11th Biennial IFC Conference on "Post-pandemic landscape for central bank statistics"

BIS Basel, 25-26 August 2022

Does firm size predict the residency status of the final investor? Evidence from Romanian FDI enterprises[1]

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[1]   This presentation was prepared for the conference. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the event.

Does firm size predict the residency status of the final investor? Evidence from Romanian FDI enterprises

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Abstract

The present study examines the extent to which the residency status of FDI enterprises is related to different firm-size measurements. Specifically, the analysis aims at revealing whether firm-size characteristics can predict an overlap (or lack thereof) between the *Ultimate Investing Country (UIC)* and the *Immediate Investor Country (IIC)*. The research hypotheses are tested on a sample of 7,311 Romanian FDI entities, using data collected via the National Bank of Romania (NBR) and the National Institute of Statistics (NIS) 2020 FDI survey. Results indicate that enterprises with higher turnover, profits and FDI positions are more likely to be finally controlled by investors whose residence does not coincide with that of any immediate investor, while, surprisingly, FDI firms with more employees are ultimately controlled by entities resident in the IIC.

Key words: ultimate investing country, immediate investor country, final investor, foreign direct investment, firm level analysis, ultimate controlling parent

JEL classification: F21, F23

Introduction

During the last two decades, the acceleration of business and capital markets globalisation has increased demand for high-quality foreign direct investment (FDI) statistics. Given their various analytical applications, data users and compilers are interested both in aggregated FDI figures included in the Balance of Payments (BoP) and in the International Investment Position (IIP) as well as statistics broken down by partner country and industry (OECD, 2020). Demand for reliable FDI statistics was further enhanced by the SARS-CoV-2 pandemic, as the crisis revealed the need to have more timely, frequent and well-documented indicators to guide policy (Tissot & De Beer, 2020).

Financing arrangements undertaken by multinational enterprises (MNEs) have become more complex over time due to a variety of causes, including the requirement to manage worldwide production networks and the desire to decrease tax and regulatory costs (OECD, 2015a). Layers of equity ownership linkages connect a parent corporation to its subsidiaries, determining whether it has direct or indirect control over them. The growing complexity of corporate structures raises concerns about the efficacy of national and international investment regulations based on investor residency. In addition to their ultimate investor, affiliates can have one or more direct shareholders and multiple indirect shareholders, all of whom may be residents of various countries (Alabrese & Casella, 2020).

MNEs are important players in the globalization process, as their activities involve production, trade, direct investment and technology transfer aimed at maximizing global profitability. Transnational corporations strategically distribute worldwide production among their cross-border affiliates, in order to take advantage of reduced labour costs, enhanced market access, more favourable regulatory frameworks, tax benefits and higher skilled work force. MNEs are increasingly setting up special purpose entities (SPEs) to channel their financial assets abroad and gain access to a wider range of financial markets.

For international business conglomerates, the choice of entrance method is critical within the internationalization decision-making process, since it defines the degree of control over an enterprise's activities in foreign markets. A suitable market entry mode is able to assist MNEs in gaining competitive advantages and even decide the investment's efficiency and development.

In this context, economic researchers have been constantly concerned with the study of the investment channels chosen by MNEs, as well as with the analysis and understanding of the factors that determine their strategic choices.

The purpose of the present study is to investigate the extent to which firm-size characteristics differ between entities for which the UIC coincides with at least one IIC and entities for which the ultimate investor is not a resident of any IIC. Although there is a plethora of literature on FDI, most studies focus mainly on the direction and driving forces of FDI flows as well as their impact on home and host economies (Ngoasong, Wang, Amdam & Bjarnar, 2021; Ahmed, Jones & Temouri, 2020; Li, Liao & Sun, 2018). The contribution that this study makes to prior literature is the use of a comparative analysis of firm-level characteristics based on the ultimate investors' residence.

The paper is structured as follows: the first section presents a review of the literature, indicating relevant studies that focus on FDI investment chains. The literature review is followed by an empirical study in which the dependencies between foreign investors' residency status and entity-size are identified and analysed. Following the discussion of the results, new research topics are proposed in pursuit of an even more comprehensive analysis of cross-border capital transactions.

Literature review

FDI has long been recognized as a significant financial resource. This type of investment enables capital, know-how and technological transfers, resulting in enhanced economic growth, higher productivity and stronger trade ties. From an analytical standpoint, it is important to determine the direct investment's source (European Commisson, 2019).

Traditional FDI datasets are compiled based on the country of residence of the immediate investor (IIC principle). This, in turn, enables MNEs complicated structures to disguise the ultimate source of FDI into a country as the UIC and the associated controlling parent, in cases where investors use chains of investment entities in economies other than their own, cannot be identified (European Commission, 2019).

In order to provide compilers and users of FDI data with more meaningful metrics, the OECD produced the 4th edition of its Benchmark Definition of FDI (BD4). According to BD4, countries should compile and disclose information on inward FDI positions by UIC (OECD, 2015b). This representation enables statisticians to identify the residence of the entity which ultimately controls the investment. Additionally, it facilitates the production of more nuanced statistics that provide deeper insights into economic relationships and can improve the traceability of funds (European Commission, 2019).

Data on UIC can be sourced from direct reporting or from already existing sources. While direct reporting through surveys enables data collection in line with international statistical standards, it also represents an additional response burden for reporters. Thus, compilers aim to manage this burden whenever feasible, through a combination of survey with other available data sources such as business registers or administrative sources. According to the European Statistical System's (ESS) and European System of Central Banks' (ESCB) joint Task Force on FDI (TF-FDI) (2020) certain countries have already implemented enterprise group registers that can be used to identify the UIC, while others use private sources on MNEs. Annual reports are another major source of information on foreign control or ownership. However, these often lag behind the reference year.

Significant differences can exist between the two representations (i.e. UIC and IIC) of the FDI position (OECD, 2015b). Identifying the underlying economic meaning of these differences as well as their economic, social and political impact on both investing and recipient countries has become a growing area of interest for governments, international organisations and academia.

There is a consensus in the literature that MNEs employ complicated ownership structures in order to manage their global operations, finances and intellectual property, as well as to decrease their tax and regulatory responsibilities (Ngoasong et al., 2021; Ahmed et al., 2020; Bankman, Kane & Sykes, 2018). The UIC compilation of inward FDI statistics enables users to look through these complicated systems to the ultimate source of investment in the country of interest. Additionally, FDI UIC figures supply analysts and policymakers with important information about who ultimately owns, reaps the benefits and bears the risks of certain investments (OECD, 2015b).

One of the early attempts to describe ownership patterns of significant enterprises across countries was made by La Porta, Lopez-De-Silanes and Shleifer (1999). The study examines the ownership chain of a sample of significant firms in developed economies to determine their level of concentration, as well as who controls them and how. The presence of pyramidal control structures and rare examples of cross-shareholding are documented by the authors.

A later line of academic inquiry looks into the specific factors that influence MNEs' financial and investment decisions, which may have an impact on the structure of ownership chains. Several studies investigate MNEs' choices as a result of tax consideration.

Altshuler and Grubert (2003) examine how transnational corporations employ affiliates to carry out investment repatriation schemes. The authors acknowledge that despite broad interest in globalization, research on MNEs tends to focus on a narrow spectrum of financial flows between overseas affiliates and their parent companies. MNEs are able to choose between direct dividend repatriation to the parent and continued real investment in the foreign affiliate. Dividend payments are a costly tax option since these transfers are taxed at the higher home country rate when received by the parent. Real investment in the overseas affiliate, which may yield lower returns than domestic investment, is one of many alternatives to direct dividend repatriation. MNEs can employ various tactics to achieve the equivalent of repatriation without having to pay the home country tax on direct low-tax income repatriation.

Ahmed et al. (2020) examine the complementary relationship between tax haven use and FDI in the developing world. The authors conduct their inquiry on a firm-level dataset and show a robust positive relationship between tax haven use and FDI into countries with low economic development and high levels of capital flight.

Mintz and Weichenrieder (2010) findings suggest that the likelihood of group consolidation and the capital exporting country's credit system influence the presence of convoluted ownership arrangements. Concerns about political and expropriation risks also motivate investors to seek investment protection through international agreements, although financial exposure, financing tactics and the host country's institutional framework may also be factors (Lewellen & Robinson, 2013).

These studies have attempted to provide insights into current FDI research questions, however, the relationship between FDI enterprise size and the overlap between UIC and IIC may generate interesting answers for future developments, which can be of significant importance for analysts, policymakers and academia. It is reasonable to expect that MNEs with more complex chains of ownership are able to take better advantage of all the benefits associated to the channelling of funds through one or even more intermediary countries before allocating them to the ultimate host country. Thus, final investors of such MNEs might be able to ultimately control larger entities than those who invest directly in the host economy.

Over 3,000 bilateral international tax treaties have been signed by countries throughout the world. As a result, the tax environment is continually shifting and MNEs can make use of transfer pricing tactics to redirect earnings from high-tax jurisdictions to low-tax ones (Kleist, 2018; Eden & Kudrle, 2005). These tactics, which are facilitated by gaps and mismatches in fiscal legislation, enable domestic tax base erosion and profit shifting (BEPS). Tax avoidance practices cost governments an estimate of about USD 100 to 240 billion in income, yearly. Because developing countries rely to a greater extent on corporate income tax than developed ones, they are disproportionately affected by BEPS (OECD, 2022).

The OECD and G20 countries have taken action towards rectifying the flaws in the international tax system that allow BEPS to thrive. They have devised a comprehensive package of measures to combat BEPS (the BEPS package) (OECD, 2017). Members of the framework (141 nations and jurisdictions) collaborate in order to combat tax evasion, increase international tax coherence and create a more transparent tax environment (OECD, 2022).

MNEs are able to channel funds and employ BEPS strategies through setting up SPEs. Given their growing importance, the International Monetary Fund's (IMF) Committee on Balance of Payments Statistics endorsed the creation of a Task Force on SPEs (TFSPE), in charge with formulating the definition of SPEs, which states that:

➢ "An SPE, resident in an economy, is a formally registered and/or incorporated legal entity recognized as an institutional unit, with no or little employment up to maximum of five employees, no or little physical presence and no or little physical production in the host economy;

➢ SPEs are directly or indirectly controlled by non-residents;

➢ SPEs are established to obtain specific advantages provided by the host jurisdiction with an objective to (i) grant its owner(s) access to capital markets or sophisticated financial services; and/or (ii) isolate owner(s) from financial risks; and/or (iii) reduce regulatory and tax burden; and/or (iv) safeguard confidentiality of their transactions and owner(s);

➢ SPEs transact almost entirely with non-residents and a large part of their financial balance sheet typically consists of cross-border claims and liabilities." (IMF, 2018).

In light of previous research and international political and economic initiatives targeting MNEs, the present study aims to investigate whether there are significant differences in terms of size between enterprises that are ultimately controlled by an investor resident in an IIC compared to those that have

no immediate investment relationship with the UIC. Four explorative hypotheses on the relationship between firm size and final investors' residency were developed, namely:

H1: FDI enterprises with higher turnover levels are more likely ultimately controlled by entities which are not residents in the IIC.

H2: FDI enterprises with higher profit levels are more likely ultimately controlled by entities which are not residents in the IIC.

H3: FDI enterprises with higher employment levels are more likely ultimately controlled by entities which are not residents in the IIC.

H4: FDI enterprises with higher FDI positions are more likely ultimately controlled by entities which are not residents in the IIC.

Data and research method

The study was conducted on a sub-sample of 7,311 FDI enterprises that were subject to the National Bank of Romania (NBR) and the National Institute of Statistics (NIS) 2020 FDI survey. Out of the entire survey sample, only legal entities that submitted a complete set of survey forms or that allowed data imputation from administrative sources were kept in the analysis.

Romania's 2020 FDI statistics were computed in compliance with the methodology set forth in the IMF Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6), based on data collected mainly through a direct statistical survey.

NBR employs the *winner takes it all* (WTA) approach to allocate FDI positions to the ultimate investor instead of the proportional approach (PA), which accounts for direct minority investment. The fundamental difference between the two approaches is that while the WTA allocates all inward FDI to where the MNEs decisions are made, PA allocation emphasises the true ultimate country portfolio of inward FDI, including the allocation of risk exposure. However, due to the scarcity of data and high additional costs for both compilers and reporters, members of the IMF Committee on Balance of Payments Statistics expressed their preference towards the use of the WTA approach for UIC FDI allocation (TF-FDI, 2020).

At end-2020, Romania's total FDI stock stood at EUR 90,773 million. Equity positions amounted to EUR 63,952 million, while debt positions totalled EUR 26,821 million (NBR, 2020). Romania's top five investing countries (IIC and UIC) and their corresponding FDI positions are presented in Table 1.

Table 1. *Romania's top investing countries at end-2020*

IIC	FDI position (EUR mil.)	% total FDI position	UIC	FDI position (EUR mil.)	% total FDI position
The Netherlands	19,994	22.0	Germany	13,792	15.2
Germany	11,070	12.2	Austria	10,153	11.2
Austria	10,858	12.0	France[*]	8,733	9.6
Italy	7,652	8.4	Italy	7,556	8.3
France[*]	5,642	6.2	United States	6,167	6.8

Source: NBR, 2020

In 2020, Romania's FDI net flows dropped by 41.9 percent from the previous year, to EUR 3,005 million. This decline was mainly caused by the outbreak of the SARS-CoV-2 pandemic and the subsequent declared state of emergency in the country, in March 2020. During this atypical year, a large

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[*] including the Principality of Monaco

number of FDI enterprises incurred losses when faced with supply chain disruptions and temporary business suspensions (NBR, 2020).

Firm-level (granular) data were imported into Stata 15.1 for statistical and econometric interpretation.

A multivariate approach was employed for empirical testing of the research hypotheses. The study variables are presented in Table 2.

Table 2. *Variables' description*

Variables	Measures/concepts
Residency status (RSTAT)	dummy dependent variable; takes value 0 if, in 2020, the firms' ultimate investor was resident in (one of) the IIC and 1 otherwise
Turnover (TURN)	turnover (EUR thousand) in 2020
Profit/loss (PL)	profit or loss (EUR thousand) in 2020
Number of employees (EMPL)	average number of people employed on a full time basis in 2020
FDI position (FDI)	FDI position (EUR thousand) at end-2020

The research hypotheses were tested based the following equation:

$$\text{Logit (RSTAT)} = \alpha_0 + \alpha_1 \text{ TURN} + \alpha_2 \text{ PL} + \alpha_3 \text{ EMPL} + \alpha_4 \text{ FDI} + \varepsilon$$

α_i are the regression's coefficients and ε represents the residuals.

Several tests were carried out using the functions implemented in Stata 15.1:

➢ t-test and Mann-Whitney test to determine the significance of the difference between turnover, profit/loss, number of employees and FDI positions of entities whose UIC coincides with at least one IIC compared to those for which there is no overlap between the UIC and the IIC;

➢ Pearson-R and Spearman-R to determine the correlation between the dependent and the independent variables.

Data analysis and results

The main descriptive statistics of the dataset are present in Table 3. In order to ensure the confidentiality of the microdata used, minimum and maximum values corresponding to each variable were not included in the analysis.

Table 3. *Descriptive statistics*

Variable	Mean	Median	Standard deviation	Skewness	Kurtosis
RSTAT	0.22	0	0.41	1.37	2.87
TURN	23,816	2,957	127,810	15.47	315.24
PL	936	65	9,564	16.28	436.46
EMPL	165	37	614	13.33	257.61
FDI	12,294	1,407	62,298	18.45	497.16

A preliminary analysis of the data was carried out in order to find potential errors and outliers. The mean value of the RSTAT variable suggests that for approximately 22% of the sampled entities (i.e.

1,592 observations) the immediate investor is not resident in the same country as the ultimate investor. The descriptive statistics presented in Table 3, particularly skewness and kurtosis, suggest that the independent variables are not normally distributed and record extreme values. In order to minimise the potential adverse effects on results' analysis and interpretation, data were winsorized at the 10% and the 90% percentile. Table 4 presents the descriptive statistics of the independent variables post-winsorization.

Table 4. *Descriptive statistics after data winsorization*

Variable	Mean	Median	Standard deviation	Minimum	Maximum	Skewness	Kurtosis
TURN	8,486	2,957	11,406	116	35,509	1.48	3.80
PL	331	65	723	-552	1,953	1.14	3.34
EMPL	82	37	99	1	315	1.39	3.60
FDI	4,986	1,408	7,065	0	21,744	1.49	3.82

Although standard deviation values remain high, the skewness and kurtosis of the four variables point to a slightly more normal distribution of the data. This is also shown by the comparative analysis of the normal probability plots in Figures 1-8.

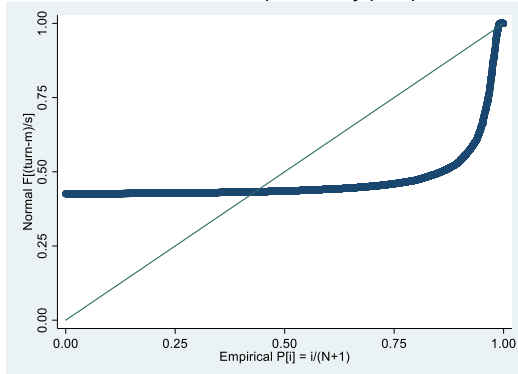**Figure 1.** *Variable TURN normal probability plot pre-winsorization*

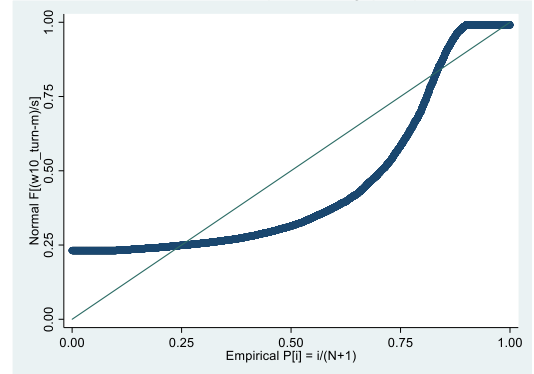**Figure 2.** *Variable TURN normal probability plot post-winsorization*

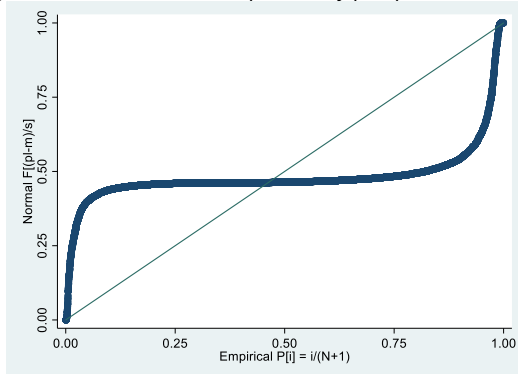
Figure 3. *Variable PL normal probability plot pre-winsorization*

Figure 4. *Variable PL normal probability plot post-winsorization*
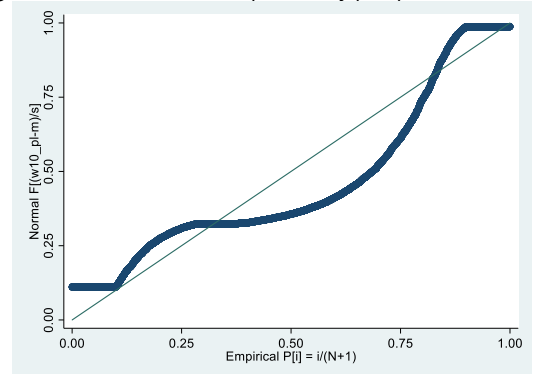

Figure 5. *Variable EMPL normal probability plot pre-winsorization*

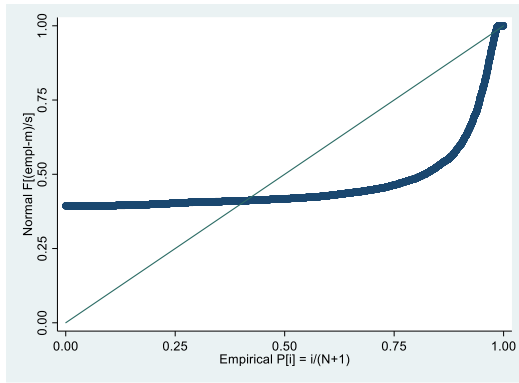**Figure 6.** *Variable EMPL normal probability plot post-winsorization*

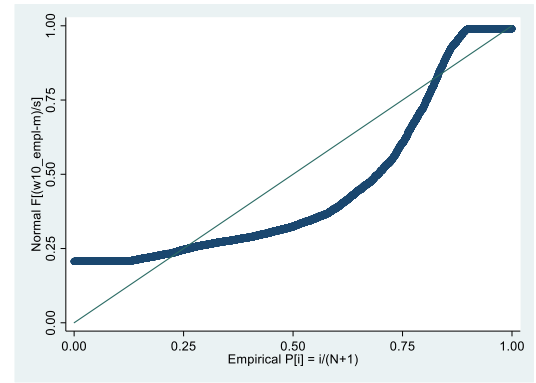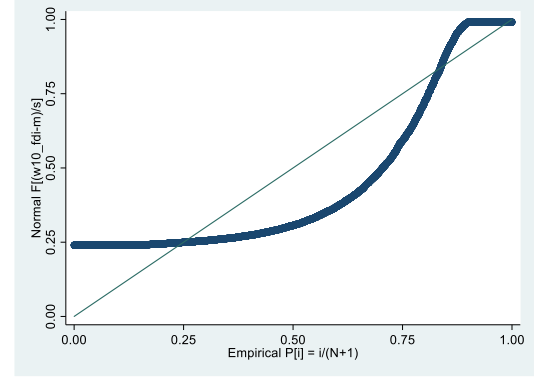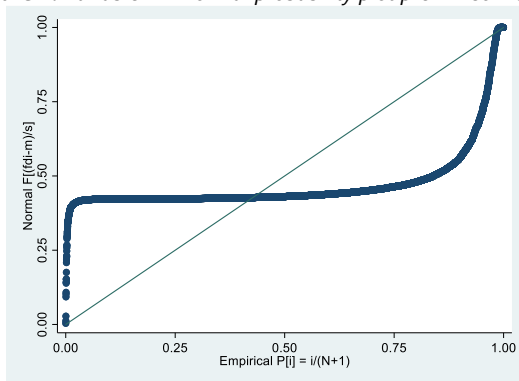**Figure 7.** *Variable FDI normal probability plot pre-winsorization*

Figure 8. *Variable FDI normal probability plot post-winsorization*

Comparative descriptive statistics (Table 5) were computed in order to determine if any preliminary differences exist between the two groups of observations, classified based on the dummy dependent variable of the study.

Table 5. *Comparative descriptive statistics*

Variable	RSTAT = 1; UIC <> IIC			RSTAT = 0; UIC = IIC			t-test	p-value	Mann Whitney test	p-value
	Mean	Median	Standard deviation	Mean	Median	Standard deviation				
TURN	10,776	4,824	12,519	7,849	2,593	10,994	-9.11	0.00	-9.38	0.00
PL	459	157	826	295	51	688	-8.03	0.00	-6.02	0.00
EMPL	92	42	109	80	37	97	-4.42	0.00	-2.10	0.00
FDI	6,631	2,395	8,079	4,259	1,256	6,685	-10.57	0.00	-8.70	0.00

Findings indicate that FDI entities that have their final investor resident in one of the IIC recorded on average lower turnover and profit levels, while also employing less people during 2020 than FDI entities for which the UIC and IIC differ. Central trend indicators also suggest that entities controlled by an IIC resident final investor exhibit smaller FDI positions at end-2020 than their counterparts. Furthermore, the t-test revealed that on average all indicators differ significantly between the two groups of observations. Results of the Mann-Whitney test are consistent with those of the t-test.

Pearson R and Spearman R coefficients (Table 6 and Table 7) suggest positive correlations between all the variables included in the analysis. However, the intensity of the correlations between the dependent variable RSTAT and the independent variables is low to moderate and it is not likely to reduce the precision of the model's estimated coefficients.

Table 6. *Pearson R coefficients*

Variable	RSTAT	TURN	PL	EMPL	FDI

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RSTAT	1.0000			
TURN	0.1059	1.0000		
PL	0.0936	0.5090	1.0000	
EMPL	0.0516	0.6923	0.3144	1.0000
FDI	0.1228	0.5379	0.3741	0.3297	1.0000

Table 7. *Spearman coefficients*

Variable	RSTAT	TURN	PL	EMPL	FDI
RSTAT	1.0000				
TURN	0.1098	1.0000			
PL	0.0704	0.4400	1.0000		
EMPL	0.0245	0.7087	0.2662	1.0000	
FDI	0.1018	0.4853	0.3214	0.2053	1.0000

Due to the fact that the dependent variable of the model is binary, a logistic model is applied to the dataset in order to estimate the probability that an observation belongs to one of the two categories. After running the logistic regression, the following equation was obtained:

Logit (RSTAT) = -1.519226 + 0.0000122 TURN + 0.00001231 PL - 0.0007465 EMPL + 0.0000266 FDI

The model revealed that all the independent variables of the study are predictive of the residency status of the final investor at a confidence level of 90%. Results of the Hosmer–Lemeshow test show that the overall model fit is 45.48 %.

Table 8. *Stata regression output*

Variable	Expected result	Coefficient	Odds ratio	p-value
TURN	+	.0000122	1.000012	0.002
PL	+	.0001231	1.000123	0.005
EMPL	+	-.0007465	0.9992538	0.053
FDI	+	.0000266	1.000027	0.000
Const.		-1.519226	0.2188813	0.000
χ^2	130.64			
Prob. χ^2	0.0000			

The multivariate analysis revealed that higher levels of turnover, profit and FDI increase the likelihood of an enterprise being controlled by an ultimate investor that is not resident in an IIC. According to the odds ratios obtained:

➢ a turnover increase of EUR 1,000 is associated with an increase of 0.0012% in the odds that the ultimate investor is not resident in the IIC;

➢ a profit increase of EUR 1,000 is associated with an increase of 0.0123% in the odds that the ultimate investor is not resident in the IIC;

➢ an FDI position increase of EUR 1,000 is associated with an increase of 0.0027% in the odds that the ultimate investor is not resident in the IIC.

We can be more that 95% confident that these relationships did not occur by chance and that they will be reflected in the population. There is, thus, strong empirical evidence to support hypotheses *H1*, *H2* and *H4*.

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Additionally, findings indicated that the more people an entity employs, the more likely it is to be ultimately controlled by an investor resident in the IIC. Specifically, an additional employee per entity decreases the odds that the UIC is different from the IIC by 0.07462% This result is statistically significant at a 90% confidence level and contradicts hypothesis *H3* of the present study.

The value of χ^2 is 130.64 and has a null associated probability (p-value = 0.0000), suggesting that the research model is valid. However, caution is warranted when interpreting the results as the study is subject to certain limitations. Firstly, a number of factors that may have a significant influence on whether an FDI entity is likely to be controlled by a final investor resident in an IIC have not been included in the model due to the difficulty to operationalise them at this stage. Secondly, the hypotheses were tested on NBR's FDI dataset for 2020. This particular year was marked by the outbreak SARS-CoV-2 pandemic that caused FDI flows to drop, determined FDI enterprises to suspend their business operations and prompted the government to implement financial aid schemes that may distort firm-level indicators. Expanding the analysis for a longer period of time might yield different results.

The main findings of the present inquiry could inform academia, as it contributes to prior literature by approaching a new and topical subject, namely FDI-UIC statistics. Scarcity of such data makes research on this topic challenging. However, further debates could shed light into previously sporadically studied economic relationships established between entities and geographical regions.

Furthermore, the business environment could benefit from knowing the characteristics of companies, which increase their probability of being controlled by a certain category of final investor. For instance, entrepreneurs that develop start-ups with the intention of selling them or expanding their operations could design underling business strategies that enable them to become attractive investment opportunities for particular investors.

Conclusions

Crises are frequently an opportunity to learn. The SARS-CoV-2 pandemic highlighted the need to access timely and high-quality statistical data for a wide variety of purposes. It represents thus an opportunity to consider the further development of the infrastructure that underpins official statistics, in particular by identifying and filling key data gaps and reorganizing processes (Rosolia et al., 2021). The health crisis also highlighted the need to undertake initiatives that enable production of new datasets, which could, in turn, facilitate a better understanding of how international finances are channelled.

The purpose of the present study was to investigate the relationship between FDI entities' size and the residency status of their final investors. Returning to the hypotheses posed at the beginning of the study, findings seem to indicate that fewer employees and higher levels of turnover, profit and FDI increase the likelihood of an enterprise being controlled by an ultimate investor that is not resident in an IIC. These results may suggest that the ultimate controlling parents of FDI enterprises might be able to benefit from certain strategic advantages when they decide to invest in host countries through intermediate ones, which in turn could enable them to set up or take over better performing projects. In turn, the aforementioned findings may be of significant importance for: (i) academia, by enabling researchers to better understand the dynamics of the business environment and the economic relationships that form between certain geographical regions; (ii) private companies interested in becoming attractive investment avenues for certain MNEs, by informing them which firm-characteristics are of interest to the final business-conglomerate owner. The analysis focused exclusively on Romanian resident FDI entities and used data collected via the 2020 NBR and NIS statistical survey. It thus makes a noteworthy contribution to the literature by testing the research hypotheses on firm-level microdata. Findings revealed that specific firm-size features are predictive of the residency status of their final investors. However, it is important to note that these results were obtained and are statistically significant for Romania's particular case. To date, no entities that meet the criteria stated in the SPEs definition, operationalized by the IMF, have been identified in Romania, as the national fiscal legislation does not

encourage their establishment. Testing of the four research hypotheses on a sample of firms resident in other economies (particularly those with significant SPE presence) might yield different results.

The international flow of capital and its key drivers represent a fruitful area for further work. More research is needed to better understand the reasoning behind investors' decision to choose one particular investment strategy over another. Subsequent inquiries could assess whether final investors, which are not residents of an IIC, would rather take over existing entities or choose to start new businesses from scratch.

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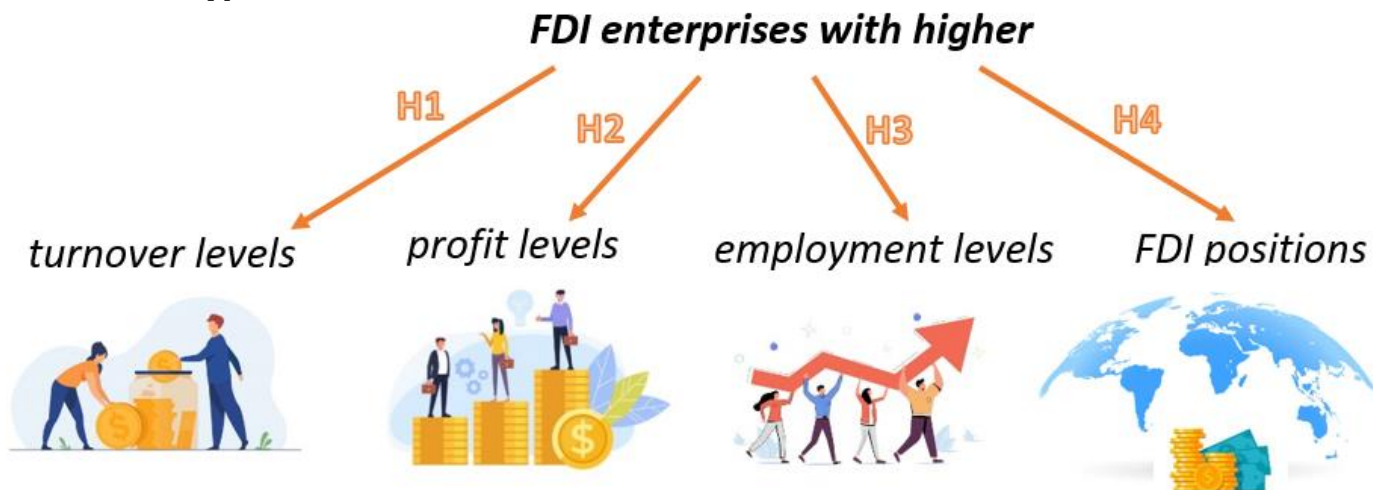
State of knowledge

- The SARS-CoV-2 pandemic revealed the need to have more timely, frequent and accurate statistics to guide policy (Tissot & De Beer, 2020).

- Central banks are the forefront of both the production and use of economic and financial data → hold a unique viewpoint on official statistics (Rosolia, Stapel-Weber & Tissot, 2021).

- The acceleration of business and capital markets globalisation has increased demand for high-quality FDI statistics (OECD, 2020).

- As key-players in the globalization process, MNEs:
  - ➢ engage in production, trade, direct investment and technology transfer aimed at maximizing global profitability;
  - ➢ strategically distribute worldwide production among their cross-border affiliates (Ngoasong et al., 2021; Ahmed et al., 2020; Bankman, Kane & Sykes, 2018).

- Complex corporate structures enable MNEs to disguise their final investor. Traditional FDI datasets compiled based on the *Immediate Investor Country* (**IIC**) principle do not capture the ultimate source of investment.

- OECD's Benchmark Definition of FDI 4th ed. (BD4) recommends countries to compile and disclose inward FDI positions by *Ultimate Investing Country* (**UIC**), as this representation:
  - ➢ enables statisticians to identify the residence of the entity which ultimately controls the investment;
  - ➢ facilitates the production of more nuanced statistics that provide deeper insights into economic relationships;
  - ➢ can improve the traceability of funds (European Commission, 2019).

- It is reasonable to expect that MNEs with more complex chains of ownership are able to take better advantage of all the benefits associated to the channelling of funds through intermediary countries before allocating them to the ultimate host country.

- Final investors of such MNEs might be able to ultimately control larger entities than those who invest directly in the host economy.

Purpose of the study and research hypotheses

- **Purpose**: to investigate the extent to which firm-size characteristics differ between entities for which the UIC coincides with at least one IIC and entities for which the ultimate investor is not a resident of any IIC.

- **Contribution to prior literature**: use of a comparative analysis of firm-level characteristics based on the ultimate investors' residence.

- **Research hypotheses**:

FDI enterprises with higher

H1   H2   H3   H4

turnover levels   profit levels   employment levels   FDI positions

are more likely ultimately controlled by entities which are not residents in the IIC.

Data and research method

- The study was conducted on a sub-sample of 7,311 FDI enterprises that were subject to the National Bank of Romania (NBR) and the National Institute of Statistics (NIS) 2020 FDI survey.

- Out of the entire survey sample, only legal entities that submitted a complete set of survey forms or that allowed data imputation from administrative sources were kept in the sub-sample analysised.

- NBR employs the *winner takes it all* (WTA) approach to allocate FDI positions to the ultimate investor and ensures the voluntary transmission of the data to Eurostat

- A multivariate approach was employed for empirical testing of the research hypotheses:

$$\text{Logit (RSTAT)} = \alpha_0 + \alpha_1 \text{ TURN} + \alpha_2 \text{ PL} + \alpha_3 \text{ EMPL} + \alpha_4 \text{ FDI} + \varepsilon$$
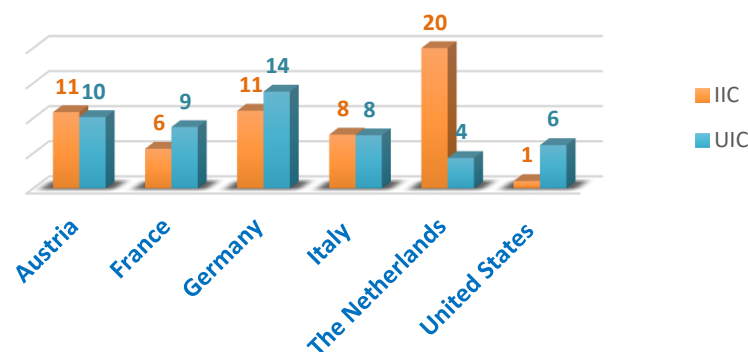
Variables	Measures/concepts
Residency status (RSTAT)	dummy dependent variable; takes value 0 if, in 2020, the firms' ultimate investor was resident in (one of) the IIC and 1 otherwise
Turnover (TURN)	turnover (EUR thousand) in 2020
Profit/loss (PL)	profit or loss (EUR thousand) in 2020
Number of employees (EMPL)	average number of people employed on a full time basis in 2020
FDI position (FDI)	FDI position (EUR thousand) at end-2020

Romania's FDI figures - 2020

**flows
€ 3 bln.**

➡️

**position
€ 91 bln.**

FDI positions by top investing countries at end-2020 (bln. €)

Legend: IIC (orange), UIC (blue)

Values by country:
- Austria: IIC 11, UIC 10
- France: IIC 6, UIC 9
- Germany: IIC 11, UIC 14
- Italy: IIC 8, UIC 8
- The Netherlands: IIC 20, UIC 4
- United States: IIC 1, UIC 6

Data analysis

- ≈22% of the sampled entities UIC ≠ IIC (i.e. the immediate investor is not resident in the same country as the ultimate investor)

- the independent variables are not normally distributed and record extreme values → data were winsorized at the 10% and the 90% percentile.

Descriptive statistics

Variable	RSTAT = 1; UIC <> IIC			RSTAT = 0; UIC = IIC		
	Mean	Median	Standard deviation	Mean	Median	Standard deviation
TURN	10,776	4,824	12,519	7,849	2,593	10,994
PL	459	157	826	295	51	688
EMPL	92	42	109	80	37	97
FDI	6,631	2,395	8,079	4,259	1,256	6,685

On average, FDI entities that have their final investor resident in one of the IIC recorded on average lower turnover and profit levels, while also employing less people during 2020 than FDI entities for which the UIC and IIC differ.

- Central trend indicators also suggest that entities controlled by an IIC resident final investor exhibit smaller FDI positions at end-2020 than their counterparts.

- The t-test and Mann-Whitney test revealed that on average all indicators differ significantly between the two groups of observations (p-value = 0.0000).

- Pearson R and Spearman R coefficients suggest positive correlations between all the variables included in the analysis, ranging between 0.0245 and 0,7087.

Results

- The model revealed that all the independent variables of the study are predictive of the residency status of the final investor at a confidence level of 90%.

- Results of the Hosmer–Lemeshow test show that the overall model fit is 45.48 %.

- Key findings:
  - ➢ higher levels of turnover, profit and FDI increase the likelihood of an enterprise being controlled by an ultimate investor that is not resident in an IIC → H1 ✓ H2 ✓ H4 ✓

  - ➢ contrary to what central trend indicators initially suggested, the logit model revealed that the more people an entity employs, the more likely it is to be ultimately controlled by an investor resident in the IIC → H3 ✗

- These results may be of significant importance for:
  - ➢ private companies interested in becoming attractive investment avenues for certain MNEs, by informing them which firm-characteristics are of interest to the final business-conglomerate owner;
  - ➢ academia, by enabling researchers to better understand the dynamics of the business environment and the economic relationships that form between certain geographical regions.

Conclusions

- Findings **suggest** that **specific firm-size features are predictive of the residency status of their final investors**.

- The analysis focused exclusively on Romanian resident FDI entities and used firm level data collected via the 2020 NBR and NIS statistical survey.

- Limitations:

    ➢ results were obtained and are **statistically significant for Romania's particular case**;

    ➢ factors that may have a significant influence on whether an FDI entity is likely to be controlled by a final investor resident in an IIC have not been included in the model due to the difficulty to operationalise them at this stage;

    ➢ to date, no entities that meet the criteria stated in the SPE definition have been identified in Romanian economy;

    ➢ hypotheses were tested on NBR's FDI dataset for 2020. This particular year was marked by the outbreak SARS-CoV-2 pandemic that caused FDI flows to drop, determined FDI enterprises to suspend their business operations and prompted the government to implement financial aid schemes that may distort firm-level indicators. Expanding the analysis for a longer period of time might yield different results.

Thank you for your attention!

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