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INVESTMENT AND DEVELOPMENT



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EDITORIAL STATEMENT

*Transnational Corporations*¹ is a longstanding policy-oriented refereed research journal on issues related to investment, multinational enterprises and development. It is an official journal of the United Nations, managed by the United Nations Conference on Trade and Development (UNCTAD). As such it has a global reach, a strong development policy imprint, and high potential for impact beyond the scholarly community.

Objectives and central terrain

The journal aims to advance academically rigorous research to inform policy dialogue among and across the business, civil society and policymaking communities. Its central research question – feeding into policymaking at subnational, national and international levels – is how to make international investment and multinational enterprises contribute to sustainable development. It invites contributions that provide state-of-the-art knowledge and understanding of the activities conducted by, and the impact of multinational enterprises and other international investors, considering economic, legal, institutional, social, environmental or cultural aspects. Only contributions that draw clear policy conclusions from the research findings will be considered.

Grand challenges and the need for multiple lenses

The scale and complexities of the “grand challenges” faced by the international community, such as climate change, poverty, inequality, food security, health crises, and migration – as embodied in the United Nations’ Sustainable Development Goals (SDGs) – are enormous. These challenges, combined with the impact of disruptive technologies on business, rapidly evolving trends in international production and global value chains, new emerging-market players and new types of investors and investment, make it imperative that policymakers tap a wide range of research fields. Therefore, the journal welcomes submissions from a variety of disciplines, including international business, innovation, development studies, international law, economics, political science, international finance, political economy and economic geography. However, submissions should be accessible across disciplines (as a non-specialized journal idiosyncratic research should be avoided); interdisciplinary work is especially welcomed. The journal embraces both quantitative and qualitative research methods, and multiple levels of analyses at macro, industry, firm or individual/group level.

Inclusive: multiple contributors, types of contributions and angles

Transnational Corporations aims to provide a bridge between academia and the policymaking community. It publishes academically rigorous, research-underpinned

¹ Previously: The CTC Reporter. In the past, the Programme on Transnational Corporations was carried out by the United Nations Centre on Transnational Corporations (1975–1992) and by the Transnational Corporations and Management Division of the United Nations Department of Economic and Social Development (1992–1993).

and impactful contributions for evidence-based policymaking, including lessons learned from experiences in different societies and economies, both in developed and developing-country contexts. It welcomes contributions from the academic community, policymakers, research institutes, international organizations, and others. Contributions to the advancement and revision of theories, frameworks and methods are welcomed as long as they are relevant for shedding new light on the investigation of investment for development, such as advancing UNCTAD's *Investment Policy Framework for Sustainable Development*.

The journal publishes original research articles, perspective papers, state-of-the art review articles, point-counterpoint essays, research notes and book reviews. All papers are double blind reviewed and, in line with the aims and mission of the journal, each paper is reviewed by academic experts and experts from the policymaking community to ensure high-quality impactful publications that are both academically rigorous and policy relevant. In addition, the journal features synopses of major UN reports on investment, and periodic reviews of upcoming investment-related issues of interest to the policy and research community.

Unique benefits for authors: direct impact on policymaking processes

Through UNCTAD's wider development community and its global network of investment stakeholders, the journal reaches a large audience of academics, business leaders and, above all, policymakers. UNCTAD's role as the focal point in the United Nations system for investment issues guarantees that its contents gain significant visibility and contribute to debates in global conferences and intergovernmental meetings, including the biennial *World Investment Forum* and the *Investment and Enterprise Commission*. The work published in *Transnational Corporations* feeds directly into UNCTAD's various programmes related to investment for development, including its flagship product, the annual *World Investment Report*, and its technical assistance work (investment policies reviews, investment promotion and facilitation and investment treaty negotiations) in over 160 countries and regional organizations. The journal thus provides a unique venue for authors' academic work to contribute to, and impact on, national and international policymaking.

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The relationship between MNE tax haven use and FDI into developing economies characterized by capital flight

By Ali Ahmed, Chris Jones and Yama Temouri*

The use of tax havens by multinationals is a pervasive activity in international business. However, we know little about the complementary relationship between tax haven use and foreign direct investment (FDI) in the developing world. Drawing on internalization theory, we develop a conceptual framework that explores this relationship and allows us to contribute to the literature on the determinants of tax haven use by developed-country multinationals. Using a large, firm-level data set, we test the model and find a strong positive association between tax haven use and FDI into countries characterized by low economic development and extreme levels of capital flight. This paper contributes to the literature by adding an important dimension to our understanding of the motives for which MNEs invest in tax havens and has important policy implications at both the domestic and the international level.

Keywords: capital flight, economic development, institutions, tax havens, wealth extraction

1. Introduction

Multinational enterprises (MNEs) from the developed world own different types of subsidiaries in increasingly complex networks across the globe. Some of the foreign host locations are characterized by light-touch regulation and secrecy, as well as low tax rates on financial capital. These so-called tax havens have received widespread media attention in recent years. In this paper, we explore the relationship between tax haven use and foreign direct investment (FDI) in developing countries, which are often characterized by weak institutions, market imperfections and a propensity for significant capital flight. This relationship is of critical importance because tax

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havens are increasingly being characterized as wealth extractors that undermine economic development and contribute to rising inequality in developed nations (Torslov, Wier and Zucman, 2018).

Recent research has begun to shed light on this phenomenon. Andersen et al. (2017) show that 15 per cent of the windfall gains in petroleum-producing countries with autocratic rulers is diverted to accounts in tax havens. A recent World Bank report (Andersen, Johannesen and Rijkers, 2020) shows that aid disbursements to highly aid-dependent countries are strongly associated with an increase in bank deposits to tax havens. Coupled with the disclosures in the Panama Papers, the Paradise Papers and the Luanda Leaks (Ndikumana, 2020), this research shows a clear pattern of abuse by elites in the developing world to amass wealth by using tax havens. Indeed, Ndikumana (2020) argues that capital flight has had a negative impact on the citizens of developing countries in Africa, depriving governments of the resources to invest in public services such as education, clean drinking water, health care, childcare services and sanitation systems.

The use of tax havens by the world's leading MNEs is not a new phenomenon. Tax havens serve as financial hubs that handle enormous amounts of capital and trade. In conjunction with the world's leading financial centres – London, New York, Frankfurt and Tokyo – they have become the nerve centres of global trading networks and a permanent feature of international business. A significant share of all MNEs own tax haven subsidiaries or, in some cases, are owned by parent MNEs that are registered in tax havens. These countries offer low tax rates or beneficial fiscal treatment of cross-border financial transactions, extensive bilateral investment and double taxation treaty networks, and access to international financial markets, which make them attractive to companies, large and small (UNCTAD, 2016). Enormous amounts of capital flow in and out of tax havens each year. The UNCTAD *World Investment Reports* of 2013 and 2016 report detailed FDI trends and amounts of investments to offshore financial centres by so-called special purpose entities, which are foreign subsidiaries created with the purpose of exploiting tax benefits in countries that offer low or zero corporate taxation. UNCTAD (2013, 2016) clearly shows how offshore financial centres account for an increasing share of global FDI flows emanating from important investor developed countries.

Zucman (2013) also finds significant flows and estimates that close to 40 per cent of the world's FDI is routed through tax havens. Almost exclusively, this type of investment is not used for productive economic activity in the tax haven location. Instead, it is held there to avoid corporate tax levied at higher rates in countries across an MNE's global network. Consequently, it deprives locations that create the economic value added of revenues that could be used to finance public investment, and it may increase taxes on less mobile forms of income, such as wages and salaries paid to workers.

Using panel data for a sample of MNEs from 19 developed economies, we find that MNEs that have subsidiaries in developing countries with a high degree of capital flight also have a much stronger propensity to own tax haven subsidiaries than other MNEs who have only conventional subsidiaries in developed economies. This suggests that when MNEs extend their networks to regions of the world characterized by weak institutions and a high degree of capital flight, this leads to more tax haven activity. For example, in one of our specifications, we show that developed-country MNEs that own a subsidiary in Africa are 5 per cent more likely to own a tax haven subsidiary in a highly secretive location.

This is an important finding and contributes to the literature both conceptually and empirically. First, our findings extend our conceptual understanding of how institutional voids affect developing countries. Buckley et al. (2015) apply internalization theory and the economic geography of FDI to tax havens and offshore financial centres with a particular emphasis on Chinese MNEs. They argue that capital market imperfections and poor institutional environments create significant transaction costs that can be alleviated by the use of tax havens. Our findings test this theory but extend the model to a specific phenomenon – countries that experience significant capital flight.

Our empirical contribution lies in the large panel data set that allows us to test the relationship between MNEs from 19 developed countries and their FDI locations around the world, including tax havens. This enables us to undertake a cross-country comparison that is rare in the literature on tax havens, which mostly focuses on single-country analysis. We also contribute to the literature by drawing out a number of policy recommendations based on our main empirical results.

The rest of the paper is set out as follows: in the second section we outline our conceptual framework and generate two testable hypotheses. In the third section we describe the firm-level data used in this study. The fourth section lays out the empirical methodology and in the fifth section we report our results. The sixth section concludes with a discussion of our findings and policy implications.

2. Conceptual framework and hypotheses

Our conceptual framework is illustrated in figure 1, which shows the complementary relationship between investing in tax havens and investing in overseas non-tax-haven subsidiaries. The framework draws on the traditional internalization theory (see Rugman, 1980, 2010) and combines with it insights from the work by Buckley et al. (2015), who apply internalization theory to offshore FDI with respect to Chinese capital flows. We build and extend the framework of Buckley et al. (2015), which uses a case-based empirical approach, by developing a conceptual framework

that enables us to generate testable hypotheses that can be estimated with firm-level data using panel data. The benefit of this larger-scale empirical analysis lies in capturing cross-country evidence for a set of heterogeneous developed-country MNEs that have subsidiary structures across the world.

The profit-shifting activity of MNEs is a complex process (Holtzblatt, Jermakowicz and Epstein, 2015; Pun, 2017). MNEs that choose to undertake this type of activity need to employ well-qualified legal advisors, accountants and tax experts to take advantage of hybrid mismatch opportunities that result from differences in tax codes across countries (Kemme, Parikh and Steigner, 2017; OECD, 2013). In general, tax avoidance schemes are not difficult for MNEs to set up but do carry risks. Nevertheless, a number of firms are willing to supply firms with these types of schemes, Panamanian law firm Mossack Fonseca being a famous example. Furthermore, many enablers of tax avoidance, such as the Big Four, are ready to meet the demands of MNEs to undertake this type of activity (see Jones, Temouri and Cobham, 2018; Sikka, 2015; Sikka and Willmott, 2010). This can be observed from the recent Panama Papers and Paradise Papers scandals, which generated widespread media attention across the world.

At present, countries across the world are signatories to more than 3,000 bilateral international tax treaties. Hence, the tax landscape is constantly changing (Kleist, 2018), and this complexity allows MNEs to use transfer pricing techniques to shift profits out of high-tax jurisdictions and into low-tax jurisdictions (Eden, 1998; Eden and Kudrle, 2005).¹ Some argue that the ability of MNEs to exploit differences in corporate tax rules across the jurisdictions in which they operate is a key competitive advantage over firms that choose not to take such extreme measures (Picciotto, 2018).

Abstracting from the complexity of the structures used to undertake international profit shifting, figure 1 shows a simple tax avoidance structure. This basic structure is useful because it can encompass the various motivations for MNEs to use tax haven subsidiaries. In order to simplify the theory, we subsume all of these factors under a simple construct: “profit shifting”.

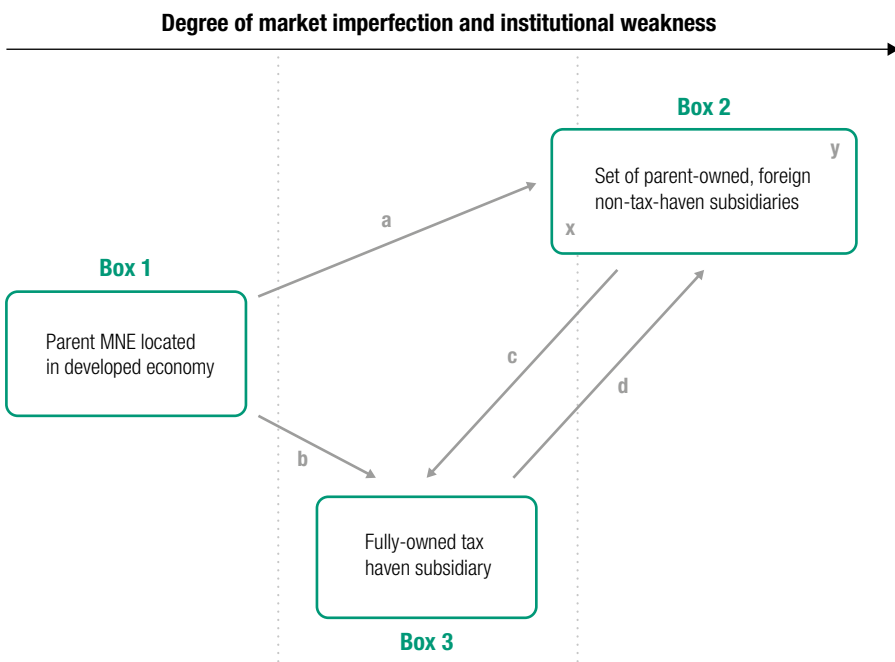
Figure 1 shows three boxes. In the first box is the parent MNE, which originates from a developed country. In the second box is the tax haven subsidiary, which is located in an offshore jurisdiction that fits the parent MNE’s specific needs. The literature

¹ It is important to note that this type of activity is not necessarily illegal. In some circumstances, transfer pricing is needed in order to evaluate the performance of divisions across an MNE’s corporate structure. But very often it is abused for tax and secrecy purposes, and many scholars and representatives of non-governmental organizations believe it does not play to the spirit and intention of the rules as they have been developed since the 1920s. Indeed, some scholars argue that it undermines the undoubted ability of capitalism to enhance living standards across the world (Palan, Murphy and Chavagneux, 2010; Shaxson, 2014).

suggests that MNEs do not choose a tax haven location in a vacuum (Dharmapala and Hines, 2009). Offshore locations differ in terms of geographical proximity and cultural ties to centres of large economic activity, quality of governance and institutions, and size of local populations, among other factors (Dharmapala and Hines, 2009). Nevertheless, one common aspect of tax haven locations is that they have institutions in place that protect the interests of investors. These include a stable political environment, a legal system that aligns with the interests of private property, privacy and high levels of secrecy for investors, light-touch regulation and low, often zero, rates of tax on corporate profits.

The third box includes the parent firm’s set of conventional (non-tax-haven) subsidiaries. Any number of such subsidiaries could be included in this box, from any location across the world (except a tax haven). We assume that the parent has a significant degree of control over these subsidiaries, but it is not necessary to assume that they are fully owned.

Figure 1: Conceptual framework



Key:
 a: Real resource flows
 b & d: Shadow resource flows
 c: Profit shifting

The simple profit-shifting structure illustrated in figure 1 can be described as follows. The parent MNE sets up subsidiaries in foreign markets to mitigate transaction costs. This type of FDI is based on the four standard FDI motives (Dunning, 1980, 1988): (1) market-seeking; (2) resources-seeking; (3) efficiency-seeking; and (4) strategic asset-seeking. Hence, real resources flow back and forth from the subsidiaries to the parent; they could include knowledge transfers, intangible assets and capital goods. They are illustrated by capital flow *a* in figure 1, which is equal to the net flow of capital to and from the parent. At some stage in the MNE's life cycle, the MNE may choose to take advantage of the financial benefits of setting up a tax haven subsidiary. This could be prior to the conventional investment overseas or it could be at a later date. Once the tax haven subsidiary has been set up, flows that we call "shadow resource flows" can be shifted between the tax haven subsidiary and the conventional overseas subsidiaries. These flows can be seen in shadow resource flows *b* and *d* in figure 1. Furthermore (not shown in the figure), the returns from these flows may end up back in the parent firm's location of origin if the tax rules change, for example, through a repatriation tax holiday or a loosening of the domestic corporate tax rate (Bloink, 2011; Kyj and Romeo, 2015). An example of a shadow resource flow could be the use of an intangible asset such as intellectual property, such as a brand, patent or unique business process. Ownership of the intangible is registered in the tax haven, and the conventional subsidiary has to pay a royalty fee to use the intellectual property. Hence, profits are shifted from the conventional subsidiary in the high-tax location into the tax haven subsidiary in the low-tax location. This is shown by capital flow *c* in figure 1, which is equal to the sum of all the profit shifting from each of the conventional subsidiaries.²

So how does this simple profit-shifting structure relate to the key research question of this paper? The answer lies in the complementary relationship between use of tax haven subsidiaries and investment in overseas non-tax-haven subsidiaries that are owned in order to conduct conventional FDI. In figure 1, the arrow at the top of the figure shows the degree of market imperfection and institutional weakness as posited by Buckley et al. (2015). As we move to the right, this degree increases as market imperfections and institutional weakness increase, and MNEs become more likely to undertake FDI with a physical presence as opposed to running joint ventures, licensing or exporting (Puck, Holtbrugge and Mohr, 2009) and also more likely to use tax havens. For example, the domestic capital market in the host location may not be driven by market forces, as MNEs may receive privileged

² A classic example of this type of structure is that of Starbucks. In 2012 it was revealed that although Starbucks had sales worth £1.2 billion in the United Kingdom in the three years preceding 2012, the company paid zero corporate income tax, as they reported zero profits. This was made possible by using practices such as transfer pricing, by registering patents with a subsidiary in a low-tax jurisdiction outside of the United Kingdom and then paying royalty payments to it, and by paying interest on loans – basically through a robust profit-shifting structure (Campbell and Helleloid, 2016).

access through political connections or a business group that receives favourable access, or they may find it difficult to obtain bank loans because of complex and discriminatory regulations. Therefore, it is plausible to argue that the second box contains a continuum of (non-tax haven) foreign subsidiaries, controlled by the parent and ranked in terms of the degree of market imperfections relative to the MNE's home environment. For instance, a United Kingdom MNE may own a conventional overseas subsidiary in Poland, represented by position x in box 2, and a conventional overseas subsidiary in the Democratic Republic of the Congo, represented by position y at the far right side of box 2, where we assume that the degree of market imperfection and institutional weakness is such that $y > x$. MNEs are more likely to own tax havens if they have FDI in developing economies with significant market imperfections. This means that capital flows c and d between the conventional subsidiaries and the tax haven will be much stronger from location y than from location x ³. This leads to our first hypothesis:

Hypothesis 1: *MNEs that control foreign subsidiaries in developing economies with weak institutions and greater market imperfections have a higher likelihood of owning a tax haven subsidiary relative to MNEs who control foreign subsidiaries only in developed economies.*

Hypothesis 1 is a direct test of the internalization theory as outlined by Buckley et al. (2015). In order to extend this theory, we specifically focus on an important phenomenon that often affects developing countries – capital flight. This is an extreme form of market imperfection and reflects the institutional weakness of the domestic economy. It often occurs in response to an economic event such as a negative economic shock, lower confidence in a country's ability to meet its debt obligations or a change in the tax and regulatory environment. Such events may lead to a depreciation in the value of a country's currency. In such environments, there is a strong incentive for foreign investors and corrupt government officials to withdraw their money from the country; and using a tax haven, with its associated light-touch regulation and secrecy, enables MNEs and individuals to do this quickly and secretly.

It is important to acknowledge that capital flight has many determinants and that it is not only about avoiding tax (see e.g. Alesina and Tabellini, 1989; Cuddington, 1986; Lensink, Hermes and Murinde, 2000; Pastor, 1990). However, in terms of the empirical evidence, Bolwijn, Casella and Rigo (2018) have examined the link between profit-shifting activities of MNEs and FDI, with a focus on the use of offshore financial centres. Their analysis confirms that tax avoidance, enabled by FDI through offshore hubs, is responsible for an estimated \$100 billion in annual losses

³ This should be thought about in a relative sense with respect to the size of the market in question. For example, financial flow as a proportion of GDP.

for developing countries. Over recent decades, some of the weakest economies in the world – notably in sub-Saharan Africa – have experienced significant outflows of foreign capital into Western financial centres. Ndikumana and Boyce (2010; 2018) calculate capital flight for 30 sub-Saharan African countries from 1970 to 2015 and find that total capital flight amounted to \$1.4 trillion over this period, far exceeding the stock of debt owed by these countries as of 2015 (\$496.9 billion). They go on to point out that these countries lose more through capital flight than they receive in the form of foreign aid. Furthermore, they state that “promoting international cooperation to lift the veil of secrecy in offshore banking jurisdictions” (Ndikumana and Boyce, 2010: 478) would go a long way to curtail future capital flight. Hence, there seems to be a strong association between countries that experience significant capital flight and tax haven use. This observation leads to our second hypothesis:

Hypothesis 2: *The likelihood of owning a tax haven subsidiary increases if an MNE controls subsidiaries in developing countries associated with a significant degree of capital flight.*

3. Data

The primary source of data for this study is the ORBIS database published by Bureau van Dijk. ORBIS is a firm-level data set that contains published information on the accounts, financials, ownership and location of companies from all across the world. It also includes the number and location of all the subsidiaries owned by each firm. This is valuable as it allows us to map the operations of MNEs across the globe and to identify investments in locations classified as tax havens. The secrecy provisions in tax havens make it hard to trace subsidiaries or any companies incorporated there, not to mention their financial details. The geographical identification of subsidiaries provided by the data from ORBIS thus presents one of the best ways to shed light on this type of activity.

For the purpose of this study, the data set includes MNEs from the following 19 developed countries: Australia, Austria, Belgium, Canada, Denmark, France, Finland, Germany, Greece, Iceland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Sweden, the United Kingdom, and the United States. Table 1 shows the firm and country coverage. As can be seen, a large number of firms are included from Germany, Italy, France and Spain. An MNE is defined as a firm with at least a 50 per cent stake in a foreign enterprise. The data consist of an unbalanced panel for the years 2009 to 2017, and the data set consists of 149,244 observations across 34,047 MNEs.

Table 1. Distribution of MNEs by home country

| Origin country | Number of parent MNEs |
|-----------------------|------------------------------|
| Australia | 516 |
| Austria | 1,160 |
| Belgium | 1,680 |
| Canada | 105 |
| Denmark | 701 |
| Germany | 4,126 |
| Greece | 214 |
| Finland | 899 |
| France | 4,129 |
| Iceland | 43 |
| Italy | 7,960 |
| Japan | 1,867 |
| Netherlands | 863 |
| New Zealand | 27 |
| Norway | 420 |
| Portugal | 832 |
| Spain | 3,956 |
| Sweden | 1,316 |
| United Kingdom | 1,850 |
| United States | 1,383 |
| Total | 34,047 |

Source: ORBIS database.

Table 2 provides summary statistics for the variables used in our analysis. As can be seen, 12 per cent of the firms in our sample have a subsidiary in a “dot” tax haven, which includes only some of the small island economies, such as the Cayman Islands. In contrast, if we use a broader tax haven measure that includes the Big Seven, such as Hong Kong (China), then 35 per cent of the firms have a tax haven subsidiary. Other interesting statistics show that the average number of subsidiaries a firm has abroad is equal to 22.7. Furthermore, 30 per cent of the firms in the sample are classified as knowledge-intensive service providers and 5 per cent of the firms are in the high-technology manufacturing sector. In terms of firm financial statistics, the average turnover in natural logarithms is 11.42, which amounts to approximately \$60 million. The descriptive statistics also show that approximately 14 per cent of the parent firms own a subsidiary in Africa and 21 per cent of the firms own a subsidiary in South America.

Table 2. Descriptive statistics

| Variable | Observations | Mean | Standard deviation |
|-----------------------------------|---------------------|-------------|---------------------------|
| Dot Tax Havens | 149,244 | 0.123121 | 0.328577 |
| Dot + EU NC | 149,244 | 0.168369 | 0.374195 |
| Dot + Big 7 | 149,244 | 0.341689 | 0.474277 |
| Dot + EU NC + Big 7 | 149,244 | 0.35842 | 0.479538 |
| Developed | 149,244 | 0.82867 | 0.376799 |
| Africa | 149,244 | 0.146833 | 0.353941 |
| East Asia | 149,244 | 0.283911 | 0.450896 |
| South and Central Asia | 149,244 | 0.158519 | 0.365228 |
| Europe | 149,244 | 0.265572 | 0.441639 |
| Middle East | 149,244 | 0.052753 | 0.22354 |
| North America | 149,244 | 0.1296 | 0.335864 |
| South America | 149,244 | 0.211231 | 0.408184 |
| Oceania | 149,244 | 0.008724 | 0.092994 |
| Capital Flight Top 10 | 149,244 | 0.390569 | 0.487879 |
| Capital Flight Top 11-30 | 149,244 | 0.152917 | 0.359909 |
| Capital Flight Top 31-50 | 149,244 | 0.211841 | 0.408614 |
| Rest of Africa | 149,244 | 0.074589 | 0.262728 |
| Rest of the World | 149,244 | 0.158894 | 0.365579 |
| Above 10% GDP | 149,244 | 0.136019 | 0.34281 |
| 5% to 10% GDP | 149,244 | 0.289693 | 0.453622 |
| 2% to 5% GDP | 149,244 | 0.370326 | 0.482894 |
| Below 2% GDP | 149,244 | 0.229704 | 0.420644 |
| Knowledge-Intensive Services | 149,244 | 0.309996 | 0.462493 |
| Less-Knowledge-Intensive Services | 149,244 | 0.252553 | 0.434478 |
| High-Tech Manufacturing | 149,244 | 0.052109 | 0.222248 |
| Medium-High-Tech | 149,244 | 0.158097 | 0.364833 |
| Medium-Low-Tech | 149,244 | 0.112681 | 0.316204 |
| Low-Tech | 149,244 | 0.114564 | 0.318496 |
| Ln Intangible Fixed Assets | 149,244 | 7.416115 | 3.645311 |
| Ln Long-Term Debt | 149,244 | 8.971327 | 2.875317 |
| Ln Cash Flow | 149,244 | 8.753994 | 2.415796 |
| Ln Turnover | 149,244 | 11.42334 | 2.269039 |
| Number of Foreign Subsidiaries | 149,244 | 22.70761 | 70.9598 |

Source: see Sections 3.1 – 3.3

3.1 Dependent variable

Defining which countries are classified as tax havens is not straightforward. In their book *Tax Havens: How Globalization Really Works*, Palan et al. (2010, p. 8) define tax havens as “places or countries that have sufficient autonomy to write their own tax, finance, and other laws and regulations. They all take advantage of this autonomy to create legislation designed to assist non-resident persons or corporations to avoid the regulatory obligations imposed on them in the places where those non-resident people or corporations undertake the substance of their economic transaction.”

Tax havens are, first and foremost, legal entities – countries, cities or states – that have the authority to make their own laws, specifically tax laws. These entities thus have legal control or jurisdiction over certain geographical areas that they use to offer individuals and corporations incentives for investment. The incentives come in a number of forms, the most significant of which are low tax rates on mobile capital and the provision of secrecy (Palan et al., 2010).

The literature so far has focused much more attention on the low tax rates set by these jurisdictions and perhaps overlooked the secrecy provisions that tax havens can provide. Researchers who have taken a conservative approach in terms of defining tax havens include Hines and Rice (1994) and Desai, Foley and Hines (2006b), who identify “dot tax havens” as geographically small and isolated, often small island economies that thrive as financial hubs with little indigenous population or industry, such as the Cayman Islands, Andorra, Monaco and Seychelles. These stand in contrast to the Big Seven havens, which are identified as Hong Kong (China), Ireland, Switzerland, Liberia, Lebanon, Singapore and Panama. The Big Seven all have populations in excess of two million inhabitants and significant indigenous economic activity. In this paper we take advantage of both of these definitions. Furthermore, we also use the European Union (EU) blacklist of non-cooperative jurisdictions (European Council, 2917; 2019). Table 3 outlines which countries are classified as tax havens across these three categorizations. The dot tax havens are taken from Jones and Temouri (2016), which has greater coverage than Hines and Rice (1994); the EU non-cooperative jurisdictions are from the EU and the Big Seven are from Hines and Rice (1994).

Once a tax haven location is defined, it is then possible to determine whether an MNE owns a tax haven subsidiary by using the ownership information in ORBIS. Hence, we are able to construct our dependent variable, which equals 1 if a firm owns a tax haven subsidiary and 0 otherwise. We create three tax haven measures to ensure robustness across each specification. The first measure equals 1 if a firm owns a subsidiary in a dot tax haven and 0 otherwise. This is therefore the narrowest definition. The other definitions become much broader in terms of coverage. The second tax haven measure equals 1 if a firm owns a dot tax haven

subsidiary and owns a subsidiary from the EU blacklist and 0 otherwise. The third measure combines all three categories; it equals 1 if a firm owns a subsidiary in a dot tax haven, an EU-blacklisted haven or one of the Big Seven and 0 otherwise.

Table 3. Tax haven definitions

| Jones and Temouri (2016), dot tax havens | EU, non-cooperative jurisdictions | Hines and Rice (1994), Big 7 |
|---|--|-------------------------------------|
| Andorra | Bahrain | Hong Kong (China) |
| Anguilla | Barbados | Ireland |
| Antigua | Belize | Lebanon |
| Barbados | Grenada | Liberia |
| Bahrain | Guam | Panama |
| Bermuda | Macao (China) | Singapore |
| Bahamas | Marshall Islands | Switzerland |
| Belize | Mongolia | |
| British Virgin Islands | Namibia | |
| Cayman Islands | Palau | |
| Cook Islands | Panama | |
| Cyprus | Saint Lucia | |
| Isle of Man | Samoa | |
| Jersey | Trinidad & Tobago | |
| Gibraltar | Tunisia | |
| Grenada | United Arab Emirates | |
| Guernsey | | |
| Liechtenstein | | |
| Luxembourg | | |
| Macao (China) | | |
| Malta | | |
| Monaco | | |
| Netherlands Antilles | | |
| Saint Kitts and Nevis | | |
| Saint Lucia | | |
| Saint Vincent | | |
| Seychelles | | |
| Turks and Caicos Islands | | |

3.2 Independent variables

In order to test our two hypotheses, we created a set of dummy variables. First, we had to identify the location of non-tax haven subsidiaries in order to create regional dummies. ORBIS provides the ownership information needed to do this. Consequently, we can create a dummy variable that equals 1 if a firm has a subsidiary in the developed world and 0 if it does not. Table 2 shows that 82 per cent of parent MNEs own a subsidiary in the developed world. This is not surprising because our sample consists of parent firms from the developed world. In a similar way, we also created dummies for Africa, East Asia, South and Central Asia, Europe, the Middle East, North America, South America and Oceania. It is important to note that these dummies are not mutually exclusive. In order to classify countries as developed or developing, we used the United Nations *World Economic Situation and Prospects* (WESP) report for 2014 (United Nations, 2014). The 2014 WESP country classifications reflect the basic economic conditions in a country and serve as a reliable marker of development for the time period used in this research. Table 4 identifies which region each country belongs to.

To test for capital flight, we used data from Global Financial Integrity (GFI), a non-profit Washington, DC-based research and advisory organization working on the analysis of illicit financial flows. GFI releases data as well as periodic reports for what it regards as “illicit financial flows” from the developing world. This paper makes use of the data from two GFI reports: *Illicit Financial Flows from Developing Countries: 2004–2013* (Kar and Spanjers, 2015) and *Illicit Financial Flows to and from Developing Countries: 2005–2014* (Global Financial Integrity, 2014). Their calculations put the total unrecorded capital flight from the developing world over the 10-year period (2004–2013) at roughly \$7.8 trillion. This paper uses the GFI data to form a ranking of average annual unreported capital flight from developing countries. The countries are then divided into three groups: (1) “extreme capital flight” includes the top 10 countries by average amount of capital flight; (2) “large capital flight” refers to the next 20 countries by average amount of capital flight; and (3) “medium capital flight” refers to the next 20 countries by average amount of capital flight. We then created a set of dummy variables for each of the three categories. These are shown in table 5.

Last, as a final robustness check, we also created four dummy variables for capital flight as a percentage of GDP: (1) capital flight greater than 10 per cent of GDP; (2) capital flight between 5 and 10 per cent of GDP; (3) capital flight between 2 and 5 per cent of GDP; and (4) capital flight below 2 per cent of GDP. It is important to note that these dummies are calculated for countries that are not developed countries. For a detailed list of countries in each category, see table 6.

Table 4. Regional distribution table

| Developed countries ¹ | | Africa | | | | | | | | | | | | | | | |
|----------------------------------|----------------|----------------------|------------|---------------------|-------------|------------------------|------------|--------------------|----------------------------------|------------------|--|---------------|--|---------------|--|---------|--|
| | | Africa | | East Asia | | South and Central Asia | | Middle East | | Europe | | North America | | South America | | Oceania | |
| Australia | Italy | Algeria | Liberia | Brunei | Afghanistan | Iran | Albania | Aruba | Argentina | Fiji | | | | | | | |
| Austria | Japan | Angola | Libya | Cambodia | Armenia | Iraq | Belarus | Costa Rica | Bolivia (Plurinational State of) | Kiribati | | | | | | | |
| Belgium | Korea, Rep. of | Benin | Madagascar | China | Azerbaijan | Jordan | Bosnia | Cuba | Brazil | Marshall Islands | | | | | | | |
| Canada | Netherlands | Botswana | Malawi | Hong Kong (China) | Bangladesh | Kuwait | Bulgaria | Curacao | Colombia | Micronesia | | | | | | | |
| Chile | New Zealand | Burkina Faso | Mali | Indonesia | Bhutan | Lebanon | Croatia | Dominica | Ecuador | Nauru | | | | | | | |
| Czechia | Norway | Burundi | Mauritania | Korea, Dem. Rep. of | Georgia | Oman | Cyprus | Dominican Republic | Guyana | Palau | | | | | | | |
| Denmark | Poland | Cabo Verde | Mauritius | Laos | India | Qatar | Latvia | El Salvador | Paraguay | Papua New Guinea | | | | | | | |
| Estonia | Portugal | Cameroon | Morocco | Malaysia | Kazakhstan | Saudi Arabia | Lithuania | Guatemala | Peru | Samoa | | | | | | | |
| Finland | Slovakia | Central African Rep. | Mozambique | Mongolia | Kyrgyzstan | State of Palestine | Macedonia | Haiti | Suriname | Solomon Islands | | | | | | | |
| France | Slovenia | Chad | Namibia | Myanmar | Maldives | Syria | Moldova | Honduras | Uruguay | Tonga | | | | | | | |
| Germany | Spain | Comoros | Niger | Philippines | Nepal | United Arab Emirates | Montenegro | Jamaica | Venezuela (Bolivarian Rep. of) | Tuvalu | | | | | | | |

Table 4. Regional distribution table (Concluded)

| Developed countries ¹ | | Africa | | | | | | | | | | | | | | | |
|----------------------------------|----------------|---------------------|-----------------------|--------------------------|--------------|------------------------|------------|-------------|---------|--------|--|---------------|--|---------------|--|---------|--|
| | | Africa | | East Asia | | South and Central Asia | | Middle East | | Europe | | North America | | South America | | Oceania | |
| Greece | Sweden | Congo, Dem. Rep. of | Nigeria | Singapore | Pakistan | Yemen | Romania | Martinique | Vanuatu | | | | | | | | |
| Hungary | Switzerland | Congo, Rep. of | Rwanda | Taiwan Province of China | Sri Lanka | | Russia | Mexico | | | | | | | | | |
| Iceland | Turkey | Côte d'Ivoire | Sao Tome and Principe | Thailand | Tajikistan | | San Marino | Montserrat | | | | | | | | | |
| Ireland | United Kingdom | Djibouti | Senegal | Timor-Leste | Turkmenistan | | Serbia | Nicaragua | | | | | | | | | |
| Israel | United States | Egypt | Seychelles | Viet Nam | Uzbekistan | | Ukraine | Panama | | | | | | | | | |
| | | Equatorial Guinea | Sierra Leone | | | | | Trinidad | | | | | | | | | |
| | | Eritrea | Somalia | | | | | | | | | | | | | | |
| | | Eswatini | South Africa | | | | | | | | | | | | | | |
| | | Ethiopia | South Sudan | | | | | | | | | | | | | | |
| | | Gabon | Sudan | | | | | | | | | | | | | | |
| | | The Gambia | Tanzania | | | | | | | | | | | | | | |
| | | Ghana | Togo | | | | | | | | | | | | | | |
| | | Guinea-Bissau | Tunisia | | | | | | | | | | | | | | |
| | | Guinea | Uganda | | | | | | | | | | | | | | |
| | | Kenya | Zambia | | | | | | | | | | | | | | |
| | | Lesotho | Zimbabwe | | | | | | | | | | | | | | |

¹ Countries listed in this column are members of the Organisation for Economic Co-operation and Development (OECD).

Table 5. List of countries by unrecorded capital outflows (Top 50)

| Extreme capital flight (Top 10) | Large capital flight (Top 11-30) | Medium capital flight (Top 31-50) |
|--|---|--|
| China | Kazakhstan | Oman |
| Russian Federation | Turkey | Peru |
| Mexico | Venezuela, Bolivarian Rep. of | Morocco |
| India | Ukraine | Serbia |
| Malaysia | Costa Rica | Egypt |
| Brazil | Iraq | Paraguay |
| South Africa | Azerbaijan | Trinidad and Tobago |
| Thailand | Viet Nam | Romania |
| Indonesia | Philippines | Nicaragua |
| Nigeria | Poland | Zambia |
| | Belarus | Saudi Arabia |
| | Aruba | Kuwait |
| | Argentina | Ecuador |
| | Iran, Islamic Rep. of | Ethiopia |
| | Hungary | Bulgaria |
| | Bangladesh | Côte d'Ivoire |
| | Brunei Darussalam | Togo |
| | Syria | Guatemala |
| | Qatar | Equatorial Guinea |
| | Honduras | Sri Lanka |

Source: Global Financial Integrity.

Table 6. Capital flight as a percentage of GDP by country

| Above 10% | 5%–10% | 2%–5% | Below 2% |
|-------------------|---------------|----------------|----------------------|
| Armenia | Bangladesh | Benin | Afghanistan |
| Aruba | Bulgaria | Bhutan | Albania |
| Azerbaijan | Burkina Faso | Bolivia | Algeria |
| Belarus | Croatia | Burundi | Angola |
| Botswana | El Salvador | Cabo Verde | Argentina |
| Brunei Darussalam | Ethiopia | Cameroon | Bosnia & Herzegovina |
| Cambodia | Fiji | China | Brazil |
| Chad | Guatemala | Dominican Rep. | Central African Rep. |

Table 6. Capital flight as a percentage of GDP by country (Concluded)

| Above 10% | 5%–10% | 2%–5% | Below 2% |
|---------------------|------------------|------------|----------------|
| Comoros | Guinea | Ecuador | Colombia |
| Congo-Brazzaville | Guinea-Bissau | Egypt | Congo-Kinshasa |
| Costa Rica | Iraq | Gabon | Dominica |
| Côte d'Ivoire | Jordan | Haiti | Eritrea |
| Djibouti | Lebanon | Hungary | Ghana |
| Equatorial Guinea | Macedonia | India | Iran |
| Georgia | Madagascar | Indonesia | Kenya |
| The Gambia | Maldives | Jamaica | Libya |
| Guyana | Mali | Kiribati | Mauritania |
| Honduras | Mauritius | Kuwait | Myanmar |
| Kazakhstan | Mexico | Kyrgyzstan | Pakistan |
| Laos | Montenegro | Mongolia | Saudi Arabia |
| Lesotho | Nigeria | Morocco | Tajikistan |
| Liberia | Oman | Mozambique | Tanzania |
| Malawi | Panama | Nepal | Timor-Leste |
| Malaysia | Papua New Guinea | Niger | Turkmenistan |
| Moldova | Philippines | Peru | Yemen |
| Namibia | Russia | Qatar | |
| Nicaragua | Rwanda | Romania | |
| Paraguay | Sao Tome | Sri Lanka | |
| Samoa | Senegal | Sudan | |
| Serbia | South Africa | Tonga | |
| Sierra Leone | Thailand | Tunisia | |
| Solomon Islands | Ukraine | Turkey | |
| Suriname | Venezuela | Uganda | |
| Swaziland | Vietnam | Uruguay | |
| Syria | | Zimbabwe | |
| Togo | | | |
| Trinidad and Tobago | | | |
| Vanuatu | | | |
| Zambia | | | |

Source: Global Financial Integrity.

3.3 Control variables

The literature identifies a number of variables that can explain the determinants of tax haven use. Taylor, Richardson and Taplin (2015) use data on 200 Australian firms. They find that intangible assets, withholding taxes and the degree of multinationality have significant explanatory power. Graham and Tucker (2006) relate firm size and profitability to the use of tax havens. Desai, Foley and Hines (2006a) focus on United States MNEs and find that firms with large research and development operations are more likely to use tax haven affiliates whereas intrafirm trade exhibits a positive relationship with tax haven usage.

With these studies as guidelines, the yearly financial accounts provided by ORBIS provide us with these control variables, such as turnover and the number of foreign subsidiaries, to capture firm size and internationalization. We also control for intangible fixed assets and long-term debt. It is important to point out that these data are for the parent MNE only and not the foreign subsidiaries. We also use the NACE two-digit industry codes to create broad sector-level fixed effects, in order to capture the effect of industry and technology-intensity differences. The categories are based on a definition from Eurostat and are as follows: high-technology manufacturing, medium-high-technology manufacturing, medium-low-technology manufacturing, low-technology manufacturing, knowledge-intensive services and less-knowledge-intensive services.

4. Empirical method

The empirical model used in this paper adapts the model used by Jones and Temouri (2016), who investigate the determinants of tax haven FDI. Thus, the data lend themselves to an econometric analysis using a probit model, which is consistent with studies undertaken in the literature. For this study we used a number of variants of the following model to test our hypotheses:

$$\text{TAX HAVEN}_{itc} = \beta_o + \Omega \text{FSA}_{itc} + \beta_j \sum_{j=1}^9 \text{REGION}_{itc} + \delta_1 \text{FLIGHT}_{itc} + S_k + P_t + \varepsilon_{itc} \quad (1)$$

where subscript i represents each individual MNE, t represents the year, c represents the parent MNE's country of incorporation and k represents sectors. The dependent variable **TAX HAVEN** refers to the dependent variable that takes the value of **1** if an MNE owns a subsidiary located in a tax haven and **0** otherwise. The vector **FSA** contains firm-specific variables that are typically found in the literature (see Graham and Tucker, 2006; Jones and Temouri, 2016). These include turnover, to account for firm size; intangible fixed assets, as these can be manipulated by transfer pricing in order to shift profits; the number of non-tax haven subsidiaries owned by the developed-country MNE, to control for the degree of internationalization; the MNE's

long-term debt, given the ability of firms to use thin capitalization to manipulate profits; and cash flow, as a short-term performance measure.

In order to test our hypotheses, we include variables called **REGION** and **FLIGHT**. The $j = 9$ **REGION** variables are set up as follows: when $j = 1$ the dummy variable is called "Developed". It equals 1 if a parent MNE has control of a subsidiary in the developed world (not including a domestic subsidiary) and 0 otherwise. When $j = 2$, the dummy variable is called Africa. This equals 1 if a parent MNE has control of a subsidiary in Africa and 0 otherwise. This continues for $j = 3, 4, 5, 6, 7, 8$ and 9. The other locations are East Asia, South and Central Asia, Rest of Europe, Middle East, North America, South America and Oceania. It is important to note that the dummy variables are not mutually exclusive.

The variable **FLIGHT** is a measure of capital flight and this is operationalized in two ways. First, we rank countries in terms of the volume of capital flight. We then create three dummy variables as outlined above and shown in tables 5 and 6. Capital Flight Top 10 is a dummy that equals 1 if the firm owns a subsidiary abroad that is in the top 10 countries in terms of capital flight and 0 otherwise. Capital Flight Top 11-30 is a dummy that equals 1 if the firm owns a subsidiary abroad that is in the 11-30 ranking in terms of capital flight and 0 otherwise. Capital Flight Top 31-50 is a dummy that equals 1 if the firm owns a subsidiary abroad that is in the 31-50 ranking in terms of capital flight and 0 otherwise. Countries outside the top 50 are in the base category to measure against. For the second approach, developing countries are classified by ranking unrecorded capital outflows as a percentage of their GDP. Dummy variables record the presence of subsidiaries in countries where unrecorded capital outflows account for (1) above 10 per cent of GDP; (2) between 5 and 10 per cent of GDP; (3) between 2 and 5 per cent of GDP; and (4) below 2 per cent of GDP.

5. Results

Our empirical results (marginal effects) are shown in tables 7, 8 and 9. Each table has three columns within it corresponding to different tax haven dependent variables, starting with the narrowest definition of a tax haven and finishing with the broadest definition. Table 7 investigates hypothesis 1, whereas tables 8 and 9 investigate the impact of capital flight and hence test hypothesis 2.

Hypothesis 1 predicts that parent firms that own subsidiaries in the developing world have a greater propensity to use tax havens. This is operationalized by including dummy variables for a specific region where a parent owns subsidiaries. As can be seen for each tax haven measure in columns 1 to 3 of table 7, parent firms that own a subsidiary in a developed country are much less likely to own a tax

haven subsidiary than those that do not own a subsidiary in a developed country. The magnitude of this effect gets larger as the tax haven measure shifts from the narrow definition to the broad definition. Hence, this represents the first part of the evidence that MNEs that own subsidiaries only in the developed world are less likely to use tax havens.

The other regional dummies are of even greater interest and specifically test hypothesis 1. The dummy variable for Africa is positive and significant. Using the narrowest definition of a tax haven, it would appear that parent firms that own a subsidiary in Africa have a 5.3 per cent greater probability of using a tax haven than do firms that do not own a tax haven subsidiary. Interestingly, the magnitude increases to 11.4 per cent when the measure for tax havens includes the jurisdictions blacklisted by the EU but falls when using the broadest measure of tax havens in column 3. This suggests that the ownership of subsidiaries in Africa is strongly correlated with the most secretive tax haven locations – the dot tax havens and the tax havens identified by the EU as being the most non-cooperative in terms of transparency.

Similar evidence can be seen for the other regional dummy variables for developing countries, but the magnitude of the effect across the tax haven measures is not quite as large as for Africa. One exception to this is the ownership of subsidiaries in Oceania. However, this can perhaps be explained as an outlier, as subsidiary ownership in this region constitutes a very small part of the sample and these locations themselves are tiny island economies, arguably working as auxiliaries to neighbouring havens. In summary, therefore, our results indicate quite strong support for hypothesis 1 in that it appears that subsidiary ownership in developing countries, which are characterized by market imperfections and weaker institutions, is strongly correlated with the ownership of tax haven subsidiaries.

Table 7. Developed versus developing countries

| Variable | (1) Dot tax havens | (2) Dot + EU non-cooperative | (3) Dot + EU non-cooperative + Big 7 |
|------------------------|-------------------------|---------------------------------|---|
| Developed | -0.0462*** (0.00272) | -0.0985*** (0.00356) | -0.214*** (0.00399) |
| Africa | 0.0526*** (0.00266) | 0.114*** (0.00384) | 0.0283*** (0.00612) |
| East Asia | 0.00660*** (0.00189) | 0.0153*** (0.00258) | 0.160*** (0.00478) |
| South and Central Asia | 0.0165*** (0.00248) | 0.0335*** (0.00341) | 0.101*** (0.00573) |

Table 7. Developed versus developing countries (Concluded)

| Variable | (1) Dot tax havens | (2) Dot + EU non-cooperative | (3) Dot + EU non-cooperative + Big 7 |
|-----------------------------|---------------------------|---------------------------------|---|
| Rest of Europe | 0.0297*** (0.00191) | 0.0307*** (0.00251) | -0.0667*** (0.00511) |
| Middle East | 0.0464*** (0.00439) | 0.186*** (0.0118) | 0.0673*** (0.0183) |
| North America | 0.00955*** (0.00251) | 0.0520*** (0.00380) | -0.0199*** (0.00666) |
| South America | -0.00208 (0.00198) | 0.0240*** (0.00281) | -0.0166*** (0.00499) |
| Oceania | 0.134*** (0.0142) | 0.177*** (0.0230) | 0.167*** (0.0361) |
| Log Intangible Fixed Assets | 0.00599*** (0.000366) | 0.00715*** (0.000469) | 0.0150*** (0.000738) |
| Log Long-Term Debt | 0.00537*** (0.000427) | 0.00605*** (0.000545) | -0.00350*** (0.000820) |
| Log Cash Flow | 0.0134*** (0.000758) | 0.0126*** (0.000976) | 0.0253*** (0.00155) |
| Log Turnover | -0.00639*** (0.000739) | -0.00620*** (0.000982) | 0.0148*** (0.00163) |
| Foreign Subsidiaries | 0.000900*** (2.99e-05) | 0.00179*** (7.91e-05) | 0.0145*** (0.000500) |
| Sector Dummies | Yes | Yes | Yes |
| Time Dummies | Yes | Yes | Yes |
| Log Pseudo-Likelihood | -38498.267 | -46785.146 | -66734.513 |
| Wald chi ² | 18103.43 | 19009.21 | 20606.02 |
| Prob > chi ² | 0.0000 | 0.0000 | 0.0000 |
| Pseudo R ² | 0.3086 | 0.3084 | 0.3147 |
| Observations | 149,244 | 149,244 | 149,244 |

Note: Each column reports the marginal effects from a set of probit regressions. The dependent variable is whether a firm owns a subsidiary in a tax haven, based on three definitions. Period dummies, the constant and the fixed effect coefficients are not reported for brevity. Total long-term debt, turnover, free cash flow and intangible assets are entered as their natural logarithms. Robust standard errors in parenthesis.

*** p < 0.01, ** p < 0.05, * p < 0.1.

Hypothesis 2 focuses on capital flight as an important determinant of tax haven use, the argument being that developed-country MNEs that own tax haven subsidiaries in developing countries and that are characterized by significant capital flight are much more likely to use tax havens. The results for this prediction are shown in tables 8 and 9, which use capital flight measures based on the absolute value of capital flight and as a percentage of GDP.

The developed-country dummy across each specification in columns 4 to 9 is again negative and significant, mirroring the results reported in table 7. In contrast, the dummies for capital flight (using the two methods) are positive and provide strong support for hypothesis 2. What is also interesting is that stronger results are obtained when using the broader measure of tax haven use. This suggests that parent firms that own subsidiaries in countries with a high degree of capital flight are also likely to own tax haven subsidiaries in the most secretive locations as well as the bigger tax haven locations. This is consistent with the argument that financial flows are channelled throughout the financial system and into and out of the most secretive dot tax havens and in turn channelled to the bigger financial centres.

Last, it is important to discuss the control variables used in each model. For each specification, the coefficient on tax haven use is strongly correlated with the ownership of intangible assets, consistent with the literature (Taylor et al., 2015). There is also significant evidence that firms that own more foreign subsidiaries, which proxies for the degree of internationalization, are also much more likely to own tax haven subsidiaries. Furthermore, firms that have a healthy cash flow are also much more likely to use tax havens, which means that tax haven use appears to be correlated with firm performance, especially in the short term. The results for turnover show that turnover is a positive predictor of tax haven use for the broader tax haven measure but a negative predictor for the narrower tax haven measure. This flips around for results obtained for long-term debt, such that more indebtedness correlates positively for MNEs who own subsidiaries in some of the most secretive tax haven locations.

Table 8. Unrecorded capital outflows (absolute)

| Variable | (5) Dot tax havens | (6) Dot + EU non-cooperative | (7) Dot + EU non-cooperative + Big 7 |
|-----------------------------|---------------------------|---------------------------------|---|
| Developed | -0.0437*** (0.00273) | -0.0915*** (0.00367) | -0.220*** (0.00397) |
| Capital Flight Top 10 | 0.00258 (0.00172) | 0.0131*** (0.00235) | 0.0501*** (0.00432) |
| Capital Flight Top 11-30 | 0.0190*** (0.00253) | 0.0689*** (0.00372) | 0.0558*** (0.00555) |
| Capital Flight Top 31-50 | 0.0422*** (0.00221) | 0.0458*** (0.00274) | -0.0777*** (0.00498) |
| Rest of Africa | 0.0568*** (0.00369) | 0.138*** (0.00678) | -0.00436 (0.00964) |
| Rest of World | 0.0163*** (0.00239) | 0.0517*** (0.00345) | 0.0390*** (0.00590) |
| Log Intangible Fixed Assets | 0.00660*** (0.000370) | 0.00840*** (0.000473) | 0.0153*** (0.000734) |
| Log Long-Term Debt | 0.00520*** (0.000428) | 0.00616*** (0.000545) | -0.00449*** (0.000808) |
| Log Cash Flow | 0.0137*** (0.000765) | 0.0133*** (0.000984) | 0.0266*** (0.00154) |
| Log Turnover | -0.00615*** (0.000749) | -0.00674*** (0.000987) | 0.0176*** (0.00163) |
| Foreign Subsidiaries | 0.000978*** (3.19e-05) | 0.00200*** (8.50e-05) | 0.0152*** (0.000432) |
| Sector Dummies | Yes | Yes | Yes |
| Time Dummies | Yes | Yes | Yes |
| Log Pseudo-Likelihood | -38753.666 | -47242.826 | -67488.619 |
| Wald chi ² | 17488.32 | 18505.21 | 19307.05 |
| Prob > chi ² | 0.0000 | 0.0000 | 0.0000 |
| Pseudo R ² | 0.3040 | 0.3017 | 0.3070 |
| Observations | 149,244 | 149,244 | 149,244 |

Note: Each column reports the marginal effects from a set of probit regressions. The dependent variable is whether a firm owns a subsidiary in a tax haven, based on three definitions. Period dummies, the constant and the fixed effect coefficients are not reported for brevity. Total long-term debt, turnover, free cash flow and intangible assets are entered as their natural logarithms. Robust standard errors in parenthesis.

*** p < 0.01, ** p < 0.05, * p < 0.1.

Table 9. Unrecorded capital outflows (GDP, per cent)

| Variable | (8) Dot tax havens | (9) Dot + EU non-cooperative | (10) Dot + EU non-cooperative + Big 7 |
|-----------------------------|---------------------------|---------------------------------|--|
| Developed | -0.0456*** (0.00276) | -0.0966*** (0.00361) | -0.200*** (0.00426) |
| Above 10% GDP | 0.0280*** (0.00271) | 0.0511*** (0.00375) | 0.130*** (0.00620) |
| 5% to 10% GDP | 0.0236*** (0.00196) | 0.0390*** (0.00261) | -0.00154 (0.00168) |
| 2% to 5% GDP | 0.0205*** (0.00180) | 0.0370*** (0.00237) | 0.104*** (0.00423) |
| Below 2% | 0.00890*** (0.00193) | 0.0452*** (0.00272) | -0.0230*** (0.00487) |
| Log Intangible Fixed Assets | 0.00647*** (0.000369) | 0.00796*** (0.000468) | 0.0162*** (0.000737) |
| Log Long-Term Debt | 0.00534*** (0.000428) | 0.00590*** (0.000540) | -0.00467*** (0.000820) |
| Log Cash Flow | 0.0129*** (0.000759) | 0.0121*** (0.000964) | 0.0276*** (0.00155) |
| Log Turnover | -0.00702*** (0.000741) | -0.00729*** (0.000968) | 0.0169*** (0.00164) |
| Foreign Subsidiaries | 0.00107*** (3.17e-05) | 0.00212*** (8.32e-05) | 0.0137*** (0.000516) |
| Sector Dummies | Yes | Yes | Yes |
| Time Dummies | Yes | Yes | Yes |
| Sector Dummies | -38990.868 | -47684.474 | -67297.497 |
| Time Dummies | 16880.33 | 18719.83 | 21200.32 |
| Log Pseudo-Likelihood | 0.0000 | 0.0000 | 0.0000 |
| Wald chi ² | 0.2998 | 0.2951 | 0.3089 |
| Prob > chi ² | 149,244 | 149,244 | 149,244 |
| Pseudo R ² | 0.3040 | 0.3017 | 0.3070 |
| Observations | 149,244 | 149,244 | 149,244 |

Note: Each column reports the marginal effects from a set of probit regressions. The dependent variable is whether a firm owns a subsidiary in a tax haven, based on three definitions. Period dummies, the constant and the fixed effect coefficients are not reported for brevity. Total long-term debt, turnover, free cash flow and intangible assets are entered as their natural logarithms. Robust standard errors in parenthesis.

*** p < 0.01, ** p < 0.05, * p < 0.1.

6. Concluding remarks and policy implications

In this research we have learned that tax haven use is strongly correlated with developed-country MNEs owning subsidiaries in developing countries, often characterized by significant market imperfections and weak institutions. Furthermore, we showed that this relationship also holds for developed-country MNEs that own subsidiaries in locations that are characterized by significant capital flight. This is a particular type of market imperfection that has a significant impact on the developing world, as it removes wealth and income that could be used to finance public expenditure targeted at the poorest members of society.

Our findings build upon the literature that investigates tax haven use (see review by Cooper and Nguyen, 2020) and directly tests the theoretical insights of Buckley et al. (2015) with respect to market imperfections, institutions and economic geography. Furthermore, our findings add insights to the literature that estimates the volume of profit shifting by MNEs (Cobham, Janský and Meinzer, 2015; Zucman, 2015; Zucman, Fagan and Piketty, 2016) and adds to our understanding of the complementary relationship between tax haven uses and investments into developing countries.

It is important to point out some weaknesses in our analysis that future research could address. First, our data set does not allow us to consider the actual financial flows that go into and out of tax havens. The ORBIS database only allows us to determine whether a developed-country MNE owns a subsidiary in a particular location. Very often the accounting data for these subsidiaries are incomplete and missing. If there were open and transparent financial reporting, country by country, then it would be possible to account for the degree of profit shifting into and out of tax havens and researchers could begin to understand the degree of asset ownership booked into tax havens. Recent evidence by Faccio and FitzGerald (2018) is important in showing a case-based study analysis of Vodafone, the first large MNE to voluntarily publish country-by-country data. Using Vodafone's data, they show the tax impact of a move to formulary apportionment on a global basis versus the EU's Common Consolidated Corporate Tax Base proposal.

Second, it is important to note that tax avoidance and capital flight are both products of a weak institutional environment (Cuddington, 1986; Lensink et al., 2000). Indeed, capital flight is not motivated only by tax considerations (Alesina and Tabellini, 1989; Pastor, 1990). Future research could consider in greater detail other confounding factors that drive capital flight and tax avoidance in order to shed additional light on this important phenomenon.

In terms of policy, this research has a number of implications. First, developing countries must strengthen their rules with respect to beneficial ownership of companies, trusts, partnerships and foundations. Being better able to understand

who ultimately owns or has legal control of companies within their jurisdictions allows much greater oversight by the public and provides incentives to representatives to hold these companies and their owners to better account. It also enables better oversight and monitoring compliance and will enable countries to enact legislation to mitigate the degree of profit shifting that lowers the revenue losses. For example, it may better enable local content laws that make it possible for mineral rights to flow to indigenous groups. This would go some way to stop capital from being withdrawn from these countries. Indeed, policies such as these would help reinforce the power of development aid to boost economic development in these regions.

Nevertheless, domestic policy is not sufficient to stop the profit shifting and wealth extraction out of developing countries. The international system of corporate taxation is in a state of flux. The old system based on the arms-length principle is in much need of reform. The rules were designed at a time when the role of the MNE in the world economy was much less important than it is today. Furthermore, the pervasiveness of digital MNEs and their ability to sell goods and services in markets without having a physical presence means that profit shifting is becoming even more pervasive. Casella and Formenti (2018) show evidence for this trend when they report that MNEs in more digital industries have less conventional FDI than less digitally-oriented MNEs and instead have higher incentives to invest in subsidiaries with fiscal and financial motives.

The OECD's 2012 Base Erosion and Profit Shifting (BEPS) initiative has had some success with respect to acknowledging this issue and has emphasized much greater transparency with respect to country-by-country reporting, but it is essential that the international community work together to reform international taxation (for data and methodological issues with implementing BEPS, see Bradbury, Hanappi and Moore, 2018). Sadly, at the time of writing this paper, implementation of these reforms appears unlikely as the United States has withdrawn from the OECD/G20 Inclusive Framework on BEPS. This framework brought together 135 countries and jurisdictions to collaborate on the 15 Actions that resulted from the BEPS initiative. It puts significant emphasis on trying to ensure that profits are taxed where economic activity and value creation occurs. Indeed, this may eventually lead to a system of unitary taxation and formulary apportionment that could go a long way towards eradicating profit shifting and mitigating the impact of tax havens. However, recently the United States and the EU Commission decided to depart from the OECD BEPS process. The use of digital sales taxes, enacted unilaterally by many countries, is undermining the multilateral framework, and it appears that developing countries are being marginalized from the process. Hence, it would appear that there is a long way to go in terms of reforming the international system of corporate taxation and eliminating the harmful tax practices that affect developing countries.

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Employment and state incentives in transition economies: are subsidies for FDI ineffective? The case of Serbia

Uros Delevic*

This study analyses the effects of government subsidies for foreign direct investment (FDI) on employment at the municipal level in Serbia. It finds that the positive correlation of subsidies with employment is limited to the creation of subsidized jobs. In other words, subsidies are ineffective in creating additional jobs, beyond the jobs created by subsidized multinational enterprises (MNEs). There is no crowding-in and there is some evidence of crowding-out in the least developed municipalities. The municipalities that received subsidized investments did not experience higher employment in comparison with the period of no subsidies and in comparison with municipalities that never received subsidized investments. Some positive effects emerge, with a two-year lag, in the municipalities which, conditional on the level of development, lowered wages. The key policy implication is that subsidy-driven FDI policy, based on financial subsidies per job created, does not lead to a sustained employment growth pattern. Policymakers might need to target high value-adding activities of MNEs that induce the creation of domestic value added.

Keywords: employment, foreign direct investment, local development, subsidies

1. Introduction

At the 2016 “EBRD Western Balkans Forum”, the Serbian prime minister made an announcement to foreign investors that “whichever country makes you a subsidy offer, come to us and we will give you even more, at least 5 per cent more” (EBRD, 2016). This was a continuation of 10 years of subsidy-driven foreign direct investment (FDI) policy. Despite pursuing policies based on subsidies¹ to attract FDI to Serbia over a lengthy period, systematic evidence on the effectiveness of such policy is lacking. Yet, Serbia is not the only country to implement subsidies as a flagship FDI policy. In the last 20 years, 95 per cent of all FDI policies around the

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¹ According to the Organisation for Economic Co-operation and Development (OECD, 2001), a subsidy is any state policy that interferes in the market by favouring or discouraging certain economic activity.

world favoured FDI with some sort of incentive (UNCTAD, 2011). Global trends in subsidies suggest that many countries provide some sort of incentives to attract FDI, but they differ in terms of scope, targeted activity, industry and final goal.

FDI subsidies boomed in the late 1980s in developed countries. For instance, multinational enterprises (MNEs) from the automotive industry in Japan expanded to the United States with the use of host-country subsidies ranging from \$11,000 per job for *Nissan* to \$50,000 per job for *Subaru*. The subsidizing policy spread to developing countries, as the example of India giving over \$200,000 per job created in the *Ford* factory shows (Thomas, 2010). The practice was later adopted by transition countries. For example, Central and Eastern Europe (CEE) radically liberalized FDI policies, and countries in the Visegrad² group started offering tax subsidies to attract FDI in the late 1990s (Beyer, 2002).

According to Incentives Monitor (2018), since 2010 \$200 billion worth of subsidies were given to companies that invested \$1.5 trillion to establish or expand operations, creating seven million jobs. It is reported that the two most common forms of incentives are tax holidays (50 per cent) and direct subsidies (40 per cent). Most governments aim to achieve greater investments and create jobs. The average incentive per job reached its maximum in 2013 at over \$48,000.

Although there is no evidence that subsidy-attracted FDI provide benefits to the local economy, the competition among countries to provide incentives to MNEs exhausts the country's financial capacity, so it is often characterized as a "race to the bottom". There is also little evidence that MNEs would not invest without subsidies (Halvorsen, 1995; Chor, 2009). Cantwell and Mudambi (2000) suggest that investment incentives can play a decisive role for investments only if MNEs are choosing between two locations with the exact (or very similar) characteristics. Otherwise, the power of subsidies to drive decisions about the location of investment is minimal.

The core academic literature in this field can broadly be categorized into two main streams. First are the "attraction-focused" studies that investigate whether subsidies (and what sort of subsidies) can attract FDI (Holland and Owens, 1996; Wells et al., 2001; Beyer, 2002; Lim, 2008) and how effective subsidies are for FDI attraction in different types of countries (developing, transition or developed) rather than on the effects of subsidized FDI on the local economy (Hintosova and Rucinsky, 2017; Simelyte and Liucvaitiene, 2012). Also, the literature examines whether subsidies can attract a specific type of (high value adding) FDI (Te Velde, 2001).

² <http://www.visegradgroup.eu>.

Second are “effects-focused” studies that investigate the impact of subsidized FDI on various social and economic characteristics of the host country, including human resource development, research and development (R&D) and innovation activity or engagement of MNEs with domestic companies (Oman, 2000; Burger et al., 2012). Most of the literature in the field focuses on investigating the relationship between FDI and growth of gross domestic product (GDP), and addressing subsidies only indirectly or at the aggregate level (Carkovic and Levine, 2005; Cambazoglu and Simay Karaalp, 2014).

Narula and Pineli (2018) mention that studies have investigated FDI and economic development by looking at aggregate income and not so much at employment. Along the same lines, Hungerford and Gravelle (2010) point out that studies that estimate the direct impact of subsidies on employment are lacking. This seems unfortunate, as fighting mass unemployment, especially in rural areas, has been stressed as the main policy concern driving the provision of subsidies. Onaran (2008) suggests that economies may experience growth in joblessness due to the increase in productivity of workers. Therefore, measuring growth in employment rather than GDP in relation to (subsidized) FDI narrows the scope of analysis and allows for disaggregated results and a better understanding of the impact of FDI on the labour market.

This study investigates employment and subsidies at the municipal level. The disaggregated analysis, at the municipal level rather than the macro-level approach, is motivated by the fact that FDI tends to concentrate on very specific, narrowly defined locations (Belderbos et al., 2020) and their effects on the local economy are mostly geographically confined (Iammarino and McCann, 2013). Furthermore, this focus makes it possible to identify heterogeneous effects of FDI across space, also based on levels of local development and absorptive capacity.

The main questions of this study are whether (1) subsidies are correlated with municipal-level employment and (2) whether the effectiveness of subsidies is dependent on the degree of development of the municipality.

Those questions have important policy implications. As noted above, this area of research is part of the broader investigation of the effects of FDI on host countries and of the effectiveness of subsidies. Surprisingly, the literature on the effects of FDI has rarely looked at the overall employment effects, despite the clear relevance of this aspect for policy. The study informs policymakers about the key features of subsidy schemes that can bring positive or negative results. The findings show how to restructure subsidizing policy in a way that could sustain employment growth. The policy implications carry broader applicability, even though they are based on data from Serbia. Other transition countries in the region have applied very similar FDI policies and also suffer from similar structural economic bottlenecks as Serbia.

Serbia, as a transition country, is an interesting and informative case. Despite decades of subsidy-based policy to attract FDI, no significant empirical work has been undertaken to analyse the effects of subsidizing policy on employment and regional development (Filipovic and Nikolic, 2017).

Serbia, as part of the former Yugoslavia (which also comprised Croatia, Bosnia and Herzegovina, North Macedonia, Montenegro and Slovenia) built a strong industry under an authoritarian regime that made it one of the most advanced European economies in the 1970s (Comisso, 1980).

After the war of the 1990s, the transition from a socialist economic order to a market-driven economy was turbulent. FDI was sought as a panacea to solve economic underdevelopment (Jensen, 2006). However, with the absence of strong institutions and the presence of widespread corruption, the potential of FDI policies was limited (Stiglitz, 2002).

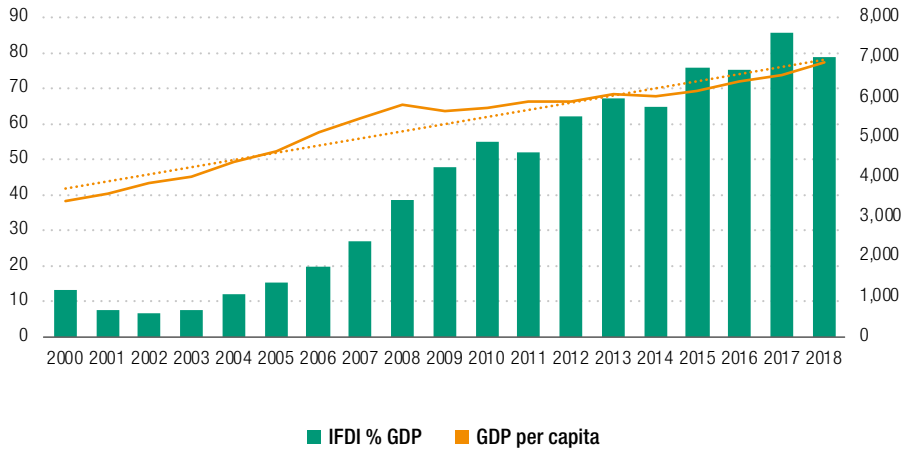
The specific feature of capital flow and the labour market in Serbia, and more generally in the Balkan peninsula, is low capital accumulation and high structural unemployment (Madzar, 2017). On top of this, capital markets are extremely shallow and underdeveloped, while interest rates in the money market are substantially above the European average (EBRD, 2017). In such circumstances, attracting FDI seems to be of crucial importance for the economy.

In the period after 2000, the Serbian economy was characterized by mass privatization of state-owned enterprises, including both firms that had been making losses and those that had been highly profitable or even natural monopolies. This is one of the specific features of FDI in Serbia and the Balkan region. The privatization process attracted the first wave of FDI inflows. According to UNCTAD (2019), FDI inflows in Serbia grew from \$52 million in 2000 to more than \$4 billion in 2018, and inward FDI stock grew from 13 per cent of GDP in 2000 to 79 per cent of GDP in 2018. However, with modest GDP growth, GDP per capita has grown from under \$4,000 to just under \$7,000 over those 18 years, as shown in figure 1

It may be argued that attracting FDI has been the main industrial policy of Serbia since 2000. However, this policy has been designed to address the symptoms of regional underdevelopment, such as high unemployment, instead of true causes, such as technological backwardness. An important question, therefore, is the extent to which providing monetary incentives for FDI is going to make up for the lack of other relevant factors such as human capital and institutions (Delevic and Heim, 2017).

The rest of the chapter is organized as follows: Section 2 provides a theoretical grounding for subsidies and a literature review of empirical findings of the expected impact of FDI on economic growth and employment. Section 3 is devoted to a

Figure 1: Serbia: inward FDI stock, share of GDP and GDP per capita (per cent and dollars)



Source: The author, based on UNCTAD data.

description of the data and empirical analysis of the relevance of state subsidies for municipal-level employment. Section 4 is devoted to the results and discussion of empirical findings. The conclusion and policy implications are provided in section 5.

2. Literature review

The literature review section is organized on three main lines of discussion. First, there is a review of the specific literature dealing with subsidies for FDI, modalities of subsidies and their effects in different countries. Second, there is a consideration of the literature that deals with the effects of subsidized FDI and the justification for such policy from the economic development point of view. Third, absorptive capacity is discussed from the point of view of the specific contextual conditions that might influence the impact of subsidized FDI on employment.

2.1 Subsidies as determinants of FDI

The concept of ownership (or firm-specific), internalization and location advantages – the “OLI framework” introduced by Dunning (1981) – explains the drivers of FDI. Ownership advantages provide firms with the ability to compete internationally.

Those are things like advanced technology, specific managerial knowledge and skills. Location advantages explain the benefits that can be derived from the use of ownership advantages in specific locations outside of the home country of the MNE, such as labour cost, infrastructure and proximity to other markets. The availability of competitive labour is one of those location-bound characteristics that determine FDI. Finally, internalization advantages explain why ownership advantages that are used in foreign locations are used internally by the firm itself (thus becoming MNE) rather than being licenced to a local enterprise (Dunning, 1981).

The literature has identified various drivers of inward FDI, including macroeconomic, institutional, infrastructure and human capital factors but also exchange rates, taxes and openness to trade (Blonigen, 2005). Government policies aimed at attracting FDI (such as fiscal and financial subsidies) are one of these important determinants. Agiomirgianakis et al. (2004: 84) consider subsidies particularly important for the attraction of MNE investments in order to capture "growth-enhancing effects of FDI on employment".

Bellak et al. (2008) suggest that subsidies come as a result of a government's intention to fix market failures in a situation where there is a large discrepancy between the social and private rate of return on investments. However, very often, politically motivated subsidies are used in the absence of market failures since governments are under political pressure to be portrayed as job creators (Christiansen et al., 2003).

Governments engage in subsidizing policy by influencing investment location, scale, type and mode of entry. Subsidies differ in the form of provision: direct (financial) subsidies, meaning direct payments from the government to a company, and fiscal (or tax) subsidies, meaning tax exemption or tax reduction from a company's payments to the government (OECD, 2017). There are also regulatory incentives, meaning that MNEs are exempt from following certain national regulations (Bellak et al., 2008). The literature also distinguishes employment and investment subsidies, depending on whether government incentives are driven by MNEs' type of investment or by high labour employment.

The key arguments in favour of subsidies are that they attract FDI and encourage investors to set up operations in countries which otherwise they would avoid. According to Solis (2011), subsidies are an effective instrument for FDI attraction only if primary determinants of FDI are in place, such as high institutional and macroeconomic stability, basic infrastructure and availability of (skilled) labour. Even though more subsidies do not automatically mean more FDI, there are views that investment incentives, such as subsidies, might be important to motivate first-mover investors in countries where few foreign investors operate (Cass, 2007).

Furthermore, investments are usually attracted by low taxes, and fiscal subsidies are even more attractive. Hungerford and Gravelle (2010) suggest that fiscal subsidies encourage investments because the cost of investment is lower, which allows greater and automatically cheaper output.

More profit after tax means more capital for future investments, so new employees can be hired. There is also an expectation that greater aggregate demand for labour would drive average salary upwards. Therefore, investment subsidies are also indirectly employment and salary subsidies. The employment-stimulating subsidies are directly targeting greater employment, with the state paying the salaries (or part of salaries) of workers employed by a private firm (Ayyagari et al., 2010).

Hintosova and Rucinsky (2017) argue that there is a significant but incremental impact of subsidies on FDI flows. They show that fiscal rather than financial subsidies stimulated greater FDI inflows to Slovakia. Arsic (2010) also suggested financial subsidies are the least effective compared with other forms of incentives (such as fiscal subsidies and subsidized loans). This is explained by the high costs that the state budget bears immediately and the uncertain income in the future.

The critics suggest that subsidies for FDI worsen other development factors, such as entrepreneurial culture, competitiveness and the budget deficit (Solis, 2011). It is argued that the use of subsidies to attract FDI is a waste of money that should instead be used to advance transparency and true institutional reforms. Incentives can be seen as a substitute for high institutional quality, in environments where property rights are not adequately protected (Christiansen et al., 2003). At the same time, politicians usually extol FDI due to the immediate effects of new plants on employment (Greenstone and Moretti, 2003).

Investment costs are higher in countries that are more corrupt, so MNEs perceive government incentives as a way to overcome those barriers (Cuervo-Cazurra, 2008). Therefore, the existence of financial and fiscal subsidies may be a sign of the bad quality of public goods and services and of less educated workers. Coyne (2015) suggests that policymakers in the United States were targeting large companies with subsidy packages, which led to the crowding-out of small and medium-sized businesses. For example, Wal-Mart had received \$1.2 billion in subsidies by 2013 but for every 100 jobs it created, another 50 jobs disappeared due to other non-subsidized companies closing down.

In most cases, the empirical evidence is not supportive of the idea of subsidies for FDI. The vast majority of studies concentrated on examining whether subsidies led to more FDI inflows. In the case of Serbia, Bojovic (2017) questions the efficiency of subsidies. The study investigated whether the state overpaid for subsidies, i.e. whether the same amount of subsidized FDI and the same number of FDI-created jobs would have occurred with fewer subsidies. The method allowed an

assessment of efficiency – whether the same amount of input (subsidies) would generate a greater output (investment). Using the data envelopment analysis method, Bojovic found that about 70 per cent of subsidies would have produced the same level of investments and jobs. In other words, 30 per cent of subsidy payments were wasted.

The incentives programme in Slovenia aimed to attract FDI, tie MNEs to the local environment and foster linkages between foreign investors and domestic Slovenian companies, and transfer knowledge and technology from MNEs to local companies. However, Burger et al. (2012) found that subsidies for FDI did not stimulate the cooperation of MNEs with local suppliers, and that, on average, the education level of workers employed by MNEs was lower than that in local Slovenian companies.

Transition countries, such as Slovenia, Romania, Poland and the Czech Republic, have also used fiscal subsidies and subsidized loans (where part of the interest rate is covered by the state) to attract FDI. Cass (2007) suggests that the richer the country and the more progressive in terms of transition towards market economy, the more funds it devotes to subsidies. However, when all types of subsidies are accounted for, the share of subsidies in GDP is the highest in Serbia (1.5 per cent), compared with Poland (0.8 per cent), the Czech Republic (0.78 per cent) and Slovenia (0.66 per cent), which are the winners of transition (Arsic, 2010).

A very prominent example in FDI attraction is the Czech Republic, which went successfully through the transition process, using investment incentive programmes and experiencing high FDI inflows. Mallya et al. (2004) examined the effectiveness of incentives for FDI in the Czech Republic by looking at the share of FDI that was attracted by subsidies. The survey reveals that the existence of direct subsidies for FDI motivated only 10 per cent of responding investors. Therefore, it is concluded that FDI incentives had a marginal contribution to the crowding-in of other investments (of only 3 per cent).

Also, according to Simelyte and Liucvaitiene (2012), two very similar countries in terms of location advantages, the Czech Republic and Poland, offered similar subsidy packages to investors; however, even though the Czech Republic is more than three times smaller (in terms of population) and has a 20 per cent higher average monthly salary than Poland, it attracted twice as much FDI per capita as Poland. Therefore, Simelyte and Liucvaitiene (2012) insist that a business-friendly environment is the key to attracting FDI.

Overall, it can be argued that there are at least three reasons why subsidies as an instrument for FDI attraction may be problematic. First of all, subsidies are unsustainable. Countries resort to subsidization policies in the absence of strong institutions and other necessary location advantages (Dorozynski et al., 2015). High-quality investors hesitate to invest in risky places, so countries offer subsidies

as compensation for weak institutions (high corruption) (Hausmann and Fernandez-Aria, 2000). MNEs attracted by subsidies (and not by local knowledge or other business infrastructure) tend to disinvest when state subsidies are exhausted, which makes investments unsustainable in the long run. Great availability of incentives would induce companies to move frequently, to more incentive-generous locations (Christiansen et al., 2003).

Second, subsidies for FDI are unfair, as they imply state interference in market competition. Since foreign MNEs are usually larger and more technologically advanced than local small and medium enterprises (SMEs), subsidies provided to MNEs put local companies in an unfavourable position, which disrupts market competition. Local companies usually cannot meet the government's criteria for subsidies, in terms of investment and employment requirements; thus, one should consider the competitive disadvantage that FDI subsidies impose on SMEs (Jensen, 2004).

Finally, subsidies are not clear. Although there are criteria for subsidy allocation, investors negotiate with civil servants for non-monetary benefits, such as urban land for building. According to Dorozynski et al. (2015), providing land, sorting out legal ownership and connecting to utility infrastructure is often even more costly and complicated than providing financial subsidies. This opens the door for corruption and political influence. Civil servants are likely to use subsidies and take credit for investments in (re)election periods, disregarding economic necessity (Nathan and Malesky, 2010).

2.2 FDI and economic development

The reason why governments subsidize FDI is the expectation that FDI will lead to GDP growth, and if such growth is observed, governments tend to believe that their FDI policies work (Borensztein et al., 1998). However, the notion of economic growth is substantially different from that of economic development. As suggested by Stiglitz (2002), one does not necessarily lead to another. Kuznets, (1967) who introduced the measure of GDP, himself warned that it is an *overly gross* measure inadequate for the measurement of life quality and human capital development. GDP can grow with poverty; it can also grow while national health indicators fall. Economic growth is just a monetary measure of the economy's capacity and market value of all goods and services.

In contrast, economic development requires sustainability, meaning inclusive development encompassing education, health, innovation and efforts to lower social inequalities. Therefore, the attraction of FDI with subsidies may not be considered successful if it is accompanied only by higher GDP growth rates. The

FDI policy and the way governments use subsidies are crucial determinants of the potential impact of FDI on economic development (Agosin and Machado, 2010).

There is a theoretical explanation of why FDI (and subsidized FDI) are expected to have an effect on employment. According to Dunning (1981), depending on the quality level of investments, MNEs will require skilled or unskilled labour and increase the demand on the labour market. The inflow of foreign capital, with the appropriate state policies, may also mean the inflow of foreign technology and knowledge. These may spill over to domestic firms (which have direct links with MNEs), but also produce externalities for all other market actors.

Thus, workers that have been given access to foreign technologies and know-how serve as carriers of tacit knowledge through labour mobility contribute to the formation of new business, so-called “spin-offs” (Blomstrom, 2006). The entry of technologically more advanced companies may benefit domestic companies in terms of productivity spillovers and may induce crowding-in of new firms. This phenomenon occurs when FDI stimulates new downstream or upstream investment that would not have taken place in its absence (Agosin and Machado, 2010).

Enabling local companies to upgrade their technological capabilities and indirectly create new jobs through forward or backward linkages with the domestic sector is the most important potential externality, as jobs beyond those created by MNEs make FDI sustainable and beneficial for the host country (Dunning, 1981).

Hungerford and Gravelle (2010) suggest that empirical testing about the effectiveness of subsidies in stimulating FDI-generated employment may be successful but that the costs for the state, on average, have been higher than the benefits. Empirical studies usually disregard “invisible” costs beyond the amount of subsidies; those include the costs of public administration that deals with this issue (Christiansen et al., 2003). Subsidized FDI may generate employment but this cannot compensate for social inequality, since subsidizing means taking money from all workers (taxpayers) and directing it towards business owners, not the socially vulnerable.

One of the very few studies that investigates a question similar to the one examined here is Patrick (2014), which asks whether increasing the availability of state incentives for private companies will support local employment growth in the United States. In short, the study found that some states attract businesses due to their location-specific advantages. Those businesses will also benefit from financial subsidies, but it is job growth that allowed local governments to pay more subsidies, not the other way around. Increasing the availability of subsidies for private companies may increase capital but not create jobs. According to Patrick (2014) investments attracted with subsidies created overcapacity in the United States, creating negative (or neutral) employment effects.

Moreover, MNEs are also likely to displace domestic companies, though the *crowding-out* effect. This often happens if FDI enters a sector where it is competing with domestic forms and uses its ownership advantages or dumps prices to push the competitors out of the market. The crowding-out effect is particularly present in transition countries (Becker et al., 2015). This is detrimental for the local economy as it leads to the disappearance of potentially productive domestic companies. This may lead to the monopolization of some industries and isolation of domestic businesses (Kokko and Thang, 2014).

2.3 Local absorptive capacity and subsidized FDI

Economic theory does not give an unambiguous answer to whether greater absorptive capacity means greater spillovers from FDI, as there are explanations that the greater the distance from the technological frontier, the greater is the chance to capture spillovers from MNEs. However, Castellani and Zanfei (2006) argue that large technological gaps may suggest that the difference between domestic and foreign technological capabilities are so big that local companies cannot learn anything. Moreover, Girma (2005), among others, found that technologically more advanced companies are more capable of capturing technological spillovers from MNEs. There is productivity convergence with MNEs when domestic companies have a higher absorptive capacity.

The impact of (subsidized) FDI on employment will depend to a great extent on the absorptive capacity of the local economy (Reiter and Steensma, 2010). Absorptive capacity, per se, does not attract FDI. It is a local condition that allows economies to leverage FDI. It refers to the ability of a domestic company to identify, assimilate and exploit foreign technologies (Girma, 2005). Among domestic companies, the capacity to absorb foreign technologies determines their capacity to increase output and employ more workers, thus contributing to their municipality's employment.

As suggested by Konings (2001), the empirical findings of technological spillovers from FDI to the domestic sector in countries that subsidized investments, such as Bulgaria and Romania, have been found to be negative, mainly due to lack of absorptive capacity. FDI in countries far away from the technological frontier cannot lead to technological upgrading, regardless of the investment incentives package (Konings, 2001).

The implicit assumption is that the greater absorptive capacity of companies in specific municipalities of the host country, would allow them to cooperate and compete with MNEs and therefore induce greater employment in their municipality. Absorptive capacity can be proxied by the level of economic development or salaries as higher salaries, for the same level of development may proxy higher human capital, so absorptive capacity may be captured by the level of development of the municipality.

This discussion leads to uncertain predictions about the effectiveness of subsidies for FDI in bolstering employment in the host economy. However, the literature has highlighted that the effects of subsidized FDI are more likely to be positive in the presence of local absorptive capacity. As state subsidies are directed towards attracting more FDI, those municipalities that spend more on subsidizing FDI would be expected to have relatively higher employment compared with those that have not received subsidized FDI.

3. Data and methodology

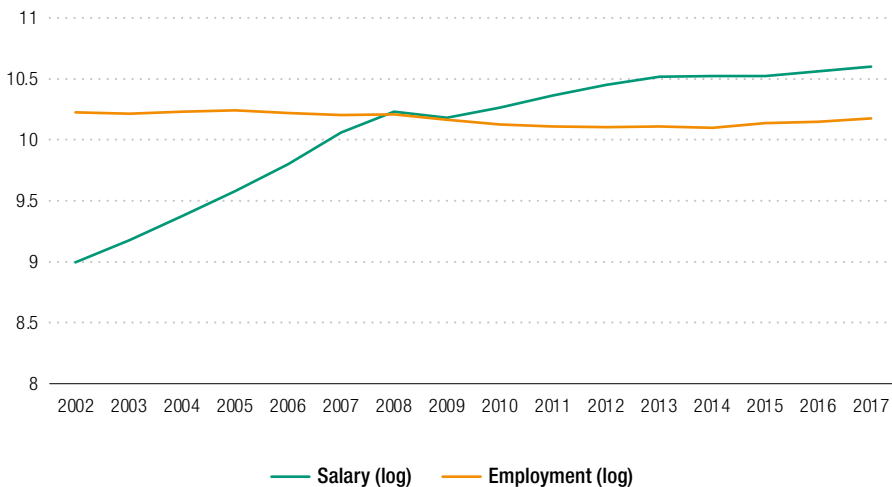
3.1 Data set

This paper tests the role of FDI subsidies on local employment using data provided by the Serbian Ministry of Economy and Finance, covering 62 municipalities in Serbia that have received state-subsidized greenfield FDI over the period from 2006 to 2017. It is a unique data set that has never been exploited in an econometric study. During the observed period, the Serbian Government provided subsidies for 222 investment projects launched by companies from 31 countries. The main recipients of all subsidies (70 per cent) were firms from only eight countries, namely the Netherlands, Italy, Germany, Switzerland, Austria, the Republic of Korea, Cyprus and the United Kingdom. In total, subsidized companies invested slightly less than €2 billion, and 70,000 jobs can be directly ascribed to this subsidized FDI. For those investments, the Serbian Government provided an additional €500 million. Only 5 per cent of all subsidies were paid to domestic companies.

The impact of subsidies is observed in comparison to the period of no subsidies (2002 to 2006) and also in comparison to another 65 municipalities that received no State-subsidized FDI between 2006 to 2017. The total number of municipalities is 127. Despite an intensive subsidizing policy that started in 2006, employment remained relatively flat from 2002 to 2017, as shown in figure 2, while net salaries increased until 2013 and then stagnated. With the two series in natural logarithms, and recognizing that a growth rate can be approximated by a difference in logarithms, figure 2 shows that wages increased by more than 150 per cent over the period 2002-2017.

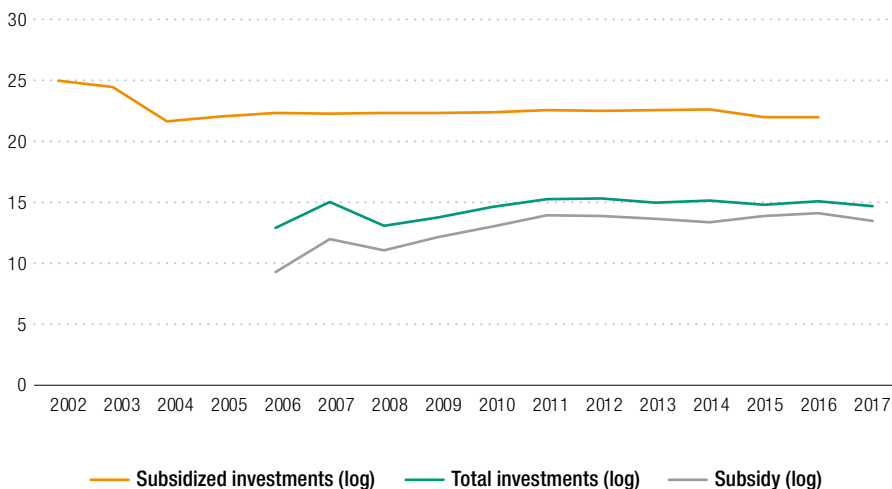
Only 3 per cent of all companies in Serbia (as of 2016) are foreign affiliates – 2,713 in all. Of that number, only 6 per cent used state subsidies, which means that 2,531 MNEs invested in Serbia without any government incentives. While the increase of subsidies over time is almost threefold, the amount invested by subsidized MNEs, as shown in figure 3 is far below the amount of total (non-subsidized) investments. However, it should be noted that the amount of subsidized MNE investments is larger than the subsidy itself. This follows from the nature of the subsidy scheme, presented in the next subsection.

Figure 2: The average salary and employment (log)



Source: The author, based on data from the Serbian Ministry of Economy and Finance.

Figure 3: Average investments and subsidies (log)



Source: The author, based on data from the Serbian Statistical Office.

3.2 Descriptive overview of the criteria for subsidy allocation

The terms and conditions for the attraction of direct investments³ lie in a legislative Act containing detailed criteria for the allocation of subsidies. Serbia provides financial subsidies based on capital investment, employment and the development level of the host municipality. Table 1 provides a basic summary of those conditions, which apply equally to foreign and domestic investors. The criteria for subsidy allocation are based on four levels of municipal development and on the three sectors (primary, manufacturing and services). The amount of allocated subsidy depends primarily on the amount of investment in tangible or intangible assets and the number of jobs created per investment project. Priority is given to labour-intensive manufacturing and less developed municipalities.

All municipalities are classified in four development-level categories on the basis of the municipality's GDP relative to national GDP. Municipalities classified as DL 1 are the most developed municipalities, with GDP above the national average; DL 2 is municipalities whose GDP is 80 per cent to 100 per cent of the national average; DL3 is municipalities whose GDP is 60 per cent to 80 per cent of the national average; and DL 4 is municipalities whose GDP is below 60 per cent of the national average.

For example, a company investing €500,000 and creating 50 jobs in the manufacturing sector (at, for example, €1,000 gross salary per month) in the most developed municipality (DL 1) is eligible for a direct subsidy of 10 per cent on total investment and 20 per cent subsidy on total gross wages. This means that the state subsidy is €60,000, according to the criteria ($500,000 \cdot 0.1 + 50,000 \cdot 0.2$).

The same company would have received for the same type of investment projects, a subsidy of €142,500 if it had invested in the least developed municipality (DL 4), since it is eligible for a direct subsidy of 25 per cent on total investments and a subsidy of 35 per cent on total gross wages, according to the criteria ($500,000 \cdot 0.25 + 50,000 \cdot 0.35$). In any case, the private investor is 100 per cent owner, even though the state invested 12 per cent of the total investment in the first case and 28 per cent of the total investment in the second case.

This paradoxical situation is made possible because of the pure expectation of the government that the taxes paid by the investor and linkages with the local companies will create additional employment and fiscal income. However, no such condition is set in the contract. The only condition is that the investor needs to achieve its full employment (that has been agreed under the subsidy allocation criteria) within three years of the date of application for subsidies, or a maximum of five years, if requested by the investor.

³ <https://ras.gov.rs/podrska-investitorima/zasto-srbija/podsticaji-za-investiranje>.

Table 1: The criteria for subsidy allocation

| Criteria | Sector | Municipality development level | | | |
|--|---------------|--|---------------|---------------|---------------|
| | | I | II | III | IV |
| Minimum jobs created | Primary | 25 | 25 | 25 | 25 |
| | Manufacturing | 50 | 40 | 30 | 20 |
| | Services | 15 | 15 | 15 | 15 |
| Minimum investment | Primary | € 200,000 | € 200,000 | € 200,000 | € 200,000 |
| | Manufacturing | € 500,000 | € 400,000 | € 300,000 | € 200,000 |
| | Services | € 150,000 | € 150,000 | € 150,000 | € 150,000 |
| Maximum subsidy for investments (in tangible or intangible assets or for gross wage expenses after full employment for the investment project has been achieved) | | 10% | 15% | 20% | 25% |
| Maximum subsidy for investments over €50 million | | – Maximum 25% for an amount over €50 million – Maximum 17% for an amount over €100 million | | | |
| Maximum subsidy for gross wage expenses* *maximum per job created | | 20% €3,000 | 25% €4,000 | 30% €5,000 | 35% €6,000 |
| Additional per-job subsidy for labour-intensive manufacturing on gross two-year wage expenses | | – Over 200 jobs created , extra 10% – Over 500 jobs created , extra 15% – Over 1,000 jobs created, extra 20% | | | |

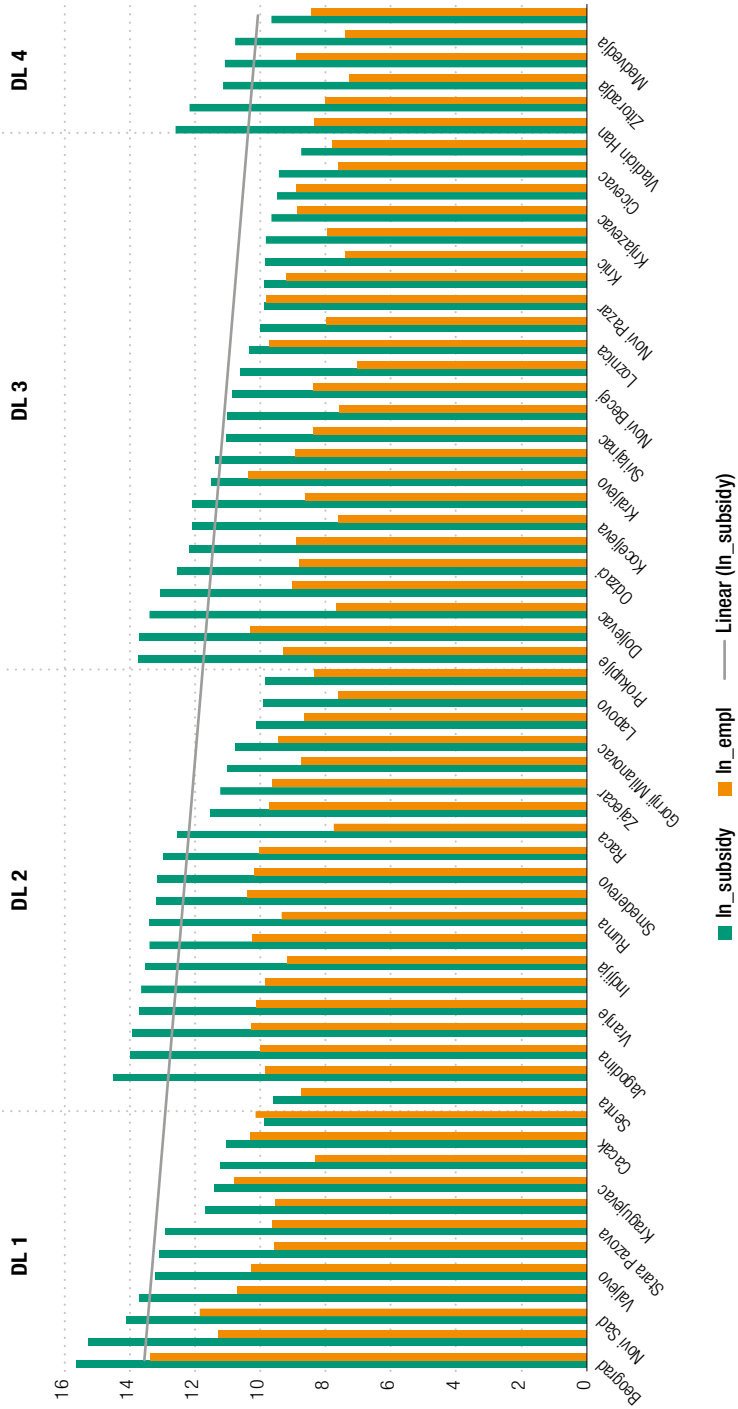
Source: The author, based on data from the Serbian Ministry of Economy and Finance.

In addition, an investor needs to keep operations in the agreed municipality and maintain the level of agreed employment for at least five years for big companies and three years for SMEs. Should this not happen, the government can activate the (previously received) bank guarantee and receive the money back. However, for the allocation of a basic subsidy, there are no conditions regarding the investor's cooperation with domestic companies or worker qualifications.

It is worth mentioning that more developed regions received more subsidies. Figure 4 shows the distribution of average subsidies and level of employment, by municipality development level (DL 1 through DL 4). Most of the subsidies were given to MNEs investing in the most developed municipalities (DL 1). The level of employment decreases from the most developed to the least developed municipality.

However, there are municipalities in both development categories (DL 1 and DL 4) that received a similar level of subsidies (such as Vladicin Han and Stara Pazova) but experienced a very different level of employment. The highest employment level in DL 4 (municipality of Prijepolje) is the same as the lowest employment level in DL 1 (municipality of Senta). Although it may seem that, on average, lower subsidies mean lower employment, the level of municipal development, i.e. local context and absorptive capacity play a huge role in explaining employment.

Figure 4: Subsidies and employment trends (log)

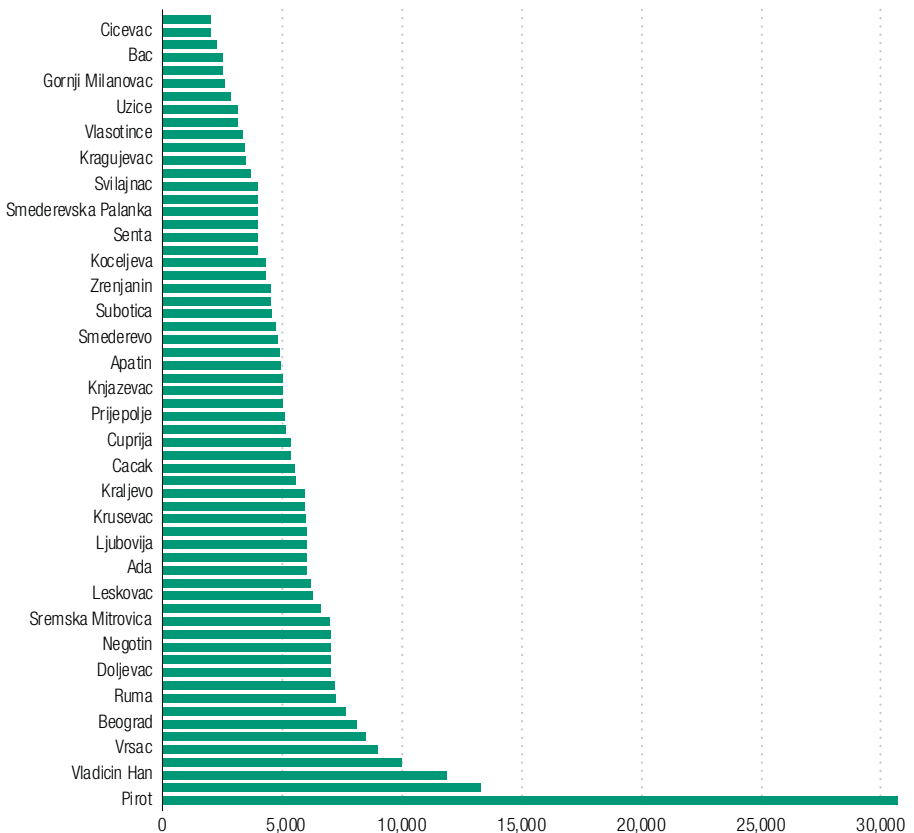


Source: The author, based on data from the Serbian Ministry of Economy and Finance.

Within each development category, high subsidies have not always been followed by high employment. In DL 3, the level of employment fluctuates regardless of subsidy level, so there are cases where two very similar municipalities (in terms of economic development), such as Novi Pazar and Knic, received the same amount of subsidies for FDI but that led to very different levels of employment.

Figure 5 shows the distribution of the ratio of subsidies per job among municipalities that received subsidized FDI. With the exception of municipality Pirot, most of the municipalities received subsidies per job in a range between €2,000 and €8,000, with the average subsidy per job across all municipalities, from 2006 to 2017, at almost €6,000.

Figure 5: Average subsidies per job per municipality from 2006 to 2017 (€)



Source: The author, based on data from the Serbian Ministry of Economy and Finance.

3.3 Methods

The longitudinal dimension of the data set makes it possible to control for time-invariant differences, which is important for understanding causal relationships between FDI subsidies and employment. The data set suggests estimation techniques that allow accounting for unobserved heterogeneity by individual municipality, using either random or fixed-effect econometric models. In theory, since a whole population of municipalities is observed, the fixed-effects model would normally be recommended; in addition, the Hausman⁴ tests support this model. All independent and control variables are observed in the current year and are also lagged up to two years in robustness checks, thereby reducing concerns of simultaneity or reverse causality. The one and two-period lagged values are included in the main results with the subscript $t-1$ and $t-2$. Appendix I provides a table with descriptive statistics and correlation coefficients. An analysis is undertaken with the use of Stata software and the following equations:

Equation (1)

$$\ln(\text{empl})_{it} = \alpha + \beta_1 \ln(\text{subsidystock})_{it} + \beta_2 \ln(\text{netsal})_{it} + \beta_3 \ln(\text{pop})_{it} + \beta_4 \ln(\text{investstock})_{it} + \beta_5 \ln(\text{jobstock})_{it} + \beta_6 \ln(\text{totalinveststock})_{it} + \mu_i + \varepsilon_{it}$$

Equation (2)

$$\ln(\text{empl})_{it} = \alpha + \beta_1 \ln(\text{subsidystock})_{it} + \beta_2 \ln(\text{subsidystock})_{it} * d_1 + \beta_3 \ln(\text{netsal})_{it} + \beta_4 \ln(\text{pop})_{it} + \beta_5 \ln(\text{investstock})_{it} + \beta_6 \ln(\text{jobstock})_{it} + \beta_7 \ln(\text{totalinveststock})_{it} + \mu_i + \varepsilon_{it}$$

where the subscript i refers to municipalities and the subscript t refers to the year under observation, ε is an error term and μ refers to fixed effects.

3.4 Variables

The dependent variable is employment (empl), at the municipal level, measured by the total number of employees per year. The main independent variable is the subsidy stock (subsidystock), measured as the cumulative level of subsidies per year. There are six additional control variables, including jobs stock (cumulative number of jobs created by subsidized MNEs), investment stock (cumulative level of investments made by subsidized MNEs) total investment stock (all other non-

⁴ With a Hausman test it is formally tested whether a fixed- or random-effects model is preferred. The test showed that the random estimator is not consistent, since it is still possible to reject the null hypothesis that the fixed and random estimators are equal ($P = 0.00$).

subsidized investments), population (pop) and average net salary per municipality (netsal). All variables are expressed in logarithms so that coefficients can be interpreted as elasticities. In addition, four municipal levels are controlled for through municipality development level. This variable (DL) interacts with subsidy stock in equation (2) because it makes it possible to control whether the effect of subsidies for FDI on employment is affected by the development level of the municipality.

Looking at employment as a potential positive externality from FDI, the extent to which it is exhausted is leveraged by contextual conditions such as average salary, employee education, population or total investments, i.e. the economic development level of the municipality. According to Girma (2005), greater absorptive capacity encourages greater externalities from MNEs. The more advanced the municipalities (in terms of their contribution to national GDP), the more absorptive capacity they have and thus the more likely to benefit from FDI. The description of all variables and data sources are provided in table 2.

Table 2: Variables

| Variable | Label | Explanation | Source |
|-------------|--------------------------------|--|---|
| Dependent | Employment | The natural log of total employment (an absolute number of employed labour) | Serbian Statistical Office |
| Independent | Subsidy stock | The natural log of subsidy stock – a cumulative level of subsidies, i.e. the sum of subsidies over time (from 2006 to 2017). | Serbian Ministry of Economy and Finance |
| | Municipality development level | A discrete variable that denotes municipality development level, based on the municipality's GDP relative to average national GDP. It takes the following values: 1 – most developed municipalities whose GDP is above the national average; 2 – municipalities whose GDP is 80% to 100% of national average; 3 – municipalities whose GDP is 60% to 80% of national average; 4 – municipalities whose GDP is below 60% of national average. | |
| Control | Job stock | The natural log of job stock – a cumulative level of jobs created by a subsidized MNE | Serbian Statistical Office |
| | Investment stock | The natural log of a cumulative level of investment made by a subsidized MNE | |
| | Population | The natural log of total population per municipality | |
| | Total investment stock | The natural log of total cumulative (non-subsidized) investments per municipality | |
| | Average net salary | The natural log of the average net salary per municipality | |
| | | | |

Table 3: The impact of subsidies for FDI on employment

| Variables | t | | | | | One-year lag | Two-year lag | | |
|---------------------------------|--------------------------|--------------------------|--------------------------|------------------------|-------------------------|-----------------------|------------------------|------------------------|------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| | | | | | ln_empl | | | | |
| In_subsidystock | 0.00341*** (0.000754) | 0.00292*** (0.000731) | 0.00195*** (0.000746) | 0.0180** (0.00744) | 0.0228*** (0.00729) | -0.00276 (0.0112) | 0.00538 (0.0111) | 0.00948 (0.0114) | 0.00328 (0.0116) |
| In_netfsal | -0.259*** (0.0229) | -0.261*** (0.0226) | -0.262*** (0.0226) | -0.262*** (0.0226) | -0.270*** (0.0258) | -0.260*** (0.0225) | -0.268*** (0.0258) | -0.136*** (0.0262) | -0.0327 (0.0262) |
| In_pop | | 0.140*** (0.0304) | 0.139*** (0.0304) | 0.139*** (0.0304) | 0.0601 (0.0368) | 0.135*** (0.0304) | 0.0519 (0.0370) | 0.0373 (0.0377) | 0.0214 (0.0375) |
| In_investstock | | | | -0.0141** (0.00652) | -0.0187*** (0.00641) | -0.00571 (0.00734) | -0.0114 (0.00734) | -0.0162** (0.00750) | -0.0134* (0.00765) |
| In_jobstock | | | | | | 0.0278** (0.0112) | 0.0228** (0.0109) | 0.0300*** (0.0112) | 0.0407*** (0.0118) |
| In_totalinveststock | | | | | 0.00847** (0.00406) | | 0.00845** (0.00407) | 0.0106** (0.00416) | 0.00985** (0.00430) |
| year dummies | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| Constant | 8.812*** (0.0111) | 11.11*** (0.204) | 9.693*** (0.379) | 9.711*** (0.379) | 10.27*** (0.461) | 9.726*** (0.378) | 10.33*** (0.462) | 9.282*** (0.471) | 8.564*** (0.469) |
| Observations | 1,999 | 1,999 | 1,871 | 1,871 | 1,626 | 1,871 | 1,626 | 1,623 | 1,499 |
| R-squared | 0.475 | 0.509 | 0.545 | 0.546 | 0.468 | 0.548 | 0.469 | 0.366 | 0.297 |
| Number of municipalities | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 126 | 126 |

Note: Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

4. Results and discussion

The findings presented in table 3 consider the effect of subsidies and other control variables on employment in the current year (time t) and in the next two years (when the independent variables are expressed at $t-1$ and $t-2$). As results from table 3 show, subsidies have a significant effect on municipality-level employment in columns (1) to (5). However, after controlling for jobs directly created by subsidized MNEs (column 6), the effect on overall employment vanishes, both in the year of subsidy approval and in the following two years.

It is worth noting that, as expected, average net salary paid in the municipality is negatively correlated with employment, suggesting that higher salaries lead to less demand for workers, whereas in column (3) population is positively correlated. This suggests that an increase in population, which may derive from internal migration, is associated with a growth in employment at the municipal level. In column (4) subsidized investments are significantly negatively correlated with employment. This is consistent with the idea that the more capital intensive subsidized investments are, the more workers are substituted with machinery, which leads to a decrease in employment.

In column (5), subsidies remain positive and significant even after controlling for total investment stock (all other non-subsidized investments). However, in column (6), in the presence of variable measuring jobs created by subsidized investments only, the effect of subsidies on overall employment becomes insignificant, which means that subsidies contribute only to the employment generated by subsidized investments. The result shows that a 10 per cent increase in subsidies would lead to an average 0.2 per cent increase in employment. It is worth mentioning that this outcome does not reflect multicollinearity issues, because, despite the high correlation between job stock and subsidy stock, multicollinearity would inflate the standard error associated with both variables, which does not occur here. The standard error of subsidy stock increases only slightly, but the estimated coefficient drops dramatically, this becoming not statistically different from zero. Conversely, the effect of job stock is quite precisely estimated, which would not have occurred in the presence of multicollinearity.

Finally, in column seven, when all independent variables are accounted for together, subsidies have no effect on municipality-level employment. At the same time, $R^2 = 0.54$, suggests the strong overall explanatory power of the model. Observing the impact of subsidies in the following two years (columns 8 and 9), there is no change in results.

Table 4 presents the results from equation (2), where the main independent variable, *subsidystock*, interacts with the municipality development level. Observing the results in the current year (t), there is a consistently negative and significant effect of

subsidies when interacted with municipality development level, suggesting that the more developed the municipality (DL closer to 1) the smaller is the negative impact of subsidies for FDI on employment.

Just as in table 3, the coefficient is the biggest in column (1), where the main effect – subsidy stock – is positive and significant. In columns (2) and (3), the average net salary and population have a negative and a positive impact, respectively. In column (4) subsidized MNE investments have a negative effect on employment. In column (5) MNE-created jobs have no effect on employment in the current year while this variable becomes positive and significant in the following years. In column (6), total (non-subsidized) investment stock remains the only positive and significant control.

The key point in the discussion of results is that if jobs created by subsidized investments are not controlled for, it would seem that subsidies have a positive effect on employment. Subsidized jobs add to the employment of the municipality, but the subsidized investment does not have an additional effect on employment that is not already captured by subsidized jobs.

On average, subsidies create some jobs, but they do not encourage crowding-in and do not create additional jobs. The positive effect of subsidies on employment is confined to those jobs created by subsidized investments. Therefore, subsidies do not seem to create a sustainable path for employment in the long run.

The important question is the consideration of the counterfactual: that is, whether the existing jobs would have been created without subsidies. This has been considered through the comparison of two groups of municipalities in Serbia – those that have received subsidized investment and those that have not.

Using the fixed-effect model it was possible to control for time-invariant characteristics, hence to compare employment not only in municipalities that received subsidies with those that did not receive them but also over time within the same municipality. The results suggest that the employment pattern is not significantly affected by subsidies, once the jobs directly created by subsidized activities are accounted for.

Besides, there is some evidence of crowding out in the least developed municipalities. This reinforces previously discussed arguments by Patrick (2014) and Coyne (2015) claiming that some subsidy-generated jobs in MNEs are neutralized by layoffs in domestic firms that do not meet criteria for subsidies.

In Serbia, subsidies contributed negatively to overall employment in the least developed municipalities, possibly because they led to the exit of domestic firms. This is in line with the insights from the literature which, in the case of Slovenia, show that subsidies for FDI did not result in cooperation between MNEs and the domestic sector (Burger et al., 2012). Subsidies were somewhat more effective

in more developed municipalities, consistent with the idea that there exists a complementarity between the absorptive capacity of the municipality and the efficacy of subsidies.

These results are related to the findings discussed in the literature review, as Hungerford and Gravelle (2010) suggest that subsidies are not effective in increasing overall employment. The greater subsidies for investments in underdeveloped areas do not contribute to a convergence in regional development, because underdeveloped areas are missing significant absorptive capacity, incarnated in developed human capital and business infrastructure, which is a necessary condition to leverage potential spillovers from FDI.

As suggested by Reiter and Steensma (2010), this may be due to the domestic sector's inability to absorb foreign technologies and consequently increase productivity and employment, or may be because MNEs are not even investing in technologically intensive projects so there is no potential for spillovers.

This study has contributed to the advancement of our knowledge on FDI subsidies and employment creation in a transition country setting in several ways. First, we now know that subsidizing policy is not an effective driver of employment spillovers from inward investment in a transition country context, which it is highly likely is due to institutional bottlenecks that make subsidies unsustainable, unfair and unclear, in the long run.

Second, the transition from a socialist economy to a market-driven one means that the domestic sector lacks substantial absorptive capacity, which is an essential factor in the facilitation of positive externalities from FDI. An industrial policy that increases the absorptive capacity and competitiveness of the domestic sector needs to be an integral part of the employment stimulation measures for FDI.

Third, knowledge about FDI subsidies is enriched by the finding that those municipalities that are most developed in terms of human capital and business infrastructure are the ones that benefit from MNE-generated employment, despite the greater provision of subsidies in less developed municipalities. Therefore, the provision of skilled labour seems more important for the attraction of MNEs and sustainable employment creation than financial subsidies.

The lower part of table 4 shows the implied effect of subsidies on employment in municipalities with different development levels. For example, everything else being constant, subsidies have a positive effect on employment only in the most developed municipality (DL 1). The implied effect of subsidies for FDI on employment showed that subsidies had a negative or neutral effect in all municipalities, apart from the most developed ones.

Table 4: The impact of subsidies on employment – municipality development level interaction

| Variables | t | | | | One-year lag | | | Two-year lag |
|---------------------------------|--|---------------------------|---------------------------|---------------------------|--------------------------|---------------------------|------------------------|------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | in_empl | | | | | | | |
| in_subsidystock | 0.0133*** (0.00172) | 0.0107*** (0.00169) | 0.0101*** (0.00173) | 0.0278*** (0.00761) | 0.0194 (0.0120) | 0.0195 (0.0119) | 0.0533** (0.0253) | 0.0770*** (0.0247) |
| in_subsidystockxdl | -0.00428*** (0.000673) | -0.00339*** (0.000659) | -0.00354*** (0.000678) | -0.00360*** (0.000677) | -0.0340*** (0.000712) | -0.00230*** (0.000714) | -0.0369* (0.0194) | -0.0615*** (0.0190) |
| in_netsal | | -0.244*** (0.0229) | -0.247*** (0.0226) | -0.248*** (0.0225) | -0.248*** (0.0225) | -0.256*** (0.0260) | -0.138*** (0.0264) | 0.0477 (0.0368) |
| in_pop | | | 0.126*** (0.0303) | 0.125*** (0.0303) | 0.124*** (0.0303) | 0.0448 (0.0369) | 0.0369 (0.0376) | 0.00725* (0.00405) |
| in_investstock | | | | -0.0155** (0.00648) | -0.0122 (0.00742) | -0.0155** (0.00742) | -0.0175** (0.00748) | -0.0128* (0.00732) |
| in_jobstock | | | | | 0.0106 (0.0117) | 0.0123 (0.0113) | 0.0214* (0.0119) | 0.00989 (0.0115) |
| in_totalinveststock | | | | | | 0.00756* (0.00407) | 0.00949** (0.00414) | -0.260*** (0.0259) |
| year dummies | yes | yes | yes | yes | yes | yes | yes | yes |
| Constant | 8.812*** (0.0110) | 10.98*** (0.204) | 9.708*** (0.376) | 9.727*** (0.376) | 9.732*** (0.376) | 10.33*** (0.461) | 9.322*** (0.469) | 10.34*** (0.459) |
| Observations | 1,999 | 1,999 | 1,871 | 1,871 | 1,871 | 1,626 | 1,623 | 1,499 |
| R-squared | 0.486 | 0.516 | 0.552 | 0.553 | 0.553 | 0.473 | 0.369 | 0.473 |
| Number of municipalities | 127 | 127 | 127 | 127 | 127 | 127 | 126 | 126 |
| DL | Implied effect of subsidies in municipalities with different development level | | | | | | | |
| 1 | 0.00902 | 0.00731 | 0.00656 | 0.0242 | 0.016 | 0.0172 | 0.0164 | 0.0155 |
| 2 | 0.00474 | 0.00392 | 0.00302 | 0.0206 | 0.0126 | 0.0149 | -0.0205 | -0.046 |
| 3 | 0.00046 | 0.00053 | -0.00052 | 0.017 | 0.0092 | 0.0126 | -0.0574 | -0.1075 |
| 4 | -0.00382 | -0.00286 | -0.00406 | 0.0134 | 0.0058 | 0.0103 | -0.0943 | -0.169 |

Note: Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

5. Conclusion and policy implications

As shown in the international investment reports (Incentives Monitor, 2018; OECD, 2001), there is a tendency among host countries to provide state incentives to attract FDI. The macroeconomic goal of subsidy-based FDI attraction is to increase employment and establish linkages with MNEs that should result in higher productivity in domestic companies. Ultimately, host countries aim to foster GDP growth by paying MNEs to employ workers and invest in the local economy.

The effect of subsidies on employment can be observed in three ways: (1) direct jobs created – jobs created only by subsidized investment; (2) indirect jobs created – additional jobs created owing to crowding-in and spillover effects; (3) jobs reduction – owing to crowding-out effect as the rest of the companies that are not subsidized decrease employment.

This study is based on data on financial subsidies, which have been an important part of economic policy in transition countries in the last decades. With the use of municipal-level data about subsidies in Serbia, the effect of subsidies on employment is analysed, controlling for other relevant factors.

The results support the idea that financial subsidies for FDI represent an ineffective way to stimulate employment as there is no significant effect of subsidies on employment (no crowding-in) beyond the jobs already created by subsidized MNEs. Moreover, the aim of subsidizing FDI was to direct investments to less developed municipalities, yet the most developed municipalities attracted the most investments.

Subsidies contribute only to the employment generated by subsidized investments. The result shows that a 10 per cent increase in subsidies would lead to an average 0.2 per cent increase in employment. However, the point of employment subsidies is to create jobs on top of what is subsidized, in the rest of the economy. Therefore, one could say that this is the failing part of subsidizing policy – that subsidies are ineffective in creating a positive employment growth pattern.

The limitation of this study that should be acknowledged is that the generation of job spillover effects, as suggested by Mudambi (1999), may need a longer time than what was observed in this study. This is particularly the case if subsidies increase the extent of the affiliate's embeddedness and contribute to making the investment "sticky". In this perspective, it is the sequential investment that the country seeks, which are worth much more in development terms than the initial investment.

Future research may be needed to advance this analysis and evaluate the effectiveness of FDI policy in even greater detail by assessing how much employment would have been generated if subsidies were used for some other sort of (public)

investment, instead of targeting the attraction of MNEs. Should data availability allow, it would also be important to consider an array of policy measures used to attract FDI, rather than just financial subsidies.

The findings from this study carry important implications for policymakers and fill some gaps in the literature. Although policy recommendations from this paper will inform policymakers in Serbia, they will have broader applicability. First, Serbia serves as an example for other transition countries in the region (namely Albania, Bosnia and Herzegovina, Croatia, Montenegro and North Macedonia). Second, the broader Eastern European region shares FDI policies adopted by Serbia. Countries such as Bulgaria, Romania and Ukraine have also aimed to achieve economic development by attracting FDI with subsidies (EBRD, 2017).

Since the beginning of FDI liberalization in transition countries, policy experts and the academic community have warned policymakers that uncontrolled globalization and the attraction of FDI, and the radical change of international trade rules, threaten to change the labour market dramatically. The introduction of subsidies for FDI was meant to contribute to this change by reducing unemployment, especially in rural areas (Iammarino, 2018).

This study suggests that the ability of subsidies to compensate for institutional and structural macroeconomic weaknesses is extremely limited and such a use is short-sighted. The current regulation on subsidizing policy in the example of Serbia is unsustainable, unfair and unclear. "One size fits all" logic is not applicable, since investors differ within sectors and incentives cannot be tailored by sector. Therefore, if policymakers are interested in sustainable employment growth, they need to comprehensively restructure the current FDI policy.

FDI policy should concentrate on attracting different types of investments, not just as much FDI as possible. The structure of FDI is crucial for greater effects on employment. This means encouraging high value-adding activities of MNEs that will not only create direct jobs but also allow spillover effect and indirect job creation within the domestic sector (Radosevic et al., 2003). The FDI subsidizing policy was relatively successful when it targeted knowledge-intensive FDI projects and upgrades of MNE activities towards high value-adding activities, as in the case of Ireland (Te Velde, 2001).

The findings of this study reveal the characteristics of FDI policy that do not work. It is focused on economic sectors and a number of jobs, and it does not make specific requirements for MNEs to cooperate with local companies and source a certain percentage of inputs locally. Since the findings confirm that this approach does not create a sustainable employment growth pattern, it can be suggested that some changes to this policy could lead to more significant employment creation.

- First, FDI policy should focus on specific activities within industries. Inward FDI should be encouraged but not with financial subsidies.
- Second, if investment-stimulating measures persist, in the long run they may be counterproductive as subsidies come at the expense of other socially important goods and services and compete with the private sector.
- Third, from the point of view of the theory of multinational enterprise, the most important externalities from FDI are spillovers and crowding-in effects, which are not achievable with subsidizing policy.
- Fourth, the whole region should adopt regional incentive control rules. The greater frequency and value of investment incentives lead to greater competition among countries for inward FDI. As a result, every country is driving up the subsidy ladder, trapped in a vicious cycle of catching up with the level of subsidy given by another neighbouring country.

Therefore, the key policy recommendation is to avoid generic subsidies and set priorities:

1. **Activities:** Establish criteria for incentives that prioritize the specific activity of MNEs (not just a sector, not just industry). Prioritize knowledge-intensive activities and base state incentives criteria on the potential for crowding-in of domestic companies.
2. **Linkages:** Provide a platform for linkages between MNEs and local suppliers. Offer special treatment for MNEs that supply a certain percentage of inputs from domestic companies and entrepreneurs.
3. **Labour:** Encourage MNEs that invest in (technical) employee training in fast-growing industries, in part by co-financing human resource development.
4. **Transparency:** Offer completely transparent and unified rules, corporate taxation, social contributions and income tax systems that are digitally available.

In structuring FDI attraction policy, it is important to investigate the interaction of all the parties involved, the government as a subsidy provider, the MNE activity and the domestic private sector. Yet, incentives can only complement a strong institutional environment and the rule of law. The incentives for FDI attraction can bring some results for economies but only if the domestic sector is at the core of economic policy. The continuous improvement of corporate governance and managerial knowledge and the fight against nepotism and corruption in the public sector are both imperative for greater FDI quality and quantity, specifically in transition countries.

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Appendix

Descriptive statistics and correlation coefficients

| Observations | Mean | Standard deviation | Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--------------|----------|--------------------|-------------------------|--------|--------|--------|--------|--------|--------|--------|-----|
| 1,999 | 2009.5 | 4.610925 | (1) ln_empl | 1 | | | | | | | |
| 1,873 | 64.044 | 36.23244 | (2) ln_subsidystockxdl | 0.3239 | 1 | | | | | | |
| 1,873 | 8.586857 | 1.148449 | (3) ln_subsidystock | 0.3362 | 0.9993 | 1 | | | | | |
| 1,873 | 3.342421 | 6.197303 | (4) ln_netsal | 0.0763 | 0.4143 | 0.4171 | 1 | | | | |
| 1,873 | 3.175724 | 5.895411 | (5) ln_jobstock | 0.3566 | 0.9877 | 0.9904 | 0.4122 | 1 | | | |
| 1,873 | 9.978357 | 0.5764915 | (6) ln_investstock | 0.3295 | 0.996 | 0.9965 | 0.4162 | 0.9822 | 1 | | |
| 1,869 | 1.28788 | 2.451003 | (7) ln_pop | 0.9574 | 0.3284 | 0.3399 | 0.0991 | 0.3605 | 0.3326 | 1 | |
| 1,628 | 3.641138 | 6.735586 | (8) ln_totalinveststock | 0.6047 | 0.4514 | 0.4607 | 0.6892 | 0.4675 | 0.4603 | 0.5731 | 1 |

The intersection of public procurement law and policy, and international investment law

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There is substantial scholarship on the limitations that international investment agreements (IIAs) place on States' authority to regulate in the public interest. An area of fundamental importance that has not received scholarly attention in connection with IIAs is public procurement regulation. Given that public procurement is about the needs of States and their citizens, States would want to retain their authority within municipal public procurement laws to decide with whom to contract to meet those needs, and to pursue socioeconomic and industrial policies through procurement. However, most States are parties to IIAs, which impose obligations on them with respect to the protection of foreign investment. This article explores this seminal issue of whether IIAs stand to limit the authority of States in the implementation of procurement legislation and policies. Based on textual analysis and arbitral case study, it argues that treaty-based standards of investment protection can limit States' authority on the implementation of methods of procurement (such as national competitive tendering or restricted tendering) and socioeconomic policies in procurement. A question that needs fuller engagement is the extent of conflict between specific IIAs and public procurement laws and policies, either regionally or globally, and how to reconcile conflicting obligations to promote foreign investment and sustainable development. This article provides the foundation for such future research.

Keywords: international investment agreements, investment treaties, methods of procurement, national treatment, procurement, socioeconomic policies, standards of investment protection, sustainable development

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1. Introduction

International investment agreements (IIAs), the major source of international investment law, provide for the legal standards of investment protection. The stated aim of investment treaties is to create favourable conditions to attract foreign investors to bring about increased economic prosperity and development, stimulate productive use of resources and strengthen cooperation between the contracting parties.¹ There is voluminous literature on the standards of investment protection by treaty.² The objective of attracting and retaining foreign investment in IIAs and economic partnership agreements with investment provisions (EPAs) generally requires States to abide by treaty terms such as national treatment, most-favoured-nation treatment, fair and equitable treatment, and full protection and security, among others.³ Through these standards, investment treaties have provided legal security for foreign investment but they have also become the basis for investors to challenge policies and measures adopted domestically to protect the public interest through investor–State dispute settlement (ISDS) provisions under these treaties. According to the United Nations Conference on Trade and Development (UNCTAD), in 2019 the number of IIAs reached 3,317 (consisting of 2,932 bilateral investment treaties [BITs] and 385 treaties with investment provisions [TIPs]), of which at least 2,658 IIAs were in force between 1980 and 2018.⁴ ISDS

¹ See the preambles to Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Republic of Ghana for the Promotion and Protection of Investments; Agreement on Encouragement and Reciprocal Protection of Investments between the Kingdom of the Netherlands and the Republic of Ghana (signed 31 March 1989, entered into force 1 July 1991); Agreement between the Kingdom of Denmark and the Government of the Republic of Ghana Concerning the Promotion and Protection of Investments (signed 13 January 1992, entered into force 6 January 1995); Agreement between the Government of the Republic of Ghana and the Government of Malaysia for the Promotion and Protection of Investments (signed on 8 November 1996, entered into force 18 April 1997); Agreement between the People's Republic of China and the Government of the Republic of Ghana Concerning the Encouragement and Reciprocal Protection of Investments (signed 12 October 1989, entered into force on 22 November 1991).

² Jeswald Salacuse, *The Law of Investment Treaties* (Oxford University Press, 2010); Kenneth J. Vandeveld, *Bilateral Investment Treaties: History, Policy, and Interpretation* (Oxford University Press, 2010); Rudolf Dolzer and Christoph Schreuer, *Principles of International Investment Law* (Oxford University Press, 2008); and Reinisch August (ed), *Standards of Investment Protection* (Oxford University Press, 2008).

³ Agreement between the Kingdom of Sweden and the Republic of South Africa on the Promotion and Reciprocal Protection of Investments, signed 25 May 1998, entered into force 1 January 1999, <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/2277/download>; Agreement between the Government of the Hellenic Republic and the Government of the Republic of South Africa on the Promotion and Reciprocal Protection of Investments signed 19 November 1998, entered into force 6 September 2001, <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/1480/download>; and Agreement between the Government of the Republic of Finland and the Government of the Republic of South Africa on the Promotion and Reciprocal Protection of Investments, signed 14 September 1998, entered into force 3 October 1999, <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/1215/download>.

⁴ UNCTAD, *World Investment Report 2019: Special Economic Zones* (United Nations, 2019) p. 99.

claims by foreign investors against States, mostly developing countries, reached 942 between 1987 and 2018, out of which 602 were concluded.⁵ The majority of these ISDS cases, decided on the merits, ended up in favour of foreign investors.⁶

The range of issues that foreign investors have challenged and the amount of compensation that has to be paid out of public funds support the proposition that claims for breach of standards of investment protection involves elements of the public interest. Foreign investment, in the words of Amokura Kawharu, “is linked to protection of the environment, human rights and public welfare.”⁷ The challenge that investment protection by treaty and arbitration poses to regulatory autonomy has raised concerns among advocacy groups, academic commentators and governments about the extent to which investment treaties “tip the balance too far in favour of freer capital flows and against the ability of governments to regulate in the public interest.”⁸ Therefore, there is good reason for each State that is party to investment protection agreements to be concerned about their consequences for its autonomy to regulate in the public interest.

In this connection, there is extensive research on the intersection of investment treaties and States’ right to regulate in the public interest under municipal laws and policies in the areas of development policy, environment and human rights.⁹ However, the potential limitations of investment treaties on domestic policy space in the area of procurement law and policy has not been explored in the literature. This article addresses this issue by examining the nature of conflicting legal obligations in public procurement law and policy and international investment law on the basis of textual analysis and case studies of procurement measures that foreign investors have challenged in investor-State arbitration relying on the terms of investment treaties.

⁵ Ibid pp. 103 and 104.

⁶ Ibid p. 104.

⁷ Amokura Kawharu, “International Law’s Protection of Foreign-Owned Property against Uncompensated Expropriation: Preserving Host State Regulatory Freedom” in David Grinlinton and Prue Taylor (eds), *Property Rights and Sustainability: The Evolution of Property Rights to Meet Ecological Challenges* (Brill, 2011) p. 345

⁸ Ibid p 47.

⁹ See, for example: Jane Kelsey, “Global Economic Policy-Making: A New Constitutionalism?” (1999-2000) 9 *Otago Law Review* 535; David Schneiderman, *Constitutionalizing Economic Globalization: Investment Rules and Democracy’s Promise* (Cambridge University Press, 2008); Gus Van Harten, *Investment Treaty Arbitration and Public Law* (Oxford University Press, 2007); M. Sornarajah, *The International Law on Foreign Investment* (3d ed, Cambridge University Press, 2010).

Public procurement constitutes a large proportion of public expenditure in most States and involves very important public projects such as those on health, education, infrastructure, energy, utilities and waste management.¹⁰ Accordingly, the achievement of value for money, maximizing the economy and efficiency are critical in most public procurement systems.¹¹ The attainment of these objectives depends on the conduct of procurement by means of a number of methods and tendering procedures including restricted tendering, request for quotations, request for proposals without negotiation, national competitive tendering, international competitive tendering and single-source procurement, depending on the procurement system.¹² Some of these methods and tendering procedures under applicable legislation not only allow, but actually require, States to pursue their domestic policy objectives and interests such as promoting development by supporting domestic businesses through the award of procurement contracts to them. These are reflected, for example, in section 217 of the Constitution of the Republic of South Africa 1996 and section 3(t) of The Public Procurement Act 2003 (Act 663, as amended) of Ghana. However, a State may pursue such an interest of domestic nature through procurement only to the extent that doing so does not conflict with its international legal commitments such as IIAs.

The majority of IIAs do not provide for pre-establishment protection. This raises the question of how public procurement comes within the purview of IIAs in the first place. This article does not seek to argue that IIA protections are mostly, always or even at all available to investors irrespective of whether they have been admitted and established their investments in the host country. Most IIA protections are available after the establishment of the investment. Therefore, this article is written principally against the backdrop of protections available to foreign investors under IIAs upon the establishment of their investments in the host State. The seminal question of the intersection of investment treaties and procurement law and policy has not been pursued in the literature. The predominant focus of this article is situations in which *covered* investors use their substantive rights under investment treaties to challenge the implementation of national procurement laws and policies. The fact that most IIAs do not provide for pre-establishment protections does not mean that covered investors may not use their post-establishment rights under IIAs to challenge procurement decisions that are adverse to their investment interests in the host country. Focusing on how covered investors might use IIA standards

¹⁰ G. Quinot and S. Arrowsmith (eds), *Public Procurement Regulation in Africa* (Cambridge University Press, 2013); and Dominic Dagbanja, *The Law of Public Procurement in Ghana: Law, Policy and Practice* (Saarbrücken: Lap Lambert Academic Publishing AG & Co Kg, 2011).

¹¹ Quinot and Arrowsmith, note 10 above.

¹² *Ibid.*

to challenge the implementation of public procurement laws and policies raises an interesting and real legal question of the intersection of investment treaties and public procurement laws and policies and sustainable development.

The specific question to address is the extent to which national competitive tendering, international competitive tendering, restricted (limited) tendering, single-source procurement and socioeconomic and environmental policies in procurement might lead to conflict with standards of investment protection in IIAs such as national treatment, fair and equitable treatment, most-favoured-nation treatment and prohibition against performance requirements. These substantive standards of investment protection apply when the investor has been admitted. Therefore, the discussion focuses on how covered investments and investors may use these standards to challenge the implementation of procurement legislation and policies by relying on the terms of IIAs. Nearly all IIAs obligate contracting parties to *promote and encourage* investments in their territories.¹³ In rare cases, this obligation may constitute a basis for an investor to challenge a contracting State prior to the establishment of an investment.¹⁴ However, this right may not arise in the context of procurement because unless a foreign investor is admitted, it may not be able to claim that it is entitled to the protection of an investment treaty intended for the protection of established investments.

Methodologically, these issues are explored through a review and textual analysis of the substantive standards of investment protection and arbitral decisions involving procurement measures, and implications are drawn therefrom for the implementation of methods and socioeconomic policies in procurement in Australia, Ghana and South Africa. The analysis focuses on these procurement systems in view of the content of applicable procurement legislation, rules and policies that raise potential conflict with standards of investment protection. In the case of Australia, the issue has come up for national debate and legislation as analysed below. Familiarity with these jurisdictions also informed the choice of these public procurement regimes. Ghana borrowed¹⁵ from the 1994 United Nations Commission on International Trade Law (UNCITRAL) Model Law on Procurement of Goods, Construction and Services,¹⁶ as did most other African countries.¹⁷ Thus, findings on the intersection

¹³ Agreement between the Government of the Republic of South Africa and the Government of the Republic of Zimbabwe for the Promotion and Reciprocal Protection of Investments, signed 27 November 2009, entered into force 15 October 2010, art .1, <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/2281/download>.

¹⁴ *Nordzucker AG v The Republic of Poland*, Adhoc, Second Partial Award, 28 January 2009 [2-8]; and *Luigiterzo Bosca v The Republic of Lithuania*, Award, PCA Case No 2011-05, 17 May 2013.

¹⁵ Dagbanja, note 10 above.

¹⁶ UNCITRAL Model Law on Procurement of Goods, Construction and Services with Guide to Enactment (Adopted by UNCITRAL ON 15 June 1994) (A/RES/49/54 17 February 1995).

¹⁷ Arrowsmith and Quinot, note 10 above.

of procurement laws and international investment law can be applicable to other countries in Africa that adopted the UNCITRAL Module Law on Procurement.¹⁸ Analysing these three jurisdictions allows for a wider and comparative determination of the implications of standards of investment protection for public procurement regulation based on the experiences of both developed and developing countries. On the basis of these case studies, this article argues that IIAs and ISDS stand to limit the authority of States to acquire goods, services and works and to pursue socioeconomic policies in the manner justified under national procurement laws and policies.

2. The methods of procurement and treaty-based standards of investment protection

An objective of the public tender procedure in procurement “is to reduce the possibility of favoritism and corruption [in the procurement] decision-making process and to maintain integrity in Government’s transactions with private players.”¹⁹ The public tender mechanism is also meant to preserve integrity and deal effectively with the principal agent problem.²⁰ The public tender procedure ultimately ensures that best value for money is achieved.²¹ Best value in the procurement context, “is the provision of economic, efficient and effective services, of a quality that is fit for purpose, which are valued by their customers, and are delivered at a price acceptable to the taxpayers who fund them.”²² A procurement method that invites nationals only can lead to the achievement of this objective. The method defines and shapes the extent to which procurement proceedings will be open for participation. Procurement proceedings may be open for participation by as many prospective bidders as interested, or they may be limited to one or a specified number of suppliers.

¹⁸ For example, many African countries have included socioeconomic and environmental considerations in their procurement legislation. See Geo Quinot, “Promotion of Social Policy through Public Procurement in Africa”, in Arrowsmith and Quinot, note 10 above, pp. 320-403.

¹⁹ Omer Dekel, “The Legal Theory of Competitive Bidding for Government Contracts” (2008) 37(2) *Public Contract Law Journal* 237, 241.

²⁰ *Ibid* 267.

²¹ Australian Government, *Commonwealth Procurement Rules* (Department of Finance, 20 April 2019, Authorised Version F2019L00536 registered 05/04/201) (CPRs herein) rule 4.4 stating: “[a]chieving value for money is the core rule of the CPRs. Officials responsible for a procurement must be satisfied, after reasonable enquires, that the procurement achieves a value for money outcome.”

²² Badcoe, P. *Best Value – A New Approach in the UK* in S. Arrowsmith and M. Trybus, (eds), *Public Procurement: The Continuing Revolution* (Kluwer Law International, 2003) p. 197.

2.1 National treatment in IIAs and national competitive tendering and restricted tendering in procurement

Here, national competitive tendering and restricted tendering in procurement are analysed along with the national treatment standard in IIAs to ascertain the extent to which national treatment can limit how governments may go about implementing their procurement legislation. It is important to explain these tendering methods and analyse the implications of national treatment for their implementation.

2.1.1 National competitive tendering and restricted tendering explained

Where national competitive tendering is employed, only national prospective bidders may be invited to participate in the procurement process.²³ Normally, procurement legislation provides for thresholds for national competitive tendering to be used.²⁴ If the cost of procurement falls within the specific threshold, then the use of national competitive tendering becomes mandatory. National competitive tendering by its very nature is exclusionary in the sense that it limits participation in procurement to nationals. This may be justified in the interest of national development and other national priorities. However, as explained below, national competitive tendering when required purely under national procurement regulation can conflict with national treatment requirement under IIAs.

In restricted tendering, only those economic operators invited to submit a tender after the contracting authority has assessed the information provided by the economic operators may make a submission. The underlying reasons for the use of restricted tendering are economy and efficiency. In other words, if using competitive tendering or other methods of procurement will not be the most viable considering the time and resources required, then restricted tendering should be used. Put differently, if the transaction cost associated with the use of a method other than restricted tendering will be disproportionate to the value of the actual procurement, then restricted tendering should be used. This method could, therefore, be described as a *transactional cost-saving method of procurement*.²⁵

²³ The Public Procurement Act 2003 (Act 663) of Ghana s 25, as amended by The Public Procurement (Amendment Act) 2016 (Act 914) (Act 663 herein) s 44(1).

²⁴ Ibid Schedule 3.

²⁵ On transaction cost, see Mikko Ketokivi and Joseph Mahoney, "Transaction Cost Economics as a Theory of the Firm, Management, and Governance", in *Oxford Research Encyclopedia, Business and Management* (Oxford University Press, 2018), <http://business.oxfordre.com/view/10.1093/acrefore/9780190224851.001.0001/acrefore-9780190224851-e-6?print=pdf>.

The use of this method in Ghana is conditioned upon goods, works or services being available from only a limited number of prospective tenderers²⁶ or upon the time and cost required for examining and evaluating a large number of tenders being disproportionate to the value of the goods, works or services to be procured.²⁷ Where restricted tendering is used, invitation for tenders must be made to prospective tenderers who can provide the goods, works or services.²⁸ To ensure effective competition, the procurement entity is required to select, in a non-discriminatory manner, a number of prospective tenderers.²⁹

National competitive tendering and restricted tendering methods by their nature are preferential and exclusionary to the extent that they require procurement entities to exclude prospective participants in procurement. These restrictions or exclusions may very well be justified, taking into consideration the nature of the procurement and applicable legislation involved. Yet, these methods become problematic with respect to compliance with standards of investment protection under IIAs when they become the bases for the selection of nationals against non-nationals. Indeed, apart from international competitive tendering, which obligates procurement entities to open the procurement process for the participation of non-nationals, limiting participation in procurement to nationals can be legally justified under procurement laws and regulations. Decisions made on the basis of national competitive tendering and restricted tendering may nevertheless be found to be in breach of national treatment under IIAs.

2.1.2 National treatment in IIAs and the implementation of national competitive tendering and restricted tendering in procurement

The *national treatment* standard requires that *covered* foreign investors and investments be treated no less favourably than domestic investors and their investments.³⁰ The standard thus focuses on nationality. It seeks to prevent differential treatment that is adverse to the investor; for example, where governments provide assistance, such as tax exemptions, to domestic businesses or other advantages through laws, policies, regulations or administrative actions that are not made available to foreign businesses protected under the applicable investment treaty.

²⁶ Act 663, note 23 above, s 38(a).

²⁷ Ibid s 38(b). *Model Law*, above n 16, art 29(1) and 34(1)(b).

²⁸ Ibid s 39(1)(a).

²⁹ Ibid s 39(1)(b).

³⁰ Ghana–United Kingdom BIT, note 1 above, art. 4(1); Ghana–Netherlands BIT, note 1 above, art. 3(2) and Ghana–Denmark BIT, note 1 above, art. 4(1); and Ghana–United Kingdom BIT, note 1 above, art. 4(2). Ghana–Denmark BIT, note 1 above, art. 4(2).

The goal is to place covered investors and their investments on at least the same footing in terms of competition or some other business advantage as domestic investors.

The application of national treatment depends on the articulation of the obligation in the treaty and facts of each case. To determine whether the host State has breached the national treatment clause, the tribunal in *Total SA v. Argentina* said the investor:³¹

(i) has to identify the local subject for comparison; (ii) has to prove that the claimant-investor is in like circumstances with the identified preferred national comparator(s); and (iii) must demonstrate that it received less favourable treatment in respect of its investment, as compared to the treatment granted to the specific local investor or the specific class of national comparators ... Different treatment between foreign and national investors who are similarly situated or in like circumstances must be nationality driven. Accordingly, a foreign investor who is challenging measures of general application as *de facto* discriminatory has to show a *prima facie* case of nationality-based discrimination.

Some investment tribunals also consider the policy justification for measures that have a discriminatory effect. If the measure is not intended to give preferential treatment to domestic investors, a tribunal may find no breach of national treatment.³² The tribunal in *Pope and Talbot Inc. v. Canada* stated that³³

Differences in treatment will presumptively violate [national treatment] unless they have a reasonable nexus to rational government policies that (1) do not distinguish on their fact or *de facto*, between foreign-owned and domestic companies, and (2) not otherwise unduly undermine the investment liberalizing objectives.

The national treatment standard is extremely broad in terms of the scope of investments it seeks to protect, the nature of the treatment of the investments that is prohibited and the subject matter of governmental regulation that may come under the standard. The typical provision as reflected in Article 4(1) of the Ghana–United Kingdom investment treaty states that “[n]either contracting party shall in its territory subject investments or returns of nationals or companies of the other Contracting Party ... to treatment less favourable than that which it accords to investments or returns of its own nationals or companies or to investments” or “as regards their management, maintenance, use, enjoyment or disposal of their investments.” The investment treaties also entitle foreign investors as regards

³¹ *Total SA v Argentina*, ICSID Case No ARB/04/1, *Decision on Liability*, 27 December 2010 [211-212].

³² *Pope & Talbot v Canada*, NAFTA, Award on the Merits of Phase 2, 10 April 2001 [79].

³³ *Ibid* at para. [78].

restitution, indemnification, compensation or other settlement to treatment no less favourable than that accorded to nationals whose investments suffer losses owing to war or other armed conflict, revolution, a state of national emergency, revolt, insurrection or riot.³⁴

The phrases “no less favourable treatment” and consequential “losses suffered” have been interpreted by arbitral tribunals very broadly. In *Asian Agricultural Products Ltd. v. Sri Lanka*,³⁵ for example, a claim was made for compensation for the total loss of the investor’s investment in Sri Lanka. It was alleged that the loss resulted from a military operation by governmental forces against an insurgent group. The claim was made under the 1980 Sri Lanka–United Kingdom investment treaty. Article 4 of the treaty required compensation or settlement on terms *no less favourable* than the host country accorded its own nationals for *losses suffered* from the specified events. The tribunal interpreted the phrase “losses suffered” as including “all property destruction which materializes due to any type of hostilities enumerated in the text”.³⁶ According to the tribunal, the mere fact that such losses existed was by itself sufficient to render the provision “applicable, without any need to prove which side was responsible for said destruction, or to question whether the destruction was necessary or not.”³⁷ The investment treaty had no restriction on the scope of application of national treatment. The tribunal interpreted “no less favourable treatment” under the treaty to “cover all possible cases in which the investments suffer losses owing to events identified as including ‘a state of national emergency, revolt, insurrection, or riot’”.³⁸

The national treatment requirement in investment treaties does not specify the industry or subject matter in respect of which it may apply. Therefore, by the national treatment standard, a procurement that is open to nationals must be open to established foreign investors in the host State under the applicable IIA. This can lead to a situation in which any form of regulation in favour of the domestic industry can be attacked by foreign investors established in the host country if

³⁴ Ghana–China BIT, note 1 above, art. 4; Ghana–Malaysia BIT, note 1 above, art. 4; Ghana–Denmark BIT, note 1 above, art. 7; Ghana–Netherlands BIT, note 1 above, art. 7; and Ghana–United Kingdom BIT, note 1 above, art. 5.

³⁵ *Asian Agricultural Products Ltd v Sri Lanka*, ICSID Case No ARB/87/3, Final Award, 27 June 1990, brought under the Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Democratic Socialist Republic of Sri Lanka for the Promotion and Protection of Investments, signed 13 February 1980, entered into force 18 December 1980.

³⁶ *Ibid* [65].

³⁷ *Ibid*.

³⁸ *Ibid* [66].

such favourable regulation is not extended to the foreign investors, who may feel disadvantaged. Thus, as Anthony VanDuzer, Penelope Simons and Graham Mayeda argue:³⁹

National treatment is one of the most significant obligations found in IIAs, in part because host state measures that discriminate in favour of domestic firms are often tied closely to national development goals and are politically very sensitive. Most host states have some programmes that grant advantages exclusively to domestic businesses in order to encourage their growth and their ability to compete with foreign investors.

It follows from the preceding analysis that the implementation of procurement legislation can conflict with national treatment under IIAs because both norms impose contradictory obligations. The conflict can also arise because of the adverse impact of implementing procurement legislation on rights accorded to admitted foreign investors and their investments under IIAs even if the procurement measure is not directly prohibited by an IIA. This conflict may narrow the policy space for the pursuit of socioeconomic policies in procurement that can promote sustainable development.

3. Socioeconomic policies in procurement and treaty-based standards of investment protection

3.1 Ghana

The use of procurement to promote the social and economic policies protecting domestic industry, through, for example, the employment of single-source procurement, may also lead to conflict with standards of investment protection such as national treatment, fair and equitable treatment, and prohibition against performance requirements in IIAs. Procurement laws are commonly used to promote objectives other than the primary objective of best value for money. These policies may range from “environmental concerns to labour and equality, industrial development and economic growth, crime prevention and social concerns such as poverty alleviation and wealth distribution.”⁴⁰ These objectives are variously described as *social* policies, *secondary* policies, *horizontal* policies or *collateral* policies in procurement.⁴¹

³⁹ Anthony VanDuzer, Penelope Simons and Graham Mayeda, *Integrating Sustainable Development into International Investment Agreements: A Guide for Developing Countries* (Commonwealth Secretariat, August 2012) p. 112.

⁴⁰ Quinot, note 18 above, 320.

⁴¹ Ibid; Cibinic Jr., J., and Nash Jr., R. *Formation of Government Contracts* (Kluwer Law, 3d. ed., 1998) at 1403; and Sue Arrowsmith, *Social and Environmental Policies in European Community Procurement Law* (Cambridge University Press, 2009).

In Ghana single-source procurement applies when procurement is made from only one prospective tenderer.⁴² The use of single-source procurement is justified where any of the following is established:

- a) Where goods, works or services are available only from a particular prospective tenderer.
- b) If a particular supplier or contractor has exclusive rights in respect of the goods, works or services, and no reasonable alternative or substitute exists.⁴³
- c) Where there is an emergency or catastrophic event.⁴⁴
- d) For purposes of standardization,⁴⁵ compatibility with existing goods, equipment and technology.⁴⁶
- e) Where the proposed procurement is limited in comparison with the original procurement.⁴⁷
- f) For research and development contracts.⁴⁸
- g) For national security reasons.⁴⁹

Another requirement for the use of single-source procurement is “where there is an urgent need for the goods, works or services and engaging in tender proceedings or any other method of procurement is impractical due to unforeseeable circumstances giving rise to the urgency which is not the result of dilatory conduct on the part of the procurement entity.”⁵⁰ The requirements for the use of single-source procurement are thus three: (1) there must be urgent need for the subject matter of the intended procurement; (2) engaging in tender proceedings or any other method of procurement must be impractical; and (3) the impracticality of engaging in tender proceedings or using any other method of procurement must be due to urgency resulting from unforeseeable circumstances (the urgency must not result from delay on the part of the procurement entity).

A procurement entity may also engage in single-source procurement where procurement from a particular supplier or contractor is necessary in order to promote a specific policy allowed in the public procurement legislation and procurement

⁴² Model Law, note 16 above, art 29(2) and 34(2).

⁴³ Act 663, note 23 above, s 40(1)(a).

⁴⁴ *Ibid* s 40(1)(c).

⁴⁵ *Ibid* s 40(1)(d)(i).

⁴⁶ *Ibid* s 40(1)(d)(ii).

⁴⁷ *Ibid* s 40(1)(d)(iii).

⁴⁸ *Ibid* s 40(1)(e).

⁴⁹ *Ibid* s 40(1)(f).

⁵⁰ *Ibid* s 40(1)(b).

from another supplier or contractor cannot promote that policy.⁵¹ The determination of the lowest evaluated tender must, in those circumstances, be based on the effect the acceptance of the tender will have on⁵²

- a) The balance of payments position and foreign exchange reserves of the country.⁵³
- b) The countertrade arrangements offered by suppliers or contractors.⁵⁴
- c) The extent of local content.⁵⁵
- d) The economic development potential offered by tenders, including domestic investment or other business activity.⁵⁶
- e) The encouragement of employment.⁵⁷
- f) The reservation of certain production for domestic suppliers.⁵⁸
- g) The transfer of technology.⁵⁹
- h) The development of managerial, scientific and operational skills.⁶⁰
- i) National security considerations.⁶¹

The underlying objective of such an approach is to promote national developmental, technological, employment and financial goals. This suggests that procurement is not just a system of substantive laws and procedures for the procurement of works, services or goods, or the disposal of governmental property, but that it may be used as a tool for the promotion and achievement of national development goals. This objective is further reflected in section 3(t) of The Public Procurement Act, which says that the Public Procurement Authority shall “assist the local business community to become competitive and efficient suppliers to the public sector”.⁶²

⁵¹ *Ibid* s 40(2).

⁵² *Ibid* s 59(4)(c).

⁵³ *Ibid* s 59(4)(c)(i) and 69(2)(c)(i).

⁵⁴ *Ibid* s 59(4)(c)(ii).

⁵⁵ *Ibid* s 59(4)(c)(iii).

⁵⁶ *Ibid* s 59(4)(c)(iv).

⁵⁷ *Ibid* s 59(4)(c)(v).

⁵⁸ *Ibid* s 59(4)(c)(v).

⁵⁹ *Ibid* s 59(4)(c)(vi).

⁶⁰ *Ibid* s 59(4)(c)(vii).

⁶¹ *Ibid* s 59(4)(d).

⁶² Dominic Dagbanja, “Promoting a Competitive Local Business Community in Ghana: The Role of the Legal Framework for Public Procurement” (2014) 58(2) *Journal of African Law* 350.

3.2 South Africa

Section 217(2) of the Constitution of the Republic of South Africa grants organs of the State and other institutions identified in national legislation power relating to “implementing a procurement policy providing for (a) categories of preference in the allocation of contracts; and (b) the protection or advancement of persons, or categories of persons, disadvantaged by unfair discrimination.” Section 217(3) requires the enactment of legislation to “prescribe a framework within which” this preferential policy “must be implemented”. Pursuant to these provisions, South Africa enacted the Preferential Procurement Policy Framework Act 2000 (No. 5). As interpreted by Geo Quinot, this enactment “aims to implement the constitutional mandate of using public procurement towards distributive justice, in particular redressing past discriminatory practices in terms of the government’s Black Economic Empowerment Policy”.⁶³ This legislation was followed by other regulations and enactments such as the Preferential Procurement Regulations 2001 and Broad-Based Black Economic Empowerment (BEE) Act 2003 (Act 53), both of which touch on preferential procurement.

South Africa also has the Broad-Based Socioeconomic Empowerment Charter for the Mining and Minerals Industry 2018.⁶⁴ The Mining Charter was made pursuant to section 100 (2) of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for the mining and minerals industry. The object of this Act is “to redress historical socio-economic inequalities, to ensure broad-based economic empowerment and the meaningful participation of Historically Disadvantaged Persons in the mining and minerals industry”.⁶⁵ To further this object of the Act, the Mining Charter aims, among other things, at enabling “growth and development of the local mining inputs sector by leveraging the procurement spend of the mining industry.”⁶⁶

The Mining Charter recognizes that procurement of “South African manufactured goods and services provide[s] opportunities for expanding economic growth, creating decent jobs and widening market access to the country’s goods and services.”⁶⁷ Therefore, the Charter requires inclusive procurement. To achieve inclusive procurement, a mining right holder is required to identify goods and services that will be required in its operations and ensure that its procurement

⁶³ Quinot, note 18 above, p. 94.

⁶⁴ Department of Mineral Resources, Broad-based Socio-economic Empowerment Charter for the Mining and Minerals Industry, 2018 (No. 1002, 27 September 2018).

⁶⁵ *Ibid.* The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) defines “historically disadvantaged person as “any person, category of persons or community, disadvantaged by unfair discrimination before the Constitution took effect”.

⁶⁶ Mining Charter, note 64 above, item 1(h).

⁶⁷ *Ibid.* item 202.

policies adhere to specified criteria.⁶⁸ In the case of the procurement of *mining goods*,⁶⁹ the Mining Charter states the criteria for inclusive procurement as follows:⁷⁰

A minimum of 70% of total mining goods procurement spend (excluding non-discretionary expenditure) must be on South African manufactured goods. The 70% shall be allocated as follows: 21% to be spent on South African manufactured goods produced by a Historically Disadvantaged Persons owned and controlled company; 5% to be spent on South African manufactured goods produced by a women or youth owned and controlled company; and 44% to be spent on South African manufactured goods produced by a BEE compliant company.

In the case of procurement of services, the Mining Charter specifies the criteria for inclusive procurement as follows:⁷¹

A minimum of 80% of the total spend on services (excluding non-discretionary expenditure) must be sourced from a South African based company. The 80% shall be allocated as follows: 50% must be spent on services supplied by Historically Disadvantaged Persons owned and controlled compan[ies]; 15% must be spent on services supplied by women owned and controlled companies; 5% must be spent on services supplied by youth; and 10% must be spent on services supplied by BEE compliant company.

These requirements of the Mining Charter constitute performance requirements because they seek to achieve social and economic outcomes by requiring the procurement of goods and services by mining companies with relevant South African content or connection. These requirements dictate how investors go about making their procurements in order to contribute to the South African economy. To the extent that *established* foreign investors in the mining industry are required to follow these requirements in their procurements, they may argue that the Mining Charter is inconsistent with South Africa's investment treaty obligation not to accord foreign investors unreasonable treatment.

The specification of percentages that must be used to procure specific goods and services determines for investors in the mining industry where to procure the goods and services from and the percentage of the procurement budget that must be used to acquire the goods and services. These requirements, therefore, limit or narrow managerial decision-making on procurement that may not always be in

⁶⁸ Ibid.

⁶⁹ The Mining Charter defines mining goods as referring to "to capital goods and consumables used by a right holder or by a contractor on behalf of a right holder".

⁷⁰ Ibid item 2.2.1.

⁷¹ Ibid, item 2.2.2.

consonance with profitable decision-making by those responsible for managing the affected mining companies. This may well be inconsistent with fair and equitable treatment and the right to enjoy full protection and security under the South Africa–Sweden investment treaty, South Africa–Finland investment treaty, South Africa–China investment treaty and South Africa–Nigeria investment treaty. These investment treaties prohibit the contracting parties from impairing by unreasonable and discriminatory measures in the management, use or enjoyment of investments.⁷² The pre-determination of specified procurement budgets that must be used to procure goods and services made or manufactured in South Africa under the Mining Charter does not always take into consideration how such procurements are profitable to companies that are required to comply with these requirements. Thus, these requirements in the Mining Charter may well be found to be unreasonable measures contrary to the South Africa’s investment treaties. Compulsory equity divestiture measures were the subject of investor–State suit in *Foresti v. South Africa*⁷³ brought under the South Africa–Italy investment treaty⁷⁴ and South Africa–Belgo-Luxembourg Economic Union investment treaty.⁷⁵ This litigation brought about the termination of these two investment treaties and others and the enactment of the Protection of Investment Act 2015 (Act 22).⁷⁶

The authority and discretion vested in procurement entities or contracting authorities in the selection of one prospective tenderer for contract award and the imposition of national interest policy goals could be in breach of provisions on performance requirements and fair and equitable treatment standards in IIAs. Performance

⁷² Agreement between the Kingdom of Sweden and the Republic of South Africa on the Promotion and Reciprocal Protection of Investments, signed 25 May 1998, entered into force 01 January 1999, art 3(2); Agreement between the Government of the Republic of Finland and the Government of the Republic of South Africa on the Promotion and Reciprocal Protection of Investments, signed 14 September 1998, entered into force 03 October 1999, art 2(2); Agreement between the Government of the People’s Republic of China and the Government of the Republic of South Africa concerning the Reciprocal Promotion and Protection of Investments, signed 30 December 1997, entered into force 1 April 1998, art. 3(1), <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/3359/download>; and Agreement between the Government of the Republic of South Africa and the Government of the Federal Republic of Nigeria for the Reciprocal Promotion and Protection of Investments, 29 April 2000, entered into force 27 July 2005, art. 4(1), <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/3554/download>.

⁷³ *Foresti v. South Africa*, Case No ARB(AF)/07/1, Award, 4 August 2010.

⁷⁴ Agreement between the Government of the Republic of South Africa and the Government of the Italian Republic on the Promotion and Protection of Investments, signed 09 June 1997, entered into force 16 March 1999.

⁷⁵ Accord entre l’Union économique belgo-luxembourgeoise et la République d’Afrique du Sud concernant l’encouragement et la protection réciproques des investissements, signed 14 August 1998, entered into force 14 March 2003

⁷⁶ Malebakeng Agnes Forere, “The New South African Protection of Investment Act: Striking a Balance between Attraction of FDI and Redressing the Apartheid Legacies” in Fabio Morosini (ed), *Reconceptualizing International Investment Law from the Global South* (Cambridge University Press, 2017) 251

requirements impose obligations on investors and other business entities to ensure that their activities or participation in government contracts achieve specified outcomes in host countries.⁷⁷ They are specifications in government contracts or investment contracts regarding⁷⁸

strengthening the industrial base and national added value, developing national expertise in a given sector, creating upstream and downstream economic links in a given economic sector, ensuring technology transfer, achieving better environmental or social outcomes, reducing unemployment, avoiding restrictive trade practices, preserving a significant part of national enterprises in key sectors, or guaranteeing security in the industrial sector.

3.3 Australia

The issue of the relationship between IIAs and public procurement regulation has also come under the attention and consideration of the Government of the Commonwealth of Australia. In Australia, procurement by public sector entities is done under the Commonwealth Procurement Rules of April 2019. The Government has integrated Australia's obligations under FTAs relating to procurement into the Procurement Rules.⁷⁹ During the 44th Parliament (November 2013–May 2016), proposals were made to the effect that government procurement rules should be revised to include a “buy Australian” preference, particularly for steel products; a redefinition of the “value for money” principle to include “secondary and social benefits to communities” and the assessment of future FTAs in terms of the “impact on manufacturing jobs”.⁸⁰ A central issue that came up for consideration in Parliament was how these proposals could stand in the face of Australia's obligations under FTAs. The Government's response to a senate committee's recommendation that the Department of Finance should provide a detailed explanation of the barriers to a preferential scheme in Australian procurement was that “international agreements limit the extent to which the Government can preference local suppliers”.⁸¹ The Government categorically stated that it⁸²

⁷⁷ Suzy H. Nikièma, *Performance Requirements in Investment Treaties* (IISD Best Practices Series - December 2014) 2.

⁷⁸ *Ibid* 1.

⁷⁹ CPRs, note 21 above, rule 2.16.

⁸⁰ Commonwealth of Australia, *Government procurement and free trade agreements*, http://www.ap.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook45p/GovernmentProcurement.

⁸¹ Australian Government, *Australian Government response to the Senate Finance and Public Administration References Committee Report: Commonwealth Procurement Procedures* (April 2015) p. 4, file://uniwa.uwa.edu.au/userhome/staff5/00092945/Downloads/Government%20response.pdf.

⁸² *Ibid* p 3.

cannot support the committee's recommendations to implement initiatives that preference local suppliers when procuring goods and services valued above the procurement thresholds ... Any recommendation to treat suppliers inequitably through schemes that preference local suppliers, beyond those that are specifically included in the 17 exemptions listed at Appendix A of the [Commonwealth Procurement Rules], would be inconsistent with Australia's international obligations.

Nicholas Seddon's opinion on the same subject was that "[b]ecause of the commitments made in the Australia–United States Free Trade Agreement chapter 15, the Commonwealth is not free to pursue a buy Australian policy unless an exemption applies."⁸³ Australia is a signatory to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (TPP-11),⁸⁴ which has a chapter on government procurement. To ensure compliance with TPP, the Government made provision in the 2016–17 Budget for: A\$12.4 million to upgrade information technology communications systems to bring about greater transparency in tender procurements; and A\$2.9 million for the Federal Court of Australia to set up a settlement mechanism for procurement disputes.

In recognition of the limitations that IIAs place on government procurement regulation, the Australia Labour Party included a clause 9 in A Fair Go for Australians in Trade Bill 2018 to prohibit the Government of Australia from entering into FTAs that restrict Australia having preferential procurement. The clause specifically states that⁸⁵

The Commonwealth must not, on or after the commencement of this Act, enter into a trade agreement with one or more other countries that includes provisions relating to government procurement which have the effect of restricting the Commonwealth's procurement arrangements from any form of preference for the purpose of: (a) protecting Australia's essential security interests; or (b) benefiting local small and medium enterprises; or (c) protecting national treasures; or (d) implementing

⁸³ Nick Seddon, Submission To The Senate Standing Committee on Finance and Public Administration References Committee, file://uniwa.uwa.edu.au/userhome/staff5/00092945/Downloads/Sub_01.pdf.

⁸⁴ *Comprehensive and Progressive Agreement for Trans-Pacific Partnership*, signed in Santiago, Chile, on 8 March 2018. See also *Agreement between the Government of Canada and the Government of the Republic of Benin for the Promotion and Reciprocal Protection of Investments*, signed 9 January 2013, entered into force 12 May 2014, art. 10 which provision exempts various forms of regulatory measures from being treated as performance requirements including measures that require an investment to use a technology "to meet generally applicable health, safety or environmental requirements".

⁸⁵ The Parliament of the Commonwealth of Australia, A Fair Go for Australians in Trade Bill 2018 (2016-2017-2018), https://parlinfo.aph.gov.au/parlInfo/download/legislation/bills/s1146_first-senate/toc_1821620.pdf;fileType=application/pdf.

measures for the health, welfare and economic and social advancement of Indigenous people; or (e) promoting ethical standards and sustainable development through ethical procurement; or (f) providing for the full, fair and reasonable participation of local enterprises in government contracts as outlined in Commonwealth, State and Territory industry participation policies and successor programs and policies; or (g) maintaining the Australian industry cap.

Another illustration of how investment treaties can constrain the implementation of procurement rules is reflected in the qualification of the requirement in the Commonwealth Procurement Rules⁸⁶ to implement the rules to bring about broader benefits to the Australian economy. According to clause 4.7 of the Commonwealth Procurement Rules, “[i]n addition to the value for money considerations ... for *procurements* above A\$4 million (or A\$7.5 million for *construction services*) (except *procurements* covered by Appendix A and *procurements* from *standing offers*), *officials* are required to consider the economic benefit of the *procurement* to the Australian economy.” This requirement is subject to clause 4.8, which states that the policy on the economic benefit of a procurement to the Australian economic “operates within the context of relevant national and international agreements and *procurement* policies to which Australia is a signatory, including free trade agreements and the Australia and New Zealand Government Procurement Agreement.”

This analysis shows in practical terms how IIAs can have an impact on the making and implementation of domestic procurement laws and policies. While opening up procurement markets for foreign investors may come with its own blessing, especially in areas where domestic businesses are not well placed to provide the needed goods, services or works, it also comes with limitations being placed on legitimate preferential treatment that governments could otherwise extend to domestic suppliers or that governments might want to impose on investors in the national interest. These tensions between social policies in procurement can be addressed by reconciling standards of investment protection with constitutional and legislative obligations with respect to the protection of the public interest using public procurement. This means that exceptions must be made in IIAs for social policies in public procurement so that the adoption of those policies at the national level does not lead to investor–State arbitration. Another way is to expressly limit the authority of governments to enter into IIAs that limit the adoption of social policies in procurement. This is what Australia sought to do with the A Fair Go for Australians in Trade Bill 2018. Investment tribunals must also interpret IIAs

⁸⁶ CPRs, note 21 above.

liberally to accommodate bona fide and legitimate policies that promote national development. Investment treaties must not be allowed to stand in the way of the national development objective supposedly underlying IIAs.⁸⁷

4. Socioeconomic policies, methods of procurement and investor-State arbitration: a case study

The *ADF Group Inc. v. United States of America*⁸⁸ case analysed here and others involving procurement measures, such as *Foresti v. South Africa*,⁸⁹ *Mercer International Inc. v. Canada*,⁹⁰ *United Parcel Service of America Inc. v. Canada*,⁹¹ support the proposition that unless an IIA exempts procurement measures from its coverage, established foreign investors can use IIAs to challenge measures that exclude them from participating in procurement or impose local content, preferences and performance requirements in the procurement process.

The *ADF Group Inc. v. United States of America*⁹² dispute related to the construction of the Springfield Interchange Project in the United States. The Springfield interchange is a highway junction in northern Virginia.⁹³ The project involved major changes to the original design of the structures and highways and constructing additional structures, approaches and highways.⁹⁴ The bridges to be constructed required the use of steel girders.⁹⁵

Shirley Contracting Corporation submitted the lowest bid in response to an invitation for bids placed by the Department of Transportation of the Commonwealth of Virginia (DTCV). Accordingly, Shirley Contracting Corporation was awarded the

⁸⁷ D. Dagbanja, 'The Development Objective as an Imperative in Interpretation of International Investment Agreements' (2018) 44(2) *University of Western Australia Law Review* 145.

⁸⁸ *ADF Group Inc. v. United States of America* ICSID Case No. ARB(AF)/00/1, Award of 9 January 2003. This case was brought under North American Free Trade Agreement (NAFTA) signed by Canada, Mexico and United States in 1992 and entered into force 01 January 1994. It has since been replaced by Canada-United States-Mexico Agreement, signed in November 2018, and entered into force 1 July 2020.

⁸⁹ *Foresti v. South Africa*, note 73 above.

⁹⁰ *In Mercer International Inc. v. Canada*, ICSID Case No. ARB(AF)/12/3, Award, 6 March 2018, para 2.19. This case was brought under NAFTA, note 88 above.

⁹¹ *Ibid* [121].

⁹² *ADF Group Inc. v. United States of America*, note 88 above.

⁹³ *Ibid* [44].

⁹⁴ *Ibid* [45].

⁹⁵ *Ibid*.

main contract for the project.⁹⁶ It then awarded a subcontract to ADF International Inc.,⁹⁷ a subsidiary of ADF Group Inc., established under the laws of Canada. The Government of the United States funded the project.

The United States measures that ADF complained about comprised statutory provisions, implementing administrative regulations and contractual provisions.⁹⁸ Under these statutory and regulatory provisions, the Secretary of the Federal Department of Transportation was not to obligate any funds authorized to be appropriated for the project if the steel, iron and manufactured products used in the project were not *produced in* the United States. No federal-aid highway construction project was to be authorized for advertisement or authorized to proceed unless the project included no permanently incorporated steel or iron materials. Permanently incorporated steel or iron materials could be used only if all manufacturing processes occurred in the United States. The statutes and regulations also required standard contract provisions at the state level to require the use of domestic materials and products when federal funds were involved in a project.⁹⁹

ADF International had proposed to perform its obligations under the subcontract by using steel produced in the United States and to carry out certain fabrication work on this steel using facilities owned by its parent, ADF Group Inc., based in Canada.¹⁰⁰ However, the DTCV advised Shirley Contracting Corporation that ADF International's proposed operations did not comply with the provisions of the applicable statutes and regulations and the terms governing the main contract.¹⁰¹

ADF instituted arbitral proceedings against the United States, arguing that the measures precluded ADF International or ADF Group Inc. themselves from using United States-origin steel fabricated in Canada in the projects.¹⁰² ADF argued that by requiring investors of another party to the North American Free Trade Agreement (NAFTA) to use only domestically-produced goods, the measures effectively prohibited the use of imported goods in certain contracts, which adversely affected the management, conduct and operation of its investment in the United States through the subsidiary. It argued that the measures also restricted the free transfer of goods and services between a parent corporation and its subsidiary, such as

⁹⁶ Ibid [46].

⁹⁷ Ibid [47].

⁹⁸ Ibid [56].

⁹⁹ Ibid 56] and [57].

¹⁰⁰ Ibid [48].

¹⁰¹ Ibid [49].

¹⁰² Ibid [90].

between ADF International and ADF Group Inc. These measures, the investor argued, placed ADF International at a competitive “disadvantage vis-à-vis domestic fabricators”,¹⁰³ contrary to Article 1102.¹⁰⁴

Under Article 1108(b) of NAFTA, the national treatment obligation did not apply to procurement by a contracting party of NAFTA or a State enterprise. To avoid the effect of this provision, the investor argued that the present case was *not a procurement* and that the investor did not complain about the conduct of any federal procurement. ADF argued that the measures imposed the purchase of goods and services on the DTCV in connection with the project. If the federal government had not imposed those measures, ADF would have been able to supply steel products fabricated at its facilities in Canada. ADF argued that the DTCV’s “activities and operations ... did constitute procurement by the Commonwealth of Virginia” because although the federal Government “did not purchase or otherwise acquire any goods and services for the Springfield Interchange Project,” the DTCV “did, for the Commonwealth of Virginia.”¹⁰⁵ According to ADF, “unlike the U.S. Federal Government, the Commonwealth of Virginia is not subject to the disciplines” of Chapter 10 of NAFTA, which covered procurement, and “has not voluntarily assumed any obligations in respect of procurement under Chapter 10.”¹⁰⁶ Therefore, if the United States’ measures “do constitute procurement, they would constitute violation by the United States Government of the prohibitions of Chapter 10”.¹⁰⁷ If the “measures do not constitute procurement by the Federal Government, then they are not saved by Article 1108(8)(b)”.¹⁰⁸ While conceding that Article 1108(7)(b) permitted a contracting party to NAFTA “to derogate from the national treatment obligation when making grants and subsidies”,¹⁰⁹ the investor argued that the provision did not permit a party “to continue infinitum to require that grant recipients in turn violate the national treatment obligation when they spend ... funds”.¹¹⁰

ADF also argued that the Buy America measures violated Article 1106(1)(b) of NAFTA by imposing performance requirements, namely (1) the imposition of a 100 per cent United States domestic content requirement; and (2) the preference requirements for United States-produced steel materials and products if ADF were to provide fabricated steel products to highway projects receiving federal aid.¹¹¹

¹⁰³ Ibid [66].

¹⁰⁴ Ibid [55].

¹⁰⁵ Ibid [87].

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid [88].

¹¹⁰ Ibid.

¹¹¹ Ibid [82].

The United States argued that the claims based on national treatment and breach of the prohibition against performance requirements were “foreclosed by the exceptions” in Article 1108(7)(a) and (8)(b) of NAFTA for procurement.¹¹² The Commonwealth of Virginia carried out procurement when it purchased steel and services from the main contractor. Since Virginia is one of the states of the United States, there was a procurement by a governmental unit of the United States. The United States argued that “purchase of steel and services by a governmental unit of the United States is “plainly ‘procurement by a Party’ within the meaning of Article 1108”¹¹³ of NAFTA. According to the United States, state and provincial government procurement was “not subjected to any national-treatment and performance-requirement obligations.”¹¹⁴

The tribunal held that the investor failed to substantiate its claim of discrimination based on differential treatment between it and United States investors.¹¹⁵ The investor “did not sustain its burden of proving that the ... measures imposed (*de jure* or *de facto*) upon ADF International, or the steel to be supplied by it in the U.S., less favorable treatment *vis-à-vis* similarly situated domestic (U.S.) fabricators or the steel to be supplied by them in the U.S”.¹¹⁶ Therefore, the investor failed to show that the measures were inconsistent with NAFTA Article 1102.¹¹⁷

The tribunal also held that the construction of the project “constituted or involved governmental procurement under Article 1001(1) of NAFTA,¹¹⁸ which stated that Chapter 10 of NAFTA was applicable to measures adopted or maintained by a contracting party relating to procurement by a federal government entity and a state or provincial government entity set out in the relevant annexes.¹¹⁹ It followed that an existing non-conforming measure of a NAFTA party “saved by Article 1108(1) may not only be a federal government measure but also a state or provincial government measure and even a measure of a local government”.¹²⁰ The effect of Article 1108(7)(a) and (8)(b) was that NAFTA provisions on national treatment, most-favoured-nation treatment and performance requirements “are not applicable in respect of procurement ... whether the procurement is carried out by an office or entity of the U.S. federal Government or by an office or entity of the Commonwealth of Virginia”.¹²¹

¹¹² Ibid [91].

¹¹³ Ibid [92].

¹¹⁴ Ibid [93].

¹¹⁵ Ibid [156].

¹¹⁶ Ibid [157].

¹¹⁷ Ibid [158].

¹¹⁸ Ibid [162].

¹¹⁹ Ibid [164].

¹²⁰ Ibid [165].

¹²¹ Ibid [170].

According to the tribunal, Article 1001(5)(a) of NAFTA “appears expressly designed to separate the financing or funding of construction or other projects from the procurement operations necessarily entailed by such projects, and thus precisely to make possible the continuation of federal government funding of state or provincial government procurement”.¹²² Based on this reasoning, the tribunal also held that ADF had not shown that the measures challenged were inconsistent with the limitation on imposing performance requirements in NAFTA Article 1106.¹²³

In *Bosca v Lithuania*,¹²⁴ the tribunal held that the decision of a Lithuanian State entity to not award a procurement contract to a foreign investor was made in bad faith and contrary to the investors’ legitimate expectation, which constituted a breach of Lithuania’s obligation to accord the investor just and equitable treatment under the Lithuania–Italy investment treaty.¹²⁵ The effect of this decision, like the *ADF Case*, is that a State party to an investment treaty which does not exempt procurement measures from its scope of application has an obligation to open its procurement proceedings for participation by covered foreign investors. A State’s failure to open such procurement proceedings and to award a procurement contract to a covered foreign investor may well be in breach of the applicable investment treaty.

Generally, national procurement laws do not provide that, when single-source procurement is used or when a socioeconomic policy in procurement is implemented, consideration must be given to foreign nationals. On the contrary, domestic procurement legislation would usually provide for preferences to be given to domestic businesses as reflected in the above analysis. Where national legislation lacks a provision requiring the opening of procurement proceedings for international participation, the obligation may arise only where a State is a party to an international procurement agreement or an investment treaty. Thus, on the one hand under domestic procurement law, procurement entities can decide to select national entities either when the subject of procurement is available only from them or to promote socioeconomic and industrial goals required under procurement legislation. On the other hand, the selection of a national tenderer using a method of procurement to promote a domestic policy may amount to a breach of national treatment under investment treaties, which requires that covered investors and investment be treated in the same way or similar to domestic investors and investments.

¹²² *Ibid.*

¹²³ *Ibid.* [174].

¹²⁴ *Bosca v Lithuania*, above 14.

¹²⁵ *Ibid.*

5. Conclusion

The protection of investment abroad today is largely governed by IIAs. These investment treaties are said to attract foreign investment, which it is claimed leads to development. However, the limitations that IIAs have placed on regulations aimed at protecting human rights and the environment, banking and financial services regulations, and industrial policies have raised reasonable doubt about whether indeed these treaties are capable of leading to the attainment of the supposed development objectives underlying them. Through the substantive standards and ISDS provisions in IIAs, legitimate State measures aimed at protecting the public interest are undermined. In this regard, much ink has been spilled about the consequences of IIAs and arbitration on States' authority to regulate in the public interest. This article adds to the debate on the subject by analysing the limitations that IIAs place on the domestic regulation of government procurement. It has shown that methods of procurement and tendering techniques such as national competitive tendering, restricted tendering, single-source procurement and the pursuit of socioeconomic policies through procurement all stand to be challenged by foreign investors in ISDS if a State adopting any of these methods and policies in procurement is a party to IIAs. A practical example has been shown in the case of Australia, which has integrated its procurement obligations under FTAs with investment clauses into its procurement rules. IIAs also obligate States to extend to foreign investors procurement opportunities that States are legally entitled under municipal law to reserve for domestic businesses, thereby imposing extra financial and regulatory costs on governments.

Governments must reserve absolute autonomy to decide who participates and who does not participate in procurement within the parameters of domestic and applicable international procurement regulations. After all, procurement is about meeting the needs of States and their citizens. The participation of foreign nationals in domestic procurement must be justified solely on the basis that such participation is necessary to meet the national need intended by the particular procurement. Therefore, governments must have the freedom to decide when foreign nationals can participate in procurement, based solely on their own determination in light of the applicable domestic rules on procurement and whether such participation is necessary to meet the needs for initiating the particular procurement. IIA rules must not be allowed to be used as an excuse for foreign nationals to bypass regular market entry rules. Where States are parties to an international agreement on procurement such as the Agreement on Government Procurement, their obligations to open their procurement market must be limited to only those countries that are also parties to the procurement agreement, and not to the world at large.

To address conflict between procurement rules and IIA rules, it is proposed that existing IIAs be re-negotiated to make exception for domestic preferences not expressly aimed at harming foreign investors. Each State exists or should exist for its citizens. Therefore, national treatment and most-favoured-nation treatment must be excluded from future IIAs unless they address national interests in tangible terms. Other ways in which States can shield legitimate and non-discriminatory public welfare regulation (including public procurement) from investor-State claims, are by “reaffirming the importance of public welfare regulation in the preamble, refining and clarifying core investment protections, and sometimes including general exceptions clauses.”¹²⁶

¹²⁶ Anthea Roberts and Richard Braddock (2016), “Protecting Public Welfare Regulation through Joint Treaty Party Control: A ChAFTA Innovation” (Columbia Centre on Sustainable Development, *Columbia FDI Perspectives: Perspectives on Topical Foreign Direct Investment Issues*, No. 176, June 20) at p 1.

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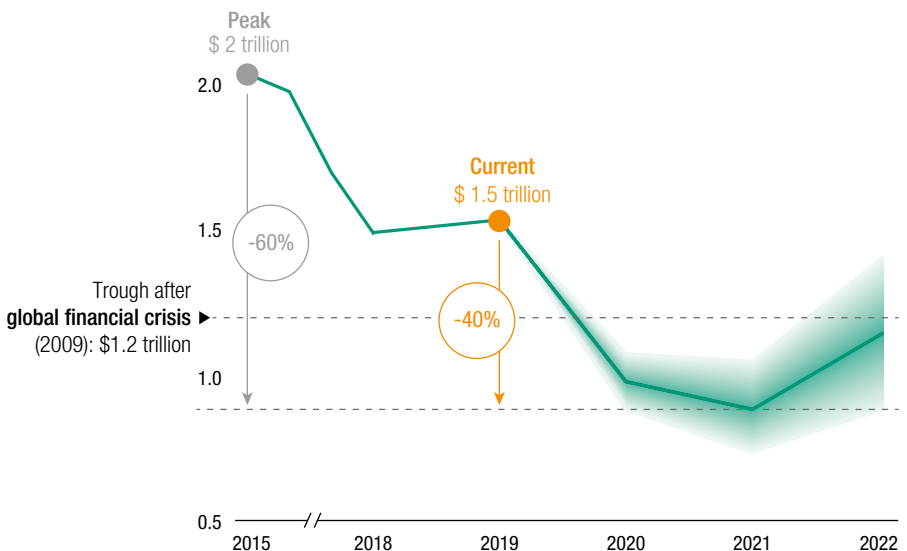
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Introduction to the focused section: COVID-19 and international production

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The global economy is in the midst of a severe crisis caused by the COVID-19 pandemic. The immediate impact on international production is dramatic. Projections in the *World Investment Report 2020 (WIR2020)* show a decline in FDI of up to 40 per cent this year, with no recovery expected until 2022 (Figure 1).

Figure 1: Global FDI inflows, 2015–2019 and 2020–2022 forecast (Trillions of dollars)



Source: UNCTAD, WIR (2020).

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Forecasts for global trade are equally gloomy. With all attention of policymakers worldwide now focused on limiting the spread of the virus and containing the immediate economic damage, much research capacity – in international organizations, think tanks and academia – has been diverted to support the global response to the pandemic. A flurry of publications and academic papers has already appeared analysing the business and economic impact from all angles.

In the *WIR2020* UNCTAD tries to look at the longer-term implications for international production, recognizing that the push for supply chain resilience and greater autonomy in productive capacity in reaction to COVID-19 is likely to have lasting consequences. To do so, the report necessarily takes into account the combined effect of the current crisis and other gamechangers for international production, including the new industrial revolution, the broader pre-existing policy shift towards more economic nationalism, and sustainability trends. It discusses several likely trajectories for the decade to 2030 across different industries, including reshoring, regionalization and supply chain diversification.

The overall directional trend in international production points towards shorter value chains, a higher geographical concentration of value added and further downward pressure on international investment in physical productive assets. That will bring huge challenges for developing countries. For decades, their development and industrialization strategies have depended on attracting FDI, increasing participation and value capture in global value chains (GVCs), and gradual technological upgrading in international production networks. They now face a shrinking pool of efficiency-seeking investment, changing determinants of FDI with a reduced importance of their key competitive advantage of low labour costs, and ever higher technological and infrastructure barriers to participation in GVCs.

The expected transformation of international production also brings some opportunities for development, such as promoting resilience-seeking investment, building regional value chains and entering new markets through digital platforms. But capturing these opportunities will require a shift in development strategies that recognizes the fundamental changes taking place along the investment-development path. Overall, a degree of rebalancing towards growth based on domestic and regional demand and promoting investment in infrastructure and domestic services is necessary. That is very much in line with the assessment of investment needs associated with the Sustainable Development Goals (SDGs), also depicted in the *WIR2020*.

The dedicated section on COVID-19 in this issue of *Transnational Corporations* reflects the cross-fertilization between the journal as an outlet for policy-relevant academic research and UNCTAD's *World Investment Report*. The selection of short perspective papers included in the section all look at the longer-term implications of the pandemic for international production. They cover different angles and

touch on various aspects of the analysis in the *WIR2020*, often taking an in-depth look at individual trends or analysing specific consequences for GVCs, MNEs or developing regions.

Peter Enderwick and *Peter Buckley* confirm the *WIR2020* view that the recovery from the COVID-19 pandemic is unlikely to see a return to the previous globalization wave. They suggest that there is an opportunity to address some of the weaknesses of globalization through a more regionally-based world economy offering a better balance between national and international interests, and between efficiency and resilience in supply chains. They acknowledge that regionalization may lower global welfare through its reduced scale and higher costs but find that these downsides can be partly mitigated through emerging technologies. They also argue that the efficiency costs of increased regionalization should be offset against the opportunities to create a more inclusive, equitable and acceptable global regime.

Hinrich Voss takes a different perspective, examining the implications of COVID-19 for business conduct along global value chains. He observes that the worldwide economic lockdowns to contain COVID-19 have led to the unilateral cancellation and suspension by multinationals of orders from overseas suppliers and argues that this is in conflict with the UN Guiding Principles on Business and Human Rights and the Sustainable Development Goals. Working with and supporting suppliers and their networks as part of a sincere engagement with human rights and working conditions requires relationships that are built on trust and mutual respect. Abandonment of suppliers through the cancellation or suspension of contracts is likely to have negative short- and long-term effects.

The importance of long-term sustainable supply chain relationships comes back in a contribution by *Ismail Gölgeci*, *Harun Emre Yildiz* and *Ulf Andersson*, who deep- dive on the balance between efficiency and resilience in global supply chains. They argue that MNEs may be able to develop social mechanisms that can maintain efficiency and resilience simultaneously. They also caution against knee-jerk reactions in a push towards resilience, as MNEs cannot easily switch supply chain partners without compromising the effectiveness of precisely those social safeguards that are needed to maintain both efficiency and resilience. Interestingly, their perspective paper also shows how reshoring, one of the expected post-pandemic trends, can make supply chains potentially more vulnerable to future shocks. Resilience can be stronger in interconnected webs of activity, where finding contingencies is easier.

Pádraig Carmody brings a development perspective to the COVID section. He focuses on the likely impact of the COVID-19 pandemic on prospects for foreign investment and development in Africa. Analogous to the approach and the findings in the *WIR2020*, he concludes that it will depend on interactions with pre-existing trends, including the fourth industrial revolution, as well as on political reactions

to the pandemic in Africa. His main finding is that while there is still an important role for foreign investment to strengthen development prospects on the continent, the crisis also creates the need for more domestically-focused investment and production. He highlights the increased urgency of economic diversification in low-income countries and the necessity to future proof their economies against shocks. He points at opportunities to increase local production of manufactures, food and other vital commodities.

Xiaolan Fu analyses the transmission mechanisms through which the pandemic affects global trade and investment. She focuses on the role of digital technologies in enhancing the resilience of value chains, enabling social distancing and fostering new drivers of growth for post-pandemic recovery. Her findings are upbeat about digital economy growth opportunities, but gloomy for development prospects and equality. In her view, many developing countries – especially in Africa and South Asia – will be worse off because of the gap in digital capabilities and infrastructure, as well as in the ability to invest in them. She calls for international technological and financial cooperation and policy coordination to help developing countries not only to combat the shock of the pandemic but also to develop their digital competencies and infrastructure to avoid them falling further behind in the post-pandemic economic recovery.

Kevin Ibeh also focuses on the role of digital technologies in the post-pandemic recovery of international production, zooming in on Africa. He looks at prospects for African digital multinationals in the post-COVID-19 international investment landscape and advances policy recommendations in four areas: organizational capabilities; financing and scaling; digital infrastructure; and regulatory conditions. He documents ongoing developments across the continent, concluding that significantly more needs to be done. He calls for a concerted effort by governments, industry and international stakeholders to bring about a step change in the international investment prospects and outcomes for African digital multinationals in the post-COVID-19 digital economy.

Taken together, the set of perspective papers provides an interesting mix of views, complementary to those in the *WIR2020*, on how international production – trade, investment and the cross-border operations of multinationals – are likely to evolve over the coming decade and on the likely implications for the trajectory of investment-related development. It also provides the contours of a future interdisciplinary research agenda combining perspectives from international business, international economics and development studies. Further research questions that emerge from the papers include, for example:

- How can countries cope effectively with the effects of the pending restructuring or reconfiguration of international production, including divestment, diversion, and digitalization?

- How can countries shift investment policy direction from a GVC towards an RVC (regional value chain)-based approach?
- How can developing countries, used to attracting export-oriented investment, more effectively promote international investment in infrastructure, domestic services, and domestically-focused manufacturing capacity?

Transnational Corporations looks forward to receiving further submissions of papers on these topics for future issues.

To conclude, the reaction to the call for short perspective papers for this dedicated section, extended only to our editorial and review boards, has been overwhelming. It is an encouraging confirmation of the dedication of our board members to the journal. Space and production limitations and a tight timeline for revisions forced the editorial team to make some difficult choices. We wish to thank all those members of our boards and contributors to the journal for their continued commitment and support.

Rising regionalization: will the post-COVID-19 world see a retreat from globalization?

Peter Enderwick and Peter Buckley*

Concerns regarding the operation of the global economy mean that recovery from the COVID-19 pandemic is unlikely to see a return to the previous globalization wave. We suggest that there is an opportunity to address some of the weaknesses of globalization through a more regionally-based world economy offering a better balance between national and international interests, efficiency and resilience in global supply chains, and between growth, inclusiveness, and equity impacts.

Keywords: COVID-19, globalization, regionalization

1. Introduction

The COVID-19 pandemic represents the most fundamental disruption to economic activity in a century, introducing huge challenges for the global economy. Although that economy has survived past disruptions – 9/11, severe acute respiratory syndrome and the global financial crisis – none have been as immediate, prolonged or widespread as the pandemic. Unlike earlier events, it has simultaneously hit the leading economies, paralyzed links between countries, prompted a mix of responses and created uncertainty about its eventual eradication. Interestingly, for a global event, it has not triggered an effective global response. Rather, nations have pursued disparate responses based on their trade-off between the costs of virus containment and those of economic shutdown and isolation. The lack of global leadership may reflect the absence of a clear single global power or the ongoing tensions between the two leading contenders – the United States and China.

One effect of the pandemic is a reconsideration of the current globalization wave and whether it should be revived or remodelled. Globalization was already subject to considerable criticism prior to the pandemic (Buckley and Hashai 2020). Concerns highlighted its inequity, its fragility, its encouragement of wastefulness and disregard for the environment, as well as its relentless drive to advance technology. These

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concerns brought the growth of nationalism, populism and challenge to the United States' economic hegemony, triggering increased protectionism and a rejection of the institutional arrangements that have guided the world economy since 1945 (Walt 2020).

This paper takes the position that we will see attempts to remodel globalization, with a move towards a more regionally-based world economy, seeking a better balance between national and international interests (Rodrik 2019), between efficiency and resilience of supply chains (Reeves and Varadarajan 2020) and between growth and equity (Gruber 2011). We believe that there is growing credence to the view that a regionally-based economy could offer some of the benefits of recent globalization (sustained growth, poverty reduction), and fewer of the detrimental effects (hypergrowth, rising inequality, environmental degradation and ineffective responses to global issues).

We first consider the forces affecting globalization prior to the outbreak of COVID-19, highlighting long-running anxieties. We then outline some of the expected changes to globalization as the world economy experiences recovery. Revival may favour growing regionalization, and the factors encouraging such a trend are discussed. The downsides of a more regionally-based global system are examined and concluding considerations presented.

2. Was globalization already overextended?

Prior to the disruption caused by the pandemic, there were indications that the current globalization wave may have reached its peak (Livesey 2018; Witt 2019). To thrive, globalization requires favourable conditions – a relatively free and non-discriminatory trading environment, low tariffs, efficient market processes and supporting institutions, and a comparatively stable operating environment, at least one characterized by manageable risk rather than disruptive uncertainty. In addition, the most recent globalization wave also required efficient infrastructure, both physical and digital, as well as sophisticated technologies to coordinate complex global supply chains and opportunities to exploit locational advantage. Changes in any of these alter the attractiveness of global business strategy. In recent years, a weakening of policy elements has become evident. There are numerous and conflicting arguments surrounding the underlying causes of these shifts – the United States' focus on military primacy (Wertheim 2020), the lack of economic convergence between countries (Rodrik 2019) and the fact that political convergence has always lagged economic integration – but the result has been a marked deterioration in policy underpinnings of the international economy.

The deterioration is evident in a number of ways. International institutions designed to bolster cross-border exchanges have been weakened through ongoing criticism, obstructions and the withholding of funding. The World Trade Organization appears weak, subject to criticism and the blocking by the United States of appointments to its Appellate Body (Yacoub and El-Zomor 2020). Similarly, the World Health Organization has seen its funding from the United States halted amid criticism that it was slow to respond to the pandemic and uncritical of China's role. The United States has reduced confidence in the integrity of trade agreements and alliances with its withdrawal from the Trans-Pacific Partnership and its contentious renegotiation of the North American Free Trade Agreement (Lawder and Freifeld 2018).

The recent increase in global protectionism has affected trade (Quaglietti 2018), international investment screening (Wernicke 2020), global value chains (GVCs) (UNCTAD 2020) and technology transfer (Sukar and Ahmed 2019). This backlash is linked to the subservience of the nation State to global interests in a world of hyper-globalization (Rodrik 2019). Empirical data support the view that de-globalization had begun prior to the pandemic (Witt 2019). World trade fell sharply after the global financial crisis. While trade has recovered somewhat, trade as a percentage of gross domestic product (GDP) has not, falling since 2008 in a period sometimes termed "slowbalization" (Irwin 2020). Comparable declines in real foreign direct investment (FDI) and GVCs have also occurred (UNCTAD 2020).

De-globalization carries a cost. Globalization has brought high growth rates for a number of emerging economies (Crafts 2004), lifted hundreds of millions out of poverty (Salvatore and Campano 2012) and provided consumers with greater choice and lower prices for a wide range of goods and services. These benefits must be incorporated into any consideration of the true costs of moving towards a more regionalized economy.

3. Changes in the nature of globalization

The underlying weaknesses outlined earlier brought pressures for change that were exacerbated by the pandemic. Several changes in the nature of globalization are already evident. First, State involvement in economic activity has increased noticeably. State support has morphed into State direction as businesses are ordered to produce critical products (ventilators, personal protective equipment), to reconsider production locations and to increase supply resilience. These policies, designed to improve national security, are affecting globalization. Japan has set aside more than US\$2 billion to assist its firms in shifting out of China, relocating either home (reshoring) or somewhere else in the region (nearshoring) (Bloomberg 2020). Japanese firms that experienced supply chain shutdowns are reconsidering

arrangements. Iris Ohyama is shifting its mask production from China to Japan, while Mazda has indicated that it will source auto parts more often from Mexico. Similar calls have been made in the United States, with White House National Economic Council Director Larry Kudlow calling for the authorities to pay the costs for United States firms to move operations home from China. Although some relocation has occurred, primarily because of rising labour costs, it has been modest and recent surveys show that many firms remain committed to China (Erchi et al. 2020). The costs of relocation are considerable, in part because many multinational enterprises (MNEs) do not own production processes that can be transplanted. Rather, they rely on a network of contract suppliers and assemblers who produce on their behalf. In some cases, the firm may have lost the competence to manufacture at home, or anywhere else. More likely is a strategy of greater diversification within the Asian region, often a China-plus-one strategy (Enderwick 2011) that strengthens the regionalization of supply chains. For example, Japanese automobile firms are favouring Thailand and Indonesia, machinery firms are targeting Vietnam and semiconductor manufacturing is looking to the Philippines. A strategy of greater diversification still enables MNEs to benefit from China, as China's trade with the ASEAN group (the Association of Southeast Asian Nations) now exceeds its trade with the United States or Europe, and specialist manufacturers and contract assemblers such as Foxconn and Pegatron increasingly commit to Vietnam, India and Indonesia (Chow 2020).

A second major change affecting globalization is a result of firms reconsidering the resilience of their global supply chains. The most recent global wave demonstrated that although supply chains manage continuous adaptation, they struggle with what Rumelt (2009) termed "structural breaks" such as the COVID-19 pandemic. The expansion of GVCs has been driven by efficiency considerations, exploiting extreme specialization and locational disparities. The result has been long, fragmented, but often geographically concentrated supply lines. Optimization at each value-adding stage is assumed to result in comparable system optimization, with system dynamics an operational constraint. However, extreme fragmentation, increased connections and growing environmental volatility mean that local disruptions have unpredictable system-wide effects. Digital ties and coordination of such systems simply accelerate the transmission of shocks (Reeves and Varadarajan 2020). Even the management of GVCs has contributed to the risk of costly disruptions. Academic analysis of the governance of GVC networks has focused on mechanisms, both social (Kano 2018) and strategic (Enderwick and Buckley 2020), that are designed to minimize coordination costs. A strong inward focus has redirected management attention from environmental scanning and the anticipation of external threats.

Third, COVID-19 is likely to affect not just the geography of production, but also the management of supply chains. Outsourcing has minimized margins for many suppliers, making business continuity challenging. The ongoing loss of trusted

suppliers may mean a reconsideration of margins and closer supportive relations along value chains. Technology offers opportunities to restructure supply lines, with frontier technologies such as 3D printing facilitating reshoring or complementary sources of supply. MNEs may seek greater internal flexibility, pursuing reforms of work practices or the use of virtual, transient outsourcing and pop-up enterprises, so-called asset-light strategies (Casella and Formenti 2018). Advanced control and communication technologies enable reduced dependence on key supply hubs such as China. If consumers are willing to accept higher prices, in the same way that they are prepared to pay a premium for fair trade goods, products may be promoted as being sourced from more resilient supply chains, where slack is incorporated, stockpiling is assured or higher supplier margins are guaranteed.

The implications of such changes for countries seeking to join GVCs are unclear. On the one hand, a desire to reduce dependence on traditional hubs could offer opportunities for countries. For example, Ethiopia is rapidly establishing itself as an important location for clothing manufacture. On the other hand, a new member economy in a GVC will need to ensure it has a stable and attractive operating environment with close regional links. Opportunities for upgrading may also be limited where protectionist measures restrict access to technology or prevent MNE investment in specific industries or locations (Buckley, Timmer, Strange and de Vries 2020). Countries such as China may find themselves excluded from GVCs in critical goods such as food, pharmaceuticals and medical supplies. However, these possible developments assume a recovery of the recent globalization wave, the United States-centric wave. It is possible that if the United States continues to reject globalization while China continues to embrace it (given the huge growth benefits China has enjoyed), a more China-centric regime may emerge (Mahbubani 2020), underpinned by an acceleration of the Belt and Road Initiative. In light of the growing concentration of political power and rigidity in decision-making within China's Central Communist Party, any new regime may be extremely unstable (Pei 2020).

4. Growing regionalization?

On balance therefore, the effect of the pandemic and underlying anxieties about globalization will push the world economy towards a more regionally-focused composition. This implies selective rather than wholesale de-globalization and is consistent with the long-running argument that from the perspective of MNE strategy at least, the world economy was better described as regional rather than global (Rugman and Verbeke 2004).

One effect of the pandemic has been to reinforce the notion of the nation State. Although the demise of the Soviet bloc created a world defined by nation States, it is at this level that medical, security and economic responses to the pandemic have originated. The considerable diversity of responses underlines national differences in the face of the unknown. The notion of a world of nation States is attractive in many ways. It provides the foundation for democracy and the provision of public goods (Wimmer 2019). But it also has its shortcomings. As an efficient economic unit, many nation States are too small or lack the diversity of economic resources needed for self-sufficiency. The rejection of outsiders also fuels resentment and, historically, conflict. Regional groupings that are based on trade agreements or closer economic relations offer a possible solution to these shortcomings. Regional groupings, often geographically clustered, attempt to bring together those with shared interests, with the European Union being perhaps the best example.

The downside of regionalization is the perceived loss of sovereignty and the erosion of national culture when decisions are taken by those with little or no national accountability. Such resentments, as illustrated by Brexit, have been fuelled by hyper-globalization, which has subsumed national interests at the expense of global gains (Rodrik 2019). However, the price of such gains and the massive inequities in their distribution (Milanovic 2018), have brought domestic disintegration – with rising nationalism, populism and trade protectionism – to a number of countries.

Regionalization is occurring as the United States seeks to decouple from China, limiting access to critical assets such as technology and raising the costs of market access. These moves may be interpreted as an attempt to improve United States national security, but they also form part of the ongoing battle for economic hegemony motivated by China's dramatic economic rise. The precise meaning of uncoupling is unclear: there are degrees of uncoupling. A number of countries have broadened their interpretation of critical assets and infrastructure, creating additional impediments to foreign acquisition, particularly in the case of State-owned firms (He et al. 2015). The implementation of tariffs across a wide range of sectors implies a deeper level of uncoupling. Most significant have been attempts by the United States to pressure trade partners to make a commitment to either the United States or China, but not both (Rajah 2019).

Encouraged by growing United States protectionism, East Asia has reduced its dependence on Western markets, with an increasing share of demand now accounted for by China. Trade in intermediate goods, while still important, is matched by increases in final goods destined for the Chinese market. Closer regional integration and self-sufficiency is increasingly evident (Rajah 2019). Further growth in the Belt and Road Initiative will offer new market opportunities for the region. Similarly, powerful new trade agreements such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership and the Regional

Comprehensive Economic Partnership offer future potential for the region. Despite being the engine of growth for the East Asian region, China faces a challenge that other regional members do not. The challenge is to balance interregional sales to markets, including the United States and Europe, with growing intraregional production systems, as Chinese firms expand their operations in East Asia and East Asian producers of intermediate products bolster Chinese manufacturing, a manifestation of what has been termed “chained globalization” (Farrell and Newman 2020). The region is characterized by a high level of State economic direction within a planning regime, and this approach will continue to be used to identify new and promising areas of investment and to tackle gaps in localizing GVCs (Grimes and Du 2020). The strengths of the Asian region are its diversity and its digital leadership. This region will couple innovation with both labour-intensive and Industry 4.0 production technologies. Its weaknesses include its few global brands, the increasing liability of China as a production centre, discrimination in trade and investment policies towards the region, and the vacillation of major economies such as Japan and India.

Complementing a stronger East Asian region, the United States already has in place a trade agreement with Mexico and Canada that offers access to complementary resources, including raw materials and cheap labour. The North American region will pursue growth based on private sector innovation, drawing on efficient venture capital funding, with start-ups strong on branding and marketing. The region has strengths at the two ends of the smile curve (innovation and marketing) but has been hollowed out in the assembly and manufacturing functions. In a reversion to the 1960s, there may be greater utilization of lower-cost locations such as Mexico. Further expansion of United States interests into Central and Latin America would provide access to a range of agricultural products and a growing consumer market. Of course, the significant issues of transnational crime, drug manufacture, State collapse and illegal migration need to be addressed if the United States is to strengthen its immediate geographical region.

Europe is the most comprehensively integrated regional grouping and, despite Brexit, has efficient production systems, affluent consumers and variety of resources. The European region is expected to pursue a model of collaborative growth, with expanding cooperation between State organizations and business. However, the region may slip further in the innovation ranking in relative terms and will be exposed to significant gaps in GVCs.

Less clear is the position of seemingly independent nations, particularly India, the Russian Federation and the United Kingdom, and those such as Japan, in a troubled regional relationship India may provide a locational alternative to China for the production of such goods as pharmaceuticals, auto parts and possibly electronics (Govindarajan and Bagla 2020). However, India is weak in many areas

of manufacturing and in innovation. The strategy of an increasingly global United Kingdom is in doubt in a world that may be moving towards greater regionalization, with the country's dependence on Europe returning despite it no longer being a member of the European Union (EU).

Increased regionalization would also bring costs. Some of the benefits of recent hyper-globalization, such as high growth rates, reduced poverty and opportunities for lesser-skilled workers, would be foregone (Irwin 2020). The costs of establishing regional supply chains would be considerable, particularly in locations that lack supporting services, specialist suppliers or efficient transport and communication links. Even when established, such chains would likely bring higher costs that buyers would have to be willing to assume. Recovery rates between sectors will vary significantly, with air transport and tourism, for example, being slow, meaning that different adjustment rates would be observed. Where there are sectoral interdependencies, these differences would add to costs. Similarly, the creation of regional value chains will require significant coordination between members of regional blocs.

There are also differences in the costs of creating regional chains that are determined by the nature of the industry involved. Primary industries, particularly those in which resources are locationally bound, will still require global markets and transport links to downstream processors at the regional level. Some regions may seek to reduce their dependence on a limited number of suppliers, as the United States has done with oil. The new technologies encompassed by Industry 4.0 could help regionalize some of the most GVC-intensive sectors by reducing the labour cost component and generating offsetting cost savings. Regional processing industries such as food and beverages will be easier to establish, as they are often able to source upstream inputs locally and to customize products to meet local consumer preferences (UNCTAD 2020). Some of the cost disadvantages of regionalism could be partially offset through the considerable gains that could result from a lowering of barriers on international labour mobility, the most protectionist of all resources. The experience of the EU with relatively free labour movement could be replicated in other locations (Rodrik 2019). Smaller economies could benefit where access to GVC involvement becomes easier because of increased regional specialization and the reduced importance of scale.

A further advantage of greater regionalization would be an enhanced ability to tackle the fundamental inequalities that persist in the world economy. The pandemic has demonstrated the human causes of much of our environmental degradation, with air pollution levels falling dramatically around the world as production was curtailed (American Geophysical Union 2020). The failure of global initiatives to effectively tackle this issue creates the opportunity to focus on policies at the regional level, where responses can be tailored more closely to issues and needs. A similar

argument could be made for income and wealth inequalities. There is a greater chance of success for an EU initiative tackling tax avoidance by transnational digital media firms than for any attempt at reaching global agreement on the issue (EU Commission 2016).

National and regional responses may also be more effective in tackling other gaps that have been highlighted by the pandemic. These include differences in the labour force – in work risk profile, economic status, production of services versus goods, and access to health care. Significant digital gaps are evident that can be addressed only by national investment. Differences in consumer behaviour, particularly in risk averseness, also favour more customized policies with regard to trade-offs in health protection versus economic recovery or border opening. For example, initial attempts to open up cross-border travel and tourism have focused on proximate areas such as the trans-Tasman bubble (Australia and New Zealand) and between the Baltic states. Countries and regions display marked differences in their probable recovery rates and likelihood of a viral resurgence (World Bank 2020). Although economic recovery has traditionally relied on lifting restrictions, that may not be appropriate in the current pandemic. Serological testing and certification that may be necessary in the recovery process are better achieved at the national or regional level, in part because of the significant data management and privacy issues involved.

5. Is there a downside to regionalization?

A move from the present globalization wave towards a more regionally-based economy would bring some disadvantages. National and regional responses may not be as effective in countering some of the global problems that the world faces such as cybercrime, global warming and cross-border criminal activity. For many of these issues, the pace of resolution has been glacial and, in the case of global warming, disjointed. In other cases, such as the “War on Drugs”, different nations are now pursuing alternative solutions, recognizing that there is usually more than one (Global Commission on Drug Policy 2018).

Greater regionalization will likely also mean reduced investment in global disaster risk awareness and management. If global institutions such as the World Health Organization are weakened by budget cuts and policy disagreements, the world may be less well prepared for future disasters. Offsetting this concern, businesses are likely to invest more resources in environmental scanning and risk management. For example, as supply chains become more resilient, that resilience should be reflected in a commitment to broader stakeholder interests and accountability through supply chain mapping and the adoption of resilience-based key performance indicators such as responsiveness and reconfigurability.

Moving beyond the purely economic dimensions to the broader military and policy dimensions, concern is growing about the hardening of attitudes in both the United States and China, and against China globally (Silver et al. 2019). An undue focus on the nation State can also be dangerous for the world economy, as seen in numerous past conflicts triggered by extreme nationalist views. Regionalization could help minimize such risks.

A further cost of regionalization is the danger of fragmentation with the growing adoption of incompatible regionally-based standards and technologies. One risk is so-called “technology walls”, with irreconcilable technologies being adopted in different regions, particularly in China and the United States. This could emerge in telecommunications operating systems and 5G or 6G technology, in GPS navigation with the expansion of China’s BeiDou system, and in the Internet of Things (Walia 2020). Duplication would be costly, reducing scale economies and production interoperability. There is even speculation about the fragmentation of the internet (the “splinternet”) which could raise the costs of communication, control and data management.

A counter to this concern is the view that regionalization is neither likely nor feasible as globalization has tied firms to key locations that provide crucial hubs for production, finance, information and logistics. Replicating these hubs, which depend on thousands of interrelated contributors in a given region, would be a vast undertaking (Farrell and Newman 2020). In some cases, the degree of dependency, particularly on China, would be difficult to break. Dun and Bradstreet (2020) estimate that 51,000 MNEs have direct suppliers in Wuhan alone, while five million firms have one or more second-tier suppliers in Hubei Province. China is the world’s leading producer and exporter of active pharmaceutical ingredients, and both India and the United States are critically reliant on continued supplies (Miller and Cohrssen 2020).

Finally, some argue that globalization is already undergoing a transformation that will address some of its failings. The slowdown in the pace of globalization since 2015 has primarily affected capital and trade flows, the traditional engines of global growth. It is suggested that a change in the composition of globalization, particularly the growth of digital exchange (MGI 2016), could bring about a more equitable and inclusive global economy. The weakness of this claim is a failure to recognize the huge digital and information gaps that persist (Chinn and Fairlie 2007).

6. Conclusions

This paper suggests that the current globalization wave will transform into a stronger regional focus as a result of underlying weaknesses in globalization and in response to the disruption of the COVID-19 pandemic. The current disruption is

unlike previous shocks in its suddenness, global impact and uncertainties about recovery. It is also occurring at a time of contestable economic hegemony. The concurrence of these events has led to a reconsideration of global supply chains and recognition of their significant vulnerabilities. A move to a more regionally-based international economy offers the possibility of a better balance of national and international interests, helping counter growing populism, nationalism and protectionism. Although regionalization may lower global welfare through its reduced scale and higher costs, emerging technologies could be used to both increase resilience and maintain efficiency.

The implications for FDI are significant, likely reductions in interregional knowledge and FDI flows but a corresponding increase in intraregional flows. GVCs may be physically shorter, but fragmentation will continue as intraregional specialization develops. Relocation through reshoring and nearshoring will occur but existing centres – China, Germany and the United States – will remain regional drivers. Investments will become increasingly market-seeking rather than efficiency-seeking as regional specialization deepens. Vertical FDI will be complemented by growing horizontal investment as regions seek to broaden their skill bases. Increased competition for FDI means there will be a need for effective regional coordination, investment promotion and industrial policy to minimize wasteful duplication. Intraregional cooperation will become critical as specialization is pushed from the global to the regional level. Finally, the efficiency costs of increased regionalization must be offset against the opportunities to create a more inclusive, equitable and acceptable global regime.

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Implications of the COVID-19 pandemic for human rights and modern slavery vulnerabilities in global value chains

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The COVID-19 pandemic has revealed vulnerabilities and fragilities in global value chains. The worldwide economic lockdowns to contain COVID-19 have led in some industries to unilateral cancellations and suspensions of orders from overseas suppliers by transnational corporations (TNCs). These decisions are argued to be in conflict with the UN Guiding Principles on Business and Human Rights, the Sustainable Development Goals, and related national laws because they have contributed to the risk that the human rights of workers will be violated and that they will become victims of modern slavery. In response, international business policies that target the conduct of TNCs and global value chains need to be reconsidered to achieve global value chain integration while strengthening local bargaining, affording sustainable growth, and protecting human rights.

Keywords: COVID-19, human rights, modern slavery, SDGs, UNGP

1. Introduction

Participation in global value chains (GVCs) has long been considered an important and effective policy tool to support the industrialization of the local economy, creation of employment, upgrading of the technological and managerial competencies of local businesses, and achievement of the Sustainable Development Goals (SDGs) (Blažek, 2016; Gereffi, 2019; Kaplinsky, 2016). Integration into GVCs has become increasingly possible over the last three decades as transnational corporations (TNCs) have narrowly defined and fine-sliced business activities to subsequently outsource them (Buckley, 2009a; Gereffi, 1989). Through fine-slicing, TNCs have articulated business activities so that they can be outsourced to take advantage of particular location-bound advantages with the overall goal of benefitting the orchestrating TNC. Labour-intensive, low-skill and low-value adding activities are thus outsourced to countries with extensive and cheap labour markets. These developments have been supported by international business policies that encourage the proliferation of GVC participation (Kaplinsky, 2016; UNCTAD, 2013).

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In parallel to the internationalization of businesses, regulatory frameworks have evolved to minimize potential detrimental effects on host economies from receiving foreign direct investment and participating in GVCs (Buhmann, 2015) through the exploitation of weak institutions and institutional voids (Clarke and Boersma, 2017; Kolk, Kourula and Pisani, 2017) by clarifying the human rights obligations of TNCs (Arnold, 2016). The UN Guiding Principles on Business and Human Rights is the overarching framework that has influenced global standard setting, laws and TNC behaviour concerning business conduct (Arnold, 2016; Buhmann, 2015; Feasley, 2016).

The COVID-19 pandemic is putting to question a policy drive for greater proliferation and integration of local businesses in GVCs and an economic development strategy that is built around the participation of local businesses in GVCs. It is providing a stress test for the regulatory frameworks on business conduct. Worldwide economic lockdowns in 2020 to control the spread of the pandemic have had ripple effects along value chains and shown that the structures and relationships of GVCs can be vulnerable and fragile. With variations by sector, some businesses found it more difficult to source products globally, encountered challenges in exporting goods, or pre-emptively closed down their supply chains. While some TNCs have responded to these challenges by supporting businesses and workers in their supply chains (Tripathi, 2020), others – international fashion TNCs in particular – have unilaterally cancelled or postponed the delivery of orders from overseas suppliers worth billions of US dollars, leaving factories and their workers out of income. With economies in lockdown and few alternative employment possibilities, workers at these suppliers are at risk of becoming exploited and victims of modern slavery (Crane, 2013). Modern slavery is an umbrella term that refers to various forms of labour exploitation including forced labour, bonded labour, child labour and human trafficking (Kara, 2017). Common to these forms of labour exploitation is, according to (Kara 2017: 8) “dishonouring and degrading people through violent coercion of their labour activity in conditions that dehumanize them” and violate their human rights.

This article contributes to discourse on the impact of the pandemic on the global economy and its international business policies by discussing its repercussions along GVCs. Using the fashion and textile industry as an example, it argues that the pandemic has made tangible the need to revisit international business policies related to the governance of TNCs, the global supply chains they orchestrate, and how human rights can be protected within them.

Section 2 provides a snapshot of how the pandemic has affected the GVCs of the fashion and textile industries. Section 3 relates recent developments in these industries to frameworks that have been established to regulate business conduct. The results from that assessment inform the discussion on GVC policies in section 4. Section 5 summarizes the argument.

2. Impact of the pandemic on the fashion and textile supply chain

The pandemic has affected supply chains across all industries globally. This impact has been felt in the first instance economically but will have consequences for the upholding of human rights and trust in the corporate social responsibility proclamations and efforts of TNCs. We will consider here the global fashion and textile industries as an exemplary case of how a sector has been affected by the pandemic and its potential consequences because of the long-standing human rights issues this sector is grappling with (Aizawa and Tripathi, 2016; Kara, 2019).

The pandemic has hit businesses in the industry's value chains as consumers cut back on their non-essential shopping during the government-enforced lockdowns. Although the majority of businesses have been affected, in particular those businesses in developing and emerging economies and those in the belly of the supply chain have felt the impact. They have been hit by shifts in supply and demand and by local government restrictions.

When China closed its economy in the beginning of 2020 to prevent the spread of COVID-19 during and after the Chinese New Year, manufacturers around the globe were cut off from Chinese supplies. As the world's largest manufacturer and exporter, China is tightly linked into GVCs at various stages. Businesses dependent on inputs from Chinese suppliers had to slow or stop production and lay off workers. As a consequence, suppliers reported that they faced penalties from international brands for delayed deliveries. The International Labour Organization (ILO) (2020) reports that Viet Nam is likely to incur losses in the order of US\$2 billion because of material shortages.

In response to the economic lockdown of the European and American markets, some international fashion brands and retailers have established support mechanisms for their global suppliers to jointly find a way through the crisis (Tripathi, 2020). Others have revisited their contracts with overseas suppliers. Claiming force majeure, they requested that contracts be cancelled, and delivery and payments be delayed, and/or significantly discounted (Worker Rights Consortium, 2020). The result is that worldwide, on average, orders are down by an estimated 42 per cent and expected revenues for 2020 are down by 32 per cent, according to an industry survey by the International Textile Manufacturers Federation (2020). There is likely to be strong variation by country as, by one estimate, orders in Myanmar were down by 70 per cent and in Bangladesh by 80 per cent, while Sri Lanka was estimated to have lost US\$5 billion worth of orders by the end of June 2020 (ILO, 2020; Kelly and Ahmed, 2020). These estimates are reflected in the claims by the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) that 1,150 factories

reported that orders for ready-made garments worth US\$3.2 billion had been either cancelled or suspended by the end of April 2020, affecting 2.3 million workers (BGMEA, 2020).

The global suppliers in the fashion industry are facing a third pressure. Although revenues have dropped sharply and produced goods cannot be sold, they have to pay loans and local taxes which they struggle to serve. Making factories and operations compliant with new physical distancing measures and hygiene standards has been estimated to increase production costs by 25 per cent. Offsetting this increase with higher sales is likely to be challenging because factories cannot operate at full capacity and the market currently has an oversupply of produced goods which suppresses prices. The price effect of oversupply is felt across the whole value chain through to raw materials.

The consequences of being squeezed from the supply and demand side as well as the domestic lockdown are evident across economies that have significant fashion and textile production, from Mexico to Honduras, to Eastern Europe and Turkey, to Bangladesh and India (Freeman, 2020). But they are of particular significance for economies that are highly dependent on the fashion and textile sector for their economic development and employment. In Bangladesh, for example, the ready-made garment industry exported goods worth US\$40.5 billion in 2019, which was about 84 per cent of Bangladesh's total exports (ILO, 2020). In Cambodia, the textile industry provides employment for about 850,000 people, accounts for 78 per cent of the country's merchandise exports and contributes US\$7 billion to the economy. Here, the textile industry is the second largest employer after agriculture, as in India, where the pandemic has been estimated to have led to the loss of 10-15 percent of jobs in the industry (ILO, 2020).

The economic pressures that suppliers face are likely to lead to company closures and redundancies. This can put downward pressure on workers. Recent reports suggest that female workers in Cambodia already find it difficult to get back into employment or retain their jobs as there is an oversupply of workers and they may not be paid regularly (Blomberg and Dara, 2020). The shortage of jobs increases the possibility of exploitation of both job seekers and those who have been fortunate in securing employment. This may become particularly acute for those domestic and overseas migrants who rely on recruitment agencies and brokers (Dickson and Warren, 2020). The deterioration of working conditions may increase the likelihood of migrants becoming vulnerable to modern slavery and having to work under poorer health and safety standards. This development would make working conditions even more precarious than they already are, which are among the most vulnerable to modern slavery (Walk Free Foundation, 2018). The extent to which the pandemic may spur a race to the bottom and roll back improvements in workers'

rights and conditions that have been achieved over the last years will depend on the effectiveness of international business policies in regulating and encouraging responsible business conduct and policies that govern GVCs.

3. Frameworks to regulate business conduct

The global frameworks to guide and regulate TNCs have evolved significantly over the last two decades through the provision of supranational agreements, the creation of national legislation with a global reach, and voluntary actions by industries. The COVID-19 pandemic is an unprecedented stress test for frameworks and legislations at the supranational and national levels that regulate and encourage responsible business conduct. The frameworks will prove their worth to the degree that TNCs follow their letter and spirit in times of crisis.

An overarching framework for business conduct is provided by the SDGs and the UN Guiding Principles on Business and Human Rights. The SDGs set out 17 goals and 169 targets to achieve economic and social prosperity while protecting the environment. The wide range of SDG targets means that the targets do not always reinforce each other and that it is challenging to define and agree on a rank order of SDGs that should be prioritized (Nilsson et al., 2018; UNCTAD, 2018; van Zanten and van Tulder, 2020). TNCs can play a significant role in achieving SDGs through a (re)calibration of their own business conduct and by reinforcing positive linkages between SDGs and mitigating the effects of negative linkages (Kolk et al., 2017; Schönherr et al., 2017; Zagelmeyer and Sinkovics, 2019). Within the current context, of particular interest are those SDGs that are directly affected by the pandemic and, building on the industry example introduced earlier, relate to fashion and textile GVCs. Participation in fashion and textile GVCs can support economic productivity (SDG 8) and gender equality (SDG 5), and can provide opportunities to achieve income and social equalities (SDG 10). GVC participation is, however, no panacea for achieving the SDGs. One particular long-standing human rights concern for TNCs in this sector is SDG 8.7, which aims to eradicate modern slavery, forced labour and child labour (Walk Free Foundation, 2018). It has been argued that the current global economic structure and the way GVCs are governed by TNCs have contributed to the challenges of modern slavery in the first place (Phillips, 2013; Phillips and Mieres, 2015). TNCs have fine-sliced and outsourced operations to developing economies for operational flexibility and economics gains (Buckley, 2009b). Yet that takes advantage of an abundance of low-skilled, low-cost labour and governments that may have limited and/or poorly enforced labour regulations. It also puts pressure on suppliers to use informal and unregulated sub-suppliers (Narula, 2020). The current developments in the fashion and textile industries outlined here suggest that vulnerabilities to modern slavery

will increase. Workers have been laid off and migrant workers have returned to their home villages. They are likely to re-engage with recruitment agencies to find employment with the threat of debt bondage (Kara, 2017). Remaining workers are competing for fewer jobs, which makes them more vulnerable to be exploited. As these developments unfold, not only will it become harder to achieve the SDGs, it will also become more difficult for TNCs to operate within the boundaries of the UN Guiding Principles on Business and Human Rights.

The UN Guiding Principles on Business and Human Rights (UNGPs) (UN, 2011) established principles for how states and businesses should individually and jointly ensure that internationally recognized human rights are protected. The agreement of the UNGPs and their endorsement by states, businesses and non-governmental organizations alike was hailed as a milestone for having established a foundation to collaboratively respect human rights and for having clarified how businesses must engage with and contribute to the human rights agenda (Feasley, 2016; Ruggie, 2014). To achieve this and establish where the boundaries between state and corporate responsibilities are, the UNGPs include a set of non-binding principles that encompass how businesses of any size should operate to respect human rights obligations. The first business-focused foundational principle, Principle 11, states that “Business enterprises should respect human rights. This means that they should avoid infringing on the human rights of others and should address adverse human rights impacts with which they are involved.” (UN, 2011: 13). It follows from here in Principle 13 that “The responsibility to respect human rights requires that business enterprises: (a) Avoid causing or contributing to adverse human rights impacts through their own activities, and address such impacts when they occur; (b) Seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts.” (UN, 2011: 14). The provisions in Principle 13 clarify that the responsibilities extend across a firm’s global supply chain. TNCs that have unilaterally cancelled or postponed contracts with global suppliers and thereby contributed to the closure of these manufacturers and the subsequent increase in vulnerability to modern slavery of workers have therefore contributed to adverse human rights impacts that are directly linked to their operations. Their pandemic responses are in conflict with the UNGPs.

Implementation and operationalization of the UNGPs for businesses have taken place at the supranational, national and firm levels. At the supranational level, the Organisation for Economic Cooperation and Development (OECD) has adopted and incorporated them into its “OECD Guidelines for Multinational Enterprises” (OECD, 2011) and in sector-specific human rights due diligence guidance such as those for the garment and footwear sector (e.g., OECD, 2013). Both reemphasize the importance of respecting human rights across all business operations (OECD, 2020).

Interlinked with the UNGPs and SDGs is recent national legislation that targets human rights abuses and responsible business conduct. Building on the objectives embedded in the UNGPs and the SDGs, legislation such as the United Kingdom Modern Slavery Act 2015 and the Australian Modern Slavery Act 2018 oblige businesses with turnover of more than £36 million or AUS\$100 million, respectively, to investigate their supply chains for any modern slavery incidences, address cases of modern slavery and mitigate their likely future occurrence. The progress that businesses make in reducing cases and vulnerabilities to modern slavery are to be published annually. Underpinning these Acts is the assumption that it is the responsibility of the TNC to ensure that along its value chain it has the responsibility and oversight authority to address human rights abuses (Enderwick, 2018). In principle, these Acts should therefore support safeguarding workers of suppliers and provide them with mechanisms to voice and share mistreatment. And in best-case scenarios it can lead to a trickling down of good working standards (Malesky and Mosley, 2018; Narula, 2019). Acts like the United Kingdom Modern Slavery Act are of particular importance now that the pandemic is seriously disrupting GVCs.

Although some businesses have embraced modern slavery legislation and consider it as part of their responsible business conduct, research into the reach and effectiveness of the United Kingdom Modern Slavery Act before the pandemic has found the Act to be underdeveloped along various dimensions and thus stifling its potential now, when it is needed most. The Act has been found to be too vague in its definition of what constitutes a value chain for businesses. Referring to “what is normally understood” as the supply chain allows individual sectors and businesses to define the scope of the supply chain they consider relevant for their operations (Voss et al., 2019), leading to approaches by businesses that are difficult to compare within and between sectors. In current times, the weak definition of the United Kingdom Modern Slavery Act allows TNCs to neglect the human rights impact their business conduct has on suppliers beyond those with whom they enjoy a contractual relationship. They can claim that because of the contractual relationship these are their ultimate suppliers and work with them to cushion the impact of the pandemic. Lower-tier suppliers, however, are also part of a TNC’s GVC and thus also affected by the cancellation and suspension of contracts. Yet how this translates into greater vulnerabilities to modern slavery is not a concern to the TNC if it defines its supply chain very narrowly. The implication is that the well-intended United Kingdom legislation to improve global business conduct and address modern slavery falls short because of insufficiently specified terminology.

The definitional challenges raise a related challenge. It has highlighted that TNCs lack transparency about their supply chains. TNCs therefore struggle to generate the positive trickle-down effect of standards and oversight beyond direct suppliers (Narula, 2019). According to Fashion Revolution (2020), less than half of surveyed fashion companies are publishing their first-tier suppliers, less than a quarter report

on suppliers farther down the chain and less than a tenth reveal the origins of their raw materials. Any informal and unregulated sub-suppliers are not captured (Narula, 2020). The consequence is a lack of transparency about how GVCs are organized and where modern slavery and human rights violations might occur. The fine-slicing of operations and the flexible reallocation of tasks to suppliers is contributing to the fluidity of the value chain, making it difficult to report on a full supply chain. Yet, to understand if and how the TNC's operations are aligned with the UNGPs, support the achievement of the SDGs and comply with national legislation requires a public understanding of how the network is structured and how TNC operations affect it.

A further shortcoming of current legislation on modern slavery is its lack of reporting standards. A large share of businesses that operate in the United Kingdom and are legally obliged to report do not do so. Those reports that have been made available often lack specific steps taken to identify and address modern slavery and they hardly quantify incidences of modern slavery in the supply chain (Voss et al., 2019). The economic consequences of the pandemic and the TNCs' responses to it will probably increase the likelihood of modern slavery. Companies that comply with the letter and spirit of the law should therefore reflect in forthcoming reporting periods on the extent to which modern slavery has increased in their supply chain and disclose the degree to which their own actions may have contributed to it. This should also include a discussion of the positive actions they may have taken to support global suppliers and their workers in difficult times and a reflection on the effectiveness or lack thereof of these actions. Such reports would contribute greatly to the much-needed transparency about modern slavery and corporate actions and shed some light on activities that are not effective in preventing modern slavery. Considering, however, both the brief history of modern slavery reports and the dilemma that firms may face when reporting bluntly about the increased vulnerabilities to modern slavery in their supply chains, suggests that the forthcoming modern slavery reports will mainly remain generic, lacking detail and specifics about modern slavery and the particular impact the pandemic has had. Such a lack of engagement with the impact in future reporting should indicate to policymakers in the United Kingdom, and legislators who follow the United Kingdom model, that the legislation requires clearer and more transparent reporting instructions and enforcement mechanisms for these requirements.

The multi-level regulatory framework to guide and manage the business conduct of TNCs is being thoroughly tested by the COVID-19 pandemic. Responses by TNCs, as illustrated here for the fashion and textile industry, that have been argued to be too self-centred and ignore the plight of and socioeconomic impact on businesses and workers in their supply chains may illustrate that the UNGPs and related guidelines and laws are neither strong nor enforceable enough. This may hasten the conclusion of the legally binding treaty on TNCs and human rights that has

been under development since 2014. If a binding treaty were to materialize, then it would have been prompted by the magnitude of the impact caused by the contract cancellations and suspensions by TNCs.

4. GVC policies

The current policy environment is dominated by short-term adaptation to the pandemic and its socioeconomic implications. In the longer term, international business policies concerned with GVCs should be revisited to consider mitigating strategies that reduce the impact of future disruptions, including potential future pandemics (Fan, Jamison and Summers, 2018), and embrace human rights and modern slavery concerns. Participation in GVCs will continue to play an important role for the socioeconomic development of countries (Enderwick and Buckley, 2020) as greater nationalism and attempts to become more self-reliant will not bring the same economic benefits for a wide range of the populace (Baldwin and Evenett, 2020). Yet, this participation should not come at the expense of human rights.

UNCTAD (2013) summarizes the contributions that participating in GVCs brings to the socioeconomic development of a country by emphasizing the potential for generating domestic jobs and thus income, improving social and environmental standards, and upgrading technological and managerial skills through the transfer of technology. These potential gains are achievable if and when the country aligns its industrial policy to the GVCs it seeks to participate in, establishes an environment that allows domestic businesses to participate in and benefit from GVCs, and reduces risk from GVC participation. The risks of GVC participation have become very visible during the COVID-19 pandemic at both country and firm level. At the firm level, the unbalanced power relationship between TNCs and suppliers illustrated by unilateral cancellations and suspension of contracts has exposed the latter, with limited opportunity to engage in a negotiated process that could be mutually beneficial. With limited options to continue operations, suppliers are closing down and leave their workers vulnerable to exploitation. At the country level, it has exposed industry policies that are too aligned with a narrow band of GVCs. Countries such as Bangladesh and Cambodia are highly dependent on fashion and textile GVCs. Shifts in demand and/or supply leave these economies vulnerable, as few other means of employment and economic development are readily available.

GVC targeting policies should therefore aim to allow a broader base of domestic businesses to evolve and participate in diversified GVCs. At the same time, the economic development imperative that underpins GVC participants should be complemented by a stronger integration of the UNGPs and SDGs. Their integration

would require TNCs to seek an engagement and collaboration with domestic businesses that aims to achieve broader socioeconomic objectives, mitigates adverse human rights impacts and can thus achieve inclusive development that is supportive of the policy recommendations by UNCTAD (2020).

Policy adjustments have to be considered in light of possible post-pandemic “new normal” scenarios. Although COVID-19 has not been contained, future disruptions to global supply chains are likely through local and regional lockdowns and the closure of businesses. TNCs will assess whether their current GVC configuration has provided them with the desired flexibility and resilience. Possible TNC responses include a greater push for automatization to ensure that production can continue with physical distancing. Consumption may continue to be suppressed by economic outlooks that forecast strong increases in unemployment for the foreseeable future. Policies are being considered that reflect on the extended period of reduced consumption of “non-essential” goods and how endorsing this consumption pattern could contribute to addressing climate change. A new normal under this scenario would mean that not all businesses in the fashion and textile industry will return to the levels of operation and employment seen in the pre-pandemic era. Preventing or mitigating adverse human rights impacts will be challenging when workers are compelled to accept any available job regardless of how well it protects them. The outline of this possible scenario suggests that a diversification of the domestic economy, a participation in a broader range of GVCs and consideration of human rights implications are pertinent. It also highlights the challenges ahead for achieving the SDGs.

5. Conclusion

The COVID-19 pandemic has economic implications. Beyond short-term adaptation to contain and reverse the most negative impacts on economies, TNCs and their global value chains, the current crisis is an opportunity to reflect on international business policies and business models. At the policy level, the frameworks and policies at the disposal of governments to enable their economies to successfully participate in the global economy should aim to reduce dependencies on a narrow set of GVC activities. They should seek to steer the global economy and economic interactions towards greater incorporation of the SDGs and the recognition of the human rights implications of international business’s operations. Policy innovations and changes emerging from the pandemic should be seen as part of an overall effort to prepare for expected future pandemics (Fan et al., 2018).

For TNCs, reflecting on their conduct with businesses in their GVC should be in their self-interest. Working with and supporting first-tier suppliers and their respective networks enable TNCs to develop relationships that are built on trust

and mutual respect and are seen as sincere engagements in human rights and working conditions, among both suppliers and consumers. When markets rebound and demand picks up again, suppliers that have been financially and operationally supported during the pandemic will be ready to supply the TNC. Abandonment of suppliers through the cancellation or suspension of contracts, in contrast, is likely to have negative short- and long-term effects. Suppliers that have closed operations or reduced capacity may face labour shortages if (migrant) workers do not return as is customary. Business owners themselves may consider leaving the sector or reconsider their relationship with the overseas buyer. These positive and negative reinforcements of buyer-supplier relationships will be amplified as long as the COVID-19 pandemic is felt economically and will leave their imprint on modern slavery and human rights trends in GVCs. International business policies can play an important role to support the positive reinforcements and mitigate adverse human rights implications.

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The rising tensions between efficiency and resilience in global value chains in the post-COVID-19 world

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This paper explores the rising tensions between efficiency and resilience in global value chains (GVCs) in the post-COVID-19 world and discusses their potential implications for managing and coordinating GVCs. It considers efficiency and resilience in GVCs in relation to each other and explores the possibility of tensions between the two concepts. Particularly, it is argued that, while efficiency and resilience in GVCs may be at odds with each other in the short-term, they are not necessarily mutually exclusive in the long run. The paper adds to the discussions of trade-offs involved in managing contemporary GVCs and offers a new perspective on the interplay between efficiency and resilience. Embedded in the discussion of resilience vis-à-vis efficiency, we also provide a long-term perspective to prepare for and deal with global pandemics – or other risks – in an increasingly interconnected world. We lay out decisions and steps involved in finding the balance between efficiency and resilience, as both need to be maintained concurrently over longer periods.

Keywords: efficiency, global value chains, post-COVID-19, resilience

1. Introduction

Globalization has so far enabled firms to optimize their value chains economically. Many firms have been able to fine-slice their value-creating activities, such as product or service design, branding, manufacturing, distribution and after-sale services, and allocate them across national borders, where they are executed in the most efficient way (Mudambi, 2008). Each supplier along the value chain has often elected to locate itself at the most cost-efficient point, running its activities in a most efficient way (Clarke and Boersma, 2017), i.e., maximizing their output-to-input ratio (Drucker, 1973). Multinational enterprises (MNEs) have been able to reap the benefits of the fragmentation and coordination of their global value chains (GVCs) by concentrating on their core competencies, saving money and

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achieving greater returns on their assets and investments (Beugelsdijk, Pedersen and Petersen, 2009). However, the COVID-19 crisis has disturbed this pattern and revealed the vulnerability of firms' value chain optimization strategies.

Aside from its dramatic effects on the physical and psychological well-being of society, the pandemic exposed the vulnerabilities of many firms, especially those that procure raw materials or finished products from suppliers located across the globe. In particular, China's dominant role as the "world's factory" has escalated Western economies' dependence on the Chinese economy. Firms whose value chain strategies depend on Tier 1 (direct) or Tier 2 (secondary) suppliers in China and South-East Asian countries have experienced significant disruption. As a result, scholars and practitioners alike have highlighted the importance of resilience and the need for GVCs to move away from the efficiency imperative towards a resilience imperative (Birkinshaw, 2020).

From this vantage point, although scholars have observed that the globalization of value creation has brought notable growth and connectivity opportunities to many MNEs, they often have overlooked complicated aspects of GVCs (Mollenkopf, Stolze, Tate and Ueltschy, 2010). Research on GVCs has not paid significant attention to the possible risks associated with interdependence among globally dispersed business activities and how firms can respond when this interdependence is severely impeded. Likewise, in the pre-COVID-19 world, strategy research on GVCs predominantly focused on MNEs' economic practices and outcomes as leading actors in GVCs but overlooked the risks and vulnerabilities involved in GVCs and GVC structures (Gereffi and Lee, 2016). The recent spike in interest in resilience has sparked some ideas about how the world and GVCs could tackle global pandemics (Rai, 2020; Remko, 2020) but has also raised questions about the possible interplay between efficiency and resilience (Wolf, 2020). There have been a growing number of calls in practitioner outlets to move away from efficiency to resilience (Galston, 2020; Reeves and Varadarajan, 2020), with no definitive answer about whether efficiency and resilience are mutually exclusive and whether firms have to sacrifice one to achieve the other. Against this background, little is known about the potential implications of the resilience imperative for GVCs and the efficiency-driven management paradigm that has dominated the contemporary discourse on GVC expansion and governance.

In this perspective piece, we explore the rising tensions between efficiency and resilience in GVCs in the post-COVID-19 world and discuss their potential implications for the management and coordination of GVCs. In particular, we argue that, although efficiency and resilience in GVCs may be at odds with each other in the short term, they are not necessarily mutually exclusive in the long run. This paper thus adds to the discussion of trade-offs involved in managing contemporary GVCs and offers a new perspective on the potential interplay between efficiency and resilience. Embedded in the discussion of resilience vis-à-vis efficiency we also

provide a long-term perspective to prepare for and deal with global pandemics – and other risks – in an increasingly interconnected world (Ahuja, 2000; Gimeno, 2004; Trkman and McCormack, 2009).

2. Theoretical background

Throughout the last four decades, the world has witnessed significant liberalization and deregulation of international trade and foreign direct investment (FDI), as well as remarkable advances in information and communication technologies. These developments have made it possible for MNEs to rearrange their operations, enabling them to adopt a model of fragmented and geographically dispersed business activities. Efficiency, simply referring to the ratio of outputs to inputs in a production or value creation system (Drucker, 1973), has been one of the most important, if not the most important, considerations for MNEs when expanding and coordinating their value chain activities across national borders. Such prioritization of efficiency has led to the rise of China and South-East Asian countries as the prime locations of manufacturing and amplified the dependence of GVCs on these countries for the supply of products (Contractor, Kumar, Kundu and Pedersen, 2010; Dong et al., 2017).

Amid the rise of globalization and enabling technologies, a substantial corpus of research has emerged to understand how MNEs manage the global configuration of their value chain activities, in which countries each activity should be located, and how these activities should be spatially distributed and strategically managed in order to optimize the value created in and captured through GVCs (for a thorough review, see Kano, Tsang and Yeung (2020)). Accordingly, it has been argued that new forms of GVC configurations have caused a profound transition for MNEs' boundary considerations. In particular, rather than internalizing business transactions within vertically integrated structures, MNEs have been outsourcing most of the business activities and paying more attention to coordinating and orchestrating spatially dispersed activities (Buckley and Ghauri, 2004; Mudambi and Venzin, 2010). This gave rise to a new organizational form called "the global factory" in which "companies with global operations have learned to fine-slice their activities and to locate each stage of the activity in its optimal location and to control the whole supply chain, even when not owning all of it" (Buckley, 2011, p. 270). In this vein, the core premise of GVCs is that efficient value creation requires more than a single firm and resides in greater networks of interdependent actors, activities and resources.

With unprecedented levels of volatility, uncertainty, complexity and ambiguity wreaking havoc in the global business environment (Bennett and Lemoine, 2014), interest in the concept of resilience has grown rapidly across different contexts

and levels of analysis (Linnenluecke, 2017; Williams, Gruber, Sutcliffe, Shepherd and Zhao, 2017). With the ever-growing magnitude of environmental dynamism, volatility and disruptions, the relevance of resilience has played out repeatedly in the last three decades (Ali and Gölgeci, 2019; Christopher and Peck, 2004; Wieland and Wallenburg, 2013). In simple terms, resilience is viewed by many practitioners and thought leaders in practitioner outlets as the ability to return to normal operations after disruption (Miroudot, 2020; Wolf, 2020). In reality, resilience is embodied by the long-term survival of businesses and their supply chains amid adversity and disruptions (Gölgeci and Kuivalainen, 2020; Gölgeci and Ponomarov, 2013). In this paper, we define resilience in GVCs as the adaptive capability of the supply chain to prepare for unexpected events, respond to disruptions and recover from them by maintaining continuity of operations at the desired level of connectedness and control over structure and function (Ponomarov and Holcomb, 2009).

In one of the influential papers on resilience, Martin (2012) conceptualizes resilience in terms of the four dimensions of resistance, recovery, reorientation and renewal, which share underlying similarities with the definition of the concept above. Resistance refers to stamina and endurance in the face of disturbances and disruptions. Nonetheless, resistance is more about the ability of systems to absorb changes (Ponomarov and Holcomb, 2009), rather than their rigidity – which may eventually lead to fragility – in the face of changes. Recovery refers to the speed and degree of readjustment and restoration in the aftermath of an external shock. Reorientation points to adaptive realignment and endeavours towards a new path of strategic action. Reorientation is especially germane to determine what is necessary to move beyond the recovery and take advantage of challenges as an opportunity for further development. Finally, renewal refers to recommencing a pre-disruption path or hysteretic alteration to a new growth trend (Martin, 2012). As such, the renewal dimension of resilience requires an innovative mindset and adaptive capabilities to not only resist and recover from adverse change but also leverage adversity and disruption to navigate towards renewal in the long run.

As can be seen in this conceptualization, resilience is more than mere recovery from disruption. Likewise, it is by no means a short-term-driven capability. Resilience requires the adoption of a long-term view and the maintenance of a survival mindset at center stage. Moreover, firms' success and survival cannot be assessed independent of competition, and one of the main outcomes of greater competition is the efficiency imperative (Reeves and Deimler, 2011), which, in turn, becomes critical for long-term survival. As such, competitors and competitive environments are an important benchmark for firms' activities and future strategy-making and have considerable implications for resilience over longer periods. This understanding of resilience has ignored implications for the interplay and possible trade-offs between efficiency and resilience, discussed next.

3. Global value chains, the COVID-19 pandemic and the (assumed) trade-off between efficiency and resilience

Firms operating as parts of GVCs are strongly influenced by the way GVCs are structured, coordinated and governed by multiple stakeholders (Clarke and Boersma, 2017; Gereffi, Humphrey, and Sturgeon, 2005). Firms rely on joining GVCs to integrate into the global economy successfully and on GVC governance mechanisms such as knowledge exchange and learning to adopt new practices that are not sufficiently internalized (Gereffi and Lee, 2016). Accordingly, GVCs are a fundamental phenomenon in international business (Buckley and Ghauri, 2004), viewed as “the world economy’s backbone and central nervous system” (Cattaneo, Gereffi and Staritz, 2010, p. 7).

That said, the prevalence and power of GVCs have been challenged by a series of events that have been unspooling for the last few years. The first challenge to GVCs (at least in terms of product flow (Gupta, 2020), is the growing criticism of globalization and the growing distress over the social and economic sustainability of GVCs (e.g., Clarke and Boersma, 2017). Second, recent developments in big data analytics (LaValle, Lesser, Shockley, Hopkins and Kruschwitz, 2011), digitalization of distribution channels (Hagberg, Sundström and Nicklas, 2016) and shorter value chains (Kurpjuweit, Schmidt, Klöckner and Wagner, 2019) have already been changing the extent and the nature of GVCs. More importantly, and unexpectedly, the COVID-19 pandemic brought about the virtual destruction of contemporary GVCs as we know them. As noted elsewhere, the pandemic has unveiled the fragility of modern GVCs. In particular, the lockdown of China during the initial phases of the outbreak showed that many MNEs, that have long been deeply entrenched in Chinese manufacturing, experienced severe difficulties and interruptions in their production flows. The lack of flexibility in their supplier base and a high degree of interdependence between different links of the value chain have caused firms to question the sustainability and viability of extant GVC configurations. In other words, the very nature of GVCs that made them cost-efficient has turned out to be a liability for MNEs when an unexpected crisis hit the global economy and trade.

These developments – especially in the aftermath of the COVID-19 pandemic – put resilience at odds with efficiency in the eyes of many academics and practitioners (e.g., Galston, 2020; Reeves and Varadarajan, 2020). For example, Galston (2020), in a recent *Wall Street Journal* column, asked, “What if the relentless pursuit of efficiency, which has dominated American business thinking for decades, has made the global economic system more vulnerable to shocks?” He argued that efficiency came through optimal adaptation to an existing environment, while resilience requires the capacity to adapt to disruptive changes in the environment. Optimal adaptation to an existing environment and adaptation to disruptive changes in

the environment are seen in contradiction to each other. Likewise, Reeves and Varadarajan (2020) note that complexity grows as GVCs grow larger and become more connected. When that happens, hidden costs typically soar beyond costs that can be explicitly accounted for by efficiency improvements.

Notwithstanding recent opinion pieces during the COVID-19 pandemic, research in operations management has already highlighted potential trade-offs involved in achieving resilience versus efficiency (Ivanov, Sokolov and Dolgui, 2014). Likewise, in one of the early and influential pieces on supply chain resilience, Pettit, Fiksel, and Croxton (2010) argued that excessive attention to efficiency in supply chains increases GVCs' and member firms' exposure to vulnerabilities, which in turn erodes supply chain resilience. In contrast, maintaining slack resources, which runs against the underlying principles of efficiency, may enable firms and GVCs to find a better balance in achieving resilience (Pettit et al., 2010). In a similar vein, research on resilience in entrepreneurship revealed that slack resources, despite creating inefficiencies in value-creating systems, function as a buffer in periods of crisis (Tognazzo, Gubitta and Favaron, 2016). As such, a number of studies in supply chain management and entrepreneurship have pointed out that trade-offs might be involved in achieving and maintaining efficiency and resilience in GVCs.

While acknowledging the contributions of earlier research in this stream on the tensions between efficiency and resilience, we also note that it has mostly been concerned with supply and value chains at large, without explicit attention to the global aspects of the picture. Likewise, despite the hike in attention to resilience over efficiency in the early part of 2020 as the pandemic rages (Birkinshaw, 2020; Rai, 2020; Reeves and Varadarajan, 2020; Remko, 2020), scholars such as Fiksel (2003) highlighted nearly two decades ago that resilience is one of the major characteristics of durable systems – along with diversity, efficiency, adaptability and cohesion. Thus, there might be more to the interplay between efficiency and resilience than an assumed trade-off, once the long-term perspective is adopted and the global aspects of the business environment are accounted for.

In the section that follows, we extend the discussion to the factors that could influence the extent to which MNEs lay emphasis on efficiency and resilience, without necessarily foregoing one for the other. Thus, unlike extant studies that consider the trade-off between efficiency and resilience as inherent and inevitable, we make the case that firms can, in fact, maintain both of these priorities in the long run.

4. Understanding the nature of tensions between efficiency and resilience

GVCs have been developed in response to the ever-increasing momentum of competition in local and international markets. In other words, part of the supremacy of MNEs in the contemporary global economy could be attributed to their ability to effectively coordinate activities and actors across multiple production locations in different parts of the world. As noted by Kano et al. (2020), this requires MNEs to achieve three things: (1) manage the bounded rationality of the parties involved – i.e., deal with information asymmetries and limited information processing capabilities, (2) manage the bounded reliability of the parties involved – i.e., alleviate the risks of limited efforts to fulfil open-ended or incomplete contracts and (3) create an organizational context that can support both innovation and capability generation.

That said, many MNEs are compelled to make difficult choices i.e., in the trade-offs involved in GVC design and governance, in order to cope with hyper-competition in local and international markets. These difficult choices could be between exploration and exploitation (March, 1991), standardization and adaptation (Theodosiou and Leonidou, 2003), or efficiency and effectiveness (Esper, Ellinger, Stank, Flint and Moon, 2010). As stated above, efficiency and resilience are increasingly being pitted against one another amid the growing prevalence of major uncertainties and disruptions (Rai, 2020; Reeves and Varadarajan, 2020; Remko, 2020). Most major disruptions are unexpected (Craighead, Blackhurst, Rungtusanatham and Handfield, 2007; Pettit et al., 2010), create discontinuities along GVCs (Rai, 2020; Remko, 2020) and force important trade-offs on GVC participants. Nonetheless, surviving actors in the aftermath of major disruptions like the COVID-19 pandemic are also required to adapt to (a new) normal in the long run. Doing so still entails making minimal use of resources to attain maximum outcomes to respond to and survive competitive forces.

Against this backdrop, we suggest that MNEs have both the possibility and the imperative to rise above the short-term tensions between efficiency and resilience in their GVCs and achieve both in the long run in order to survive both fierce market demands and unexpected disruptions. Kano (2018) identifies social mechanisms that could economize on bounded rationality and reliability and foster capability development in the GVC system, which would collectively increase and sustain intended efficiency outcomes.

First, by being selective when choosing their GVC partners, MNEs can lower knowledge exchange and monitoring costs, reduce knowledge processing complexity, avoid unintended knowledge dissipation and manage the quality of ties among fewer actors, who would be more likely to share knowledge for the generation of collective capability.

Second, with the inclusion of non-business organizations and actors that relate directly to the immediate value chain, MNEs can increase their access to knowledge that goes beyond the localized or specialized knowledge domain of traditional GVC participants. In this vein, using non-business strategies and engaging with institutions can also erect barriers against undesired knowledge dissipation, fill institutional gaps and create a more suitable environment for innovation.

Third, by decentralizing decision-making and undertaking strategy as a joint activity, MNEs can better engage different GVC partners, which would in turn reduce knowledge asymmetries, curb opportunism by aligning parties' interests and create a common identity that would be conducive to knowledge sharing and joint capability generation. Such decentralized decision-making and collaborative strategy formulation could help MNEs identify local domains of efficiency improvements and be more responsive to unexpected disruptions in different locations in GVCs.

Fourth, generating social and relational capital by instituting common norms would help MNEs maintain a more efficient flow of tacit knowledge, promote social safeguards against opportunistic behavior and strengthen different parties' willingness to contribute to the common goals of the socially cohesive GVC network. In fact, recent research has found that social capital can be a critical source of both resilience in times of crises and disruptions (Gölgeci and Kuivalainen, 2020) and efficiency under calmer conditions (Sözbilir, 2018).

Finally, by establishing multilateral feedback mechanisms and distributing value equitably among GVC partners, MNEs can erect further safeguards against the risks of incomplete and/or asymmetric information distribution, and thereby economize on bounded rationality and reliability. Increased visibility of system-wide value-creating activities and interorganizational justice among GVC partners results in greater alertness to external threats and better interorganizational governance (Gligor, Gligor, Holcomb and Bozkurt, 2019; Griffith, Harvey and Lusch, 2006; Malagueño, Gölgeci and Fearn, 2019). Consequently, MNEs can bolster their GVCs' ability to withstand disruptions while maintaining the efficacy of their operations through visibility and equitability, thereby simultaneously maintaining the efficiency and resilience of their operations.

Although less formal and mechanical than other proactive management tools prevalently discussed in the literature on supply chain management, these social mechanisms could not only foster GVC efficiency but also increase GVC resilience in the wake of turbulent changes emerging from unforeseeable crises. Indeed, GVCs' vulnerability stems from their complex nature, given that they entail multiple products, processes and actors located in different parts of the world. This inherent complexity makes it difficult for them to remain flexible and absorb turbulent change. As noted by Gunasekaran, Subramanian and Rahman (2015, p. 6812), "because complexity usually accompanies high degrees of freedom in a

system from a control-theoretic perspective, managers cannot attempt to control all elements in the system simultaneously but need to address them selectively in an incremental approach. The greatest weakness of risk management is its inability to adequately characterize low-probability, high-consequence events.” To deal with this complexity, Gunasekaran et al. (2015) suggest a myriad of strategies such as ensuring continuous monitoring, flow and communication of knowledge among different parts of the GVC; increasing transparency and knowledge sharing; and fostering cooperation and collaboration between different partners and actors inside the GVC system. Clearly, these suggested remedies to reduce complexity and increase the resilience of GVCs are quite aligned with the efficiency-generating mechanisms discussed above. In other words, working with a select set of actors who are actively involved in making strategy and with whom common relational norms are in place, MNEs can mitigate or better prepare for potential risks by closely collaborating with their partners and benefitting from extended access to local knowledge in different parts of the GVC system. This is especially important for preparing contingency plans that consider possible risk scenarios that would be otherwise difficult to foresee, if MNEs were to act on their own, without the involvement of their GVC partners. Furthermore, as a socially cohesive and unified entity, GVCs would have the flexibility and coordination capacity to better act on such contingency plans when a crisis unfolds.

5. Concluding remarks and implications

In this perspective piece, our objective was to highlight the need for MNEs to find a balance between the efficiency and the resilience of their GVCs in the post-COVID-19 era. On the one hand, MNEs often face fierce competition in multiple markets, which compels them to rationalize their GVC activities to make sure they keep the efficiency of their operations at an optimal level. On the other hand, the COVID-19 outbreak has revealed that an exclusive focus on efficiency could, in fact, be myopic and leave MNEs vulnerable and paralyzed once some links of their GVCs get interrupted by a low-probability, high-impact event. These conflicting demands on GVCs appear to lead to tensions between efficiency and resilience.

However, although efficiency and resilience considerations may at first appear to be at odds with each other, the core premise of our paper is that efficiency needs to be sustained to achieve long-term resilience and survival. We point out that although resilience may have to be prioritized over efficiency in GVCs in the wake of severe disruptions, especially in the absence of contingency planning and risk mitigation or disaster recovery mechanisms (Sahebjamnia, Torabi and Mansouri, 2018; Tomlin, 2006), both efficiency and resilience need to be maintained concurrently over longer periods. Accordingly, we posit that MNEs may be able to develop and establish

social mechanisms that would maintain efficiency and resilience simultaneously. Drawing on Kano (2018) and relevant international business research on GVCs, we lay out decisions and steps involved in finding the balance between efficiency and resilience instead of focusing exclusively on one over the other.

Clearly, the pandemic is not the sole factor that determines the future of GVC structures and strategies. For example, the recently increasing tension with the United States has caused China to lose a substantial share of its global export market, and the trend of non-Chinese firms' moving their production to other low-cost production sites (or back to their home base) is expected to accelerate during the post-COVID-19 period (Hedwall, 2020). This has several important implications for GVCs, especially on the efficiency front. For MNEs, possible shifts in value chain activities require companies to rethink their financial and non-financial commitments to other actors in their GVC ecosystem. Such transitions in GVC structuring and mapping are likely to curb efficiency in the short run, as a result of the unsettling changes in the system components of value chain activities and the learning curve of the new actors participating in GVCs.

Likewise, the social mechanisms outlined earlier in the paper require time and effort to develop and take full effect. This means that MNEs cannot easily change their GVC partners without compromising the effectiveness of social safeguards that have the capacity to simultaneously maintain efficiency and resilience. In other words, MNEs need to take on a long-term perspective while preparing and engineering their GVC strategies.

Furthermore, lessons learned in one low-cost host country might be unusable – or even destructive – when moving to another host country. For instance, while making a case for India as an alternative sourcing site for those companies that plan to partially withdraw their operations from China, Govindarajan and Bagla (2020) draw attention to the key political, economic, social and cultural differences between the two countries. Unless MNEs remain aware of the potential “liability of past experience” while restructuring their GVCs, actions and decisions taken in the pursuit of resilience and efficiency might backfire.

Could curtailing the global aspect of value chains and moving operations back to a home country or region be a solution for remaining resilient to future shocks? Even though this option has been punted in ongoing public policy debates, a recent paper by Bonadio et al. (2020) suggests that repatriation of value chains could, in fact, be a bad idea. Their quantitative assessment and simulation studies suggest that the negative effects of pandemic-style input shocks could be more severe if supply or value chains were totally repatriated. This is because if firms' operations rely purely on domestic inputs, future lockdowns in their home countries or regions would render MNEs even more paralyzed. When countries and their value chains are cut off from the rest of the world, such incidents are likely to hurt resilience even

more severely than glitches in the interconnected web of activity and resource flow, where finding contingencies might be more probable (Wolf, 2020). Nevertheless, in their further analysis, Bonadio et al. (2020) also show that this likelihood depends on the severity of the domestic lockdown, where countries that adopted more stringent lockdowns would experience pandemic-induced input shocks more acutely than those that imposed less stringent measures. This suggests that MNEs need to consider the responses and policies of their home-country regulatory bodies when deciding which of their future GVC activities could be relocated to their home country or region.

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Meta-trends in global value chains and development: interacting impacts with COVID-19 in Africa

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How will the COVID-19 pandemic affect prospects for foreign investment and development in Africa? In part this depends on its interaction with pre-existing meta-trends in the global economy, such as the coming Fourth Industrial Revolution (4IR). It will also depend on the nature of revisions to political settlements in Africa arising from the pandemic. This paper explores these issues through an examination of the direct and indirect economic impacts of the pandemic and their likely interaction with meta-trends in the global economy. In particular it argues that while there is still an important role for foreign investment, the crisis also creates opportunities for more domestically-focused investment and production.

Keywords: Africa, COVID-19, development, Fourth Industrial Revolution, value chains

1. Introduction

Globalization has both positive and negative impacts, which are unevenly distributed by class, gender, geography and other factors. COVID-19 has highlighted both the depth of global interconnection, and the vulnerabilities and inequalities that undergird it. Globalization would not happen, or not happen to the same extent, if levels of development and wages, for example, were the same around the world (Yeung, 2002). In a context of globalization, development strategies must be locally designed and refined to differing contexts. To achieve this requires an understanding of the changing nature and context of global value chains and how they are likely to be affected by the pandemic.

Global value chains are changing as a result of a concatenation of economic, political, social and epidemiological forces which at the moment seem to, if not militate against deepening interconnection, then display strong counter-tendencies to it. The United Nations Conference on Trade and Development estimates that

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downward pressure on foreign direct investment (FDI) could be in the order of -30 to -40 per cent in 2020 and 2021 (Zhan, 2020). How will COVID-19 impact on value chain development in the Global South and what might appropriate policy responses be? In part the answers to these questions depend on the nature of pre-existing mega or meta-trends, such as the coming Fourth Industrial Revolution (4IR) (Schwab, 2017), and how these interact with the impact of the virus. This paper explores these issues with reference to Africa to argue that the pandemic has further revealed some of the weaknesses of existing economic structures. However despite the virus' devastating impact, it also presents academics and policy makers with an opportunity to rethink past approaches and tailor policy proposals and actions to meet current and future challenges. Actualizing the potential for alternative approaches entails first understanding the evolving context of value chain development, driven by a number of meta-trends, such as the rise of China. However, before interrogating these it is important to understand some of the economic impact of COVID-19 on the continent.

2. Economic impact of COVID in Africa

Developing countries are likely to be the worst affected economically by COVID-19 in the medium and long-term. For example, the World Food Programme predicts that an additional quarter of a billion people will be hungry around the world by the end of 2020 as a result of the pandemic (Christiano, 2020). To date, Africa has been less directly affected than many other world regions (although there may be substantial under-reporting as a result of a relative lack of testing). In part this is because COVID is an "indoor disease" (Stein, 2020)¹, while the majority of the continent earn their living in agriculture². Africa also has a median age of under 20, making it less affected, and parts of the continent have extensive experience dealing with epidemics, such as Ebola (OECD and UNECA, 2020). However, the indirect effects on the continent are likely to be the most severe of anywhere, for reasons elaborated below.

"Africa may lose half of its GDP [gross domestic product][increase] with growth falling from 3.2 per cent to about 2 per cent due to a number of reasons which include the disruption of global supply chains," says Ms. Vera Songwe, head of the United Nations Economic Commission for Africa (UNECA). She added that the continent's interconnectedness to affected economies of the European Union

¹ However, meat packing plants in Rwanda, for example, have been severely affected by the pandemic. In Ghana the President reported that one worker in a fish processing plant infected 533 others (CNBC, 2020).

² Although slums are also highly at risk given high population densities (Wilkinson, 2020). Some predominantly urban countries, such as South Africa, have also been very badly affected.

(EU), China and the United States was causing ripple effects. (Africa Renewal, 2020). The World Bank estimates that the pandemic could push up to an additional 60 million people into poverty on the continent (cited in Dahir, 2020). Partly this will result from reductions in prices for most primary commodities, which the continent is highly dependent on for exports; accounting for more than 90 per cent of its total by some estimates (UNCTAD cited in Stein, 2014).

Even though more than 85 per cent of Africa's labour force works in the informal sector, if subsistence agriculture is included (ILO, 2018), the loss of formal sector employment, in the resource sector for example, has a variety of impacts. Reduced economic growth and rising poverty on the continent will make many countries less attractive as destinations for market-seeking FDI. While Africa has hosted some of the world's fastest growing economies in recent decades, and rapidly expanding ones tend to attract the most FDI, in something known as the "endogeneity effect" (Moghalu, 2014), this will now likely be compromised. Furthermore dramatic decreases in raw material prices will reduce resource-seeking FDI, creating unemployment. Some formal sector workers, in mining for example, may support up to ten family members, with the average number being close to three in South Africa (Cox, 2013). Lower commodity prices will reduce investment in the sector and shrinking economies in natural resource export-dependent economies will further depress the service sector and market-seeking manufacturing FDI.

The indirect impacts have, potentially, even wider effects. First amongst these is a "negative multiplier". Dramatic reductions in the formal economy will have substantial knock-on effects on the informal sector, with potentially massive implications for poverty and unemployment. The United Nations Economic Commission for Africa forecasts that up to half of all formal sector jobs in Africa could be lost as a result of the pandemic, whereas McKinsey predicts 18 million formal and 100 million informal jobs could be at risk (Thomas, 2020). While the urban informal economy may be locked in an exploitative relationship with the formal one (Santos, 1979), it is nonetheless largely dependent on it for its survival. Reductions in remittances from urban areas or from relatives living overseas may affect rural areas particularly badly. In rural Western Kenya average income declines of 25 per cent were recorded from early April to the end of May 2020 as lockdown measures were introduced and then eased (Miguel, 2020)³. Flows of remittances to Sub-Saharan Africa are projected to decline by 23.1 per cent in 2020 (World Bank cited in African Business, 2020).

As formal sector jobs are lost, less income circulates through the economy and tax revenues are reduced. This may also have potentially severe political

³ Other surveys recorded even sharper declines in income of between 60 and 80% in Kenya and India (Niehaus, 2020).

economy effects as “productive” social contracts (Nugent, 2019) may be further undermined, where they exist, as informalization deepens and proliferates, driving marginal productivity even further down. This may, in turn, exacerbate problems of governance and corruption in certain countries, with myriad, but generally negative economic consequences; again potentially compromising the ability to attract inward inflows of productive FDI.

Reduced tax revenues may also mean reductions in infrastructural investment and social expenditure, increased indebtedness, or most likely, both – again reducing economic growth – with the potential to generate a vicious circle. While there have been some initiatives to try to limit the impact of increased indebtedness, such as a debt moratorium by the Group of 20 (G20) for low income countries until the end of the year, the head of the International Monetary Fund (IMF) has argued that many countries will need debt restructuring, rather than just a freeze (Reuters, 2020).

As economic conditions deteriorate in many African countries they will find it increasingly difficult to source finance from international capital markets, which may reorient to service developed countries seeking to finance their budget deficits. Consequently, many have already been forced to ask the IMF for emergency assistance. However, the strict conditions attached to IMF loans have generally not been conducive, or have been actively detrimental, to development efforts on the continent (Mkandawire and Soludo, 1999). Dozens of countries on the continent are now under, or requesting, IMF financial assistance, even if that organization has also offered some debt relief (Mizner, 2020)⁴. The (enforced) return or reinforcement of economic orthodoxy on the continent will reduce policy space for developmental states, such as Ethiopia, to emerge in the future (Carmody, Kragelund and Riboredo, 2020).

Increased indebtedness, which was already a major issue for several countries on the continent pre-COVID (Carmody, 2020), may also necessitate the sale of strategic state assets, vital for development. This has been the case with Ethiopian Airlines (planned pre-COVID), for example, which has been fundamental to, and instrumental in, that country’s recent successful economic development (Arkebe, 2019). According to the Organisation for Economic Cooperation and Development – (OECD) (2020a, p. 2) “we have witnessed the cascading collapse of entire production, financial and transportation systems, due to a vicious combination of supply and demand shocks”. African airlines lost US\$4.4 billion of revenue in the first quarter of 2020 (OECD, 2020b) and reduced air connectivity could potentially negatively affect (the relatively little) export-platform FDI on the continent, in addition to other substantial foreign exchange earners, such as

⁴ The Chinese government is reported by some African governments to be demanding collateral in exchange for debt rescheduling or relief (Thomas, 2020).

tourism⁵. The price of oil in the United States remarkably turning negative at one point in 2020 as investors did not have sufficient storage capacity for their stocks (BBC, 2020), however, some rebound in commodity prices has already taken effect as pandemic lockdowns end or are eased around the world. Nonetheless the travel and tourism industries, which are large consumers of oil, are likely to remain depressed for years, which will affect oil exporters and popular destinations most directly⁶. The outlook then for commodity exporters and tourism-dependent economies is bleak in the medium term; although the crisis may offer opportunities to rethink unsustainable development models, discussed in more detail later. The impacts of COVID, however, also interact with other meta-trends affecting global value chains.

3. COVID-19 interactions with meta-trends: the rise of China, liberalization, populism and 4IR

The geography of global production has shifted massively in recent decades. At the outbreak of the SARS1 (sudden acute respiratory syndrome) epidemic in the early 2000s, China accounted for about 4 per cent of the global economy. Now it accounts for 19 per cent (Purdie, 2019). This is a reflection of the success of the development policy initiatives of the Chinese state which facilitated increases in FDI and the growth of the domestic economy. In recent years China has overtaken the United States as the world's largest economy, measured at purchasing power parity. The corollary to this rapid rise is that China's economy accounted for 60 per cent of all additional greenhouse gas emissions since the climate activist Greta Thunberg was born in 2003, according to Niall Ferguson (2020). The central role of China in global supply chains, contributed to the rapid spread of COVID-19. China for these, and other reasons, is now central to processes of economic, environmental and epidemiological globalization and restructuring, amongst other vectors of these processes.

The scale and global interconnectedness of China, which has heavily shaped or constructed the nature of the country, initially facilitated the spread of COVID-19 through dense air traffic routes with the rest of the world; initially to Europe and then it appears onwards to Africa from there. The evolution of the Chinese economy,

⁵ In some countries, such as Kenya and Tanzania for example, tourism is one of their largest "exports", with substantial domestic linkages and pro-poor effects (World Bank, 2017), and reductions will again have multiple impacts, including perhaps the exacerbation of foreign currency constraints on economic growth.

⁶ However, many non-oil exporting developing countries will benefit from lower oil prices. Paradoxically, despite their primary commodity dependence, most African countries are net natural resource importers (primarily as a result of oil).

society and polity will be central to future global development. Some have argued that as labour costs have risen in China, industrial offshoring to Africa will be a major source of growth and development (Sun, 2017; Lin and Xu, 2019). While it is important to take advantage of this possibility, there is little evidence to date of widespread “industrialization by invitation” on the continent. Rather, there is a need to build up domestic industries in resource and agro-processing and other subsectors, as well as attract FDI in an articulated industrial strategy (Lopes, 2019). However, attracting FDI will be more difficult post-COVID-19, even if China continues its ascent in the international system, suggesting the importance of developing other sources of inclusive growth.

Other meta-trends will also shape the nature, geography and impact of global investment and value chains in Africa, including global environmental change and the development of artificial intelligence (AI) and associated technologies. Recursively, the COVID-19 pandemic has also had, and will continue to have, massive economic and social impacts that will interact with, and perhaps accelerate, other trends such as the coming 4IR and informalization, among others. In order to understand the longer-term impacts of COVID-19 on international investment and development in Africa it is necessary to explore how the pandemic is likely to interact with trends such as the “globotics upheaval” (Baldwin, 2019).

For Baldwin globotics is the combination of robotics, and associated technologies such as AI, and globalization. He argues that many middle class professions in developed countries, such as accountancy, are likely to come under further strain from the combination of out-sourcing and AI, again with major political economy impact. Robotics, by reducing the labour cost component of production, also facilitates near or reshoring to advanced economies, again potentially reducing manufacturing FDI to the Global South, and making it harder for Africa to industrialize. Meanwhile, new information and communication technologies continue to facilitate offshoring for basic service functions or sectors, such as call centres, to developing countries; offering potential for Africa to attract more of this economic activity.

The spatial dynamics of liberalization⁷, globalization and offshoring have generated reactionary backlashes in some developed economies, such as the United States and the United Kingdom. The rise of right-wing populism has also been associated with “anti-globalization” and protectionism in these countries (Gereffi, 2018; Kiely, 2020). Baldwin (2019) predicts that these tendencies will intensify as middle class professions are gutted by the technologies of the 4IR, generating further protectionist pressures, including for service sector jobs, and making replicating the

⁷ Indeed, some argue that the under-regulation of markets generally, including the “wet” wildlife market in Wuhan, where the transfer of the virus to humans is thought to have occurred, is a major reason for the pandemic outbreak (Wallace et al., 2020).

export-oriented manufacturing success of some East Asian economies even more difficult for other latecomers. In any case, new models of industrialization should be more domestically and regionally focused and critically, greener.

COVID-19 is also likely to reinforce protectionism in advanced economies as some industries become newly considered as strategic, such as pharmaceuticals⁸ and personal protective equipment (PPE), given the global scramble to source these during the pandemic. This will likely result in a spatial retraction and integration of some supply chains under the auspices of national (health) security as the pandemic has revealed the extent of global (inter)dependence on China for PPE⁹ and other medical supplies and devices. European Union members now assert the imperative of “strategic health sovereignty” (French-German Initiative, 2020). Meanwhile, the ascent of China in the international system has generated friction over which countries will control the core technologies of the 4IR, as evidenced in recent international disputes around Huawei, for example. Some have argued that (dis)connectivity is the new geopolitics (Vlahutin, 2020) and this is being conducted through geoeconomic means. Yuval Hariri (2018) has argued that we are seeing the emergence of a “network of fortresses”, as countries seek to buffer themselves from the negative effects of globalization, while also taking advantage of the benefits it may offer them. COVID-19 is likely to exacerbate such tendencies towards “shelterism” (Baldwin, 2019) and reshoring as transnational enterprises seek to make their supply chains more resilient (Zhan, 2020). Of course the precise content of economic policies in developed countries will depend on the nature of governments in power, which will partly hinge on upcoming and future elections in the United States and elsewhere. However, the current round of globalization appears to have passed its high-water mark as a result of trends towards protectionism, COVID-19 and the looming climate crisis, which will also generate pressures to shorten supply chains to reduce carbon emissions.

4. Implications for, and potential responses by, lower-income countries in Africa

The perils of global integration have been dramatically highlighted by the pandemic and the emphasis must now be on building more resilient, sustainable and secure economic structures through economic diversification on the continent. How should lower-income, primary commodity resource-exporting countries respond to the current conjuncture? Crises, as long as they are not overwhelming, are also

⁸ Controversially, the United States bought almost the entire global supply of the drug remdesivir, which has been shown to be effective in treating COVID-19.

⁹ Accounting for about a third of global supply (OECD and UNECA, 2020).

moments of opportunity to rethink and reconfigure current policies, politics and institutions that may not have been working to their intended purposes. The need for economic diversification in low-income countries is as urgent as it has ever been, as is the necessity to “future proof” their economies against current and potential shocks to their systems. It is also an opportunity to rethink current economic models on the continent; although COVID-19 will likely make it more difficult for the continent to industrialize; particularly when combined with meta-trends such as robotization, 3D printing and reshoring of manufacturing. Nonetheless, international interconnection, through trade, investment and ideas, is vital to development.

Certain types of FDI can be an important component of a successful development strategy. For example, Ireland has targeted the attraction of high-tech FDI, while China has maximized local benefit through technology transfer and joint ventures with local companies, amongst other policy mechanisms (Dicken, 2015).

Particularly as Africa’s biggest single trade, and in some years, investment partner, China can play an important role in a reimagining of African economies. The country can serve as a source of inspiration for alternative development ideas, about how to harness FDI to be developmentally beneficial. However, risks remain.

The current conjuncture may also offer opportunities to increase local production of manufactures, food and other vital commodities in Africa. At independence in the 1960s Africa was a net food exporter (Bello, 2009), whereas now most countries on the continent are in food deficit, requiring imports and resulting in the accumulation of debt (OECD, 2020b). In the context of COVID the imperative of strategic and dynamic domestically-focused development and integration of African countries into the global economy rises. For Africa this means both the chance and imperative to focus more on internally-based development, with a view to productive global integration over the medium-term. For example, oxygen, vital to patient survival in extreme cases of COVID-19, is thirteen times more expensive in Kenya than in the United States, opening up possibilities for local production and import substitution (Gates, 2020). The National Agency for Science and Engineering Infrastructure has produced the first ventilators made in Nigeria (OECD and UNECA, 2020), bespeaking the potential for creative solutions to health and other problems on the continent. Africa is estimated to import 94 per cent of its pharmaceutical needs (OECD and UNECA, 2020), despite their being several countries on the continent with the capacities to produce some of these at scale.

If the pandemic highlights the need to reduce external vulnerabilities for populations, states could potentially be reconfigured to be more domestically, developmentally focused. Gross inequality persists in Africa, which will likely be exacerbated by COVID-19 (United Nations, 2020). (United Nations, 2020). However, as noted earlier, in line with systemic vulnerability theory, crises are also moments of opportunity to rethink, reimagine, rework and bring into being new, more equitable,

dynamic and sustainable economic structures (Doner, Hicken and Ritchie, 2009). The key to this happening, or not, is the nature of (transnational) political settlements which are likely to emerge post-COVID (Whitfield, Therkildsen, Buur and Kjær, 2015); a key area of social and political struggle in the future.

Creativity, adaptability and ingenuity will be vital to reimagining the economies of the continent and the ways in which they are integrated in global value chains, while the international community has a responsibility to be flexible and generous in its supports through debt relief and other modalities of assistance. While the impact of the virus has been devastating at all levels, it also highlights the need to think differently and more collaboratively, if the Sustainable Development Goals are to be realized – an increasing challenge in the context of the pandemic (Di Marco et al. 2020; Sumner et al. 2020). Global institutional innovations, such as a Health Impact Fund, that reward pharmaceutical companies on the basis of their contribution to disease eradication, rather than responding to market demand alone, would help reduce health, and by extension, other inequalities (Holzer and Pogge, 2020). Health and human capital formation are key components of both economic and social development, and complements to both domestic and international investment. As such they are too important to be left to vagaries, vulnerabilities and the vicissitudes of unregulated markets.

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Digital transformation of global value chains and sustainable post-pandemic recovery

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This perspective paper examines the impact of the COVID-19 pandemic on global production and trade from the perspective of global value chains. Particular attention is paid to the transmission mechanisms and the role of digital technology in sustainable post-pandemic economic recovery. It argues that emerging technologies will be a driver of the global economic recovery, while the challenge to sustainable and inclusive global development will be significant, especially with regard to inequality and job creation. Also discussed are policy implications, to ensure this recovery is inclusive and sustainable, not leaving any country or people behind.

Keywords: automation, COVID-19, digital transformation, global value chains, post-pandemic recovery

1. Introduction

The segmentation and globalization of production systems into fragments of tasks have transformed how countries trade with the rest of the world (Gereffi, 1999; Grossman and Rossi-Hansberg, 2008; Zhu and Fu, 2013). Participation and upgrading in global value chains (GVCs) enable developing countries to gradually develop technological capabilities for “faster” industrial upgrading (Baldwin, 2012; Gereffi, 1999), and to expand exports (Criscuolo and Timmis, 2017; Collier and Venables, 2007). GVCs can also be a tool for industrialized countries to re-invigorate slow growth in the absence of major innovations (Kummritz, 2017).

The COVID-19 pandemic and the resultant global lockdown have caused enormous disruptions and permanent change to global production networks. Together with the trend that had developed before the pandemic, especially driven by the Fourth Industrial Revolution and trade protection, the pandemic is set to reinforce the regionalization, localization and diversification trends of GVCs (Rodrik, 2020; Fu,

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2020), and business leaders are now thinking about changing the way business is organized (UNCTAD, 2020b). It is estimated that the cost of world trade could increase by as much as one-third and that of global foreign direct investment (FDI) by 30 per cent to 40 per cent, according to (WTO, 2020) and UNCTAD (2020a). In early March, when the pandemic had not yet expanded globally, UNCTAD (2020b) reported that the coronavirus had already cost GVCs \$50 billion. Such a deep drop in global trade and FDI has far-reaching implications for economies and societies. We will see a subsequent fall in incomes and job opportunities, and price fluctuations. As the shock varies across industries and countries, inequalities within and between countries and even poverty in some countries will inevitably rise.

Although there is a wealth of literature on GVCs concerning their governance and organization, the gains from GVC participation and factors influencing a country's degree of participation (Timmer, 2013; Johnson and Noguera, 2012; Koopman et al., 2014; Antràs, 2015, 2019), our understanding of the impact of a pandemic on GVC organization and participation is scant, with only a few exceptions. Studies have found that the 2014 Ebola pandemic in some countries in West Africa resulted in a drop in trade (e.g. Kostova et al., 2019). Using a disaster impact model and simulation method, Guan et al. (2020) built a global supply-chain network on the basis of the Global Trade Analysis Project database for 2014 and assessed the global supply-chain effect of COVID-19. They found that supply-chain losses related to the initial lockdowns were largely dependent on the number of countries imposing restrictions and that losses were more sensitive to the duration of a lockdown than to its strictness. While this research provides valuable and timely assessment of the global supply-chain effects of COVID-19 control measures in terms of duration and strictness, the impact of these control measures are assumed to be homogeneous across industries and countries. In fact, the impact of a pandemic varies significantly across industries according to differences in contact intensity, degree of GVC fragmentation, and digitizability of the sector and to the degree of digitization in different sectors and different countries.

This paper analyses the varying impact of the pandemic on global production and trade through a detailed analysis of the transmission mechanisms from the GVC perspective. Particular attention is paid to the role of digital technology in changing the contact intensity of an industry, enhancing the resilience of value chains, and offering solutions to the challenge of social distancing and fostering new drivers of growth for post-pandemic economic recovery. It argues that such emerging technologies will be a driver of that recovery, while inequality and employment is expected to reach a record high. International technological, financial and policy cooperation and coordination need to come into force now if we are serious about the aim to achieve the 2030 Sustainable Development Goals (SDGs) to which the global society has committed.

2. How does the pandemic hit GVCs?

2.1 Mechanisms

The pandemic hits GVCs by way of three channels. First, it hugely disrupts transportation systems and almost cuts off access to the logistics of supply chains in some cases. In the past several decades, multinational enterprises (MNEs) have sliced their production processes into fine segments and relocated these small parts of the process to different locations around the world in order to maximize their profits. Intra-industry trade of spare parts and components within GVCs accounts for more than 60 per cent of global trade. In such a production and trade model, stable and on-time logistics is very important to the supply chain. When any part of the chain is blocked, all the subsequent production activity is affected. For example, in Japan car manufacturing was affected because some outsourced spare parts could not be delivered on time and no stock had been maintained due to the lean production system. As countries have adopted various social distancing and border control measures, transportation of goods has been significantly reduced. In the first half of 2020, 1,675 sailings have been cancelled, representing 13 to 17 per cent of the proforma sailings for the major shipping alliances (The Maritime Executive, 2020). As a result, supply chains have been seriously disrupted.

The second channel by which the pandemic affects GVCs is through its disruption of the supply side of production. In addition to the disruption to the supply chain, other measures that have been introduced, such as the closure of workplaces and public transportation, put significant constraints on labour inputs into production.

The third channel through which the pandemic affects GVCs is through the sharp fall in demand. It was not significant in January and February, when China was the epicentre. However, from March 2020, as the virus spread globally, it led to a sharp fall in demand. Cancellations of orders were widely reported; for example, cancellation of orders for garment factories in Sri Lanka and Bangladesh, and for electronics factories in South-East Asia. Through this channel, the shock of the pandemic has been transmitted to regions such as Africa, where the pandemic had not yet broken out. Orders from the global north were cancelled, commodity prices fell by 20 per cent and the total amount of trade is predicted to fall by 50 per cent (UNCTAD, 2020c).

2.2 Sectoral and national variations

However, the pandemic has had different impacts on different sectors and in different countries. In general, four factors affect the degree of the pandemic shock in different sectors and countries. These are the contact intensity of the industry, degree of fragmentation of the GVC, the degree of digitization of the company and country, and quarantine measures adopted by a country.

First, if a sector is more contact-intensive, it will be hit more heavily than others. For example, hair salons, beauty shops, hotels and tourism are heavily affected because of the necessity of contact between customer and service provider. However, for the financial services sector, business consulting and some parts of the retail industry, which can move their business activities online, the impact is lower. During the pandemic, new demands also fostered the growth of some sectors, such as e-health, e-learning and online entertainment.

Second, the degree of fragmentation of the value chain is important. If a value chain is less fragmented, it will be less affected; in GVCs that are highly fragmented such as those of the electronics and automobile industries, the impact will be significant.

Third, the degree of digitization of a company and of a country matters, too. Here there are two factors at play. One factor is the “digitizability” of the production and services. Some business activities are more digitizable and some are less or even not digitizable. For example, business services are more digitizable, whereas beauty services are not; on average, manufacturing is more digitizable than provision of services. The other factor is the capability of a country or a company to digitize its business activities. Companies that are more digitized and automatized have fewer workers and use more automated machines or artificial intelligence. They can accomplish more production activities online through online activities or by remote control of production in the factories. These companies, whether in manufacturing or services, are less likely to be affected. For example, in the City of London, many of the business services and financial companies continue to operate online during the pandemic and quarantine. Of course, the level of digitization and the digital infrastructure of a country significantly affect the degree to which companies can reach the market by means of digitization. Firms in developing countries, which have weaker digital infrastructure, are less able to move their business activities online and hence will be hit harder than their peers in rich countries.

Finally, policy measures, especially the quarantine measures adopted by governments, will also determine the degree of the shocks felt by the economy in different countries. Quarantine measures range from very strict, such as the ones adopted in China, to much more flexible, such as the ones adopted in the United States and the United Kingdom. As a result, the impact on the services and the manufacturing sectors is different in different countries.

Because different countries have different industrial structures, the overall impact of COVID-19 will differ, for the reasons discussed earlier. Most of the countries in the global north are basically service economies. In the United States and the United Kingdom, 70-80 per cent of gross domestic product (GDP) and employment come from the services sector, mostly knowledge-intensive services. In comparison with countries whose economies are mainly based on manufacturing, their economies will be less affected should the contagion ratio of the pandemic be the same in

all countries. Low-income countries are dominated by the informal sector and contact-intensive service sectors such as small retailers, restaurants and family-run microbusinesses, as well as by agriculture and resource extraction, for which global demand and commodity prices will drop considerably. Moreover, the level of digitization is also low in these countries. They do not have the digital infrastructure and digital competencies to enable a rapid transition to online business. As a result, these low-income countries will be heavily affected.

In addition to these factors, the pandemic will deepen the earlier trend. Three macroeconomic factors will interact, reinforce and form an aggregate shock to the developing countries. First, the Fourth Industrial Revolution and technical progress in automation and digitization have made economically viable the reshoring of some manufacturing activities in industrialized countries. Second, rising economic nationalism and the wave of deglobalization have spurred this reshoring tendency with political support. As a result, MNEs are considering the regionalization or localization of value chains as well as the diversification of GVCs. Third, in the last two years, this tendency has been further reinforced by the trade war. The pandemic has deepened instead of reversed these trends. Economic self-sufficiency and even state economies are being discussed in the policy and academic arena, despite the fact that they are not economically efficient. Business leaders are now thinking about changing the way business is organized. Regionalization and diversification of GVCs through digitization are popular choices.

3. Automation and digitization to be the stars in post-COVID economic recovery

Looking forward to the post-COVID economic recovery, then, automation and digitization are likely to be the star features, for three reasons. First, digital technology and automation have played an important role in the global community's fight against COVID-19. Several novel services have proliferated during the pandemic. These include remote tracking and detection (including of infections), robotic cleaning in hospitals, and the delivery of medicine, live materials and notices by drones. Tele-health, e-business, online education, online entertainment, and online conference and office systems have also grown rapidly and are contributing to the global response to COVID-19 and thus to society and the economy.

Second, some sectors – and even some “new” sectors such as the online provision of various services – have already grown rapidly during the pandemic owing to increasing demand. It will not be surprising to see new star industries in the

reshuffle and relocation of GVCs. Some countries will fill the gap of relocated GVCs by investing heavily in star future sectors in the digital economy, innovation in digital applications in traditional industries and the development of digital infrastructure. These sectors will be new engines of economic growth.

Third, lessons from the pandemic and the trade war will push business to build more resilient production systems and supply chains.¹ Digital transformation of industries and production systems will be a popular choice for companies in both the manufacturing and services industries. Digitization often means greater capital and technology intensity and less use of labour. Engineers can even manage the production process by remote control. This makes the production process less contact-intensive and hence less affected by social distancing and restrictions on human mobility. Therefore, digital transformation – including smart manufacturing, smart services, e-government and digitized green transformation supported by 5G, Big Data, cloud technology, the Internet of Things and blockchain technology – will transform or even revolutionize manufacturing and the provision of private and public services.

4. Increasing inequality to become a challenge

Because of differences between countries in digital skills, capabilities and infrastructure, as well as in the ability to invest in new technology and digital infrastructure, we are bound to see increasing inequalities within and between countries. The opportunity window for low-income countries to catch up will narrow. This will be exacerbated by increasing protectionism in the world economy. Although the relocation and regionalization of GVCs may benefit a few countries, most of the developing countries – especially in Africa and in South Asia – will not be better off because they are not geographically close to the rich markets. Neither are their current industrial capabilities and infrastructure conditions close to the level that would enable them to fill the gap left by China in a short time. On the contrary, they may be affected by uncertainties and volatilities in the market due to trade tensions.

In sum, emerging technologies – especially automation and digitization – will be an effective driver of the post-pandemic global economic recovery. At the same time, the mission to reduce inequality and promote decent jobs for all will be more challenging. International technological and financial cooperation, and policy coordination are urgently needed to prepare developing countries, not only to

¹ See also Gölgeci, I., H. Emre Yıldız and U. Andersson, 'The rising tensions between efficiency and resilience in global value chains in the post-COVID-19 world', in this issue (Editor).

combat the shock of the pandemic, but also to develop their digital competencies and infrastructure so that they will not fall behind again in the post-pandemic economic recovery. If we fail to do this, we will not achieve the SDGs by 2030.

5. Conclusions and policy implications

Looking forward to the economic recovery, digital technologies and digital transformation of GVCs will play important roles in offering solutions to the challenge of the great lockdown, enhancing the resilience of the global production system and supply chains, and fostering new drivers of economic growth.

First, innovative technologies have played an important role in the fight against COVID-19. Not only robot cleaners in hospitals, drone delivery of medicine and food, and contact tracking, but also tele-health, e-business, online education, online entertainment and online office systems have all grown rapidly. Second, some sectors such as various e-businesses have already expanded owing to increasing demand. New industries will emerge in the reshuffle and relocation of GVCs, not only in the digital economy but also in the provision of public health. They will be new engines of economic growth. Third, the digital transformation of industries will shield the production process from restrictions on human mobility. Therefore, digital transformation – including smart manufacturing, smart services and digitized green transformation supported by 5G, Big Data, and cloud and blockchain technology – will support the way to a sustainable recovery.

The discussion in this paper has some significant policy implications. First, this digital transformation requires essential digital competencies. They include digital skills, digital infrastructure and a business environment favourable to them. Given the significant gap in digital competencies between developing and developed countries, and the lack of capital in developing countries, especially the low-income ones, to invest in these critical infrastructure and skills, developing countries will be left behind again if they have to build up all these on their own. Therefore, international technological, financial and policy cooperation and coordination need to come into force now to help developing countries to build up the necessary digital infrastructure – including broadband connectivity, mobile phone and 4G/5G infrastructure, and data collection, storage and processing facilities – and gradually develop their capacity in high-speed Big Data transmission capacity. International cooperation is also needed in building training capacity and enhancing the digital skills of the workforce, especially among the youth and women.

Second, given the challenge of the pandemic to human mobility, traditional knowledge diffusion channels – interpersonal meetings, conferences, visits and training – have been significantly and brutally cut off. Policies should give urgent

priority to encourage and assist the use of online digital platforms for international and intranational knowledge transfer and diffusion. This will enable the global community to keep knowledge flow smooth at a time when human mobility is restricted. Policy actions should emphasize (i) the provision of online platforms, (ii) the enhancement and active use of online platforms by governments to disseminate information and knowledge to fight the pandemic, provide job information and disseminate knowledge to assist economic recovery, especially for the poor and for small and medium enterprises; and (iii) the provision of technical assistance and training for people on how to use these platforms. Conditional cash transfers for access to online information should be introduced, in addition to various cash subsidies for citizens and households.

In sum, digital technologies will be an important driver of post-pandemic economic recovery. To ensure this recovery is sustainable and inclusive, international cooperation in a wide range of aspects is crucial to enable developing countries, the least developed in particular, to have the necessary financial and technological resources, skills and infrastructural competencies to harness the benefits of digital technologies. Digital technologies should also be harnessed to facilitate global knowledge flow, especially when human mobility is hindered by pandemic-related measures.

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Promoting African digital multinationals for a more inclusive post-pandemic future

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This paper advances policies for promoting the intraregional and international investment prospects of African digital multinationals in the post-pandemic era. Based on the building blocks of organizational capabilities, funding access, digital infrastructure and regulation, it advocates for a more globally inclusive investment landscape in which African-born digital multinationals would no longer be a rarity. Against the backdrop of the COVID-19 crisis and its amplification of humankind's shared and digital future, policymakers and influential stakeholders at all levels are challenged to intensify the push for a more inclusive global digital economy.

Keywords: Africa, COVID-19, digital business, post-pandemic, technology-enabled activities

1. Introduction

Although the Coronavirus pandemic, and its human and material costs, is still underway, history suggests that it will inevitably pass. Indications regarding the shape of the future global economy can be gleaned from the handful of sectors that thrived amid the pandemic. These include innovative technology and digital businesses offering connecting products and services as well as online retailers and service providers and their supply chain and logistics partners. These businesses, not surprisingly, are excelling in major global stock markets, and they and other innovation platforms such as robotics, energy storage, artificial intelligence, blockchain technology and DNA sequencing (Gurdus, 2020) are likely to sustain their strong investment prospects in the post-pandemic global economy.

Of particular interest to the present perspective paper is the extent to which the expected boost in global digital investment might foster digital inclusion, access and entrepreneurship in underrepresented parts of the world, specifically Africa. Although internet penetration levels and online marketplaces have expanded across Africa in recent years (Lattimore, 2015), significant gaps still exist compared

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with other regions. For example, the International Telecommunication Union (ITU) recently found that internet access, especially fixed broadband, is still out of reach for many Africans (Mugisha, 2020a). The World Bank reported digital skills adoption across sub-Saharan Africa to be half the global average (Madden and Kanos, 2020). The virtual absence of African businesses in every major list of global digital brands is additionally instructive; one supposed exception, an e-commerce player traded on the New York Stock Exchange, seems beset with declining fortunes and claims of appropriating African identity (BBC, 2020).

Redressing Africa's peripheral role in the global digital economy has become even more urgent for a number of reasons. One, the COVID-19 crisis has strongly illustrated the continent's need for digitalization and rapid digital transition (Kasraoui, 2020), while also exposing appreciable gaps in provision and access (Madden and Kanos, 2020). Two, the prevalence of African digital companies and multinationals is likely to improve the region's prospects of meeting the United Nations Sustainable Development Goal (number 9) of fostering innovation, building resilient infrastructure, and promoting inclusive and sustainable industrialization. This inclusivity theme resonates with the rising global focus on promoting equality by channelling investments and opportunity levers to less represented populations, an agenda that the United Nations Conference on Trade and Development (UNCTAD, 2020) promotes by enabling several developing economies to use its e-government platforms to sustain operations amid the pandemic.

The present article discusses policy ideas for strengthening the international presence of African digital multinationals in the post-pandemic global economy. Multinationals are focused upon because they offer Africa's best prospects for future global competitiveness. This is particularly true, given the relatively small market size of all but a handful of African economies. Space restrictions preclude a substantive effort at theoretical positioning, but it must be noted that insights from the organizational capabilities (Teece et al., 1997) and institution-based theories (Mayer and Peng, 2005) underpin the policy ideas presented.

The remainder of this paper briefly profiles African digital multinationals, offers policy recommendations for advancing their international investment prospects and reflects on how the latter might contribute to a more inclusive global economy in the post-pandemic era.

2. African digital multinationals

The term "digital multinationals" is used here to describe enterprises whose business model is based on digital technologies and that own and manage value-creating activities in two or more markets outside their home country. Digital multinationals

are an integral part of the digital economy and are commonly found in the information and communication technology (ICT) sector, among firms undertaking internet/mobile technology-enabled activities and those whose activities underpin internet operations (UNCTAD, 2017; Ibeh and Lloyd-Reason, 2017).

African digital multinationals and other digital sector organizations, despite the infrastructural and capacity constraints noted earlier, have been crucial to serving the diverse needs of organizations and individuals across the continent since the COVID-19 crisis began. These multinationals, typically larger firms, have also dominated the many private sector coalitions and initiatives established in several African countries to combat COVID-19. Such initiatives have equally attracted the support of Africa's development partners as suggested, for instance, by the earlier mention of UNCTAD's making its e-government platforms available for the use of several developing economies.

A sample of digital multinationals from several African countries appears in table 1, essentially to offer an indicative view of the prevalence and profile of African digital multinationals and some context for subsequent policy reflections on their support needs.

Table 1. A sample of African digital multinationals

| Company name | Indicative digital provision | Markets where present |
|---------------------------------|---------------------------------|---|
| Access Bank (Nigeria) | Digital financial services | 9 countries: 8 in Africa plus the United Kingdom |
| Attijariwafa Bank (Morocco) | Digital financial services | 25 countries, mainly in Africa, the Middle East and Europe |
| Banque Populaire (BCP)(Morocco) | Digital financial services | 24 countries, mainly in Africa; 8 in Europe, the United Arab Emirates and Canada |
| BGFI Bank (Gabon) | Digital financial services | 10 countries: 9 in Africa plus France |
| BMCE (Morocco) | Digital financial services | 28 countries: 18 in Africa, 7 in Europe, Canada, the United Arab Emirates and China |
| Ecobank (Togo) | Digital financial services | 33 African countries, plus France, the United Kingdom, China and the United Arab Emirates |
| First Bank (Nigeria) | Digital financial services | 10 countries: 6 in West Africa, plus the Democratic Republic of the Congo, the United Kingdom, France and China |
| First Rand (South Africa) | Digital financial services | 13 countries: 10 in Africa, plus the United Kingdom, Guernsey and India |
| Globalcom (Nigeria) | Digital communications services | 3 West African countries |
| GTB (Nigeria) | Digital financial services | 11 countries: 10 in Africa plus the United Kingdom |

Table 1. A sample of African digital multinationals (Concluded)

| Company name | Indicative digital provision | Markets where present |
|--|--------------------------------------|---|
| KCB (Kenya) | Digital financial services | 9 countries: 8 in Africa plus the United Kingdom |
| Massmart-Game (South Africa) | Digital financial services | 25 countries, mainly in Africa, the Middle East and Europe |
| MTN (South Africa) | Digital financial services | 24 countries, mainly in Africa; 8 in Europe, the United Arab Emirates and Canada |
| Naspers Group – Takealot, Prosus, Media24 (South Africa) | Digital financial services | 10 countries: 9 in Africa plus France |
| NSIA (Côte d'Ivoire) | Digital financial services | 33 African countries, plus France, the United Kingdom, China and the United Arab Emirates |
| Safaricom (Kenya) | Digital financial services | 10 countries: 6 in West Africa, plus the Democratic Republic of the Congo, the United Kingdom, France and China |
| Shoprite (South Africa) | Digital financial services | 13 countries: 10 in Africa, plus the United Kingdom, Guernsey and India |
| Standard Bank (South Africa) | Digital communications, services | 3 West African countries |
| Telkom (South Africa) | Digital financial services | 11 countries: 10 in Africa plus the United Kingdom |
| UBA (Nigeria) | Digital financial services | 23 countries: 20 in Africa, plus the United States, the United Kingdom and France |
| Woolworths (South Africa) | Online retailing, financial services | 14 countries: 12 in Africa, plus Australia and New Zealand |
| Zenith Bank (Nigeria) | Digital financial services | 7 countries: 5 in Africa, plus China and the United Kingdom |
| Younger digital multinationals | | |
| Nadia (Kenya) | E-health | 4 African countries |
| Rightcom Technologies (Benin) | Digital (CEM) consulting | 18 countries, mainly in Africa, Europe and the Middle East |
| Wallets Africa (Nigeria) | Fintech | 3 African countries |

Source: Adapted from various sources.

Box 1. Young digital multinationals from Africa

Rightcom Technologies, founded in 2012 by Benin Republic's Adetoye Aguessy, reportedly uses advanced tools, including artificial intelligence, to offer leading-edge customer experience consulting to clients in different industries, primarily across Africa, but also in Europe and the Middle East (RightCom, 2020).

Nairobi-based provider of non-urgent telemedicine care Nadia, one of the 180 African e-health start-ups featured in the latest report by Disrupt Africa, was established in early 2019 by four classmates at Meltwater Entrepreneurial School of Technology (MEST), in Accra. Its proprietary health companion app offers users in Kenya, Nigeria, Ghana and Tanzania real-time consultations with doctors. Nadia has reportedly experienced a surge in demand since the COVID-19 crisis (Jackson, 2020e).

As table 1 shows, African digital multinationals have an investment presence across the continent and beyond. They deploy digital technologies mainly to offer financial, communication and retailing services. Digital financial service providers account for most of the multinationals profiled. Online retailers and digital communication service providers make up the next sizeable cohorts.

MTN, in the midst of the COVID-19 crisis, reportedly entered the digital financial service space with a mobile money product (Reuters, 2020), thus offering a substitute to Africa's most famous mobile payment platform, M-Pesa, now jointly and equally owned by Safaricom and Vodacom (Business Daily, 2020).

Table 1 also presents African digital multinationals in other sectors, including e-health, online higher education and digital consulting, all of which have been boosted by the COVID-19 shelter-in-place policies. Honoris United Universities, an African online education group with a presence in Mauritius, Morocco, South Africa, Tunisia, Zambia and Zimbabwe, recently expanded into Nigeria by acquiring the Nile University, Abuja (Ukpe, 2020). Digital consulting specialist Rightcom Technologies and telemedicine start-up Nadia also exemplify the entrepreneurial drive and international investment push of African digital businesses (see box 1).

It should be noted, however, that the digital multinationals profiled here seem less engaged in the production of digital technologies and digital infrastructure. South Africa's Naspers Group, a major investor in technology companies Tencent (China) and Swiggy (India), appears to be among the few exceptions (Naspers Group, 2020).

The increasing flow of new entrepreneurial actors into the African digital sector, even amid the COVID-19 crisis, augurs well for the more inclusive digital future that this paper advocates. The potential of these enterprises underlines the need to actively support such budding digital multinationals with effective policy measures.

3. Policy ideas for supporting African digital multinationals

The fresh, COVID-19-driven, impetus to advance the participation of African digital businesses in the expanding global digital economy demands policy innovations, but not unnecessary reinventing the wheel. This section, thus, starts with an appeal for policymakers and development partners to judiciously adapt support programmes with demonstrated effectiveness in other world regions. For instance, there is widespread support for the digital ecosystem approach to assistance provision, i.e. focusing on mutually supporting stakeholders such as dedicated research teams in selected higher-education institutions, major corporate innovation players, high-growth digital start-ups, technology incubators and accelerators, organized private sector bodies, financial institutions and development promoting organizations (Giudici and Blackburn, 2013). The adoption of this approach is strongly urged, particularly as it aligns with the more inclusive post-pandemic future canvassed for by this paper.

Four policy building blocks are discussed around which support measures are articulated, specifically, organizational capabilities, financing and scaling, digital infrastructure and regulatory environment.

3.1 Capabilities upgrading initiatives

Given evidence on the effects of organizational capabilities on performance (Teece et al., 1997), the importance of frontier knowledge for competing in digital industries (OECD, 2016) and Africa's earlier-noted shortcomings in digital skills compared with other regions, support programmes to facilitate the upgrading of in-house and relational capabilities among African digital multinationals require priority attention. Sample suggested measures include establishing knowledge sharing and mentoring circles to facilitate successful adoption of complex digital technologies, championing technology accelerators and instigating collaborations within the digital ecosystem (Ibeh and Lloyd-Reason, 2017). More specifically, policymakers are urged to instigate a version of the Small Business Technology Coalition that has been employed to good effect by the United States Small Business Administration, Amazon, Facebook, Microsoft and others to advance technological capabilities among smaller United States enterprises. Such collaborative platforms could

Box 2. Upgrading the capabilities of African digital multinationals

The fifth cohort of the Google for Start-ups Accelerator Africa programme, comprising 20 tech start-ups, commenced virtually on 29 June 2020. This three-month programme aims to connect participants with Google's technologies, people, networks and methodologies in order to help them scale. Forty-eight African start-ups have already passed through the programme since its debut in March 2018 (Jackson, 2020b).

produce in African digital enterprises stronger capabilities to innovate in the opportunity spaces generated by the COVID-19 pandemic in national, intraregional and extraregional markets.

Encouragingly, some potentially significant initiatives are increasingly being observed across Africa. One example is the ongoing collaboration between the United Nations Economic Commission for Africa (UNECA) and the Rwandan National Institute of Statistics (NISR) to set up a Big Data regional hub for Africa in Kigali. The hub, similar to three others in China, Brazil and the United Arab Emirates, is expected to spearhead the development of new capabilities in the use of Big Data and modern technology and to foster international collaboration on the sharing of data and expertise (Mugashi, 2020b). Another example is UNCTAD's eTrade for All initiative, launched in 2016, which provides a seven-step programme geared to steer e-commerce towards development. Its approach is holistic and in addition to capacity-building elements, the initiative encompasses funding, infrastructure and regulatory components. Influential accelerator programmes are also emerging. Examples include the Naspers Group's Foundry, reportedly aimed at assisting South African entrepreneurs to build great tech businesses, and the Google for Start-ups Accelerator Africa programme (see box 2).

3.2 Financing and scaling initiatives

Although financing barriers, particularly scale-up financing barriers, have always challenged growth-seeking digital start-ups and multinationals, the dampening effects of the COVID-19 pandemic on African economies and businesses have significantly exacerbated the situation. Nevertheless, financing schemes, mainly external ones, regularly emerge, and this requires African policymakers to continually monitor and extend their awareness of pertinent funding opportunities for African digital enterprises. The World Bank's Financial and Digital Inclusion Development Policy Financing Project focused on promoting digital transformation, and access for businesses and individuals is arguably one such example. Other options

Box 3. Sample scale-up funding

A US\$275 million higher education platform for Africa set up by the private equity firm Actis in 2017 is enabling the expansion of an African education group, Honoris United Universities Initiative, into several African countries. The group, which recently acquired the Nile University in Nigeria, had previously invested in private universities in Morocco, Tunisia, Mauritius, South Africa, Zambia and Zimbabwe (Ukpe, 2020).

The Egyptian digital health care start-up Vezeeta, which serves Middle Eastern and African markets, reportedly raised US\$40 million in a funding round led by Gulf Capital, a major Middle East-based alternative asset management firm, in July 2020. The company, founded in 2012, currently operates in Egypt, Saudi Arabia, Jordan and Lebanon and had secured funding from other major investors, including Saudi Technology Ventures (Nzekwe, 2020).

Nigerian B2B e-commerce start-up TradeDepot recently raised US\$10 million in equity funding from Partech, the International Finance Corporation (IFC), Women Entrepreneurs Finance Initiative and MSA Capital. This is to support expansion into other African cities and launch a suite of financial products and credit facilities for its retailers. The e-commerce platform, described by the IFC's Head of Africa Venture Capital Investment as a "rising star" in the African internet landscape, has built a significant network of retailers, global distributors and manufacturers since its establishment in 2016 (Jackson, 2020).

are support measures that expand funding opportunities through collaboration with credible private providers, promote and guide digital firms' involvement in crowdfunding, and foster digital-ecosystem-type scale-up initiatives like the United Kingdom's Digital Catapult (Ibeh and Lloyd-Reason, 2017).

More specifically, the African Development Bank could consider taking a cue from the European Investment Bank by establishing an African Technology Facility and African Investment Fund start-up facility, to channel early investment into innovative, high-growth African digital start-ups. Similarly, the African Union could develop its version of the European Union's Horizon 2020 programme to foster collaboration on cutting-edge research in digital technologies among industry innovation leaders, start-ups and research-intensive higher-education institutions.

Since the COVID-19 crisis began, reports have been emerging of a growing list of African digital B2B start-ups, including Nigeria's Kobo360 and Kenya's Lori Systems, that are attracting significant investments to fund their expansion across the continent (Nzekwe, 2020). The World Bank is similarly reported to have approved significant funding to boost digital inclusion in a number of African countries,

including Morocco (Kasraoui, 2020) and Niger (Barton, 2020e). The foregoing and the additional examples presented in box 3 represent good steps forward that need to be amplified and sustained in order to significantly redress the financing barriers facing African digital multinationals.

However, note must be taken of anecdotal evidence that American venture capital and equity investors in Africa preponderantly favour start-ups led or fronted by white foreign founders, leaving black African entrepreneurs struggling to raise financing (Madowo, 2020b). This report, which resonates with the broader global conversation on systemic bias and racial injustice, further justifies the call for a more inclusive global investment landscape. Increased attention must be paid to reports such as the above, not to judge, condemn or vilify, but to educate and encourage stakeholders to collaboratively develop positive steps and targets for redressing inequities in access to investment funding.

3.3 Digital infrastructure provision initiatives

The COVID-19 pandemic has weakened public and private sector capacity to redress Africa's widely recognized infrastructure gaps – recently estimated at between US\$130 billion and US\$170 billion annually by the African Development Bank (Bishop, 2020). Yet the heightened reliance on digital channels and the connectivity and access problems reported since the start of the crisis have underscored the scale and urgency of the challenge.

Intensified policy attention is thus required so as to promote sustained investments in areas such as provision of high-speed broadband and energy to enable African digital enterprises to more fully capitalize on the innovation opportunities associated with cloud computing, data analytics, machine learning, artificial intelligence and other advanced tools. Support measures should also actively facilitate private sector and wider stakeholder participation in the delivery of digital infrastructure projects as well as promote interoperability and ICT policy coordination among African economies and sectors.

Digital infrastructure projects and interoperability schemes announced across Africa since the COVID-19 emergency began include collaborative 5G network projects by MTN-Ericsson in South Africa, Djezzy-Nokia in Algeria, Telma-Ericsson in Madagascar and Safaricom-Aviat in Kenya (Barton, 2020b), a new tier III data centre in Cameroon (Mulyungi, 2020), and a high-capacity regional express cable from Senegal to Cabo Verde (HMN, 2020) (Box 4). The Ivorian and Ghanaian governments' respective pushes for interoperable digital financial systems and electronic payment systems (ITC and Telecom, 2020a, 2020c) are also laudable, as is the Central Bank of Nigeria's recently announced multibillion-dollar infrastructure development company (Ashike, 2020).

Box 4. Some digital infrastructure projects in Africa

Algerian mobile operator Djezzy and Nokia recently trialled a project to offer high-capacity ultra-broadband transceivers to support Algerian operators as they transition to 5G networks. The project will reportedly grant Djezzy a strong solution for mobile backhaul as well as improve its network capacity (Barton, 2020a).

Telma, Madagascar's national telecommunication provider, on 26 June 2020 switched on its Ericsson-backed 5G commercial network to provide high-speed services and mobile connectivity to subscribers, including gaming and entertainment services, health care, education, energy, agriculture, the Internet of Things and business applications (Telma Madagascar, 2020).

The South African government recently announced plans for a space infrastructure hub to support the development of satellite infrastructure. Project Thobela on broadband development aims to boost internet connectivity for businesses and households increasingly reliant on the internet, especially since the COVID-19 crisis (O'Grady, 2020c).

3.4 Regulatory and institutional upgrading initiatives

Although governments around the world largely tightened their national borders to check the spread of COVID-19, a collaborative international approach appears to have taken hold, particularly among research teams and vaccine alliance groups, in the ongoing quest for COVID-19 therapies and vaccines (Capurro, 2020). The collaborative approach, rather than retreat to protectionism, remains the orthodoxy for finding solutions to global challenges.

Based on the view that economies marked by liberal market principles and positive investment climates offer the best prospects for advancing the international expansion of African digital multinationals, this paper calls on African policymakers at national and regional levels to actively embrace and sustain such attractive institutional contexts. This entails, for example, promoting UNCTAD's tools on regulatory transparency, simplified procedures and transactional electronic single windows (UNCTAD, 2020); and, at the global level, supporting a renewed push for an equitable General Agreement on Trade in Services (GATS) to redress the partial closure to FDI of many service sectors, including telecommunication, on which the digital economy depends (Eden, 2016).

The trend in investment climate reforms appears positive across Africa, particularly at the regional level. Indeed, the imminent launch of the African Continental Free Trade Area (AfCFTA) and its recently announced online mechanism for monitoring, reporting and removing non-tariff barriers, as well as the Intra-African Trade Fair in

2021 and the African E-Commerce Platform, illustrate the continent's priority focus on integrating its vast market space in order to mobilize investment (African Union, 2020). Furthermore, as noted earlier, several African countries, including Benin, Kenya, Lesotho, Mali, Rwanda, Tanzania and Uganda, have reportedly taken advantage of UNCTAD's business-friendly digital services to sustain and facilitate operations amid the COVID-19 pandemic (UNCTAD, 2020).

That said, digital multinationals still face a mixed bag of regulatory conditions across African countries. Some positive strides, partly instigated by the heightened need for digitalization amid the COVID-19 crisis, include Zambia's new ICT licensing regime, aimed at opening up the market for foreign investment; the Namibian government's National Broadband Policy, which incentivizes digital infrastructure investment; the Ethiopian government's plan to liberalize its telecommunication market by selling a 40 per cent stake in Ethio Telecom to private overseas investors; and the Nigerian authorities' recent withdrawal of a US\$2 billion tax demand on South Africa's MTN in an apparent move to mend relations. Contrastingly, foreign telecommunication providers have been at the receiving end of enforcement actions in Lesotho and Ghana for allegedly infringing regulatory conditions or obliged by Uganda's new operating licence terms to list 20 per cent of the firm on the local stock exchange.

4. Conclusions

This paper has reflected on policy ideas for enhancing the intraregional and international investment prospects of African digital multinationals in the post-pandemic era. Seeking to promote a more globally inclusive investment landscape marked by a growing population of impactful African digital multinationals, the paper advances for a number of policy recommendations organized around the four interconnecting building blocks of organizational capabilities, financing and scaling, digital infrastructure and regulatory conditions. It acknowledges positive developments reported from several African countries regarding each of these areas but contends that significantly more needs to be done. A concerted multilevel effort by policymakers, governments, leading industry players and other influential stakeholders is needed to bring about a step change in the international investment prospects and outcomes for African digital multinationals in the post-pandemic global economy.

This paper calls for excellent strategic leadership and governance of the soon-to-be-launched AfCFTA to enhance its prospects of realizing the vision of an integrated and more liberal operating context for trade, investment and the digital economy. This is crucially important, as the success of the AfCFTA will allow Africa's vast economic and investment potential to be fully and effectively accessible to businesses across the continent and beyond. The recent AfCFTA-inspired deal

between the Ghanaian government and a South African infrastructure provider to improve rail transport infrastructure, export logistics and intracontinental movement of freight and reported negotiations for at least two similar rail projects in West and Southern Africa exemplify the kind of benefits that the AfCFTA may catalyse (Bishop, 2020).

Space limitations have not allowed much fine-grained nuancing of this paper's policy discussions, but it suffices to say that a suitably segmented, tailored and targeted approach to providing support will be better than a "one size fits all" perspective. Such an approach would ensure, for example, that smaller African digital multinationals are targeted with more dedicated support measures than their better-heeled counterparts.

Finally, as the COVID-19 crisis amply illustrates, the future is undeniably digital. Given humankind's shared fate, it behoves policymakers and other influential stakeholders at the supranational, regional and national levels to work more assiduously towards the more globally inclusive digital economy advocated in the present paper.

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Assessing the impact of foreign ownership on firm performance by size: evidence from firms in developed and developing countries

S. Selsah Pasali and Arslan Chaudhary*

Foreign direct investment (FDI) flows are frequently credited with a wide range of benefits for recipient economies. This research investigates the impact mechanics of FDI by mapping the extent to which firms are owned by foreigners against their performance. Firms in both developed and developing countries are included in the study and the performance indicators used are growth in sales, employment and labour productivity. Based on data from more than 80,000 firms during the period 2010 to 2019, this research is unique because it compares the performance of foreign-owned and domestic firms of different sizes. While the preliminary results show foreign ownership overall does give firms an edge on performance, there is no consistent evidence that this is so by firm size. However, across all developing regions, the study consistently finds that foreign ownership has a positive impact on the sales and productivity growth of micro-size firms. This calls for more research on and policy experimentation with outward-oriented and innovative start-ups.

Keywords: FDI, firm growth, foreign direct investment, productivity, small and medium-sized enterprises, SME

1. Introduction

Over the past three decades, the convergence of distinct economic, technological and policy factors caused international production to enter an era of rapid growth. These factors have fundamentally transformed the way in which firms across industries operate, how they distribute value addition across geographically dispersed locations, and how they apportion activities to actors along their value chains. As a consequence, trade and foreign direct investment (FDI) have grown significantly faster than gross domestic product (GDP) and global value chains (GVCs) have become the dominant forces in a highly globalized economy. FDI flows, despite having slowed down in recent years, still amount to \$1.3 trillion globally.

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As such, they are a crucial source of financing and enablers of industrialization, economic diversification and structural transformation especially in developing countries, which have increased their share of global FDI to 54 per cent in 2019 – a record level (UNCTAD, 2019). Similarly, the geographical spread of FDI stock, defined as the number of countries that account for 90 per cent of global FDI flows has been increasing steadily (UNCTAD, 2020), indicating that more and more countries are becoming important players in the global FDI and international production landscape.

Multinational enterprises (MNEs) occupy a pivotal position in the global economy as demonstrated by the high share of sales that MNEs' foreign affiliates have in total global trade. Despite the rapid growth of FDI, a large part of the literature on FDI is focused on the perspective of investing MNEs, with limited research on the performance differentials between foreign affiliates and domestic enterprises as well as between firms with minority foreign ownership and domestic enterprises. In particular, scant attention is paid to how firms with foreign ownership or participation differ in performance from domestic firms in developing countries. As the promotion of FDI has become an almost universal policy objective at both national and regional levels, there is a need to better understand the performance advantages firms with foreign ownership or participation enjoy, if any, compared to domestic firms, in order to craft the most effective policies at the firm, regional and national levels.

The aim of this paper is to expand knowledge about FDI and private sector development. The paper explores the specific angle of the effect of foreign ownership on firm performance, using three indicators: annual employment growth, annual real sales growth and annual labour productivity growth. In addition, the paper explores the impact of FDI, how it varies by firm size and how the results compare by region. By impact of FDI, this paper means to compare foreign affiliates and firms with minority foreign participation with domestic firms, and not the same firms before and after receiving FDI. Although the analysis shows that in general, foreign ownership and participation in firms are associated with performance advantages compared to domestic firms, the results vary, with the positive impact of FDI on firm performance being more pronounced in certain regions and for certain type of firms. For example, large firms that received FDI showed faster employment growth than domestic firms but the differential impact was more pronounced in the transition economies of Eastern Europe and Central Asia. Similarly, there was strong evidence that foreign owned micro-sized firms outperformed domestically-owned micro-sized firms in both employment growth and productivity but the correlation was stronger in developing economies, including Africa, Asia and the Pacific and Latin America and the Caribbean. The clearest evidence of the positive impact of FDI on firm performance was seen when analysing the impact of increasing share of foreign ownership in a linear form with performance for which there was a significant correlation across all the three performance indicators.

The rest of the paper proceeds as follows: section 2 provides a brief literature review, section 3 presents data and methodology, in section 4 the empirical findings are presented, while section 5 concludes and suggests policy recommendations.

2. Literature review

Considering the importance of FDI flows at the macro level, there have been a number of studies to assess the impact of foreign ownership on firms at the micro level in both developed and developing countries. Although earlier literature on this subject focused more on the former, there is a growing stream of research in this field that includes developing countries too. Broadly, the literature points towards a positive association between foreign ownership and firm performance, both in developed and developing countries. However, a deeper investigation especially at more recent studies, shows that the literature is not completely unanimous in this regard. Not only is there some evidence that foreign ownership does not translate into substantial improvements in firm performance, there is even research that indicates the opposite. Moreover, some studies paint a mixed picture where the positive association between foreign ownership and firm performance is limited to certain select measures of firm performance or contingent upon specific conditions.

Of the literature that suggest a positive correlation between foreign ownership and firm performance, there are a variety of studies from both developed and developing countries. For instance, Willmore (1986) compared 282 pairs of foreign and domestically-owned Brazilian firms, using information about their sales and their four-digit manufacturing industry classification. He observed large differences between these firms across a diverse range of performance indicators, including that foreign-owned firms had a higher ratio of value added to outputs, greater exports, higher labour productivity and greater capital intensity. Bentivogli and Miranda (2017) tested the foreign ownership premium by comparing Italian firms with and without foreign ownership using propensity score matching methodology with panel data. Their results demonstrated a premium for the size, profitability, and financial soundness of firms with foreign ownership which increased over time, was concentrated in the service sector, but disappeared if the foreign investor was based in a fiscal haven. Certain studies have showed a positive correlation between foreign ownership and firm performance but only in terms of particular indicators. For example, Gunduz and Totaglu (2003) conducted a comparison of group-affiliated and independent firms in Turkey. As part of this study, they also compared the financial performance of foreign-owned firms and domestic firms. With a one-way analysis of variance (ANOVA) test confirmed by a non-parametric test, they were able to demonstrate that foreign-owned firms performed significantly better than local firms but only in terms of return on assets and not with other financial indicators.

Majumdar and Chhibber (1999) examined the influence of foreign ownership on the performance of firms in India, measured by return on sales and return on investment. Their results showed that firms with foreign ownership performed better than local ones when controlled for a variety of firm and environment-specific factors. However, these results only became apparent when ownership levels were 51 per cent or higher, and thereby meant foreign owners had unambiguous management control. On the other hand, Gurbuz and Aybars (2010) studied the financial performance of firms according to degree of foreign ownership in Turkey and found the opposite result. They concluded that foreign ownership improved firm performance up to a certain level, beyond which additional foreign ownership did not add to firm profitability, and for some indicators could actually be detrimental.

Bentivogli and Mirenda (2017) outlined two sets of mechanics prevalent in the literature that explain the performance advantages foreign-owned firms have over local firms. These include intra-sectoral heterogeneity in productivity between firms that engage in FDI and those that do not. Intra-sectoral heterogeneity in productivity entails existing productivity and performance advantages that some firms have over others in the same sector. The rationale is that only highly productive firms can afford to engage in foreign investment, therefore the transfer of technology, skills and capital from these firms will have a positive effect on the firms that they invest in. The other stream highlights the ex-ante selection bias of investors. Put simply, foreign investors only choose well-performing firms to invest in, so the superior performance can be attributed to selection bias (for example, Guadalupe et al., 2012).

As mentioned earlier there is also considerable research that indicates a negative or neutral relationship between foreign ownership and firm performance, especially in developing countries. For example, Amin and Hamdan (2018) evaluated the relationship between ownership structure and firm performance measured by return on assets in 171 Saudi firms from all sectors between 2013 and 2014. They concluded that foreign ownership had a negative and statistically significant relationship with firm performance. Mihai (2013) investigated the relationship between foreign ownership and firm performance in Romania using data from 261 manufacturing companies. Firm performance was proxied by return on assets, return on equity and return on sales. Linear regression analysis showed that the link between foreign ownership and firm performance was not significant.

Considering the wide array of results distilled from studies analysing the effects of foreign ownership and firm performance, the purpose of this study is to shed further light on this issue from the perspective of both developed and developing countries. To our knowledge, no study has looked at the impact of foreign ownership on the performance of firms of different sizes. Our methodology, by looking at small (fewer than 20 employees), medium-sized (20 to 99 employees) and large (more

than 100 employees) firms takes the important aspect of firm size into account. In addition, selecting firms for analysis based on propensity score matching aims to eliminate extraneous factors that might affect the analysis. It is hoped that not only will this study add to the existing literature but also add clarity in the context of both developed and developing countries on how foreign ownership affects the performance of firms of different sizes. Based on our results, a few practical guidelines for policymakers are derived in terms of promoting FDI openness and developing targeted FDI promotion policies, issues which are likely to be of paramount importance in the post-COVID recovery phase of the global economy.

3. Data and methodology

Our preliminary empirical strategy is to employ the ordinary least square estimator over a sample of pooled cross-country firm-level data from 144 countries in the period between 2010 and 2019 with country, location (within-country), industry and year fixed effects and clustered standard errors. In addition, regional and country-level estimations are conducted following the same specification with industry and location (within-country) fixed effects. Specifically, the following empirical specification is estimated:

$$\theta_i = \alpha + \beta_1 \text{foreign}_i + \beta_2 \text{size}_i + \beta_3 \text{foreign}_i \times \text{size}_i + \beta X_i + \mu_i + \gamma_i + \varepsilon_i \quad (1)$$

where θ_i represents three firm performance indicators including real annual growth in employment, sales and labour productivity in firm i . All performance variables are constructed in annual average terms covering the last fiscal year completed and a previous period. Inevitably, some observations are lost owing to missing information from the previous period, often three fiscal years before the survey. *Foreign* represents the shares of firms owned by foreigners and is measured by three alternative proxies. The first measure captures majority ownership with a dummy variable that equals 1, if the share of firms owned by foreigner is over 50 per cent and 0 otherwise. Second measure captures participation with a dummy variable that equals 1 if the share is over 10 per cent and 0 otherwise. Finally, the share of foreign ownership is used as a continuous variable ranging from 0 to 100 per cent. *Size* represents a set of dummy variables proxying the size of the firm including small, medium and large following the definitions adopted by the Enterprise Surveys with small firms having five to 19 employees, medium-sized firms having 20 to 99 employees and large firms having over 100 employees. Our main variable of interest is the interaction between foreign and size variables, which captures the impact of foreign ownership on firm performance by size. When foreign ownership is measured in continuous form, firm size enters numerically and both measures enter the equation in quadratic form. X is a matrix of standard control variables, including firm age, exporter status, active credit line, having a website and,

finally, industry, country and year dummies. Given the stratified random sampling with stratification based on sector of activity, firm size and geographical location, equation 1 is estimated with weights following Friesen and Konstantin (2019).

The baseline strategy cannot establish causality because of endogeneity problems. The main variable of interest – that is, the extent of foreign participation in firm ownership – is a highly strategic variable, far from exogenous. There is also room for reverse causality between foreign ownership and firm performance. The cross-sectional nature of data employed unfortunately cannot control for time-invariant firm-specific factors exposing the baseline results to omitted variable bias. In an effort to limit the threats imposed by these issues, we also employ propensity score matching to compare firms that are similar on observable characteristics and estimate the average treatment effect on the treated, using several matching algorithms following Caliendo and Kopeinig (2008).

We expect that foreign ownership will have a positive impact on all performance indicators. This could be through various channels. Foreign ownership can lower financial constraint of domestic firms, improve their market access through global value chains and also expose them to higher levels of technology, thereby improving firm productivity and performance. Since small and medium-sized enterprises face more significant challenges on this score, we also expect that foreign ownership will improve the firm performance of small and medium-sized enterprises relative to large enterprises.

Our data source is the Enterprise Surveys collected by the World Bank across the developed and developing world between 2010 and 2019, which yields a sample of over 80,000 formal enterprises in 144 countries. Regional coverage of the sample is as follows: there are 47 countries in Africa, 32 countries in Asia, 31 countries in Latin America and the Caribbean and 17 countries in Europe. In addition, there are 17 countries classified as transition economies of Eastern Europe and Central Asia (See Table A4 in Appendix). An important limitation of this study is that the surveys only capture formal enterprises in the non-agricultural urban economy. On average, over 600 firms per country are surveyed, albeit with significant variation, with only 65 firms surveyed in Papua New Guinea at a minimum and 9,281 firms surveyed in India at a maximum. Table 1 below presents the descriptive statistics pertaining to the main variables used in the estimation.

In our sample, around 3.1 per cent of firms report that over 50 per cent of their shares are held by foreigners. Firms in Africa lead the way with 6.5 per cent of firms reporting foreign ownership followed by Latin America and the Caribbean at 4.2 per cent. In Asia and the Pacific region and among transition economies, around 2 per cent of firms are foreign owned while in Europe about 1.5 per cent of firms are owned by foreigners. Lowering the threshold to 10 per cent to capture foreign participation, there is a slight increase in the share of firms with foreign participation.

The regional pattern remains the same with 11 per cent of firms in Africa having foreign participation. Two-thirds of our sample are small-sized enterprises employing fewer than 20 people, while 6 per cent are large, employing over 100 people. In Africa and Asia and the Pacific some 60 per cent of firms are small while in Latin America and the Caribbean this figure increases to 65 per cent and reaches 70 per cent and 82 per cent in transition economies and Europe, respectively. Firms in our sample are well established with an average 17 years in operation. One-third have a line of credit or a loan from a financial institution. About half of the firms operate

Table 1 Descriptive statistics

| Variable | N | Mean | Min | Max |
|--|--------|--------|------|-----|
| Annual employment growth (%) | 61,528 | 4.358 | -100 | 100 |
| Annual real sales growth (%) | 73,386 | 2.472 | -100 | 100 |
| Annual labour productivity growth (%) | 59,628 | -1.668 | -100 | 100 |
| Foreign owned (>50%) | 79,990 | 0.031 | 0 | 1 |
| Foreign participation (<10%) | 79,958 | 0.045 | 0 | 1 |
| Foreign share (%) | 79,915 | 3.416 | 0 | 100 |
| Small | 81,060 | 0.662 | 0 | 1 |
| Medium | 81,060 | 0.262 | 0 | 1 |
| Large | 81,060 | 0.076 | 0 | 1 |
| Manufacturing | 80,879 | 0.381 | 0 | 1 |
| Construction | 80,879 | 0.101 | 0 | 1 |
| Wholesale and retail trade | 80,879 | 0.374 | 0 | 1 |
| Hotels and restaurants | 80,879 | 0.060 | 0 | 1 |
| Transport, storage and communication | 80,879 | 0.056 | 0 | 1 |
| Real estate, renting and business activities | 80,879 | 0.000 | 0 | 1 |
| Firm age | 79,593 | 17.3 | 0 | 340 |
| Existing loan | 78,303 | 0.336 | 0 | 1 |
| Exporter | 79,496 | 0.010 | 0 | 1 |
| Having a website | 85,625 | 0.539 | 0 | 1 |
| Africa | 81,060 | 0.255 | 0 | 1 |
| Asia and the Pacific | 81,060 | 0.275 | 0 | 1 |
| Europe (developed) | 81,060 | 0.104 | 0 | 1 |
| Latin America and the Caribbean | 81,060 | 0.204 | 0 | 1 |
| Transition economies | 81,060 | 0.164 | 0 | 1 |

Source: Enterprise Surveys. Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank

Note: Sampling weights are used to account for stratified random sampling methodology.

in the services sector, particularly in wholesale and retail trade. About 10 per cent of firms are categorized as exporters, while more than half use information and telecommunication technologies.

4. Empirical results

4.1 Main findings

Table 2 below presents the global regression results from estimating equation (1) for three performance indicators with a baseline regression with only key variables of interest followed by a second regression that includes a variety of control variables. Before interpreting the results, it should be noted that, given the configuration of variables and their interactions, the coefficient on foreign ownership variable captures firm performance among foreign-owned small firms relative to domestically-owned small firms. Medium and large capture the performance of medium-sized and large domestic firms relative to small domestic firms. Interaction variables capture the differential impact of foreign ownership for medium and large firms. However, calculating the relative performance of foreign medium firms relative to benchmark category (domestic small) requires the sum of the coefficients associated with foreign, medium and the relevant interaction term. The sample applies to foreign large firms.

The first two columns in Table 2 focus on real annual average sales growth. Although the results in both specifications, with and without controls, indicate some positive association between foreign ownership and firm performance, the association cannot be statistically verified and is can vary substantially by context, in particular by different firm types. Older firms report lower sales growth at a decreasing pace while firms that communicate with their clients over their websites show some evidence of positive sales growth. Interestingly, having a loan or exporting is not significantly associated with sales growth even though the association is positive, as expected.

In the next two columns, we focus on annual employment growth and find that foreign-owned small firms are not significantly different from domestic small firms in terms of annual employment growth. Domestic medium-sized and large firms, however, respectively grew approximately 1.5 and 1.4 percentage points faster than domestic small-size firms. There is no other statistically significant differential in employment growth. Older firms experienced faster employment growth than younger firms, but at a varied pace, as this growth tapers off when they get older still. Having a loan is positively associated with annual employment growth whereby firms with credit grew on average 0.7 percentage points faster than firms without credit.

Our third performance indicator is annual labour productivity growth between the last fiscal period and three fiscal years before, where labour productivity is sales divided by the number of full-time employees. Consistent with the first four columns, we observe that although there is some positive association between foreign ownership and labor productivity growth, the difference is limited to foreign small and medium firms and is not at a statistically verifiable level across the board. There is also some evidence for growth differentials in labour productivity between domestic medium-sized and domestic small firms. Notably, we lose the maximum number of observations in the last two columns where almost one-third of the sample has missing data.

Table 2 Foreign ownership and firm size on performance

| | Sales growth | | Employment growth | | Productivity growth | |
|---------------------|-------------------|----------------------|--------------------|----------------------|----------------------|----------------------|
| Foreign (>50%) | 1.543 (1.729) | 1.110 (1.770) | 0.299 (1.271) | -0.051 (1.280) | 0.645 (2.283) | 0.371 (2.369) |
| Medium | -0.648 (1.139) | -0.651 (1.290) | 1.182** (0.563) | 1.465** (0.623) | -2.132*** (0.563) | -2.215*** (0.744) |
| Large | 0.357 (0.594) | 0.679 (0.610) | 0.830 (0.549) | 1.442** (0.666) | -0.825 (0.716) | -0.926 (0.769) |
| Foreign x medium | 0.246 (3.435) | -0.025 (3.370) | -1.856 (1.565) | -1.929 (1.923) | 2.374 (4.027) | 2.554 (4.336) |
| Foreign x large | -1.890 (1.820) | -2.731 (1.778) | -1.090 (2.555) | -1.299 (2.655) | -0.332 (2.893) | -0.986 (3.143) |
| Age | | -0.212*** (0.046) | | -0.234*** (0.039) | | -0.004 (0.048) |
| Age-squared | | 0.001*** (0.000) | | 0.002*** (0.000) | | 0.000 (0.000) |
| Exporter | | 0.195 (0.730) | | -0.276 (0.402) | | 0.223 (0.563) |
| Line of credit | | 0.084 (0.662) | | 0.734** (0.300) | | -0.765 (0.874) |
| Website | | 1.061* (0.567) | | 0.042 (0.474) | | 1.090 (0.754) |
| Observations | 60,940 | 58,824 | 72,550 | 69,023 | 59,146 | 57,252 |
| R-squared | 0.066 | 0.071 | 0.054 | 0.068 | 0.057 | 0.056 |

Source: Enterprise Surveys. Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank

Note: Industry and country dummies included. Standard errors clustered at country level. *** p<0.01, ** p<0.05, * p<0.1

We complement these global results with regional level regressions, paying specific attention to developing regions¹. In Africa, we find that large domestic firms record significantly faster employment growth than domestic SMEs. We also observe that domestic small-sized enterprises exhibit faster annual employment growth relative to foreign small-sized enterprises. The regional findings echo global results for domestic firms, with medium-sized and large firms recording faster employment growth than small firms. We find no evidence of a differential in labour productivity between foreign and domestic firms. In Asia, we find significantly slower growth in annual employment by foreign medium-sized and large firms. There is some evidence for slower productivity growth among domestic medium-sized firms relative to domestic small firms. In Latin America and the Caribbean, we find foreign small firms surpassing domestic small firms in sales growth. Notably, we find differentials among foreign firms with small firms outperforming large foreign firms in sales growth. In annual employment growth, only significant differentials are found among domestic firms similar to the global results. In labour productivity, again domestic medium-sized and large firms underperform relative to domestic small firms. Among transition economies in Eastern Europe and Central Asia, we find similar results in employment growth but also observe some evidence of domestic small-sized firms outperforming small foreign firms, as well as domestic medium-sized and large firms in labour productivity growth.

Table 3 reports the main results from the second measure of foreign direct investment where firms with foreign participation in their shares above 10 percent are under investigation. On all three performance indicators, the differentials are quantitatively and qualitatively very similar to Table 2. Notably, we observe a significant positive differential in labour productivity growth between domestic small and medium-sized enterprises.

Focusing on developing regions, we find strong evidence for larger differentials in employment growth among domestic medium-sized and large firms in Africa relative to domestic small-sized firms. In Asia, we find that small-sized firms with foreign participation exhibit lower sales growth while medium-sized firms with foreign participation experience higher sales growth. However, small-sized firms with foreign participation recorded larger growth in annual employment than domestic small-sized firms. Among domestic firms, only large firms outperform small firms in annual employment growth while among firms with foreign participation, small-sized firms outperform medium-sized and large firms. Consistent with these results, we observe that labour productivity growth is slower among small-sized firms with foreign participation but higher among medium-sized firms with foreign

¹ Our global sample includes a few developed economies in Europe where we do not find any significant differentials.

Table 3 Foreign participation, firm size and performance

| | Sales growth | | Employment growth | | Productivity growth | |
|---------------------|-------------------|----------------------|-------------------|----------------------|----------------------|----------------------|
| Foreign (>10%) | 0.067 (1.143) | -0.219 (1.253) | 1.134 (1.021) | 0.946 (1.035) | -1.627 (1.808) | -1.779 (1.943) |
| Medium | -0.902 (1.184) | -0.898 (1.324) | 1.129* (0.573) | 1.443** (0.620) | -2.321*** (0.564) | -2.448*** (0.763) |
| Large | 0.261 (0.521) | 0.579 (0.578) | 0.888 (0.556) | 1.511** (0.676) | -1.004 (0.710) | -1.095 (0.777) |
| Foreign x medium | 4.725 (2.949) | 4.779 (2.977) | -0.734 (0.988) | -1.383 (1.464) | 5.692* (3.227) | 6.728* (4.021) |
| Foreign x large | 0.247 (1.904) | -0.079 (1.489) | -1.911 (1.839) | -2.080 (1.971) | 2.834 (2.414) | 2.346 (2.522) |
| Age | | -0.211*** (0.046) | | -0.233*** (0.039) | | -0.004 (0.049) |
| Age-squared | | 0.001*** (0.000) | | 0.002*** (0.000) | | 0.000 (0.000) |
| Exporter | | 0.056 (0.713) | | -0.352 (0.385) | | 0.177 (0.560) |
| Line of credit | | 0.093 (0.649) | | 0.750** (0.298) | | -0.771 (0.857) |
| Website | | 1.062* (0.570) | | 0.032 (0.477) | | 1.105 (0.758) |
| Observations | 60,932 | 58,819 | 72,519 | 68,998 | 59,139 | 57,247 |
| R-squared | 0.066 | 0.071 | 0.054 | 0.068 | 0.058 | 0.057 |

Source: Enterprise Surveys. Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank

Note: Industry and country dummies included. Standard errors clustered at country level. *** p<0.01, ** p<0.05, * p<0.1

participation. In Latin America and the Caribbean, there is some evidence of relatively higher sales growth among small-sized firms with foreign participation relative to domestic small-sized firms. Large firms with foreign participation underperform relative to domestic small-sized firms. Among domestic firms, medium-sized and large firms grow faster in annual employment but slower in labour productivity relative to small-sized firms. Among transition economies, a notable result is that large firms with foreign participation exhibit strong growth performance in annual employment growth.

Finally, Table 4 below reports our main results from the last proxy of foreign direct investment in firm performance by firm size. As noted earlier, the percentage of firm shares owned by foreign firms enter in continuous form along with the number of full-time employees. To capture non-linearities, both variables enter in quadratic form along with an interaction variable in linear form. We find that as the shares owned by foreigners increase, there is a positive impact on all three indicators of performance including sales, employment and labor productivity growth. For every 1 per cent increase in foreign shares, we find a 0.13 percentage point increase in sales growth and 0.9 percentage point increase in employment growth. In other words, switching from no FDI to minimum FDI could boost sales and employment growth by around 1 percentage points. Given the average annual real sales and employment growth in our sample at below 5 per cent, the results hint at a substantial increase in firm performance when there is foreign participation. The negative coefficient on the quadratic form indicate growth at a slower rate by shares. Similarly, there is a positive correlation between increasing foreign share and labour productivity growth, although the magnitude is lower than the other two variables. Interestingly, firm size has no significant association with any of the performance indicators along with the interaction term. We interpret this finding as potentially positive for SMEs if they can attract FDI.

Our regional analysis finds that foreign shares are positively and significantly associated with sales growth in Africa, sales and employment growth in Latin America and the Caribbean, and employment growth among transition economies. We often observe that the quadratic form of foreign shares has a negative sign hinting at a slowdown after a certain share is reached. Firm size on the other hand is positively associated with sales and employment growth in Africa and among transition economies. In Latin America, as firm size increases so does employment growth but labour productivity falls. The interaction terms between size and foreign shares is insignificant across all regions and performance indicators.

The results presented thus far indicate that although in general there is a positive association between FDI and firm performance, the magnitude of the correlation varies significantly across regions and firm types. However, the positive results are more evident across the board when looking at increasing shares of foreign ownership and how they impact firm performance.

Table 4 Foreign shares and firm performance by size

| | Sales growth | | Employment growth | | Productivity growth | |
|-------------------------|---------------------|----------------------|---------------------|----------------------|---------------------|-------------------|
| | | | | | | |
| Foreign share (%) | 0.141** (0.057) | 0.133** (0.056) | 0.118** (0.050) | 0.090*** (0.029) | 0.027 (0.045) | 0.062 (0.041) |
| Firm size | -0.000 (0.001) | 0.000 (0.001) | 0.001 (0.002) | 0.002 (0.002) | -0.002 (0.002) | -0.002 (0.002) |
| Foreign x size | -0.000** (0.000) | -0.000 (0.000) | -0.000** (0.000) | -0.000** (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| (Foreign share)-squared | -0.001** (0.001) | -0.001** (0.001) | -0.001** (0.001) | -0.001*** (0.000) | -0.000 (0.001) | -0.001 (0.000) |
| Size-squared | 0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| Firm age | | -0.214*** (0.047) | | -0.229*** (0.040) | | -0.011 (0.048) |
| Firm-age-squared | | 0.002*** (0.000) | | 0.001*** (0.000) | | 0.000 (0.000) |
| Exported | | 0.034 (0.720) | | -0.215 (0.405) | | -0.001 (0.565) |
| Credit | | 0.013 (0.613) | | 0.864*** (0.271) | | -0.972 (0.805) |
| Website | | 1.008* (0.524) | | 0.186 (0.418) | | 0.845 (0.689) |
| Observations | 60,739 | 58,686 | 72,486 | 68,993 | 59,112 | 57,247 |
| R-squared | 0.066 | 0.071 | 0.053 | 0.067 | 0.056 | 0.055 |

Source: Enterprise Surveys. Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank

Note: Industry and country dummies included. Standard errors clustered at country level. *** p<0.01, ** p<0.05, * p<0.1

4.2 Alternative specifications and robustness checks

We subject our main results to several robustness checks with alternative samples and specifications. In the next four sub-sections we report the main highlights.

4.2.1 Restricting the sample by firm size

Across many developing countries, SMEs are defined partly by the number of their employees which is expected to be under 250. When we restrict our sample to fewer than 250 employees, we maintain about 90% of the firms in the sample. Our main findings are robust to this sample restriction, both quantitatively and

qualitatively. In the specification with foreign ownership, domestic medium-sized and large firms still grow faster than small domestic firms, while they record slower labour productivity growth. Foreign participation plays a crucial role for labour productivity growth for medium-sized enterprises which experience much faster growth in productivity compared to small firms. Foreign shares are again positively and significantly associated with sales and employment growth, albeit at a larger quantity in the former, reaching 0.16 percentage points for a 1 per cent increase in foreign shares. We also find that in this restricted sample annual labour productivity growth is accelerated by 0.10 percentage points following an increase in foreign shares by 1 per cent (See Table A1 in the Appendix). While firm size is positively associated with annual employment growth, for labour productivity growth it is negative. There is again no evidence of a significant differential impact of foreign share by different firm sizes.

4.2.2 Re-defining the size dummies

Next, we re-define size dummies leveraging the continuous measure of firm size and add micro-enterprises in our equation. When we focus on foreign ownership, we find significant results on all types of firms. Specifically, foreign-owned micro-sized firms grew employment by 22 percentage points less than domestic microenterprises, while domestic small, medium and large enterprises grew employment by respectively 5.2, 6.5 and 6.5 percentage points faster than domestic microenterprises (See Table A2 in Appendix). While we observe significant productivity differentials – up to 14 percentage points – among domestic firms in favour of domestic micro firms up to 14 percentage points, there is no evidence of any productivity differentials among foreign-owned firms. This is an interesting result that could be related to foreign ownership levelling the productivity differentials across differently sized firms. We find no significant deviations from this picture when we employ the foreign participation proxy.

In our regional estimates, we find that in Africa foreign-owned micro firms exhibited substantially faster annual real sales growth and labour productivity growth than their domestic equivalents – by up to 40 percentage points. As firm size increases, labour productivity growth decreases for both domestic and foreign firms. In Asia, foreign small-sized firms grew faster than foreign micro enterprises. In terms of labour productivity, foreign microenterprises grew 2.7 percentage points faster than domestic micro firms. Among domestic firms, labour productivity growth increases by size while the opposite holds among foreign-owned firms. In Latin America, domestic SMEs and large enterprises are growing employment faster than domestic microenterprises. Foreign microenterprises grew 12 percentage points faster than domestic micro firms. Among transition economies, foreign microenterprises are the worst performers, both in relation to larger foreign firms and all domestic firms.

4.2.3 Widening the sample with multiple years from countries with available data

Between 2010 and 2019, Enterprise Surveys were collected multiple times in several countries. By including those additional years in our sample, we bring an additional 30,000 firms to our sample. Our global estimates remain robust regardless of the sample expansion. In employment growth, domestic medium-sized and large firms grew about 1.7 and 1.9 percentage points faster, respectively, than domestic small-sized firms. In terms of productivity growth, we see that domestic medium-sized firms grew 2.2 percentage points slower than domestic small firms (See Table A3 in Appendix). In Africa and among transition economies, we observe that foreign-owned small-sized firms grew 3.7 and 8.7 percentage points slower, respectively, than domestic small-sized firms in sales growth. In Asia and Latin America and the Caribbean, however, foreign-owned small firms grew 4.2 and 7.6 percentage points faster, respectively, than domestic small-sized firms. We find similar results for global estimates in employment and productivity growth with significant differentials in the same direction among domestic firms.

Re-estimating the equation in this new sample with foreign participation does not qualitatively change our results at the global level although some differences show up at regional level. In foreign shares, we again find a positive association – by similar margins – between the extent of foreign participation and sales and employment growth. In employment growth, the positive impact of foreign participation decreases as the firm size increases. These findings are largely replicated across regions.

Table 5 Summary of results

| | | Performance indicators | | |
|------------------------------|-------------|--|--|--|
| Type | Size | Annual employment growth | Annual real sales growth | Annual labour productivity growth |
| Foreign ownership | Micro | Negative globally, especially in AP and among TEs | Positive, only in Africa | Positive in Africa, AP and in LAC |
| | Small | Negative, only in Africa | Positive, only in LAC | Negative, only among transition economies |
| | Medium | Negative, only in Asia | Negative, only in LAC | No significant difference |
| | Large | Negative, only in Asia | No significant difference | No significant difference |
| Foreign participation | Micro | Negative globally, especially among TE | Positive, only in Africa | Positive, only in Africa |
| | Small | Negative (weakly) in Africa but positive (weakly) in AP | Positive in LAC | Negative in AP |
| | Medium | Negative in AP | Positive in AP | Positive globally, especially in AP |
| | Large | Negative in AP | Negative in LAC | Positive in AP |
| Foreign share | All | <i>Positive:</i> 1 per cent increase in foreign ownership accelerates employment growth by 0.9 percentage points | <i>Positive:</i> 1 per cent increase in foreign ownership accelerates sales growth by 0.13 percentage points | <i>Positive:</i> 1 per cent increase in foreign ownership accelerates labour productivity growth by 0.06 percentage points compared to the sample mean of -1.6 per cent annual change. |

Source: The authors

Note: The benchmark category is small domestic firms, except in the case of micro firms where the benchmark category is domestic micro firms. LAC refers to Latin America and the Caribbean. AP refers to Asia and the Pacific. TE refers to transition economies in Europe and Central Asia. Regional estimates are available upon request.

4.2.4 Propensity score matching with firms with fewer than 250 employees

Following Caliendo and Kopeinig (2008), we employ a different econometric specification to improve the identification of the relationship between foreign direct investment and firm performance. With an identification strategy of selection on observables, propensity score matching offers an opportunity to compare firms that are similar across several observable characteristics and estimate the average treatment effect on the treated, where treated refers to foreign-owned firms or firms with foreign participation of at least 10 per cent. We impose common support and employ three alternative matching algorithms including nearest neighbour, fifth neighbour and radius matching.

We find qualitatively and quantitatively similar results across different matching algorithms. First, we find no evidence of statistically significant differentials in annual real sales growth. Second, and consistent with our earlier results, we find that foreign firms experience slower growth in employment than domestic firms. There is an important distinction here between foreign ownership and foreign participation. While the employment growth differential is greater than 1 percentage point when foreign-owned firms (3.9 per cent) are compared to similarly sized domestic firms (5.1 per cent), the magnitude of the differential is reduced by half if we compare firms with foreign participation of at least 10 per cent (4.3 per cent) and domestic firms (4.9 per cent). Finally, we find some weak evidence for labour productivity differentials between foreign and domestic firms in favour of the former group. While both types of firms experience negative annual labour productivity growth, the figure for foreign firms is more tempered. Interestingly, the differential in negative productivity growth is twofold when foreign-owned firms (-1.45 per cent) are compared with domestic firms (-2.9 per cent) and reaches threefold when firms with at least 10 per cent foreign participation (-0.6 per cent) are compared with domestic firms (-1.8 per cent).

5. Conclusion and policy implications

In the last three decades, FDI flows have grown at a rate significantly higher than both global trade and GDP and have become one of the pivotal economic forces in developed and developing countries alike. Not only have FDI flows been instrumental for the transformation of international production but they have also made a central contribution to domestic production and consumption, especially in developing countries. However, FDI inflows do not necessarily translate into positive performance dividends compared to other modes of international production, including arms' length trade and non-equity modes. It is thus crucial for firms as well as policymakers in developing countries to be cognizant of how FDI affects firm performance and how the performance impact depends on firm characteristics, such as size. Although

the findings cannot be generalized, and there caveats as with any empirical study, there are some useful policy recommendations based on the results. For example, policymakers could tailor investment policies to specific firm's characteristics, while at the same time be cognizant of the specific dynamics – national or regional – that affect the interplay between FDI and firm performance. This research also identified future research areas that can advance insight into the effects of FDI and firm performance, including the specific channels through which the former affects the latter. These include, for example, analysing data on the performance of the same firms before and after receiving FDI as well as the specific considerations guiding the investment decisions of MNEs. Further research will delve into these critical areas with a specific focus on developing deeper and more targeted investment policy recommendations on innovation, market access and financial constraints. This is particularly relevant in the COVID-19 environment. While FDI is expected to decline sharply in the face of the pandemic, post-crisis recovery will largely dependent on foreign investment driving both international production and domestic economic activities.

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Appendix

Table A1. Alternative specification – firms with <250 employees (SMEs)

| | Sales growth | Employment growth | Labour productivity growth |
|-------------------------|----------------------|----------------------|----------------------------|
| Foreign share (%) | 0.159*** (0.057) | 0.085** (0.033) | 0.094** (0.041) |
| Firm size | -0.034 (0.029) | 0.064*** (0.020) | -0.094*** (0.014) |
| Foreign x size | -0.000 (0.000) | -0.000 (0.000) | -0.000 (0.000) |
| (Foreign share)-squared | -0.002*** (0.001) | -0.001*** (0.000) | -0.001* (0.000) |
| Size-squared | 0.000 (0.000) | -0.000*** (0.000) | 0.000*** (0.000) |
| Observations | 53,750 | 63,749 | 52,760 |
| R-squared | 0.073 | 0.069 | 0.059 |

Source: Enterprise Surveys. Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank

Note: Industry and country dummies included. Standard errors clustered at country level. *** p<0.01, ** p<0.05, * p<0.1

Table A2. Alternative specification – redefining size dummies

| | Sales growth | Employment growth | Productivity growth |
|---------------------|---------------------|----------------------|-----------------------|
| Foreign (>50%) | 9.038 (20.271) | -21.645** (8.826) | 18.173 (16.404) |
| Small | -6.716 (5.977) | 5.243*** (1.752) | -12.186*** (4.363) |
| Medium | -7.368 (5.638) | 6.538*** (2.095) | -14.228*** (4.040) |
| Large | -6.003 (5.743) | 6.543*** (2.259) | -12.958*** (3.959) |
| Foreign x Small | 20.895** (9.150) | -8.151 (20.986) | -18.324 (16.790) |
| Foreign x Medium | 18.354** (8.961) | -7.874 (20.361) | -15.248 (16.611) |
| Foreign x Large | 19.090** (9.189) | -10.626 (20.479) | -18.810 (16.589) |
| Observations | 72,550 | 58,691 | 57,252 |
| R-squared | 0.059 | 0.073 | 0.063 |

Source: Enterprise Surveys. Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank

Note: Industry and country dummies included. Standard errors clustered at country level. *** p<0.01, ** p<0.05, * p<0.1

Table A3. Alternative specification – widening the sample size

| | Sales growth | Employment growth | Labour productivity growth |
|---------------------|-------------------|---------------------|----------------------------|
| Foreign (>50%) | 1.188 (1.582) | 0.348 (1.049) | 0.238 (1.965) |
| Medium | -0.428 (1.163) | 1.733*** (0.620) | -2.229*** (0.653) |
| Large | 0.887 (0.581) | 1.848*** (0.703) | -1.212 (0.737) |
| Foreign x Medium | -0.419 (3.048) | -2.229 (1.599) | 2.290 (3.703) |
| Foreign x Large | 2.065 (4.416) | -2.101 (1.852) | 4.401 (4.276) |
| Observations | 77,178 | 94,103 | 75,040 |
| R-squared | 0.073 | 0.064 | 0.057 |

Source: Enterprise Surveys. Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank

Note: Industry and country dummies included. Standard errors clustered at country level. *** p<0.01, ** p<0.05, * p<0.1

Table A4. List of economies

| Africa | Asia and the Pacific | Latin America and the Caribbean | Europe | Transition economies |
|----------------------------|----------------------|---------------------------------|----------------|------------------------|
| Angola | Afghanistan | Antigua and Barbuda | Bulgaria | Albania |
| Benin | Bangladesh | Argentina | Croatia | Armenia |
| Botswana | Bhutan | Bahamas | Cyprus | Azerbaijan |
| Burkina Faso | Cambodia | Barbados | Czech Republic | Belarus |
| Burundi | China | Belize | Estonia | Bosnia and Herzegovina |
| Cameroon | Fiji | Bolivia | Greece | Georgia |
| Cape Verde | India | Brazil | Hungary | Kazakhstan |
| Central African Republic | Indonesia | Chile | Italy | Kyrgyz Republic |
| Chad | Iraq | Colombia | Latvia | Moldova |
| Congo, Republic | Israel | Costa Rica | Lithuania | Montenegro |
| Cote d'Ivoire | Jordan | Dominica | Malta | North Macedonia |
| Congo, Democratic Republic | Lao, PDR | Dominican Republic | Poland | Russia |
| Djibouti | Lebanon | Ecuador | Portugal | Serbia |
| Egypt | Malaysia | El Salvador | Romania | Tajikistan |

Table A4. List of economies (Concluded)

| Africa | Asia and the Pacific | Latin America and the Caribbean | Europe | Transition economies |
|-----------------------|-----------------------------|--|-----------------|-----------------------------|
| Eritrea | Micronesia | Grenada | Slovak Republic | Ukraine |
| Eswatini | Mongolia | Guatemala | Slovenia | Uzbekistan |
| Ethiopia | Myanmar | Guyana | Sweden | |
| Gabon | Nepal | Honduras | | |
| The Gambia | Pakistan | Jamaica | | |
| Ghana | Papua New Guinea | Mexico | | |
| Guinea | Philippines | Nicaragua | | |
| Guinea-Bissau | Samoa | Panama | | |
| Kenya | Solomon Islands | Paraguay | | |
| Lesotho | Sri Lanka | Peru | | |
| Liberia | Thailand | St. Kitts and Nevis | | |
| Madagascar | Timor-Leste | St. Vincent and the Grenadines | | |
| Malawi | Tonga | Suriname | | |
| Mali | Turkey | Trinidad and Tobago | | |
| Mauritania | Vanuatu | Uruguay | | |
| Mauritius | Vietnam | Venezuela | | |
| Morocco | West Bank and Gaza | | | |
| Mozambique | Yemen | | | |
| Namibia | | | | |
| Niger | | | | |
| Nigeria | | | | |
| Rwanda | | | | |
| Senegal | | | | |
| Sierra Leone | | | | |
| South Africa | | | | |
| South Sudan | | | | |
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