**ORIGINAL ARTICLE**

The World Economy WILEY

# Undercurrents in the world economy: Evolving global investment flows in the South

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**Abstract**

Foreign direct investment (FDI) to the global South has increased, but very little research has gone into analysing the diverse FDI flows between unequally related groups of countries. This paper contributes by investigating (a) the distribution of global FDI into and between semi-peripheral and peripheral countries in the global South (2006–2014), and (b) the country location factors of FDI in these two regions. We introduce a distinction between multinational enterprises from emerging (EMNE) and from peripheral countries (PMNE) and show evidence of their different investment behaviour. Our results uniquely demonstrate intra-regional investment differences, the increasing sophistication of peripheries as hosts and sources of FDI (developmental undercurrents) and a rich set of location factors explaining FDI into these regions. We also show that EMNEs invest in semi-peripheral countries so as to benefit from their emerging capacity to innovate.

**KEYWORDS**
development, FDI, global South, location factors, periphery, semi-periphery

# 1 | INTRODUCTION

The continual expansion of global investments causes greater economic interdependence among a broader range of countries. However, this interdependence does not preclude the persistence of imbalances in growth and development. Over a decade ago, while the core of the global economy experienced an economic crisis, many countries in the global South showed an unprecedented socio-economic development (Dargin, 2013; Gray & Gills, 2018). This paper explores the 'rise of the South' (UNDP, 2013) by investigating recent trends in the growth of foreign direct investments (FDI) and factors explaining these flows to different types of countries in the South (UNCTAD, 2006, 2014, 2015; UN-Habitat, 2018).

Studies exploring the global investment network show that the 'East-West triad' – North America, Europe and Asia-Pacific – persistently dominates, while investments to the rest of the world are limited (OECD, 2016; UN-Habitat & IHS-Erasmus University Rotterdam, 2018; Wall & van der Knaap, 2011; Wall & Stavropoulos, 2016). However, the 'rest of the world' is increasingly investigated by addressing the rising role of emerging economies, China and India, in particular (e.g. Haakonsson et al., 2012; Jadhav, 2012; Soumaré et al., 2016; Varma et al., 2015). Only a few studies investigate why FDI is directed to or sourced from other parts of the South (e.g. Asiedu & Lien, 2011; Cleeve et al., 2015). There is limited and fragmented knowledge about the evolving geography of FDI into and within different parts of the South, and its motivations.

Furthermore, previous studies have shown that MNEs seek the competitive advantages that different countries offer according to their levels of economic development (e.g. Blonigen, 2005; Ramírez-Alesón & Fleta-Asín, 2016), and their power positions in the global economy (Chase-Dunn & Lawrence, 2010; Dezzani, 2001; Dezzani & Johansen, 2012; Van Hamme & Pion, 2012; Van Hamme & Grasland, 2011). Still, most studies on FDI in the global South do not consider asymmetries between countries in the South as *origins* and *destinations* of FDI.

To contribute to the limited literature on FDI in the global South, we seek answers to two research questions. RQ1: *What is the distribution of global FDI (2006–2014) into and between semi-peripheral and peripheral countries of the global South?* RQ2: *Which location factors explain the flows of FDI to these types of countries?* Answering these allows us to unravel trends and explanatory factors of investments by MNEs from *advanced* countries (AMNEs), and from *emerging* (or, semi-peripheral) and *peripheral* Southern countries (EMNEs, and what we term PMNEs) and targeting different parts of the South.

The remainder of this paper is organised as follows. Section 2 reviews the literature on FDI targeting the global South by MNEs from North and South. Section 3 describes the data and methods used. Section 4 presents the geographic distribution and growth trends of FDI targeting the two groups of countries in the South. Section 5 identifies the location factors for FDI into those groups. Section 6 discusses the results of our analyses. Section 7 outlines the implications of our analyses and makes recommendations for further research.

# 2 | The South in the interdependent world economy

## 2.1 | Shifting global interdependencies

Countries' technological advancement has been taken to determine their role in the international division of labour (Hymer, 1972; Wallerstein, 1979). The top-down aspect of this world-system hierarchy means, at the extremes of the spectrum, economic integration always benefits the core

at the expense of the peripheries. This classic view has, however, been challenged since the 1990s (Sanderson, 2005; Schwartzman, 2006) with the rise of emerging and developing economies (Meyer & Thaijongrak, 2013; UNCTAD, 2015).

Despite growth and development taking place in less advanced economies, the uneven structure of the global economy has not profoundly changed (e.g. Chase-Dunn & Lawrence, 2010, p. 474; Dezzani & Johansen, 2012, p. 580). Moreover, uneven development also extends to the South, through increasing South-South economic relations (Schwartzman, 2006; Smith, 2017). Therefore, an analysis of the roles of different types of countries in the evolving international division of labour remains critical (cf. McElroy, 2018, p. 717).

We review what has been exposed about investments by AMNEs, EMNEs and PMNEs in the South. The studies on FDI often make use of Dunning's (1998) distinction between resource-seeking, market-seeking, efficiency-seeking and strategic asset-seeking motivations. These motivations correspond to different levels of advancement of sought after location factors as indicated in the following review (cf. Dunning & Narula, 1996).

## 2.2 | AMNE investments: Emerging productive interdependence

Reviewing existing studies on FDI in the South is tricky because they lack comparability[1] and partly report inconclusive results on location factors. Studying FDI from advanced (OECD) countries targeting developing countries, Antonakakis and Tondl (2015, p. 23) find a fair share to be continually *resource-seeking*. While they do not find institutional factors to be robust determinants for all FDI in developing countries, others (e.g. Asiedu & Lien, 2011) do find resource-seeking FDI to be sensitive to institutional factors.

*Market-seeking* motivation, according to Antonakakis and Tondl (2015, p. 21), makes AMNEs favour large Southern countries with advanced markets, qualified labour, high wages and high productivity (also see Buckley & Hashai, 2014) but, as Cuervo-Cazurra and Genc (2008, p. 976) show, also least developed countries are valuable markets for AMNEs. Further, Antonakakis and Tondl (2015, p. 21) find that a bulk of AMNE investment to the South is *efficiency-seeking* and favours destinations with low labour costs and tax rates. Ramírez-Alesón and Fleta-Asín (2016), however, remind that factor price advantages diminish as countries develop and are able to offer other advantages. Also, efficiency-seeking motivations are related to complex knowledge-intensive production processes requiring highly qualified labour and developed financial markets.

Motivations behind FDI by AMNEs differ across regions, although evidence is scattered and mostly concerns investments targeting Asia, Africa or individual BRIC countries. Market and efficiency-seeking motivations drive AMNEs to invest in Asia and the BRIC countries (Jadhav, 2012; Vogiatzoglou, 2007). Yet, the increasing search for knowledge and skills is captured by the influence of location factors like education and intellectual property rights protection which have been found essential for FDI attraction into China and India (Belkhodja et al., 2017; Haakonsson et al., 2012). Resource and market-seeking motivations drive MNEs generally to invest in African countries, but also there changing location determinants (higher skill levels) have attracted higher value-added efficiency-seeking FDI (Cleeve et al., 2015). However, a more systematic and comprehensive study of AMNEs' investments in different types of countries of the global South is still needed.

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[1]Existing studies stem from divergent theoretical approaches (e.g. Assunção et al., 2013), analyse varying types of countries, have different data sources (e.g. Blonigen, 2005), or test new datasets using determinants derived from earlier literature (e.g. Jadhav, 2012).

## 2.3 | EMNE and PMNE investments: The challenge from the South

Until the 1980s, the South was primarily a recipient of investments. Today, it is impossible to ignore MNEs from developing countries, especially when they have intensified competition at the global scale and are increasingly challenging AMNEs by moving from low cost production activities to innovation (e.g. Aharoni, 2015, p. 26; Buckley & Hashai, 2014, p. 424). Since 2003, South-South FDI have been growing faster than North-South (UNCTAD, 2005) and accounts for more than half of total FDI in some of the poorest countries (UNCTAD, 2006). South-South FDI has been found to be driven by similar factors as North-South FDI (Aykut & Goldstein, 2006), however, the literature on South-South FDI lacks specificity on how different types of countries in the South feature as a source or destination of investment flows.

Research on FDI originating in the South focuses predominantly on EMNE investments, and often compares them with those of AMNEs. We find fragmented evidence of location factors associated with EMNEs' southbound FDI. For instance, Chinese *resource-seeking* FDI is more prone to invest in institutionally weak, oppressive or unstable locations than AMNEs (e.g. Buckley et al., 2007, p. 513; Quer et al., 2012). *Market-seeking* FDI by EMNEs is attracted to markets with a strong export orientation (Rabellotti, 2014, p. 87). Asian *efficiency-seeking* FDI is attracted to other Asian countries offering lower production costs (e.g. Sim & Rajendran Pandian, 2007).

EMNEs' *strategic asset-seeking* FDI, instead, have been predominantly associated with advanced economies where they can access more advanced resources and catch up with AMNEs (e.g. Cuervo-Cazurra et al., 2015; Giuliani et al., 2016). However, strategic asset-seeking FDI by EMNEs also occurs in the South (e.g. Demirbag & Glaister, 2010, p. 1557), especially in countries with growing domestic markets and catching up technologically (Buckley & Hashai, 2014).

Thus, the importance of the South in global FDI flows is rising, even if the South still remains a small player. Development is taking place in many Southern countries which affects the motivations of MNEs to invest in them and changes their role in global FDI flows. There is a gap in the literature, however, regarding MNEs originating in the peripheral countries of the South (*PMNEs)*. We do not have a good grasp on what motivates PMNEs' investments in different parts of the world, and whether they are likely to challenge EMNEs.

This study aims to remedy this situation by studying FDI flows prompting the integration of the South into the world economy. In addition to considering the top-down North-South relations, we observe FDI flows within the South. Analysing different types of FDI flows is crucial because the number and diversity of international relations (similarly as found in earlier analyses of trade relations; cf. Greenaway & Milner, 1990; Havrylyshyn, 1985) are said to enhance the strategic position of countries in the world economy, and reduce exploitative core-periphery relations (Clark, 2010, p. 1145).

## 3 | DATA AND METHODS

### 3.1 | Data

The FDI data is sourced from the fDi Markets database (Financial Times, 2015) and uniquely consists of greenfield cross-border project ventures or expansions of at least 1 million USD. These are investments by MNEs holding high firm profile requirements, which are known to directly facilitate the growth of capital formation, local productivity and employment in foreign markets (Agosin & Machado, 2005), as well as the transfer of core technology and production
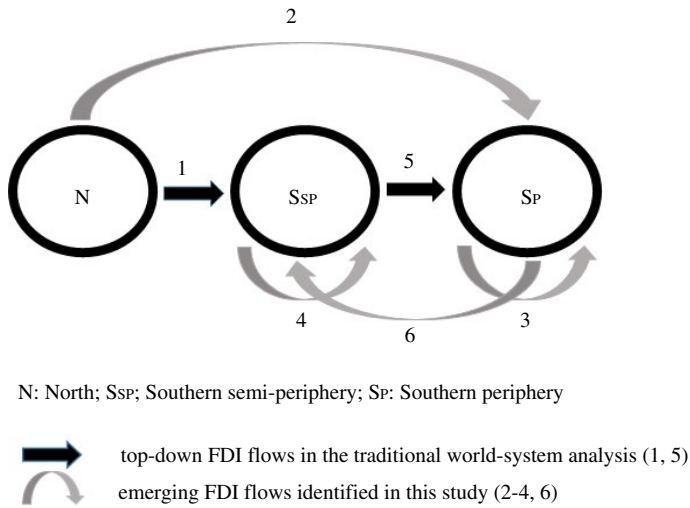
N: North; S$_{SP}$; Southern semi-periphery; S$_P$: Southern periphery

top-down FDI flows in the traditional world-system analysis (1, 5)

emerging FDI flows identified in this study (2-4, 6)

**FIGURE 1**   FDI flows targeting the South

processes to the host country (Nocke & Yeaple, 2007). Because this type of investment has a well-defined tangible impact on regional development, it is often used in studies by international development agencies and academics. Furthermore, the database is based on transactions cross-referenced from different sources and is updated annually to ensure that only completed projects are included.

The data used covers the period 2006–2014, which includes 75,351 FDI ventures worldwide that target the global South. The data was coded into North-South constituents according to the 'Brandt Line' (Brandt, 1980), and countries positions according to the international core-periphery division of labour (Van Hamme & Grasland, 2011, p. 21; Van Hamme & Pion, 2012, p. 78). The countries of the global South are presented in Appendix A (Table A1). In this study, the global South is coded by the southern periphery (S$_P$) and southern semi-periphery (S$_{SP}$). The latter includes Southern 'emerging economies' and the kinds of countries that are varyingly included in projections of potentially emerging economies. The southern core (Sc) only includes two destinations, which limited statistical purposes and was excluded. The global north is coded by (N). Figure 1 identifies the six FDI flows of interest.

The country-level indicators considered as location factors are based on the Global Competitiveness Historical Dataset developed by the World Economic Forum (Porter et al., 2006). As with the FDI data, these indicators cover the period 2006–2014. The dataset is derived from the global South countries' annual Global Competitiveness Index (GCI) which consist of three levels of indicators: the three key indicators, the 12 pillars that define the key indicators and the sub-indicators defining the pillars. The data are based on macroeconomic and microeconomic measures that explain a country's prosperity and effectiveness in utilising available resources (Porter et al., 2006; Sala-i-Martin et al., 2014, p. 9). In Appendix A (Table A2), the indicators used can be seen.

## 3.2 | Methods

Due to the heterogeneity and multicollinearity found in the GCI pillars, these were recalculated using the Pena's Distance (P2 distance) method with sets of underlying indicators (Pérez-Luque et al., 2015). The recalculation was done for *goods market efficiency*, *infrastructure*, *macroeconomic*

*environment, labour market efficiency, technological readiness, market size and health*. The P2 distance index is a synthetic index that combines all indicators into a single representative vector. This allows comparisons between entities (temporal and spatial) and is considered an exhaustive synthetic indicator because it is not based on a reduction of information (Bonet-García et al., 2015). To calculate the P2 distance, we started with a matrix $X$ of order $(m, n)$ in which $m$ is the number of countries and $n$ the number of variables. Each element, $Xri$, is the value of the variable $i$ in country $r$. The $P2$ distance indicator calculates the distance of each country regarding a theoretical country of reference. Initially, a distance matrix $D$ is calculated as:

$$dri = \left| Xri - X^*i \right|$$

where $Xri$ is the $r^{\text{th}}$ element of the reference base vector
$X^*i = (x1, x2, ..., xn)$. For each variable, a reference value must be defined to compare the different countries (Bonet-García et al., 2015).

The calculation of the $P2$ distance follows the formula

$$DP2 = \sum_{i=1}^{n} \left\{ \left( \frac{di}{\sigma i} \right) \left( 1 - R^2_{i,\, i-1, i-2, ..., 1} \right) \right\}.$$

With $R^2_i = 0$; where $di = |X_{ri} - X_{*i}|$ with the reference base $x_* = (x_{*1}, x_{*2} ... x_{*n})$ where:
$n$ = number of variables
$x_{ri}$ = value of variable $i$ in the spatial entity $r$
$\sigma i$ = standard deviation of variable $i$
$R^2_{i,\, i-1, i-2 ..., 1}$ is the coefficient of determination in the regression of $X_i$ over $X_{i-1}$, $X_{i-2}$, ... $X_1$ already included.

To answer RQ1, we carried out trend analysis of the numbers and shares of FDI flows and mapped the data using ArcGIS (ESRI, 2011), both according to the six flow types represented in Figure 1. To answer RQ2, econometric analyses were run on the correlation between location factors (independent variables) and inward FDI (dependent variable). We used a general linear model (GLM) because our dependent variable is a count measure and is longitudinal. The applicable models for count fall under the Poisson family of GLMs, including negative binomial and zero-inflated types (e.g. Agresti, 2015). To avoid the problem of over-dispersion in our data, we used the negative binomial model[2].

In our negative binomial regressions, the link function is logarithmic, and thus, for each separate regression, the formula for the model is

$$\log \left( DV_t \right) = \beta_0 + \beta_1 * IV_{1t} + \beta_2 * IV_{2t} + \cdots + \beta_k * IV_{kt} + u_t,$$

$DV_t$ = dependent variable, FDI counts.
$k$ = number of independent variables.
$IV_{jt} = j^{\text{th}}$ independent variable, location factors, $j = 1 ... k$.

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[2]In ordinary linear regression, the mean of the dependent variable is predicted with a linear combination of predictors. In GLM, the mean of the dependent variable can be a nonlinear function of independent variables. Negative binomial regression assumes the dependent variable, and consequently, the error of the model to have a negative binomial distribution.

**TABLE 1** FDI flows to the South (2006–2014 aggregate)

| | | | FDI DESTINATION | | |
|---|---|---|---|---|---|
| | | | Destination $S_{SP}$ | Destination $S_P$ | Destination S, total |
| **FDI ORIGIN** | Origin North | FDI number | 40477 | 15823 | 56300 |
| | | share of total | 58% | 23% | 81% |
| | | growth | 2% | 6.5% | 3.5% |
| | Origin South | FDI number | 5472 | 7775 | 13247 |
| | | share of total | 8% | 11% | 19% |
| | | growth | 5.5% | 10.5% | 8.5% |
| | Total targeting South | FDI number | 45949 | 23598 | 69547 |
| | | share of total | 66% | 34% | 100% |
| | | growth | 2.5% | 7.5% | 4% |
| | Origin South, disaggregated $S_{SP}$ | FDI number | 3916 | 3256 | 7172 |
| | | share of total | 6% | 5% | 10% |
| | | growth | 3.5% | 8% | 5.5% |
| | $S_P$ | FDI number | 1556 | 4519 | 6075 |
| | | share of total | 2% | 6% | 9% |
| | | growth | 12.5% | 12.5% | 12.5% |

*Note:* Based on fDi Markets data.

The models are estimated with robust standard errors (HAC) using EViews (EViews, 2015). Multicollinearity of the independent variables was checked using VIF tests. The Wald X2, Chi-Squared Test, was used to test the joint significance of independent and dependent coefficients. All our results showed significant Wald X2, which means that there is joint significance and no over-specified variables used. The analyses proceeded stepwise according to the three levels of GCI indicators discussed earlier on. In step A, the models test the three key indicators, that is, *basic requirements*, *efficiency-enhancers* and *innovation-driven*. In step B, the models test at a lower level the 12 pillars of competitiveness, and finally, in step C, the sub-indicators comprising each pillar.

# 4 | RESULTS

## 4.1 | FDI distribution into the global South

The total number of FDI ventures in the South ($S_{SP}$ and $S_P$) for the period 2006–2014 was 69,547 (Table 1). Approximately four-fifths of those investments originated in the North, and the rest originated in the South. This dominance is observed in Figure 2 (maps a and b), which portrays dense flows from the North to $S_{SP}$ and $S_P$. Interestingly, however, South-South flows have had the highest growth rate, at 7%, which is more than double the growth rate of the North-South flows. The higher growth of South-South FDI is largely due to investments [$S_{SP}$-$S_P$], [$S_P$-$S_{SP}$] and [$S_P$-$S_P$]. Investments by PMNEs had the highest growth rate, while those by EMNEs grew more slowly. Likewise, investments to the semi-peripheries, [N-$S_{SP}$] and [$S_{SP}$-$S_{SP}$], revealed the lowest growth rates. Hence, FDI from and to Southern peripheries is growing fastest.
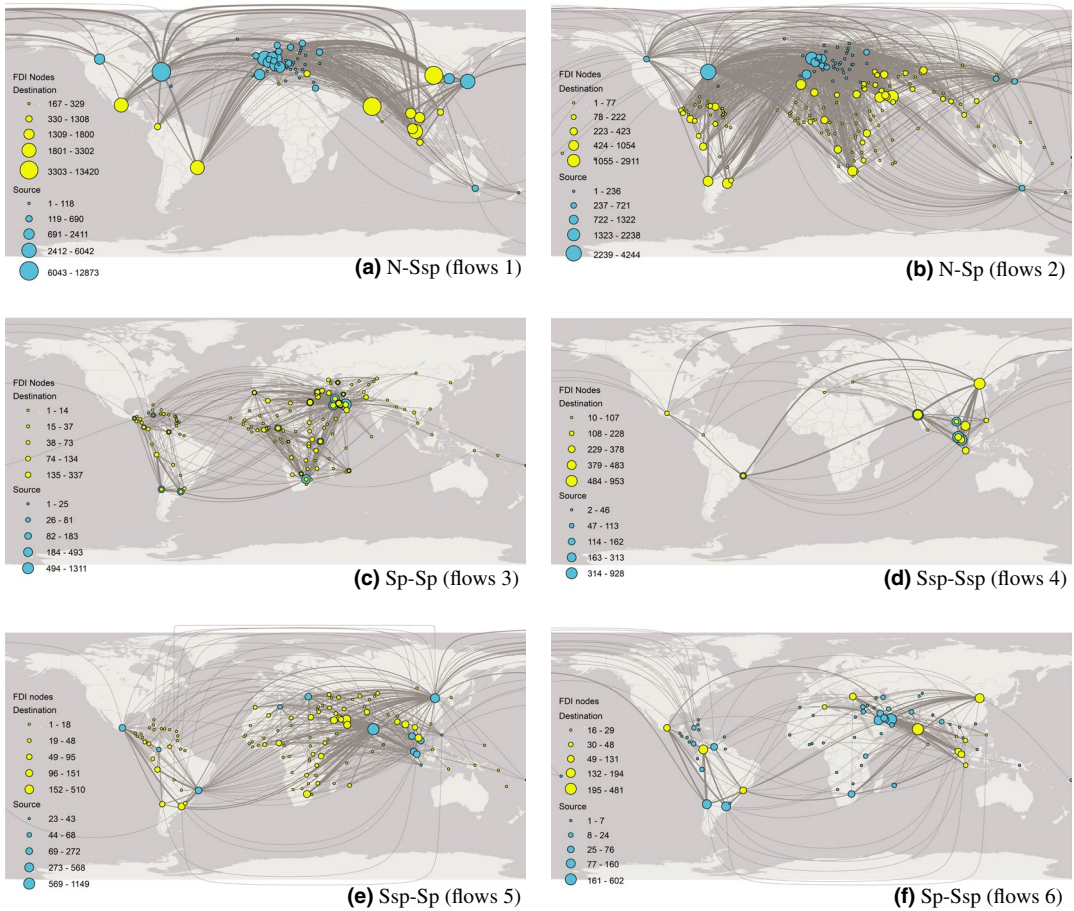
**FIGURE 2** Aggregated FDI flows between country categories (2006–2014): FDI flows 1–6, as in Figure 1; the maps are presented in the order that corresponds to their volumes from highest (a) to lowest (f) (see Table 1)

Most FDI from the North still goes to the Southern semi-periphery (map a, Figure 2), accounting for 58% of investments. Northern investments to the Southern periphery confirm increasing interdependencies between hierarchically opposed world regions (cf. Clark, 2010; Dezzani & Johansen, 2012). Map b (Figure 2) reveals the diversity and intensity of Northern FDI to the Southern peripheries, suggesting a new dynamic in the global economy. However, both maps confirm the predominance of top-down flows from the North, suggesting the persistence of the hierarchic division of labour.

Of investments originating in the $S_{SP}$, over half went to other $S_{SP}$ countries, while the $S_P$ received a somewhat smaller share suggesting that the $S_{SP}$ countries hold cohesive relations with each other (map d). Yet, their investments in the $S_P$ have grown faster than in the $S_{SP}$, suggesting many $S_P$ countries offer interesting opportunities for EMNEs, particularly in Africa and the Middle East (map e).

Of PMNE investments, three-quarters have targeted the $S_P$ and one-quarter the $S_{SP}$. This result contradicts classic world-system analysis that overlooked intra-group interdependences and bottom-up relations originating in peripheral countries. We found that [$S_P$-$S_P$] investments cover the largest FDI volume within the South, even though they stem from a limited set of $S_P$ countries (map c). Moreover, the [$S_P$-$S_P$] and [$S_P$-$S_{SP}$] investments have the highest growth rates.

In summary, FDI flows to the South have grown in volume and diversity, as peripheral countries are increasingly involved (RQ1).

## 4.2 | The factors of FDI attraction into the global South

Six models were tested, as described in Section 3. Table 2 presents the results of the models according to the largest (model 1) to the smallest (model 6) volumes of FDI (as seen in Table 1).

### 4.2.1 | Basic requirements

The results of step A reveal that the category *basic requirements* is only negatively significant in model 6, where FDI is from $S_P$ to $S_{SP}$. This implies primary factors (related to societal institutions, infrastructure, macroeconomy and health) are not sufficient to attract investors. As seen later in step B, this is strictly due to the negative impact of *institutional burden*, and in more detail in step C, explained by the *business cost of terrorism* (a proxy of risk), suggesting PMNE investments are affected by the institutional framework related to general safety. The *basic requirements* category thus provides only a limited understanding of FDI flows to the South; in most categories, basic requirements alone do not suffice to influence FDI.

### 4.2.2 | Efficiency-enhancers

The results of step A reveal that *efficiency-enhancers* are positively significant in all six models, that is, they matter independently of origin or destination country groups. This is in line with previous studies indicating that FDI in the South is efficiency-seeking. In step B, the *technological readiness* and *market size* pillars remain significant in all six models.

The *technological readiness* pillar assesses a country's agility in adopting new technologies. In step C, the significant factor in models 1 [N-$S_{SP}$], 2 [N-$S_P$], and 5 [$S_{SP}$-$S_P$] is the *firm-level technological absorption*, that is local firms' ability to adopt technologies. Thus, AMNEs seek countries with high technological capabilities in both the $S_{SP}$ and $S_P$. Similarly, EMNEs are drawn to countries in the $S_P$ where relatively advanced activities can be carried out, that is EMNEs are not seeking only natural resources or low labour costs but are also drawn by the global trend towards skill-intensive activities. Thus, EMNEs' investments in the $S_P$, are – in technological terms – similarly motivated as those of AMNEs in the South. In model 6 [$S_P$-$S_{SP}$], the *availability of the latest technology* as a significant indicator suggests that PMNEs seek locations in the $S_{SP}$ to access particular technologies, a sign of their attempts to acquire a higher level of technological competence, possibly by interacting with local firms or technology providers or by monitoring them from a closer distance.

The *market size* pillar concerns the combined size of a country's domestic and foreign markets. This reflects a country's efficiency through specialisation and advantages of economies of scale in the production of services and goods for all of its markets. Step C reveals that the *foreign market size* is common to all models, except model 6 [$S_P$-$S_{SP}$], suggesting that countries in the South function as export platforms for all investors, except PMNEs in $S_{SP}$. The latter are attracted by the *domestic market size*, suggesting that PMNEs seek to succeed in these relatively more demanding markets.

**TABLE 2** Negative binomial models of location factors of FDI into the global South (only significant results shown)

| Variable | Model 1 N-Ssp | Model 2 N-Sp | Model 3 Sp-Sp | Model 4 Ssp-Ssp | Model 5 Ssp-Sp | Model 6 Sp-Ssp |
|---|---|---|---|---|---|---|
| **Step A** | | | | | | |
| GCI Location factors, main categories | | | | | | |
| Basic requirements | | | | | | −0.363 * |
| | | | | | | (0.156) |
| Efficiency-enhancers | 0.788 * | 0.891 *** | 0.659 *** | 0.798 *** | 0.534 ** | 0.795 * |
| | (0.343) | (0.175) | (0.125) | (0.212) | (0.166) | (0.325) |
| Innovation-driven | | | | −1.386 *** | | |
| | | | | (0.407) | | |
| C | | −5.189 *** | −3.170 *** | | −2.858 *** | |
| | | (0.741) | (0.506) | | (0.815) | |
| Wald X2 | 7.981 * | 125.522 *** | 101.721 *** | 19.982 *** | 32.633 *** | 10.540 * |
| **Step B** | | | | | | |
| Basic requirements | | | | | | |
| Pillar 1B Institutional burden | −0.194 * | | | | | −0.491 ** |
| | (0.096) | | | | | (0.188) |
| Efficiency-enhancers | | | | | | |
| Pillar 5 Higher education and training | | 0.245 * | | −0.860 * | | |
| | | (0.117) | | (0.354) | | |
| Pillar 6 Goods market efficiency burden | 0.120 *** | −0.091 * | | 0.109 * | | |
| | (0.028) | (0.041) | | (0.045) | | |

**TABLE 2** (Continued)

| Variable | Model 1 N-Ssp | | Model 2 N-Sp | | Model 3 Sp-Sp | | Model 4 Ssp-Ssp | | Model 5 Ssp-Sp | | Model 6 Sp-Ssp | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pillar 7 Labour market catalyst | 0.288 | ** | 0.305 | * | | | 0.765 | *** | | | | |
| | (0.092) | | (0.121) | | | | (0.184) | | | | | |
| Pillar 8 Financial market catalyst | −0.114 | ** | −0.142 | * | 0.132 | * | | | | | | |
| | (0.043) | | (0.067) | | (0.063) | | | | | | | |
| Pillar 9A Technological readiness catalyst | 0.593 | *** | 0.526 | ** | 0.374 | * | 0.541 | * | 0.476 | * | 0.602 | * |
| | (0.141) | | (0.198) | | (0.177) | | (0.225) | | (0.225) | | (0.284) | |
| Pillar 10 Market size catalyst | 2.020 | *** | 1.719 | *** | 0.764 | *** | 1.004 | *** | 1.074 | *** | 0.741 | * |
| | (0.109) | | (0.131) | | (0.137) | | (0.129) | | (0.118) | | (0.312) | |
| Innovation-driven | | | | | | | | | | | | |
| Pillar 12 Innovation catalyst | | | | | | | 0.214 | * | | | | |
| | | | | | | | (0.098) | | | | | |
| C | −7.453 | *** | −6.182 | *** | −3.221 | *** | −4.481 | *** | −4.567 | *** | | |
| | (0.847) | | (0.993) | | (0.971) | | (1.175) | | (1.187) | | | |
| Wald X2 | 446.946 | *** | 351.601 | *** | 113.173 | *** | 197.634 | *** | 127.968 | *** | 94.940 | *** |
| Step C | | | | | | | | | | | | |
| Pillar 1B Institutional burden | | | | | | | | | | | | |
| 1B.2 Business cost of terrorism | | | | | | | | | | | −0.244 | * |
| | | | | | | | | | | | (0.110) | |

(Continues)

**TABLE 2** (Continued)

| Variable | Model 1 N-Ssp | | Model 2 N-Sp | | Model 3 Sp-Sp | Model 4 Ssp-Ssp | | Model 5 Ssp-Sp | Model 6 Sp-Ssp |
|---|---|---|---|---|---|---|---|---|---|
| Pillar 5 Higher education and training | | | | | | | | | |
| 5.1 Tertiary education enrolment | | | | | | −0.027 | *** | | |
| | | | | | | (0.007) | | | |
| Pillar 6 Goods market efficiency burden | | | | | | | | | |
| 6.1 Intensity of local competition | −0.432 | ** | −0.380 | * | | −0.447 | * | | |
| | (0.133) | | (0.159) | | | (0.212) | | | |
| 6.2 Total tax rate | | | | | | −0.007 | * | | |
| | | | | | | (0.003) | | | |
| 6.4 No. of days to start a business | | | −0.003 | ** | | | | | |
| | | | (0.001) | | | | | | |
| 6.6 Trade tariffs | 0.041 | *** | | | | | | | |
| | (0.010) | | | | | | | | |
| 6.7 Business impact of rules on FDI | | | 0.294 | ** | | | | | |
| | | | (0.110) | | | | | | |
| Pillar 7 Labour market catalyst | | | | | | | | | |
| 7.2 Flexibility of wages | 0.301 | *** | | | | | | | |
| | (0.087) | | | | | | | | |

**TABLE 2** (Continued)

| Variable | Model 1 N-Ssp | Model 2 N-Sp | Model 3 Sp-Sp | Model 4 Ssp-Ssp | Model 5 Ssp-Sp | Model 6 Sp-Ssp |
|---|---|---|---|---|---|---|
| 7.3 Women in labour force | | | | 2.298 *** | | |
| | | | | (0.576) | | |
| Pillar 8 Financial market catalyst | | | | | | |
| 8.2 Affordability of financial services | | | 0.056 * | | | |
| | | | (0.025) | | | |
| 8.3 Ease of access to loans | −0.261 ** | | 0.339 *** | | | |
| | (0.097) | | (0.094) | | | |
| Pillar 9A Technological readiness catalysts | | | | | | |
| 9A.1 Availability of latest technology | | | | | | 0.397 * |
| | | | | | | (0.171) |
| 9A.2 Firm level technology absorption | 0.607 *** | 0.321 * | | | 0.412 ** | |
| | (0.129) | (0.151) | | | (0.143) | |
| Pillar 10 Market size catalyst | | | | | | |
| 10.1 Domestic market size index | | | | | | 0.956 *** |
| | | | | | | (0.209) |
| 10.2 Foreign market size index | 1.361 *** | 1.124 *** | 0.325 ** | 0.649 *** | 0.464 *** | |
| | (0.076) | (0.076) | (0.113) | (0.105) | (0.124) | |

(Continues)

**TABLE 2** (Continued)

| Variable | Model 1 N-Ssp | | Model 2 N-Sp | | Model 3 Sp-Sp | | Model 4 Ssp-Ssp | | Model 5 Ssp-Sp | | Model 6 Sp-Ssp | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pillar 12 Innovation catalyst | | | | | | | | | | | | |
| 12.4 Patent applications | | | | | | | 0.004 | * | | | | |
| | | | | | | | (0.002) | | | | | |
| C | −4.949 | *** | −5.146 | *** | −1.634 | *** | −2.375 | * | −2.649 | *** | −3.512 | *** |
| | (1.122) | | (0.933) | | (0.492) | | (1.138) | | (0.654) | | (1.028) | |
| Wald X2 | 724.170 | *** | 484.788 | *** | 133.766 | *** | 463.405 | *** | 104.624 | *** | 101.487 | *** |
| Standard errors in parentheses | *$p < 0.05$ | | **$p < 0.01$ | | ***$p < 0.001$ | | | | | | | |

**TABLE 3**  Determinants of FDI into the global South 2006–2014

| Main categories | Top down FDI flows from the North | | Intragroup FDI flows | | Top down and bottom up FDI flows from the South | |
| --- | --- | --- | --- | --- | --- | --- |
| | N-S$_{SP}$ | N-S$_P$ | S$_P$-S$_P$ | S$_{SP}$-S$_{SP}$ | S$_{SP}$-S$_P$ | S$_P$-S$_P$ |
| **Basic requirements** | | | | | | **(−) Institutional burden**<br>→ (−) Business cost of terrorism |
| **Efficiency-enhancers** | **(+) Technological readiness**<br>→ (+) Firm level technology absorption<br><br>**(−) Higher education and training**<br><br>**(+) Labour market catalyst**<br>→ (+) Flexibility of wages<br><br>**(+) Market size**<br>→ (+) Foreign market<br><br>**(+) Goods market efficiency burden**<br>→ (−) Intensity of local competition<br>→ (+) Trade tariffs<br><br>**(−) Financial market catalyst**<br>→ (−) Ease of access to loans | **(+) Technological readiness**<br>→ (+) Firm level technology absorption<br><br>**(+) Higher education and training**<br><br>**(+) Labour market catalyst**<br><br>**(+) Market size**<br>→ (+) Foreign market<br><br>**(−) Goods market efficiency burden**<br>→ (−) Intensity of local competition<br>→ (−) No. of days to start a business<br>→ (+) Business impact of rules on FDI<br><br>**(−) Financial market catalyst** | **(+) Technological readiness**<br><br>**(+) Market size**<br>→ (+) Foreign market<br><br>**(+) Financial market catalyst**<br>→ (+) Affordability of financial services<br>→ (+) Ease of access to loans | **(+) Technological readiness**<br><br>**(−) Higher education and training**<br>→ (−) Tertiary education enrolment<br><br>**(+) Labour market catalyst**<br>→ (+) Women in labour force<br><br>**(+) Market size**<br>→ (+) Foreign market<br><br>**(+) Goods market efficiency burden**<br>→ (−) Intensity of local competition<br>→ (−) Total tax rate | **(+) Technological readiness**<br>→ (+) Firm level technology absorption<br><br>**(+) Market size**<br>→ (+) Foreign market | **(+) Technological readiness**<br>→ (+) Availability of latest technology<br><br>**(+) Market size**<br>→ (+) Domestic market |
| **Innovation-driven** | | | | **(+) Innovation catalyst**<br>→ (+) Patent applications | | |

*Note:* N: North, S$_{SP}$: Southern semi-periphery, S$_P$: Southern periphery, (−): deterrent of FDI, (+): attraction of FDI.

The *higher education and training* pillar is significant and negative concerning investments in $S_{SP}$ in models 1 [N-$S_{SP}$], and 4 [$S_{SP}$-$S_{SP}$], and it is positive in model 2 concerning investments in $S_P$ [N-$S_P$]. This seems to imply that AMNEs and EMNEs do not invest in the $S_{SP}$ because of activities that require relatively advanced skills. This may suggest labour cost in $S_{SP}$ countries has risen. AMNEs, therefore, invest in $S_P$ countries since these also increasingly have highly educated and skilled labour. In step C, only the *tertiary education enrolment rate* is significant and negative in model 4, indicating that EMNEs do not invest in other $S_{SP}$ countries for advanced skills.

The *goods market efficiency burden* pillar measures domestic competition and government intervention. In step B, this proved to be positively significant in models 1 [N-$S_{SP}$] and 4 [$S_{SP}$-$S_{SP}$], and negatively significant in model 2 [N-$S_P$], that is, AMNEs and EMNEs find $S_{SP}$ markets sufficiently efficient and AMNEs find $S_P$ markets burdensome. In step C, we observe that in model 1, FDI flows are affected negatively by the *intensity of local competition* and positively by *trade tariffs*, suggesting that AMNEs seek $S_{SP}$ countries with relatively easy access and to serve local markets. In model 2, the *intensity of local competition* has a significant negative impact on FDI, suggesting AMNEs avoid pressure from local contenders in $S_P$. Further, the negative impact of the *number of days to start a business* and positive impact of the *business impact of rules on FDI* indicate that AMNEs seek to invest in $S_P$ countries that have a relatively advanced regulatory environment. In model 4, EMNEs are affected negatively by the *intensity of local competition* and *total tax rate* in $S_{SP}$, indicating avoidance of intra-group investments if it toughens competition or increases costs.

The *labour market catalyst* pillar was significant in step B in models 1 [N-$S_{SP}$], 2 [N-$S_P$], and 4 [$S_{SP}$-$S_{SP}$]. This indicates labour market efficiency is a condition for AMNE investments in the whole South, and EMNEs, in other $S_{SP}$ countries. Step C sheds further light on models 1 and 4. The *flexibility of wages* increases AMNE attraction to $S_{SP}$ countries, signalling the importance of local instead of centralised bargaining. The share of *women in the labour force* as an attractor of EMNE investments to $S_{SP}$ indicates that EMNEs seek countries with relatively advanced business environments characterised by equal opportunity or inclusiveness, fairness, and openness of labour markets.

The *financial market catalysts* pillar was negatively significant in models 1 [N-$S_{SP}$], 2 [N-$S_P$], and positively significant in model 3 [$S_P$-$S_P$]. This may indicate that well-functioning financial markets deter AMNEs through increased local competition. Instead, well-functioning financial markets in other peripheral countries serve PMNEs' needs. The Middle Eastern countries as central to the [$S_P$-$S_P$] investments (map c, Figure 2) may help explain this. Step C clarifies, with significant results for models 1 and 3 that for AMNEs, the negative impact of the *ease of access to loans* was an impediment in $S_{SP}$ investments. PMNEs were attracted to other $S_P$ countries by the *affordability of financial services* and the *ease of access to loans*, which is fundamental if they lack capital reserves or their home-country banks do not support them abroad.

### 4.2.3 | Innovation-driven

The third category of location factors, *innovation-driven*, reflects an advanced level of development on the part of the host country and the most demanding requirements on the part of investors. This was significant in model 4 [$S_{SP}$-$S_{SP}$], EMNEs' intra-group investments. In step A, it was negatively significant. However, *innovation-driven* factors were significant and positive in steps B and C. The negative sign in step A was influenced by the other pillar in this category, *business sophistication*, which was negative in step B but not strong enough to be significant. In step B,

the *innovation-driven* pillar is explained by the *innovation catalyst*, which measures countries' R&D capability and whether they have the knowledge necessary to innovate and upgrade firms' profiles at the global scale. This supports the conclusion that EMNEs engage in strategic-asset-seeking FDI within the $S_{SP}$. Finally, the *patent application* in step C is a formal indicator showing the ability to create original new knowledge is not the privilege of the North but also happens in the $S_{SP}$. The $S_{SP}$-$S_{SP}$ flows are not evenly distributed globally, as map d (Figure 2) shows: the Asian countries are more dominant investors and recipients of investments.

Table 3 presents a summary of the results.

## 5 | DISCUSSION

### 5.1 | Top-down flows from the North

The dominance of the North is evident as [N-$S_{SP}$] and [N-$S_P$] are the most frequent investment flow types. While [N-$S_{SP}$] investments are the most voluminous flow type in the data, they showed the lowest growth rate. The $S_P$, instead, is increasingly attracting investments directly from core countries. [N-$S_P$] investments are relatively voluminous already and grew three times faster than [N-$S_{SP}$] investments. Presumably this is because countries in the $S_{SP}$ are becoming more independent, more specialised, and more expensive – and some of the factors that previously attracted Northern FDI now characterise the rising $S_P$. This result signifies a distinctive emerging trend that should attract more attention in contemporary research.

All AMNEs' investments in the South are explained by *efficiency-enhancers*. This confirms previous research explaining FDI flows to developing countries by *efficiency-* and *market-seeking* motivations (e.g. Antonakakis & Tondl, 2015; Jadhav, 2012). Further, our results on market-seeking factors show that they apply to all AMNE FDI in Southern countries, not only to particular regions or large and more advanced markets (Antonakakis & Tondl, 2015; Buckley & Hashai, 2014). Additionally, while existing research identifying market-seeking motivation does not systematically distinguish between host and export markets, our results show that export market opportunities in Southern countries attract AMNEs investments.

AMNEs perform technologically relatively sophisticated activities in the South, as demonstrated by the technological readiness requirement in both $S_{SP}$ and $S_P$. Then again, our results complement Ramírez-Alesón and Fleta-Asín (2016), who found that although cost advantages are decisive for global FDI in less developed countries, their importance diminishes with countries' rising levels of development. Our results show that in the largest group, AMNE investments, efficiency-enhancers remain predominant for both groups of receiving countries. While investments toward the $S_{SP}$ and $S_P$ are in many respects similar in terms of the requirements they set for these operating environments, those towards $S_P$ are more influenced by the efficiency in the host country's domestic markets, that is, a reasonable level of red tape, and an advanced regulatory environment.

### 5.2 | Intra-group flows

There is evidence of persistent differences between Southern country groups in terms of their patterns of intra-group FDI. While the growth of [$S_{SP}$-$S_{SP}$] investments is slowing down, the growing dynamism in $S_P$ is demonstrated by the relatively high volume and fast growth of [$S_P$-$S_P$]

investments. This indicates, vis-à-vis Van Hamme and Pion (2012), that the peripheral group of countries is not merely subject to top-down dominance and unable to form mutually cohesive groups.

EMNEs' intra-group investments [$S_{SP}$-$S_{SP}$] are explained by *efficiency-enhancers* and it is the only flow type featuring *innovation-driven* factors. The former suggest that EMNEs avoid other $S_{SP}$ countries where local competition, and tax and education levels are high, indicating that they are crowding out as low-cost production platforms. Instead, the patenting capability factor from the latter renders $S_{SP}$ countries export platforms of high value-added products suggesting this group is forming strong intra-group relations in a similar way that the global North has done. Female participation in labour markets may indicate a level of societal transformation and availability of talent. These results qualify previous findings indicating motivations for EMNE investments in all of the South are efficiency-, market-, and strategic asset-seeking. Further, while previous literature found that EMNEs' strategic asset-seeking FDI targeted advanced economies, our results support research suggesting that such assets are increasingly acquired in other $S_{SP}$ countries (cf. Buckley & Hashai, 2014; Demirbag & Glaister, 2010).

As PMNEs' intra-group FDI has not been specifically studied, a novel finding is that PMNEs benefit from accessible financial services in other peripheral countries, understandably supporting their production and export activities.

The location factors explaining intra-group flows show both EMNEs and PMNEs use intra-group investments to access export platforms to third countries. Unlike, for example Quer et al. (2012) in the case of EMNEs' overall investments, we found no evidence supporting EMNEs' or PMNEs' attraction to institutionally weak countries. Our results regarding a required level of technological sophistication suggest that not only host countries but also EMNEs and PMNEs may benefit from technological capability upgrade when they invest in countries with similar developmental circumstances. For EMNEs, this is highlighted by host country patenting capability. Hence, intra-group flows have potential strategic importance and development potential for PMNEs and EMNEs, as well as their home and host countries.

## 5.3 | Reciprocal top-down and bottom-up flows

The least frequent investment flows were found in reciprocal top-down and bottom-up FDI flows between the $S_{SP}$ and $S_P$. [$S_{SP}$-$S_P$] investments, a 'traditional' top-down relation, is the larger of these, and growing at a moderate rate. [$S_P$-$S_{SP}$] investments are the only bottom-up FDI flow type in the analysis, and the smallest in volume, but growing rapidly.

Our results show that *efficiency-enhancer* factors explain [$S_{SP}$-$S_P$] FDI, in line with earlier research (e.g. Sim & Rajendran Pandian, 2007). The *efficiency-enhancer* indicators of model 5 further specify that EMNEs can rely on the technological ability of the peripheral countries and use them as export platforms. In contrast to for example Quer et al. (2012), our findings lend no support for host country institutional environments influencing [$S_{SP}$-$S_P$] FDI. Although the periphery may allow EMNEs to leverage cost-efficiency advantages, such leveraging requires technology absorption capabilities by host country firms, suggesting a level of peripheral development not recognised by previous literature. Such development may explain the growing attractiveness of $S_P$ for differently originated FDI and may imply tougher competition among peripheral countries based on efficiency-enhancing factors.

Model 6 explains the nascent [$S_P$-$S_{SP}$] investments by *basic requirements* and by *efficiency-enhancers*: PMNEs invest in $S_{SP}$ countries with stable institutional environments and latest

technologies. Much of the literature on EMNEs has considered *bottom-up* investments from South to North (e.g. Cuervo-Cazurra et al., 2015). We found a comparable logic in our analysis of $[S_P\text{-}S_{SP}]$ investments: PMNEs invest in $S_{SP}$ economies to access latest technologies and domestic markets, thus enabling technological catch-up and ability to compete in EMNEs' home markets. This is a novel trend. The fact that PMNE investments were derived negatively by the terrorism-related *basic requirements* in host countries may suggest investments to the $S_{SP}$ are sensitive because they seek $S_{SP}$ domestic markets. Institutional volatility implies a business risk they might not be able to manage.

## 5.4 | Limitations and future research

This paper is an initial attempt to study the South as a receiver and source of southbound FDI. The group as a whole is clearly rising in importance in FDI flows, and further study is warranted to understand the specifics of its development and identify subdivisions and power relations within it. The analysis of the nature of PMNEs is also relevant, including whether they are a distinct type of MNE, or reminiscent of EMNEs and originating in countries that are about to enter semi-peripheral positions.

In this paper, only FDI flows to the South, and the reasons behind them are analysed. Data on South-North FDI flows would allow comparison of EMNE and PMNE investment patterns to the North and their location factors, shedding further light on differences between the two MNE types. Last, our analysis goes as far as the aggregation of FDI at the country level. We still have a poor understanding of the sectoral and sub-national spatial differentiation, and the nature of the activities involved in the investment flows.

## 6 | CONCLUSION

We started our discussion of the integration of the South into the global economy taking the interdependent, albeit unequal relations between groups of countries as a starting point. Acknowledging the limits of the idea of sheer top-down dependence on the North (e.g. Sanderson, 2005; Schwartzman, 2006), we also analysed bottom-up and intra-group investment flows amongst semi-peripheral and peripheral countries of the South. Our descriptive and statistical analyses identified new types of dynamics in the southbound FDI flows, rebalancing global investment relations (cf. Clark, 2010). Those include trends in intra-group ($[S_P\text{-}S_P]$, $[S_{SP}\text{-}S_{SP}]$) and bottom-up ($[S_P\text{-}S_{SP}]$) flows that have not been comprehensively studied previously.

We interpreted the strengthening of minor trends as developmental 'undercurrents', that may gradually lead to reconfigured interdependencies. This is evident in the growing role of the $S_P$ as a target and a source of FDI and the occurrence of more demanding location factors than those recorded in the existing literature. First, we found that basic requirements were significant only in $[S_P\text{-}S_{SP}]$ investment flows, whereas efficiency-enhancing factors were significant in all flows. Second, we found that technological readiness has become inherent to the ability of Southern countries to compete for global FDI. Nevertheless, consistent with earlier findings (Sala-i-Martin et al., 2014, p. 8), they remain in an intermediate position in the world economy and generally function as FDI export platforms. Third, the $S_{SP}$ was found to be a source of innovation capabilities for EMNEs, whereas, for PMNEs, it provides the latest technologies and an opportunity to

succeed in more demanding markets. Fourth, both AMNEs and EMNEs benefit from technological capabilities in country groups lower in the hierarchy, indicating similar criteria regarding investment environments.

Our results also shed light on the development of the two country groups in the South. While the $Ss_P$ was found to be a source of strategic resources indicating more advanced expectations, the $S_P$ nevertheless featured efficiency-enhancing factors similar to those of the $S_{SP}$. Thus, both country groups can offer a range of relatively sophisticated features to foreign investors. We found that value creation opportunities related to South-South factors stem from two main trends. First, investments amongst countries with broadly similar economic circumstances ($[S_{SP}-S_{SP}]$ and $[S_P-S_P]$), help EMNEs and PMNEs access factors that may facilitate the upgrade of their capabilities. The second trend occurs through PMNEs investing in the Southern semi-peripheries. PMNEs may technologically leapfrog by interacting with and monitoring more advanced firms and accessing more sophisticated markets. Our findings suggest that both routes are already being used, and provided their growth rates, these trends will likely intensify.

These results contribute to policy-relevant knowledge about the global South. It assists in deepening our image of the South and the factors attracting foreign investors. While previous literature argues that the number and variety of international relations may reduce countries' core-periphery dependence, our results add that intra-group and bottom-up FDI likely have a particularly positive impact on this development.

## CONFLICT OF INTEREST
None.

## DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available from the Financial Times fDi Markets Database. Restrictions apply to the availability of these data, which were used under license for this study.

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## REFERENCES
Agosin, M. R., & Machado, R. (2005). Foreign investment in developing countries: Does it crowd in domestic investment? *Oxford Development Studies*, *33*(2), 149–162. https://doi.org/10.1080/13600810500137749

Agresti, A. (2015). *Foundations of linear and generalized linear models*. Wiley.

Aharoni, Y. (2015). The many faces of the ever-changing multinational enterprise. In M. Demirbag, & A. Yaprak (Eds.), *Handbook of emerging market multinational corporations* (pp. 17–37). Edward Elgar Publishing.

Antonakakis, N., & Tondl, G. (2015). Robust determinants of OECD FDI in developing countries: Insights from Bayesian model averaging. *Cogent Economics & Finance*, *3*(1), 1–25. https://doi.org/10.1080/23322039.2015.1095851

Asiedu, E., & Lien, D. (2011). Democracy, foreign direct investment and natural resources. *Journal of International Economics*, *84*(1), 99–111. https://doi.org/10.1016/j.jinteco.2010.12.001

Assunção, S., Forte, R., & Teixeira, A. A. (2013). Location determinants of FDI: Confronting theoretical approaches with empirical findings. *Argumenta Oeconomica*, *31*(2), 5–28.

Aykut, D., & Goldstein, A. (2006). *Developing country multinationals: South-South investment comes of age*. (Working Paper No. 257). OECD Development Center. https://www.oecd-ilibrary.org/development/developing-country-multinationals_245230176440

Belkhodja, O., Mohiuddin, M., & Karuranga, E. (2017). The determinants of FDI location choice in China: A discrete-choice analysis. *Applied Economics*, *49*(13), 1241–1254. https://doi.org/10.1080/00036846.2016.1153786

Blonigen, B. A. (2005). A review of the empirical literature on FDI determinants. *Atlantic Economic Journal*, *33*(4), 383–403. https://doi.org/10.1007/s11293-005-2868-9

Bonet-García, F. J., Pérez-Luque, A. J., Moreno-Llorca, R. A., Pérez-Pérez, R., Puerta-Piñero, C., & Zamora, R. (2015). Protected areas as elicitors of human well-being in a developed region: A new synthetic (socioeconomic) approach. *Biological Conservation*, *187*, 221–229. https://doi.org/10.1016/j.biocon.2015.04.027

Brandt, W. (1980). *North-South: A programme for survival. Report of the Independent Commission on International Development Issues*. MIT Press.

Buckley, P. J., Clegg, J., Cross, A. R., Liu, X., Voss, H., & Zheng, P. (2007). The determinants of Chinese outward foreign direct investment. *Journal of International Business Studies*, *38*(4), 499–518. https://doi.org/10.1057/palgrave.jibs.8400277

Buckley, P. J., & Hashai, N. (2014). The role of technological catch up and domestic market growth in the genesis of emerging country based multinationals. *Research Policy*, *43*(2), 423–437. https://doi.org/10.1016/j.respol.2013.11.004

Chase-Dunn, C., & Lawrence, K. S. (2010). Alive and well: A response to Sanderson. *International Journal of Comparative Sociology*, *51*(6), 470–479. https://doi.org/10.1177/0020715210387983

Clark, R. (2010). World-system mobility and economic growth, 1980–2000. *Social Forces*, *88*(3), 1123–1151. https://doi.org/10.1353/sof.0.0295

Cleeve, E. A., Debrah, Y., & Yiheyis, Z. (2015). Human capital and FDI inflow: An assessment of the African case. *World Development*, *74*, 1–14. https://doi.org/10.1016/j.worlddev.2015.04.003

Cuervo-Cazurra, A., & Genc, M. (2008). Transforming disadvantages into advantages: Developing-country MNEs in the least developed countries. *Journal of International Business Studies*, *39*(6), 957–979. https://doi.org/10.1057/palgrave.jibs.8400390

Cuervo-Cazurra, A., Meyer, K., & Ramamurti, R. (2015). Explaining the internationalization of emerging-economy multinationals: The relative resource specialization of firm and environment. In M. Demirbag, & A. Yaprak (Eds.), *Handbook of emerging market multinational corporations* (pp. 68–88). Edward Elgar Publishing.

Dargin, J. (2013). *The rise of the Global South: philosophical, geopolitical and economic trends of the 21st century*. World Scientific.

Demirbag, M., & Glaister, K. W. (2010). Factors determining offshore location choice for R&D projects: A comparative study of developed and emerging regions. *Journal of Management Studies*, *47*(8), 1534–1560.

Dezzani, R. J. (2001). Classification analysis of world economic regions. *Geographical Analysis*, *33*(4), 330–352. https://doi.org/10.1111/j.1538-4632.2001.tb00451.x

Dezzani, R. J., & Johansen, H. (2012). The role of foreign direct investment as a structural development indicator of the hierarchical world economy. *Environment and Planning A*, *44*(3), 580–604. https://doi.org/10.1068/a44325

Dunning, J. H. (1998). Location and the multinational enterprise: A neglected factor? *Journal of International Business Studies*, *29*(1), 45–66. https://doi.org/10.1057/palgrave.jibs.8490024

Dunning, J. H., & Narula, R. (1996). The investment development path revisited: Some emerging issues. In J. H. Dunning, & R. Narula (Eds.), *Foreign direct investment and governments, catalysts for economic restructuring* (pp. 1–41). Routledge.

ESRI (2011). *ArcGIS Desktop (Release 10)*. Environmental Systems Research Institute.

EViews (2015). [Econometrics software] (Release 9.5). IHS Global Inc.

Financial Times (2015). *fDi Markets database*. Retrieved from http://www.fdimarkets.com

Giuliani, E., Martinelli, A., & Rabellotti, R. (2016). Is co-invention expediting technological catch up? A study of collaboration between emerging country firms and EU inventors. *World Development*, *77*, 192–205. https://doi.org/10.1016/j.worlddev.2015.08.019

Gray, K., & Gills, B. K. (Eds.) (2018). *Rising powers and south-south cooperation*. Routledge.

Greenaway, D., & Milner, C. (1990). South-South trade: Theory, evidence, and policy. *The World Bank Research Observer*, *5*(1), 47–68. https://doi.org/10.1093/wbro/5.1.47

Haakonsson, S. J., Jensen, P. D. Ø., & Mudambi, S. M. (2012). A co-evolutionary perspective on the drivers of international sourcing of pharmaceutical R&D to India. *Journal of Economic Geography*, *13*(4), 677–700.

Havrylyshyn, O. (1985). The direction of developing country trade: Empirical evidence of differences between South-South and South-North trade. *Journal of Development Economics*, *19*(3), 255–281.

Hymer, S. (1972). The multinational corporation and the law of uneven development. In J. N. Bhagwati (Ed.), *Economics and World Order: From the 1970's to the 1990's* (pp. 325–352). Collier-Macmillan cop.

Jadhav, P. (2012). Determinants of foreign direct investment in BRICS economies: Analysis of economic, institutional and political factor. *Procedia-Social and Behavioral Sciences*, *37*, 5–14. https://doi.org/10.1016/j.sbspro.2012.03.270

McElroy, C. A. (2018). Reconceptualizing resource peripheries. In G. L. Clark, M. P. Feldman, M. S. Gertler, & D. Wójcik (Eds.), *The New Oxford Handbook of economic geography* (pp. 715–731). Oxford University Press.

Meyer, K. E., & Thaijongrak, O. (2013). The dynamics of emerging economy MNEs: How the internationalization process model can guide future research. *Asia Pacific Journal of Management*, *30*(4), 1125–1153. https://doi.org/10.1007/s10490-012-9313-9

Nocke, V., & Yeaple, S. (2007). Cross-border mergers and acquisitions vs. greenfield foreign direct investment: The role of firm heterogeneity. *Journal of International Economics*, *72*(2), 336–365.

Organisation for Economic Co-operation and Development (OECD) (2016). *African Economic Outlook 2016: Sustainable cities and structural transformation*. OECD Publishing.

Pérez-Luque, A. J., Moreno, R., Pérez-Pérez, R., & Bonet, F. J. (2015). *Welfare's synthetic indicator: Package 'p2distance'*. R-Cran: Retrieved from https://cran.r-project.org/web/packages/p2distance/p2distance.pdf

Porter, M. E., Ketels, C., & Delgado, M. (2006). The microeconomic foundations of prosperity: findings from the business competitiveness index. In K. Schwab, M. E. Porter, A. López-Claros, & W. E. Forum (Eds.), *The global competitiveness report 2007-2008* (pp. 51–81). Palgrave Macmillan.

Quer, D., Claver, E., & Rienda, L. (2012). Political risk, cultural distance, and outward foreign direct investment: Empirical evidence from large Chinese firms. *Asia Pacific Journal of Management*, *29*(4), 1089–1104. https://doi.org/10.1007/s10490-011-9247-7

Rabellotti, R. (2014). What is so special about emerging economy multinational enterprises? *Istituto Lombardo-Accademia Di Scienze E Lettere-Rendiconti Di Lettere*, *148*, 77–95. https://doi.org/10.4081/let.2014.217

Ramírez-Alesón, M., & Fleta-Asín, J. (2016). Is the importance of location factors different depending on the degree of development of the country? *Journal of International Management*, *22*(1), 29–43. https://doi.org/10.1016/j.intman.2015.10.002

Sala-i-Martin, X., Bilbao-Osorio, B., Di Battista, A., Drzeniek Hanouz, M., Geiger, T., & Galvan, C. (2014). The global competitiveness index 2014–2015: Accelerating a robust recovery to create productive jobs and support inclusive growth. In K. Schwab, & W. E. Forum (Eds.), *The global competitiveness report 2014–2015* (pp. 3–52). World Economic Forum.

Sanderson, S. K. (2005). World-systems analysis after thirty years: Should it rest in peace? *International Journal of Comparative Sociology*, *46*(3), 179–213. https://doi.org/10.1177/0020715205058606

Schwartzman, K. C. (2006). Globalization from a World-System Perspective: A New Phase in the Core A New Destiny for Brazil and the Semiperiphery. *Journal of world-systems Research*, *12*(2), 265–307. https://doi.org/10.5195/jwsr.2006.368

Sim, A. B., & Rajendran Pandian, J. (2007). An exploratory study of internationalization strategies of Malaysian and Taiwanese firms. *International Journal of Emerging Markets*, *2*(3), 252–273. https://doi.org/10.1108/17468800710758396

Smith, D. A. (2017). World-system zones in the 21st century: Beyond core and periphery, who fits where? In M. Boatca, A. Komlosy, & H.-H. Nolte (Eds.), *Global Inequalities in World-Systems Perspective* (pp. 3–17). Routledge.

Soumaré, I., Gohou, G., & Kouadio, H. (2016). Comparative study of the characteristics of FDI from China to Africa versus developed countries. *Transnational Corporations Review*, *8*(3), 165–177. https://doi.org/10.1080/19186444.2016.1233715

UNCTAD (2005). *World investment report: Transnational corporations and the internationalization of R&D*. United Nations.

UNCTAD (2006). *World investment report: FDI from developing and transition economies: Implications for development*. United Nations.

UNCTAD (2014). *World Investment Report 2015: Investing in the SDGs: An Action Plan*. United Nations.

UNCTAD (2015). *World Investment Report 2015: Reforming International Investment Governance*. United Nations.

UNDP (2013). *Human development report 2013. The Rise of the South: Human Progress in a Diverse World*. United Nations Development Programme.

UN-Habitat & IHS-Erasmus University Rotterdam. (2018). *The State of African Cities 2018: The geography of African investment*. R. S. Wall, J. Maseland, K. Rochell, & M. Spaliviero (Eds.). United Nations Human Settlements Programme (UN-Habitat).

Van Hamme, G., & Pion, G. (2012). The relevance of the world-system approach in the era of globalization of economic flows and networks. *Geografiska Annaler: Series B, Human Geography*, *94*(1), 65–82. https://doi.org/10.1111/j.1468-0467.2012.00396.x

Van Hamme, G., & Grasland, C. (2011). *Divisions of the world according to flows and networks*. Work Package 5 halshs-00654535, version 1. Retrieved from https://hal.archives-ouvertes.fr/halshs-00654535/

Varma, S., Bhasin, N., & Nayyar, R. (2015). Motives as locational determinants: A study of FDI between India and LAC. *Transnational Corporations Review*, *7*(3), 335–352. https://doi.org/10.5148/tncr.2015.7306

Vogiatzoglou, K. (2007). Vertical specialization and new determinants of FDI: Evidence from South and East Asia. *Global Economic Review*, *36*(3), 245–266. https://doi.org/10.1080/12265080701561984

Wall, R. S., & van der Knaap, G. A. (2011). Sectoral differentiation and network structure within contemporary worldwide corporate networks. *Economic Geography*, *87*(3), 267–308. http://dx.doi.org/10.1111/j.1944-8287.2011.01122.x

Wall, R. S., & Stavropoulos, S. (2016). Smart cities within world city networks. *Applied Economics Letters*, *23*(12), 875–879. http://dx.doi.org/10.1080/13504851.2015.1117038

Wallerstein, I. (1979). *The capitalist world-economy*. Cambridge University Press.

## APPENDIX A

**TABLE A1** Core–periphery classification of countries in the global South in 2005 (Van Hamme & Pion, 2012)

| | |
|---|---|
| Southern semi-peripheries ($S_{SP}$) (14 countries) | Brazil, China, Colombia, India, Indonesia, Malaysia, Mexico, Philippines, Singapore, Sri Lanka, Thailand, Tunisia, Turkey, Vietnam |
| Southern peripheries ($S_P$) (132 countries) | Afghanistan, Algeria, Angola, Antigua, Argentina, Armenia, Aruba, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Benin, Bhutan, Bolivia, Botswana, Brunei, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Cayman Islands, Central African Republic, Chad, Chile, Comoros, Congo (DRC), Costa Rica, Cote d'Ivoire (Ivory Coast), Cuba, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Ethiopia, Fiji, French Polynesia, Gabon, Gambia, Georgia, Ghana, Grenada, Guadeloupe, Guatemala, Guinea, Guinea Bissau, Guyana, Haiti, Honduras, Iran, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Laos, Lebanon, Lesotho, Liberia, Libya, Macau, Madagascar, Malawi, Maldives, Mali, Martinique, Mauritania, Mauritius, Micronesia, Mongolia, Morocco, Mozambique, Myanmar (Burma), Namibia, Nepal, New Caledonia, Nicaragua, Niger, Nigeria, North Korea, Oman, Pakistan, Palestine, Panama, Papua New Guinea, Paraguay, Peru, Puerto Rico, Qatar, Republic of the Congo, Reunion, Rwanda, Saint Kitts & Nevis, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Solomon Islands, Somalia, South Africa, South Sudan, St. Lucia, Sudan, Suriname, Swaziland, Syria, Tajikistan, Tanzania, Timor-Leste, Togo, Trinidad & Tobago, Turkmenistan, Turks and Caicos Islands, UAE, Uganda, Uruguay, Uzbekistan, Venezuela, Yemen, Zambia, Zimbabwe. |

**TABLE A2** Explanatory variables, countries location factors according to GCI 2006–2014

| GCI Level 1 | Basic requirements | GCI Level 3 competitiveness sub-indicators |
| --- | --- | --- |
| | Efficiency-enhancers | |
| | Innovation-driven | |
| | | 3b.1 inflation |
| | | 3b.2 general government debt |
| | | 4a.1 life expectancy |
| GCI Level 2 pillars of competitiveness | pillar 1a institutional catalyst | 4b.1 business impact of malaria |
| | pillar 1b institutional burden | 4b.2 business impact of tuberculosis |
| | pillar 2 infrastructure catalyst | 4b.3 business impact of HIV/AIDS |
| | pillar 3a macroeconomic environment catalyst | 5.1 tertiary education enrolment |
| | pillar 3b macroeconomic environment burden | 5.2 quality of math and science institutions |
| | pillar 4a health catalyst | 5.3 quality of management schools |
| | pillar 4b health burden | 5.3 availability of research and training services |
| | pillar 5 higher education and training | 6.1 intensity of local competition |
| | pillar 6 market efficiency burden | 6.2 total tax rate |
| | pillar 7 labour market catalyst | 6.3 no of procedures to start a business |
| | pillar 8 financial market catalyst | 6.4 no of days to start a business |
| | pillar 9a technological readiness catalyst | 6.5 prevalence of trade barriers |
| | pillar 9b technological readiness burden | 6.6 trade tariffs |
| | pillar 10 market size catalyst | 6.7 business impact of rules on FDI |
| | pillar 11 business sophistication catalyst | 6.8 burden of customs procedures |
| | pillar 12 innovation catalyst | 7.1 cooperation in labour employer relations |
| GCI Level 3 competitiveness sub-indicators | 1a.1 intellectual property protection | 7.2 flexibility of wage determination |
| | 1a.2 public trust in politicians | 7.3 women in labour force |
| | 1a.3 judicial independence | 8.1 availability of financial services |
| | 1a.4 transparency of government in policymaking | 8.2 affordability of financial services |

(Continues)

**TABLE A2** (Continued)

| | |
|---|---|
| 1a.5 ethical behaviour of firms | 8.3 ease of access to loans |
| 1a.6 strength of auditing and reporting standards | 8.4 venture capital availability |
| 1a.7 strength of investor protection | 9a.1 availability of latest technology |
| 1b.1 burden of government regulation | 9a.2 firm-level technology absorption |
| 1b.2 business cost of terrorism | 9b.1 fdi and technology transfer |
| 1b.3 business cost of crime and violence | 10.1 domestic market size index |
| 2.1 quality of roads | 10.2 foreign market size index |
| 2.2 quality of railroad infrastructure | 11.1 local supplier quantity |
| 2.3 quality of port infrastructure | 11.2 local supplier quality |
| 2.4 quality of air transport infrastructure | 11.3 value chain breadth |
| 2.5 quality of electricity supply | 11.4 extent of marketing |
| 2.6 mobile telephone subscriptions | 12.1 quality of scientific research institutions |
| 2.7 fixed broadband internet subscriptions | 12.2 university industry collaboration in R&D |
| 3a.1 government budget balance | 12.3 availability of scientists and engineers |
| 3a.2 gross national savings | 12.4 patent applications |