswami et al., 2019) and consequently offset any positive impact of FDI spillovers on the sales of domestic firms.

Our results also suggest that high-growth status (HG) and its interaction terms with FDI channels do not have any significant impact on productivity. Therefore, hypothesis 3 is not supported. The insignificant coefficient of HG indicates no significant difference between HGFs and NHGFs in terms of productivity.

<table>
<thead>
<tr>
<th>Threshold variable</th>
<th>Threshold</th>
<th>Minimum SSR</th>
</tr>
</thead>
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<td>linkages</td>
<td>0.31</td>
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</tr>
<tr>
<td>demonstration</td>
<td>0.19</td>
<td>131.51</td>
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</table>

### Table 10. Estimated threshold and the corresponding SSRs

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<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
</tr>
</thead>
<tbody>
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<td>Log_age</td>
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<td>0.128</td>
<td>0.125</td>
<td>0.128</td>
<td>0.129</td>
<td>0.126</td>
<td>0.129</td>
</tr>
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### Table 11. Determinants of productivity when linkages channel <0.31

**Note(s):**
The dependent variable is natural logarithm of productivity

\( t \) statistics in parentheses

* \( p < 0.05 \), ** \( p < 0.01 \), *** \( p < 0.001 \)
5. Conclusions and policy implications

This paper aims to first, study the role of FDI channels in improving the local firms’ productivity, second, investigate whether HGFs (constituting a relatively small share of firms in the economy and quickly scaling their employment) can have a disproportionate

### Table 12

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**Note(s):** See the notes to Table 11

### Table 13

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**Note(s):** See the notes to Table 11
contribution to overall productivity and create positive spillovers throughout the value chain in developing countries in EAP Region. In an effort to boost development, decision-makers are usually keen to identify and support these firms. However, the economic literature surveyed and the analysis in this paper show that this policy could be misguided. Besides, high-growth episodes are usually short-lived.

This is the first study to investigate the strength of FDI spillover channels across different sectors and their impact on the productivity of local enterprises in the EAP region. It also investigates the potential role of HGFs in this interaction via job creation and improving output growth rate. While many studies in this field employed small samples, the present study tries to generate more reliable results and actionable policy implications by employing a large sample provided by World Bank.

Although high-growth enterprises are powerful engines of job creation, our empirical analysis doesn’t detect any significant difference between these firms and the rest in terms of their capacity in absorbing FDI spillovers. This highlights the necessity of rethinking public policy priorities to support firm growth.

The Firm-level analysis of output and employment growth across sectors in the developing countries of the EAP region shows that HGFs in the services sector outperform those in manufacturing. However, both demonstration and linkages channels of FDI spillovers are stronger in the manufacturing sector. It proves that the sole presence of FDI channels doesn’t necessarily imply the positive spillovers of FDI for local firms. These firms may be unable to improve their performance via obtained knowledge even if they are suppliers of foreign firms.

Our findings indicate that firms’ age, size and exporting status are the most critical determinants of productivity. In the other words, experienced larger firms with external market linkages are predicted to be more productive. There is no difference between HGFs and NHGFs in terms of productivity; however, large firms are much more productive than small firms.

The effects of linkages and demonstration channels on productivity are insignificant or significantly negative when these FDI channels are weak within the industries. This could be

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Table 14.
Determinants of productivity when demonstration channel >0.19

Note(s): See the notes to Table 11.
due to competition pressures and lower prices in the domestic market. High-growth status (HG) and its interaction terms with FDI channels do not have any significant impact on productivity either. According to Cusolo and Maloney (2018), not every growth is driven by efficiency. Firms can grow for different reasons such as political connections, uncompetitive markets, or demand shocks. That’s why the link between high growth and productivity is often weak.

Our results also show that stronger FDI channels have significantly positive effects on the productivity of local firms. Therefore, the strength of FDI channels plays an important role in capturing productive positive spillovers of FDI by local firms. This proves first, the non-linear relationship between productivity and FDI channels and the importance of ideal model specifications to capture this non-linearity; second, the importance of improving the linkages and demonstration channels in improving the productivity of local firms via FDI inflows.

The main findings and conclusions from the in-depth analysis of high-quality datasets in the EAP region are robust across all models, validating the study’s insights and policy suggestions. The question is what policymakers can do to improve the absorptive capacity of domestic firms to benefit from FDI spillovers and use them to boost their productivity? How to improve the linkages and demonstration channels?

A flexible labor market is one of the essentials in improving the demonstration channel. It facilitates the movement of skilled workers and managers between domestic and foreign firms to bring their knowledge from one firm to the next. According to the World Bank (2018), the main obstacles in developing linkages are (1) lack of access to finance, (2) the production standards of domestic firms do not meet the quality requirements of foreign firms, (3) local suppliers are small size and cannot respond to large orders from multinational, (4) high cost of search for both sellers and buyers due to the asymmetry of information. To solve these problems and create a policy environment for linkages, strong stakeholder engagement, coordination mechanisms across institutions and a suitable lead agency are recommended.

Linkages programs in most developing countries support a vast group of SMEs; however, such a policy has no empirical basis. Linkages programs have to identify and support domestic enterprises with a high potential in becoming suppliers of multinationals. Productivity-limiting distortions can obscure the relationship between productivity and high growth by first, misallocating resources from more efficient to less efficient firms, second, decreasing the number of companies that can achieve high growth.

Local firms’ administrations have to be informed that better linkages to multinationals and learning from them can improve the productivity of domestic firms. We call managers’ attention to elements that make a solid foundation for firm productivity, including financial development, global linkages, managerial capabilities and worker skills, agglomeration and network economies and innovation. Finally, for a greater likelihood of high firm productivity, a degree of priority must be given to plans that connect local enterprises to export markets and attract high-quality FDI to improve learning and quality upgrading.

The data employed in our analysis is a cross-section of firms in different countries collected over only three years. Hence, at the time of conducting this research, it was not feasible to study the dynamics of the detected relationships over time. This limitation in the available data will be eliminated in the future as the World Bank continues conducting the current survey in the coming years.

Future studies can expand this study by employing a panel data with a longer time horizon to model both the individual and common behaviors of groups and provide further policy implications that are critical to firm-level productivity in developing economies. Two interesting lines of research for the future studies are first, analyzing the effects of FDI channels on the productivity of small, medium and large size firms separately while moderating for absorptive capacity in each group of firms; and second, studying the impacts of FDI spillovers on the employment growth of domestic companies in the EAP region.
Notes
2. The primary dataset includes 10,984 firms. The Boxplots of each variable are used to identify the outliers. The observations located out of the whiskers of the Boxplots are removed as outliers.

References


**Corresponding author**
Amin Sokhanvar can be contacted at: sokhanvar@urfu.ru

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