The Internationalization of State-Owned Enterprises: An Analysis of cross-border M&As

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Abstract

We study the internationalization of State-owned Enterprises (SOEs) in the 21st century and its underlying firm-level and country-level drivers. Using a global database of more than 100,000 M&As over the period 2005-2012 (a 10% having a State-owned acquirer), we empirically investigate differences between traditional (listed or majority-owned) SOEs and modern reformed (listed or minority-owned) SOEs. We show that the degree of control is associated with a diverging behaviour at home and abroad as compared to private firms. Reformed SOEs are more outward-oriented, tend to purchase better performing targets, concentrate their investments towards less risky countries that are geographically closer, with better institutional quality and with a more central position in the trade network. Our findings are consistent with the view that reformed SOEs, like private firms, are increasingly adopting market-oriented strategies thus differing from traditional SOEs in their objective functions.

Keywords: Internationalization, State-Owned Enterprises, cross-border M&As, Trade Network

JEL codes: F2, L22, L33

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1 Introduction

At the end of the twentieth century, trade liberalization brought the opportunity for **Privately-Owned Enterprises** (POEs) to internationalize their business through a wave of Foreign Direct Investments (FDIs) and cross-border M&As. This process did not involve significantly **State-Owned Enterprises** (SOEs), whose lower propensity to expand internationally has been motivated by various arguments: lack of adequate market incentives, political capture and a different objective function.

Against this backdrop, the New Millennium has been characterized by a surge of public ownership in the global arena. While a comprehensive empirically-based understanding of this phenomenon is still lacking, various researches document an international expansion of some government-controlled enterprises, which established themselves as world multinational corporations (Kowalski et al. 2013, CuervoCazurra et al. 2014 Karolyi and Liao 2017).

The present paper discusses the phenomenon of SOEs' internationalization in light of the major reforms that SOEs have undergone through the last decades. While continuing to maintain the residual right to appoint the relative majority of the board, many governments have partially divested from SOEs. Many of them have been corporatized, opened to private equity and listed in the stock markets. In these cases, governments continue to hold the ultimate control through a non-absolute majority of shares or pyramidal organizational structures (Bortolotti and Faccio, 2009; Fan et al., 2013; Pargendler et al., 2013). This partial privatization has reduced government holdings to a point where SOEs can no longer be considered as State-owned, according to traditional definition. Instead, they have been increasingly referred to as mixed enterprises, reformed SOEs or **State-invested enterprises** (SIEs)[1] (Christiansen and Kim, 2014, Clò et al. 2020). According to Musacchio and Lazzarini (2018), reformed SOEs have been increasingly adopting market-oriented strategies, with a significant improvement in their financial accountability and economic performance.

Given this framework, our main research interest is to extend the traditional dichotomic comparison between public and private ownership by questioning whether reformed SOEs differ from traditional SOEs and from their private competitors in their objective functions and market strategies, and in particular in their M&A activity and propensity to internationalize through cross-border M&As. We analyze the firms'

[1]Throughout the paper we use SIEs or reformed SOEs interchangeably.

pattern of internationalization by inquiring whether POEs, traditional SOEs and SIEs differ with respect to the firms and countries where they address their foreign investments.

The fact that SOEs have embarked on a path of internationalization that historically mainly concerned private companies can bring one to question whether some differences still persist across POEs and SOEs in their investment strategies and ultimate goals. Our main thesis is that SOEs and POEs are still characterized by diverging objective functions, but we enrich this traditional view by arguing that the divergence between SOEs and POEs depends on the intensity of internal reforms that involved SOEs.

We hypothesize reformed SOEs to be more aligned to POEs in their investment strategies, this encompassing both their propensity to internationalize, and the type of country or enterprise towards which they direct their investments. Conversely, there might be substantial differences between reformed SOEs and traditional SOEs. We argue that while reformed SOEs are likely to adopt market-oriented strategies, traditional SOEs are still motivated by political and social objectives that can deviate from profit maximization. Accordingly, we expect contemporary reformed SOEs to be more likely to internationalize and direct their foreign investments towards more profitable target firms and less risky countries. Conversely, we expect traditional SOEs to be more domestically oriented and, when they internationalize, more likely to undertake riskier investments aimed at achieving political motives, such as getting the control over strategic assets. To address these research questions, we adopt an empirical approach which relies on a novel database of more than 110,000 M&As over the period 2005-2012, a 10% of which with a State-owned acquirer. These data are analyzed through a two-step approach. First, we use disaggregated deal-level data to analyze the firms' propensity to internationalize and to assess whether POEs, traditional SOEs and contemporary reformed SOEs differ in their firm-targeting strategy. Second, we use country-level aggregated data to investigate whether divergent internationalization patterns across POEs and different type of SOEs can be traced back to country-specific characteristics, including institutional quality, degree of geographic and cultural proximity, the presence of strategic natural energy resources. Morevoer, we link country-to-country deals with countries' position in international trade. While from a theoretical perspective foreign investments (M&As and FDIs) and trade flows may be either substitute or complements, depending on the purpose of the investment, the empirical evindence leans towards complementarity, especially with firms increasingly involved complex vertically fragmented activities. We enrich this debate by testing whether the relationship between trade flows and M&As varies depending on the ownership nature of the investing firms. To this end, we con-

struct the world trade network and calculate several centrality measures detecting key players (countries) within the network.[2] This approach enriches our analysis in at least two ways. First, it makes it possible to study the links across agents in relation to the whole network, since each country is analyzed through its interactions with others within the network. Second, it allows the construction of richer measures that look at the relationships between entities in a more in-depth way that also takes into account the context of all the other links between countries.

This paper contributes to the existing literature in several ways. We highlight how differences across SOEs' internationalization depend on the intensity of their internal reforms. In particular, SIEs show a higher propensity to internationalize through cross-border M&As. Like their private counterparts, they adopt market-oriented strategies and acquire profitable companies both in domestic and cross-border deals. Conversely, traditional SOEs perform more domestic M&As and acquire lower performing target firms, suggesting that governments uses them as a vehicle to pursue political goals, such as the bail out of national companies in financial distress. The country-level analysis documents relevant differences as well. We find that both the geographical and cultural proximity hypotheses (the tendency to invest more in geographically or culturally close countries) hold more for POEs and reformed SOEs. Conversely, in light of the higher political protection they benefit, traditional SOEs undertake riskier foreign investments, towards countries with a lower institutional quality or that are culturally and geographically distant. Moreover their investments are directed towards countries with a higher endowment of strategic natural resources, suggesting that their internationalization is driven by political motives, such as national security. Finally, we find that being pivotal countries in the trade network implies higher number of deals.

The paper is organized as follows. In section 2, we specify our main hypotheses and research questions which we formulate according to the main relevant literature. In section 3, we present the database and the main variables we analyze. In section 4, the empirical strategy is introduced, and centrality measures based on the trade network are explained. Main results are discussed in section 5. Section 6 reports our conclusions and final considerations.

[2]This approach has been adopted to analyze financial investments (Garlaschelli et al., 2005), FDIs (De Masi et al., 2013; De Masi and Ricchiuti, 2018, 2020), ot world trade (Fagiolo et al., 2009; De Benedictis and Tajoli, 2011, 2018).

2 Research Questions and Literature Review

In this section, we specify our main research questions and our hypotheses about firms and countries where different type of SOEs address their international investments through cross-border M&As.

Propensity to internationalize. Our first hypothesis is that SOEs exhibit different internationalization patterns depending on the intensity of reforms they have undergone. Our expectation is that traditional - unlisted and majority owned - SOEs mainly address their investments within national borders. This hypothesis builds on previous literature, which has advanced various arguments to explain why SOEs historically showed a lower propensity to internationalize. According to the 'social view' argument, SOEs were deliberately deviating from a profit maximization behavior, as they were called to pursue nationally-relevant social goals such as: territorial development and cohesion, employment support, income redistribution and inflation control through pricing mechanisms, and affordable access to services of general interest. The SOEs' focus on national priorities lowered their propensity to invest extensively abroad, thus dismissing potentially profitable opportunities stemming from internationalization, as foreign direct investments were perceived to have a detrimental effect on the domestic balance of payments, on employment dynamics and, ultimately, on the support of the domestic economy. Other authors stressed the risk of political interference and the capture by private interests (Shleifer and Vishny, 1994; Mauro, 1995). According to this argument, governments use their controlled enterprises as a vehicle to pursue private political rents. As a consequence, SOEs were deterred from going abroad, where politicians have a lower capacity to exert their political control and influence. Conversely, we expect these arguments to be less relevant for reformed - listed and minority owned - SOEs, which we expect to exhbit a greater propensity to internationalize compare to traditional SOEs.

Market-oriented strategies. Internationalization through cross-border M&A can be described as a market-oriented strategy motivated by a genuine economic rationale. Cross-border acquisitions represent a fast way to enter new markets, to acquire new capabilities or distributional networks, to access strategic intangible assets such as patent-protected technologies, superior managerial skill and know-how (Deng 2009; Wang and Boateng 2007; Sun et al. 2012). We explore this argument by analyzing the profitability (as measured by the ROS ratio) of the firms that are targeted by private and public acquirers in their domestic and cross-border M&As. According to our conceptual framework, we expect both POEs and reformed SOEs' internationationalization pattern to be driven by a market-oriented strategy, resulting in the targeting of

profitable firms. Conversely, traditional SOEs (which internalize political goals in their objective function) should acquire enterprises with an inferior economic performance, that private acquirers would not consider in their acquiring strategy. Our hypothesis is consistent with the evidence of the large-scale governments' bail out operations targeted to the banking sector and strategic enterprises in financial distress (Tagkalakis 2013). We also inspect differences among traditional and contemporary SOEs strategies by comparing their foreign and domestic M&As. We expect the propensity of traditional SOEs to acquire bad performing firms to be more pronounced within domestic boundaries compared to cross-border M&As, while this difference should not be relevant for profit-maximizing POEs and SIEs.

Risks and institutions. The quality of formal and informal institutions affect the risk associated to investments and thus are likely to influence both the propensity to internationalize and the choice of the country where firms direct their foreign investments. Moeller and Schlingemann (2005) find that weak institutional environment in the target's country increases agency problems and asymmetric information, resulting in a lower probability of cross-border M&As to take place. By affecting the degree of reciprocal trust, social and cultural factors have been also identified as determinants of cross-border deals (Guiso et al. 2009; and Bottazzi et al. 2012). Other studies have found that geographical, cultural and language proximity positively affect the intensity of cross-border M&A, as this lowers the non-monetary transaction costs of trans-border deals (Stulz and Williamson 2003; Ahern et al. 2012; Di Giovanni 2005, Erel et al. 2012). With respect to this literature, we argue that institutional factors affect differently the firms' propensity to internationalize depending on their ownership nature. In particular, our main hypothesis is that, compared to POEs, traditional SOEs have a higher capacity to undertake riskier internationalization patterns. Thus, we expect them to address their cross-border M&As towards countries with lower institutional quality, geographical and cultural proximity. This hypothesis stems from the canonical argument that, compared to POEs, traditional SOEs are less risk-exposed, as they face softer budget constraints, and are less exposed to the threat of takeover or bankruptcy (Vickers and Yarrow, 1991; La Porta et al., 1998). Conversely, we expect this argument to be less relevant for contemporary reformed SOEs. Accordingly, Knutsen et al. (2011) find that SOEs are more likely to make hazardous investments as they invest more than private enterprises in countries with a poor rule of law and high corruption, suggesting that their strategies are less influenced by institutional risk factors. Mariotti and Marzano (2019) argue that institutional factors drive the pattern of SOEs' internationalization.

Strategic resources. The emergence of SOEs in the global arena has raised various concerns, as governments can use SOEs as a vehicle for pursuing non-commercial and political objectives (Cuervo-Cazurra et al. 2014), and this may involve anti-competitive effects and generate economic distortions at the global level (Guriev et al. 2011; Kowalski et al. 2013). Some authors argue that SOEs pursue political goals such as national security and thus they internationalize to access to strategic natural or primary resources which are not available domestically (Butt et al. 2008, Bremmer 2010; Bass and Chakrabarty 2014; Luo and Tung 2007, Jeong and Weiner, 2012). Focusing on the Chinese case, Ramasamy et al. (2012) find that SOEs mainly address their cross-border M&As towards countries rich of natural resources. In light of this literature, we question whether SOEs and POEs address their foreign investments towards countries which differ with respect to their endowment of natural and strategic resources. According to our conceptual framework, we expect this difference to be relevant mainly for traditional SOEs that can be used by governments as a vehicle to achieve politically relevant goals.

Centrality within the trade network. The decision to make foreign investments may depend on the trade patterns. FDIs and cross-border M&As represent a way to enter new markets or relocate certain tasks. Existing trade linkages matter as some countries are better positioned than others within the trade network, depending on the reasons for the investment. Traditionally, foreign investments and exports have been seen as substitute ways to serve the market. However, with production fragmentation and the emergence of Global Value Chains, the complementarity between trade and foreign investments has become more relevant. Being positioned in central locations, with strong trade linkages with international markets enhances such complementarieties and is likely to provide more valuable opportunities. In light of the debate concerning the nature of the relation between foreign investments and trade (complementarity vs. substitutability), we investigate whether cross-border deals involve acquiring and target companies located in countries that hold more central positions in the world trade network. Centrality signals less risky and more market oriented firms' strategy. We expect that countries with a higher degree of centrality, which also play an important role in supply chains, also tend to be more involved in cross-border deals. Moreover, we hypothesize that the sign and size of this relationship might depend on the ownership nature of the acquiring company. For SIEs and POEs, we expect a positive relationship between deals and centrality in the network of target countries. On the contrary, we expect target's country position in international trade to be less relevant for canonical SOEs.

3 Data

We combined data from different sources. We first extract from the Zephyr,[3] a database managed by Bureau Van Dijk, the entire set of M&As that took place over the period 2005-2012. We consider only those deals reporting non-missing information about: the year of the deal; the deal type; the name of the target and acquiring companies involved in each deal and their respective identification numbers (IDs). Companies' IDs are then used to extract from the Orbis data set (also managed by the Bureau Van Dijk) additional information on the target and acquirer firms involved in the selected deals. Orbis contains yearly information on the financial, accounting and corporate characteristics of a large number of international companies. From this data source, we retrieved information related to firms' profitability (as measured by the ROS indicator) in the year of the deal, their geographical location, year of incorporation, whether the firm is listed on a stock market, and its sector of activity. The sector of activity is used to gauge information on the technological level of firms. Based on the Eurostat classification (Statistics on high-tech industry and knowledge-intensive services), high-tech firms include those in high-tech knowledge-intensive services and high-technology manufacturing.[4] Moreover, for the acquirer companies, we extract from Orbis information on their governance structure: their listing status, the percentage of shares owned by the top shareholder and their ownership nature. Our main explanatory variable refers to whether the acquirer is State-owned or not. A firm is considered a SOE when it is ultimately owned by a government or public authority.[5] For companies that are under government control, we use information on the percentage of shares owned by the top shareholder to distinguish majority-onwed SOEs and minority-owned SOEs. While in the former case, where the government owns the absolute majority of shares, in the latter case the government is the top shareholder though it owns less than 50% of shares within the controlled company.

On top of considering firm-level variables, we enrich our dataset by including variables which capture some

[3]Zephyr reports worldwide information on deals. We include acquisitions, mergers, joint ventures, IPO, minority stakes, institutional buy-outs and management buy-outs, while we disregarded data of rumors about potential and not completed deals

[4]The classification of NACE rev. 2 sectors by technological level is available from Eurostat at `https://ec.europa.eu/eurostat/cache/metadata/Annexes/htec_esms_an3.pdf`.

[5]The ownership of a company is determined by adopting the following procedure. We extracted information on the firm's top shareholder from ORBIS. The former refers to the owner of the largest share of equity in the company, so we proceeded in a recursive manner until the ultimate controller is identified, especially when such an entity is a governmental body. This criterion encompasses both enterprises under direct public control, where the government is the top shareholder, and indirect public control, where the government is the ultimate owner through a chain of upstream ownership relations while it does not figure as the SOE's top shareholder.

features about the countries where the target and acquiring companies originate. According to our conceptual framework, these country-level variables can contribute to explain differences in the internationalization pattern across POEs, traditional and reformed SOEs. For each country, the level of strategic resources is proxied by three variables: the amount of natural gas and oil reserves (data are sourced from BP Statistical Review of World Energy), and the level of mineral rents, whose data are taken by the Workd Development Indicators managed by the World Bank. [6] Following a consolidated literature, to measure the country institutional quality we rely on the World Bank's Worldwide Governance Indicators (WGI) database (Kaufmann and Kraay 2008; Kaufmann et al. 2010). In light of our specific interest in the quality of the government controlling the SOEs, we decide to focus our attention on the Control of Corruption (CC) indicator, which captures *'the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the State by elites and private interests'* (p. 223, Kaufmann et al., 2011). Bilateral trade flows between countries as well as geographical variables such as distance, common language and colonial ties are from CEPII. Bilateral trade flows are taken from the BACI database provided by CEPII and based on raw data from UN-Comtrade. We aggregate trade data at the origin-destination country level and use it build the World Trade Network (De Benedictis et al, 2014) on which we calculate centrality measures.

After cleaning the data (errors, misreportings, missing information), our final database is composed by a total of 110,064 deals that occurred worldwide over the period 2005-2012. Geographically, our database has a global coverage, including 130 acquirer countries and 164 target countries. Of the 110,064 deals in our dataset, 91.3% (100,480) involve POEs as acquirers and 8.7% (9,584) regard SOEs. Domestic deals are 73.3% (80,693), while cross-border deals are 26.7% (29,371). 92% of the cross-border deals (27,019) are performed by POE and 8% (2,352) by SOEs.

We report in Table 1 the list of variables used in the analysis and their source.

3.1 Network measures

Centrality is a key concept in the network analysis. By measuring the importance of each agent (a node) within the network, it greatly differs conceptually and computationally from standard individual-level mea-

[6] According to the World Bank, Mineral rents are calculated as the difference between the value of production for a stock of minerals at world prices and their total costs of production. Minerals included in the calculation are tin, gold, lead, zinc, iron, copper, nickel, silver, bauxite, and phosphate.

Table 1: List of variables and sources.

Variable	Description	Source
Deal-level variables		
Acquirer	Acquiring firm ID	Zephyr
Target	Target firm ID	Zephyr
Year	Year of the deal	Zephyr
Firm-level variables		
SOE	State or privately owned	Orbis
SOE minority-owned	State owns less than 50% of shares	Orbis
SOE majority-owned	State owns more than 50% of shares	Orbis
Listed	Listed or unlisted	Orbis
Profitability	Return on sales ebit	Orbis
Country	Country name	Orbis
Sector	NACE rev. 2 sector, 2-digit	Orbis
High-tech	H-tech manuf., H-tech know.-int. serv.	Eurostat
Country-to-country variables		
Cross-border	Domestic or cross-border	Zephyr
Distance	Distance between countries	CEPII
Colonial ties	Common colonial ties or not	CEPII
Bilateral trade	Imports and exports	CEPII
Country-level variables		
Oil reserves	Oil reserves, barrels	BP
Natural gas reserves	Natural gas reserves, cube meters	BP
Mineral rents	Mineral rents, % of GDP	World Bank
Control of corruption	Index of control of corruption	World Bank
Degree	Centrality in the world trade network	Own elaboration
Eigenvector	Centrality in the world trade network	Own elaboration
Clustering	Centrality in the world trade network	Own elaboration
Average neighbour degree	Centrality in the world trade network	Own elaboration

sures for the fact that it takes into account the entire structure of the network (see Newman, 2018). Following De Masi and Ricchiuti (2020), we use country-to-country bilateral trade flows to construct a yearly undirected trade network. The nodes i and j (countries) are linked when we observe a trade flow between them. In the case of international trade, weights are particularly meaningful. Specifically, in each year t, they are constructed as the ratio between bilateral trade (imports plus exports) and the total world trade. They capture the relevance that each country pair within the world trade network:

$$\omega_{ij,t} = \frac{Imports_{ij,t} + Exports_{ij,t}}{Imports_{w,t} + Exports_{w,t}}$$

We consider several measures of centrality, including both local measures (degree of centrality, average degree of neighbors, clustering) and higher-order measures (eigenvector centrality). These measures vary according to the network topology, and catch different node's attitudes. [7]

The **degree centrality** is the simplest centrality measure, and allows to detect a leader of the network. For each country, it is given by the ratio between its (unweighted) number of links and the maximum number of possible links. Therefore, it is defined as the fraction of countries that is connected to country i:

$$DC_i = \frac{k_i}{(N-1)}$$

where k_i is number of links of country i and N is the total number of nodes.

The second measures employed is the **the average neighbor degree**, which returns the average degree of the country's neighbor. Specifically, the index equal to:

$$AVND_i = \frac{1}{s_i} \sum_{j \in N(i)} \omega_{ij} k_j$$

where s_i is the weighted degree of node i, ω_{ij} is the weight defined above, k_j is the degree of node j and $N(i)$ are the neighbors of node i. Having a high *average* means that the country is linked to highly-connected countries. This indicator measures how much the network is assortative, i.e. if the nodes are similar in some way. To be more specific, if the average degree of the neighbors increases with the node's

[7] It is worth noting that these measures are statically highly correlated but the hubs identified could diverge (Krackhardt, 1990) significantly. Indeed, the measures are constructed in a different way, even if the background meaning that they aim to calculate is the centrality of a node with respect to the network.

degree, then the network is assortative; if it decreases, then the network is disassortative.

The last local measure we consider is the **clustering coefficient**, which is a measure of the density of connections around a node. For unweighted graphs, the clustering of a node is the fraction of possible triangles through that node that exist, allowing us to detect the neighboring nodes which in turn are connected to each other. For weighted graphs, different algorithms may be used to define the clustering coefficient, we follow the library NetworkX implemented in Python employing the geometric average of the sub-graph hedge weights ($\omega_{ij,t}$ defined above).

We finally calculate a global measure of centrality, the eigenvector, whose value depends on the structure of the network as a whole.

Eigenvector centrality represents a generalization of the degree (Newman, 2010). It accounts for both the number of connections of each node and, recursively, the number of connections of neighbors. It catches the neighbors' centrality. Specifically, its value for country i is the $i-th$ element of the vector x defined by the system:

$$Ax = \lambda x$$

where A is the adjacency matrix of the network and λ the eigenvalue. If λ is the largest eigenvalue, there is a unique solution x. The neighbors centrality are weighted using ω_{ij}. A higher eigenvector implies that the the country is connected to many nodes that themselves have high eigenvector centrality scores.

For degree, clustering and eigenvector centrality, we expect the largest number of deals to be done in the hub countries of the trade network. This result would confirm a complementary relationship between M&A and trade. The sign of the Average Neighbor Degree, on the other hand, strictly depends on the network's topology. If this is assortative (dissortative), we expect a positive (negative) relationship. Indeed, in the former, index is higher for the countries with the higher degree. In the second case, it is the opposite.

4 Empirical Strategy

To answer our research questions, we develop the empirical strategy on two levels. First, at the firm level, we focus on SOEs' internationalization and market orientation. Regarding the former, we assess whether the probability of performing cross-boarder deals depends on the ownership structure of the firm such as being either a POE, majority or minority-owned SOE. For the latter, we look at the characteristics of targeted firms, such as their economic sector and profitability. Second, at the country level, we investigate the geographical patterns of cross-border deals. To this end, we study how the total number of deals between each country pair depends on the characteristics of the involved countries, such as their institutional quality, geographical and cultural proximity, the presence of strategic natural resources or their weight in the international trade network. The firm-level empirical strategy is presented in subsection (4.1), while in subsection (4.2) we describe the country-level empirical strategy.

4.1 Firm-level Analysis: Model Specification

To investigate how firms' characteristics affect the type of deals performed regarding the propensity to operate at the international level and the market orientation, we first work on the full cross-section dataset of deals.

Propensity to internationalize. The propensity to operate at the international level is investigated through the following probit baseline specification:

$$Pr(Y = 1) = \Phi(\alpha + \beta SOE + \gamma' X + \delta_t + \delta_{ci} + \delta_{cj} + \delta_{si} + \delta_{sj}) \tag{1}$$

where the variable Y indicates whether the deal is domestic ($Y = 0$) or cross-border ($Y = 1$); Φ is the cumulative standard normal distribution function; α is the constant term; SOE is a dummy variable equal to 1 when the acquirer is a State-owned enterprise and 0 otherwise; and β is the main parameter of interest, capturing whether the (conditional) probability to perform cross-border deals depends on the ownership nature of the acquirer. A positive (negative) value of β indicates that SOEs display a higher (lower) propensity to internationalize relative to POEs, conditional on controls. The vector X denotes a set of control variables of the acquirer firm, including their listing status, the institutional quality of the country

where they are located and the percentage of shares owned by the top shareholder. Fixed-effects are added to control for potential confounding factors and for correlated unobserved heterogeneity. Year fixed-effects δ_t capture time-dependent common shocks including yearly macroeconomic exogenous shocks, while the other parameters control for time-invariant differences across the acquirer i and the target j involved in the M&A. These include, respectively, their country c (δ_{ci} and δ_{cj}) and sector of activity s (δ_{si} and δ_{sj}).

The initial baseline model specified in equation (1) allows to analyze whether, at the firm level, the probability to internationalize through a M&A depends on the acquirer's ownership nature (private vs. SOE), when controlling for specific firm and country level variables of both the acquirer and target company. Next, we further investigate the heterogeneity between different types of SOEs. To do so, we distinguish between majority-owned and minority-owned SOEs as well as between listed and unlisted SOEs. For this purpose, we extend the baseline model by adding a dichotomic variable, $Firm\ type$ and by interacting it with the ownership variable as follows:

$$Pr(Y = 1) = \Phi(\alpha + \beta_1 SOE + \beta_2 SOE \times Firm\ type + \gamma' X + \delta_t + \delta_{ci} + \delta_{cj} + \delta_{si} + \delta_{sj}) \qquad (2)$$

where $Firm\ type$ capturs different types of firms according to the specification. We check our results with (i) $Firm\ type$ being a dummy for majority vs. minority owned firms; (ii) $Firm\ type$ being a dummy for listed vs. unlisted firms. In these specifications, the coefficients of interest are those of interaction terms ($SOE \times Firm\ type$) that allow us to verify whether propensity to internationalize differs across traditional and reformed SOEs, conditional on the control variables X (including the non-interacted $Firm\ type$).

Market-oriented strategies. Having investigated SOEs' internationalization, we then turn to the characteristics of the targeted firms. Separately for domestic and cross-border deals, we first test whether the probability of acquiring domestic/foreign firms operating in high-tech sectors depends on the type of acquirer.[8] For this purpose, we employ the same probit model specification discussed above in equation (2), with $High-tech$ being now our binary dependent variable of interest (equal to 1 when the target enterprise operate in a high-tech sector, according to the Eurostat definition).

Moreover, SOEs' market orientation is investigated by looking at target's profitability, again distinguishing for domestic and cross-border deals. The specification follows the ones above, but in this case the dependent

[8]Furthermore, we also checked the probability to acquire listed targets (not reported for space reasons). Results available upon request.

variable (ROS ebit) is continuous, hence we turn to an OLS estimator (rather than probit).

4.2 Country-level Analysis

To investigate whether different internationalization patterns across SOEs and POEs are associated with country-specific characteristics, we aggegate deals at a country-level. The dependent variable of interest is the number of country-to-country deals having either a private or State-owned acquirer (accordingly, the dataset is aggregated at the country-pair level, separately for POEs and SOEs). Working with a count dependent variable which contains only integer values, we adopt a Poisson estimator. Although our dependent variable shows a departure from the assumption of equi-dispersion (i.e. mean and variance can be different) of a Poisson regression, it still has several advantages compared to alternative estimators (e.g. negative binomial): it provides consistent estimates of the coefficients of interest even when the underlying distribution of the dependent variable is not Poisson but the conditional mean is correctly specified (Gourieroux et al., 1984; Wooldridge, 1999). Moreover, the Poisson regression model is robust to a number of misspecifications such as overdispersion (it can be accommodated by using robust standard errors), the presence of an excessive number of zeros, to dependence over time as well as cross-sectional dependence (Bertanha and Moser, 2014). We use standard errors clustered at the level of the origin country. The country-specific characteristics of interest as expanatory variables regard both the acquirers' country of origin and the targets' country of destination; and include their institutional quality, their geographical and cultural proximity or the presence of strategic natural resources. Moreover, we analyze how the number of deals relates to the international trade network.

In our specification, we investigate how the number of bilateral deals depends on country characterisitcs and how the ownership nature of the acquiring firm affects this relationship. Our specification is the following:

$$E[Y_{ij}^{L}] = exp(\alpha + \beta_1 SOE_i + \beta_2 SOE_i \times x_h + \gamma_1' X_i + \gamma_2' X_j + \gamma_3' X_{ij} + \delta_{ci} + \delta_{cj} + \delta_t) \qquad (3)$$

where $E[Y_{ij}^{L}]$ denotes the (conditional) expected value of Y_{ij}^{L} that is the number of M&A deals between the home country i and the host country j made either by listed acquirers ($L = 1$) or by unlisted acquirers

($L = 0$).[9] The vectors X_i and X_j include the following set of country-level time-variant control variables respectively for home country i and host country j: institutional quality, measured by the WGI Control of Corruption (CC) indicator; the annual GDP per capita, the amount of gas reserves, oil reserves and mineral rents. Moreover, various alternative network centrality measures are used for both home and host countries: eigenvector centrality, degree centrality, clustering coefficient and the average neighbor degree. The vector X_{ij} captures time invariant country-pair variables commonly used in gravity models such as geographical distance, colonial ties and common language. Concerning the coefficients of interest, β_1 captures the baseline difference in the number of bilateral deals between SOEs and POEs (both being either listed or unlisted), while the β_2 coefficient of the interaction term ($SOE_i \times x_h$) captures how the association between the number of deals and the variable $x_h \in \{X_i, X_j, X_{ij}\}$ differs for SOEs as compared to POEs.
We check several specifications with the x_h variable and its interaction term defined as follows.

Risk and institutions. We check whether SOEs' and POEs' cross-border M&As differ in their association with the institutional quality of the home/host country. $SOE_i \times CC_j$ measures whether, compared to private firms, State-owned acquirers direct their investments towards countries with a better or worse institutional quality proxied by the World Bank's control of the corruption indicator. We use two alternative dependent variables to compare deals performed by listed and unlisted SOEs and to verify whether traditional SOEs tend to perform cross-border M&As in riskier countries.

Strategic resources. These interaction terms are introduced to test the hypothesis formulated in the previous literature according to which SOEs respond also to non-economic strategic incentives related to political power and access to natural resources. $SOE_i \times Gas_j$, $SOE_i \times Oil_j$ and $SOE_i \times Mineral_j$ measure whether, compared to private enterprises, SOEs tend to address more cross-border investments towards natural resources abundant countries. Again, we use as dependent variable the total amount of deals performed by both listed and unlisted acquirers in order to check for differences across traditional and reformed SOEs and to test whether traditional SOEs' internationalization is motivated by political reasons.

Proximity, trade and centrality. According to their differing objectives, SOEs and POEs may display different sensitivity to geographical factors as well as to country's role in international trade. The interaction

[9] In order to investigate differences between reformed and traditional SOEs we prefer to separately consider two alternative dependent variables (the total amount of deals performed either by listed or unlisted acquirers) rather than using among the regressors a triple interaction term (between the SOE dummy, the $listed$ dummy and the country variable of interest x_h). In this way, results are easier to interpret.

term $SOE_i \times Distance_{ij}$, $SOE_i \times Colony_{ij}$ and $SOE_i \times Common\ Language_{ij}$ are gravity variables introduced to test the geographical and cultural proximity hypotheses: that is whether SOEs tend to value more or less than POEs geographical or cultural factors. Finally, the interaction terms $SOE_i \times Eigenvector_i$ and $SOE_i \times Eigenvector_j$ (as well as with the other centrality measures) are introduced to to analyze home/host country trade network centrality can explain the number of deals carried out by SOEs and POEs. We wonder whether SOEs behave differently from private companies. Deals may be carried out to seek synergies with existing international trade linkages, or on the contrary they might seek peripheral countries, for instance to open new linkages.

5 Results

5.1 Firm-level Analysis

Firm-level analysis is aimed at understanding differences in the cross-border M&A activity among enterprises depending on their ownership nature and other firm-specific features. Descriptive statistics show that the share of cross-border deals (about 24-27%) is similar for both POEs and SOEs. A stark difference, however, emerges when we consider minority-owned State-invested enterprises (SIEs, below 50% of the shares) and majority-owned State enterprises (above 50% of the shares), or listed and unlisted SOEs. In Table 2, we see that for SIEs and listed firms, about 34% of the deals are cross-border, suggesting a greater propensity to internationalize, while majority-ownedand unlisted SOEs tend to operate domestically.[10]

These differences in unconditional means are further investigated empirically. Table 3 reports the estimates for the models specified in equations (1) and (2) regarding SOEs' internationalization. The positive and highly statistically significant coefficient of the SOE variable (Column 1) indicates that the probability to observe a cross-border deal increases when the acquirer is controlled by a government. This first evidence implies that, at a firm level, the propensity to internationalize through cross-border M&As depends on the acquirer's ownership nature and confirms the non-negligible role that SOEs have been playing since the new

[10]Summary statistics as well as the sector and country distributions of deals are reported in the Appendix in Tables 9, 11 and 10. All the results presented in this and the next section are robust to the exclusion of China, whose SOEs have a particular important role in the domestic economy as well as abroad. In our dataset, China accounts for a small fraction of deals and it is not driving our results. All the other figures reported in the text as well as further descriptive evidence and econometric results are available upon request.

Table 2: Share of domestic and cross-border deals by type of firm.

	Domestic	Cross-border	Total	N
POE	73.1	26.9	100	100,480
SOE	75.5	24.5	100	9,584
of which:				
minority-owned	66.3	33.7	100	3,707
majority-owned	81.2	18.8	100	5,877
listed	66.1	33.8	100	3,705
unlisted	81.3	18.7	100	5,879
All deals	73.3	26.7	100	110,064

century in the market for corporate control.

Results reported in Column 2-3 of Table 3 show that the propensity to internationalize varies across different type of SOEs, depending on the intensity of the governance reforms they have undergone. In particular, we observe that the previous result about the SOEs' higher internationalization is entirely driven by contemporary reformed SOEs, which are proxied by both minority-owned SOEs and listed SOEs. Conversely, traditional (unlisted and majority-owned) SOEs are less internationalized compared to both POEs and contemporary SOEs.

These results suggest that the intensity of government control is likely to affect the operational objectives that SOEs' managers are instructed to achieve. Indeed, compared to traditional SOEs, listed and minority-owned SOEs show a higher entrepreneurial attitude towards internationalization through cross-border deals. This confirms our hypothesis about a shift towards characteristically private-sector models of corporate structure and profit orientation on behalf of reformed SOEs operating in deregulated and globalized markets (Clò et al., 2017). This suggests that the long-term objectives and market strategies of contemporary reformed (listed and minority owned) SOEs are unlikely to differ significantly from those of their private peers. Conversely, majority-owned SOEs and unlisted SOEs are still more inclined at acquiring firms within their domestic borders. This evidence is in line with the traditional social view about public ownership according to which SOEs are called to pursue a social welfare objective, inducing them to undertake domestic investments with a positive repercussion on the national economy.[11]

[11] Another insight emerges when distinguishing SOEs according to their economic sector of activity. Additional econometric analyses show that the propensity to internationalize increases for both State-owned and private enterprises operating in high-tech sectors, while when looking at the financial sector, the probability to internationalize

Table 3: Firm-level Analysis: Propensity to internationalize.

	(1)	(2)	(3)
Listed	0.386***	0.382***	0.375***
	(0.011)	(0.011)	(0.011)
SOEs	0.115***		
	(0.019)		
Minority SOEs		0.136***	
		(0.023)	
Majority SOEs		0.017	
		(0.026)	
Unlisted SOEs			0.035
			(0.026)
Listed SOEs			0.580***
			(0.028)
Constant	6.682***	6.695***	6.714***
	(0.330)	(0.330)	(0.330)
Observations	109,096	109,096	109,096
Year Sector and Country FE	YES	YES	YES
R2	0.157	0.157	0.157

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

We now turn to the market orientation of POEs and SOEs. To this end, one important dimension regards the propensity to acquire domestic and foreign technology. In Table 4, we present the results of probit regressions of the probability to acquire high-tech targets. Columns 1 and 2 show that SOEs behave differently than POEs and that they follow differnt strategies at home and abroad. SOEs are more likely to acquire high-tech domestic firms and less likely to acquire high-tech foreign firms as comparared to POEs. In columns 3-4 and 5-6, we see that these results do not apply uniformely to all types of SOEs, but are largely driven by majority-owned and unlisted SOEs. Traditional SOEs, thus, focus more on the domestic economy, where they invest in technology. On the contrary, reformed SOEs, especially when listed, seem to adopt strategies that are more in line with private firms.

We further analyze the strategies adopted by different type of acquirers by comparing the profitability of

increases only in case of private ownership. This result can be interpreted when looking at the descriptive statistics. In case of public ownership, the financial sector is covered mainly by traditional SOEs, which focus their M&As within national borders, while contemporary reformed SOEs are relatively more present in high-tech sectors. Another confirmation about the diverging strategies across traditional and contemporary SOEs emerges from the evidence of their different internationalization pattern before and after the 2008 financial crisis. Indeed, after the economic recession, traditional SOEs have redirected their investments and financial capital within domestic borders more than contemporary SOEs (Figures are available upon request). This suggests that, while listed and minority-owned SOEs adopt a market-oriented strategy, traditional SOEs still represent a vehicle that governments dispose to implement national industrial policies and to pursue political objectives. These results are not reported in the paper but are available from the authors upon request.

Table 4: Firm-level analysis: Probability of acquiring domestic and foreign high-tech firms.

	(1) Domestic	(2) Cross-Border	(3) Domestic	(4) Cross-Border	(5) Domestic	(6) Cross-Border
Listed	-0.243***	-0.149***	-0.241***	-0.148***	-0.230***	-0.175***
	(0.013)	(0.020)	(0.013)	(0.020)	(0.013)	(0.020)
SOEs	0.096***	-0.128***				
	(0.021)	(0.036)				
Min.-owned SOEs			0.006	-0.144***		
			(0.036)	(0.046)		
Maj.-owned SOEs			0.142***	-0.107**		
			(0.026)	(0.051)		
Listed SOEs					-0.027	0.076
					(0.036)	(0.047)
Unlisted SOEs					0.160***	-0.362***
					(0.025)	(0.053)
Constant	-4.292***	-4.606***	-4.296***	-4.606***	-4.321***	-4.541***
	(0.510)	(0.535)	(0.511)	(0.535)	(0.510)	(0.535)
Observations	79,888	29,093	79,888	29,093	79,888	29,093
Year Sector and Country FE	YES	YES	YES	YES	YES	YES
R2	0.188	0.186	0.188	0.186	0.188	0.187

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

the target enterprises they acquire in both domestic and cross-border M&As. Results reported in columns 1-2 of Table 5 show that, on average, SOEs purchase better performing enterprises only in case of cross-border M&As, while no significant difference emerges in case of domestic deals. Columns 3-6 of Table 5 show significant differences among different types of SOEs. The hypothesis that contemporary reformed SOEs develop market-oriented strategies is confirmed by the evidence that both listed SOEs and minority-SOEs purchase well performing enterprises, with a higher ROS compared to the target enterprises purchased by private acquirers. This result holds when looking at both domestic and cross-border M&As, with the ROS being on average higher in case of trans-border deals. This suggests that internationalization is motivated by rent-seeking opportunities.

A different picture emerges when we focus on traditional SOEs, as the profitability of the target companies they acquire differs significantly across domestic or foreign deals. In case of domestic M&As, unlisted and majority-owned SOEs purchase bad performing enterprises, with a lower ROS than the target enterprises purchased by both POEs and SIEs. The internalization of political objectives brings traditional SOEs to target enterprises facing financial distress, or inferior performance, that private acquirers do not consider in their acquiring strategy. The fact that this result holds only for domestic deals suggests that traditional

SOEs mainly pursue a socio-political goal which deviates from profit maximization only when they operate within domestic borders. Conversely, when they decide to go abroad, their strategies can be driven by profit-seeking opportunities (acquisition of profits or its underlying determinants, such as skills, know-how etc.). Indeed, in their cross-border deals, unlisted SOEs and majority-owned SOEs purchase well performing firms, with a higher profitability compared to private and other public acquirers.

Table 5: Firm-level Analysis: ROS of the Target Enterprise.

	(1)	(2)	(3)	(4)	(5)	(6)
	Domestic	Cross Border	Domestic	Cross Border	Domestic	Cross Border
Listed	1.862***	0.846*	1.820***	0.648	1.649***	1.039**
	(0.355)	(0.505)	(0.356)	(0.455)	(0.372)	(0.517)
SOEs	-0.409	2.766***				
	(0.483)	(0.911)				
Minority-owned SOEs			0.881	2.143*		
			(0.827)	(1.149)		
Majority-owned SOEs			-1.023*	3.462***		
			(0.561)	(1.202)		
Unlisted SOEs					-1.032*	4.248***
					(0.562)	(1.236)
Listed SOEs					2.483***	2.433*
					(0.783)	(1.261)
Constant	102.381***	79.763***	102.208***	79.536***	102.463***	79.704***
	(16.270)	(16.288)	(16.264)	(16.260)	(16.279)	(16.285)
Observations	29,524	11,681	29,524	11,775	29,524	11,681
Year, Sector, Country FE	YES	YES	YES	YES	YES	YES
R2	0.073	0.104	0.073	0.104	0.073	0.104

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

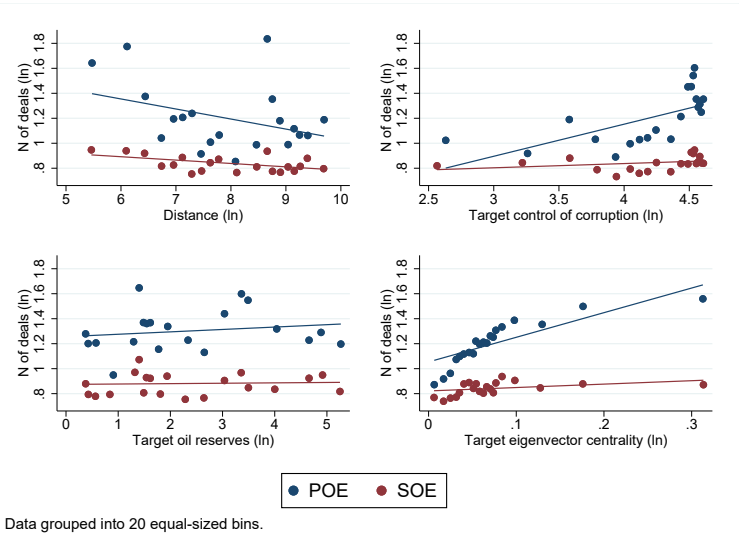
5.2 Country-level Analysis

In this section we investigate whether different internationalization patterns across POEs and different type of SOEs can be traced back to country-specific characteristics. We recall that, for this purpose, cross-border M&As have been aggregated at a country-pair level. Cross-border deals are geographically concentrated: the top 15 origins account for more than 70-80% of deals, while the top 15 destination account for 60-70% of deals.[12] A large fraction of deals regards the United States and the United Kingdom. Deals by POEs are relatively focused on rich western countries, while those by SOEs are more geographically differentiated. In general, however, the geographical distribution of cross-border deals largely overlaps between origin and

[12]See the Appendix for details. Further evidence evidence and results available on request.

destination as well as between POEs and SOEs (correlations and rank-correlations are all very high, in most cases above 80-90%). To investigate further the geographical patterns, we also look at origin-destination combinations. For clarity, we consider aggregates and look at cross-border deals between North America and Western Europe and the rest of the world. POEs' distribution is skewed towards North America and Western Europe and include deals within these two macro-areas. By contrats, SOEs' deals are much more evenly distributed. The geographical distribution of cross-border deals is correlated with country characteristics. We summarize the main ones in Figure 1. The country-to-country number of deals is negatively correlated with the geographical distance, with SOEs' deals being less affected. The institutional quality of the destination country is positively correlated with the number of deals, yet this almost exclusives applies to POEs while SOEs seem not to take it into consideration. Natural resources such as oil reserves tend to be only slightly positively associated with cross-border deals, with not significant differences between POEs and SOEs (a similar result applies to gas reserves).[13] Lastly, country centrality in the world trade network is positively correlated with the number of deals; this especially applies to POEs, while SOEs seem much less affected.

Figure 1: Country-to-country deals and target characteristics.



In the following part of the section, we analyze which factors contribute to explain the direction of cross-border M&As performed by different type of acquirers. For this purpose, we recall that two distinct

[13] In terms of natural resources, the top target countries are Saudi Arabia, Canada and Venezuela are the top three for oil reserves; Russia, Iran and Qatar are the top three for natural gas reserves.

dependent variables are considered: the number of cross-border deals undertaken respectively by listed and unlisted enterprises for each pair of countries: respectively the acquirer's home country i and the target's host country j. In the first specification of the model, we estimate equation (3) and assess to which extent SOEs's and POEs's cross-border M&As are driven by country formal and informal institutional factors, which ultimately affect the riskiness of foreign investments. Table 6 shows that the coefficient of the SOEs tends to be negative and statistically significant, indicating that the number of cross-border M&As for SOEs is lower than for private firms (for both listed and unlisted acquirers). This result is reasonable since SOEs are lower in number and overall they make a lower amount of cross-border M&As. The country's quality of institutions is proxied by the World Bank's Control of Corruption (CC) indicator, whose coefficient is positive and significant (Columns 1-2 Table 6). This implies that for both listed and unlisted private acquirers the number of cross-border M&As increases with the institutional quality of the host country. Conversely, we observe that the interaction between the SOE_i and CC_j variables has a negative coefficient, implying that for the public ownership case the number of cross-border M&As decreases with the institutional quality of the host country where the target enterprise is located. Thus, compared to private acquirers, SOEs address their investment towards riskier countries with a lower institutional quality. This result is stronger for unlisted SOEs than listed SOEs, implying that on average traditional SOEs adress their investments towards riskier countries.

The relevance of informal institutions in explaining the firms' internationalization pattern is proxied by $Distance_{ij}$ variable (geographic distance between the home and host countries) and by the $Colony_{ij}$ variable, which indicates whether the countries involved in a deal have been in colonial relationship. According to previous literature, these variables represent a proxy for non-monetary transaction costs and barriers which can emerge due to differences in language, ethnicity, and religion.

Results reported in Column 3-6 of Table 6 show that the geographical proximity hypothesis is confirmed for private acquirers (no matter their listing status or sector of activity) and for listed SOEs only. Indeed, for them, both the coefficients of the $Distance_{ij}$ variable and of the $SOEs * Distance_{ij}$ interaction term are negative and significant (Column 3), indicating that cross-border M&As are more intense among geographically closer countries while they tend to decline as the distance between the home and host countries involved in the M&As increases. Conversely, this hypothesis does not hold for traditional unlisted SOEs. Indeed, the coefficient of the $SOE_i \times Distance_{ij}$ interaction term is not significant (Column 4), implying

that, differently from POEs and listed SOEs, the number of M&A deals does not depend on the geographical distance among the home and host countries.

The $Colony_{ij}$ variable shows a positive and significant coefficient for private acquirers (no matter their listing status) or and for listed SOEs only. In these cases cross-border M&As are more intense among countries that have been in a colonial relationship. Conversely, the cultural proximity hypothesis does not hold in case of cross-border M&As performed by unlisted SOEs. In this case, the $SOE_i \times Colony_{ij}$ is not significant. This result indicates that, differently from POEs and listed SOEs, unlisted SOEs do not address their investments towards culturally closer countries. Overall, these results indicate that both formal and informal institutional factors are likely to affect differentially the SOEs, SIEs and POEs' internationalization pattern. Indeed, when they decide to internationalize, unlisted SOEs are more likely to undertake riskier investments than POEs (and listed SOEs), by addressing their cross-border M&As towards countries with a lower institutional quality and which are characterized by lower geographical and cultural proximity. This result is consistent with our a priori hypothesis and with previous researches arguing that, being backed by a government shareholder, tradtional SOEs' strategies are less influenced by institutional risk factors.

Table 6: Country-Level Analysis: Risks and institutions.

	(1)	(2)	(3)	(4)	(5)	(6)
	Listed	Unlisted	Listed	Unlisted	Listed	Unlisted
SOEs	-0.308	0.571	-1.153***	-2.724***	-2.367***	-2.577***
	(0.372)	(0.453)	(0.357)	(0.373)	(0.0559)	(0.0634)
Host CC	0.340***	0.425***				
	(0.0559)	(0.0800)				
SOEs*Host CC	-0.470***	-0.741***				
	(0.0896)	(0.110)				
Distance			-0.454***	-0.569***		
			(0.0279)	(0.0260)		
SOEs*Dist			-0.148***	0.0202		
			(0.0451)	(0.0470)		
Colony					0.516***	1.184***
					(0.127)	(0.172)
SOEs*Colony					1.237***	0.225
					(0.191)	(0.243)
Constant	-11.36***	-15.10***	-5.796***	-7.602***	-10.17***	-13.66***
	(0.748)	(0.767)	(0.733)	(0.696)	(0.740)	(0.711)
Observations	36,596	36,596	36,596	36,596	36,596	36,596
Country, Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Listed and unlisted refer to acquirers; CC stands for Control of Corruption; other controls include home GDP per capita, Home CC, Home Oil and Gas Reserves and Home Eigenvector (not reported for space reasons); clustered standard errors at the acquiring country level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

We further investigate differences in the strategies stemming behind SOEs' and POEs internationalization patterns by looking at the endowment of natural resources in the host countries where foreign investments are directed. This is measured by three variables: the amount of oil reserves, gas reserves and mineral rents. Results reported in Table7 show significant differences across listed and unlisted SOEs. The coefficients of the three interaction terms (between the SOE variable and the natural resources variables) are positive and significant only in the case of unlisted SOEs (Columns 2, 4, 6), indicating that, compared to POEs, unlisted SOEs are more likely to address their foreign investments towards countries with higher endowement of primary energy resources. Conversely, when looking at the deals performed by listed companies, the coefficient of their interaction terms are either not significant or negative and significant (Columns 1, 3, 5), implying that listed SOEs do not differ significantly from POEs in their targeting strategy. When read together, these results suggest that, accordingly with previous literature, SOEs are used by government as a vehicle to pursue political goal such as national security, since they internationalize to ensure access to energy resources and raw materials. Nevertheless, this result holds only when considering traditional unlisted SOEs which are under government control, while it is not confirmed in case of reformed listed SOEs.

Finally, results on the firms' centrality within the trade network are reported in Table (8). In this case, we question whether SIEs, SOEs or POEs address their cross-border investments towards host countries more or less relevant in the international trade network. As anticipated, we use different centrality measures that, in spite of referring to the same concept, are constructed in different ways to capture distinct aspects of the network topology.[14] The centrality measures allow to capture elements concerning the network topology: how the countries are connected to each other. In the table we report the correlation between the centrality measures, for both the country of origin and the country of destination, and we focus on the interaction between begin a SOE and the value of centrality for the host country.

[14]While $Degree$, $Clustering$ and $Average\ neighbor\ degree$ variables are built around the single node (country), the $Eigenvector\ centrality$ is a general measure which consider the structure of the whole network topology. Specifically, $Degree$ is a very crude measure of centrality, it evaluates all neighboring nodes equally, as if they were equivalent. With $Average\,neighbor\,degree$ and $Clustering$ more information about the node's neighbors are added: their average degree and if the are linked or not, respectively. Finally, the $Eigenvector$ is an extension of $Degree$, which takes into consideration not only how many countries each exporter is connected with but also *'who'* these countries are (Newman, 2020). In this way, a country can be central in the network not only because it is connected to many other countries but also if it is connected to a few countries which have many connections. In terms of the international trade network, this means that if the average degree of the neighbors decreases as the degree increases, then the more connected countries are connected to nodes that have, on average, fewer connections.

Table 7: Country-Level Analysis: Strategic resources.

	(1)	(2)	(3)	(4)	(5)	(6)
	Listed	Unlisted	Listed	Unlisted	Listed	Unlisted
SOEs	-2.239***	-2.640***	-2.285***	-2.676***	-2.335***	-2.601***
	(0.0577)	(0.0720)	(0.0625)	(0.0767)	(0.0559)	(0.0641)
Host Oil Reserves	0.300***	0.270***				
	(0.0333)	(0.0331)				
SOEs*Host Oil Reserves	-0.0592**	0.0574*				
	(0.0242)	(0.0301)				
Host Gas Reserves			0.514***	0.388***		
			(0.0313)	(0.0337)		
SOEs*Gas Reserves			-0.0523	0.183***		
			(0.0564)	(0.0660)		
Host Mineral rents					-0.00777	-0.0253***
					(0.00789)	(0.00899)
SOEs*Host Mineral rents					0.0205	0.0436***
					(0.0146)	(0.0140)
Constant	-10.54***	-13.97***	-10.52***	-13.91***	-10.14***	-13.55***
	(0.733)	(0.709)	(0.730)	(0.706)	(0.741)	(0.718)
Observations	36,596	36,596	36,596	36,596	36,568	36,568
Country, Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Listed and unlisted refer to acquirers; other controls include home GDP per capita, Home CC, Home Oil and Gas Reserves and Home Eigenvector (not reported for space reasons); clustered standard errors at the aquiring country level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

It emerges that $Degree$, $Clustering$ and $Eigenvector$ present a similar pattern. A greater centrality within the trade network, at home as well as for the host country, is positively and significantly correlated with the number of deals between countries i and country j. And this result holds by looking at both listed and unlisted. However, the interaction between $SOEs$ and host's centrality show us hand that the relationship is still positive for SOEs but with a lower magnitude. This may indicate that SOEs direct their investments towards countries which are less central within the trade network. This result is confirmed for the three centrality measures when the acquirers is unlisted. On the other hand, this result is statistically significant only for listed when the $Degree$ is considered. For $Clustering$ and $Eigenvectorcentrality$, there is no difference between for POE and SIE.

We believe that these results may well capture three different aspects. On the one hand, the positive correlation highlights the complementarity between trade and foreign direct investment. The number of deals is greater for the more central countries because the companies try to position themselves, within the trade network, in the most relevant nodes. These nodes are both those that allow firms to access the most important markets and those which the most significant trade flows pass through (both elements captured

precisely by the network measurements). We can therefore conclude that these regressors tell us that there is a positive correlation between M&A and trade: a clear indication of complementarity between the two phenomena. While looking from a particular perspective, we can conclude that our analysis reinforces the belief that FDI and international trade are complements and not substitutes.

On the other hand, this result underlines - in our opinion - how companies are more averse to risk and are more oriented to invest in more central countries. And the choices made are more market oriented. Finally, we believe that the network variables may well approximate the economic "size" of the country. This is seen more as a central role of the target country in the commercial network than as a mere level of gdp.

Also for $AverageNeighborDegree$ we have a positive correlation between the centrality of the country of origin and the number of deals that are made. However, at least at first glance, this measure seems to give us different indications: the coefficients for the host and for the interaction are significant only for unlisted firms but with opposite signs with respect the other centrality measures. However, considering that the network is disassortative, it emerges that a lower value is linked to nodes (countries) with a greater number of connections. So, this is simply telling us that higher deals are signed with more connected target countries.

Therefore, M&A are concluded between large countries, which present for firms fewer risks. And FDI are complements - and not substitutes - of international trade. While this result is clear for both SIE and POE, it is less strong for traditional SOEs. The latter go also to riskier and smaller countries, highlighting that the strategies adopted are not necessarily market oriented.

Table 8: Country-Level Analysis: Centrality within the Trade Network.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Listed	Unlisted	Listed	Unlisted	Listed	Unlisted	Listed	Unlisted
SOEs	-2.257***	-2.356***	3.787***	5.960***	-2.253	-7.731***	-2.240***	-2.310***
	(0.0754)	(0.0829)	(0.903)	(1.039)	(2.202)	(2.589)	(0.0843)	(0.0931)
Home Eigenvector	3.460***	4.386***						
	(0.467)	(0.385)						
Host Eigenvector	5.395***	5.103***						
	(0.349)	(0.312)						
SOEs*Host Eigen	-0.672	-2.513***						
	(0.574)	(0.633)						
Home Degree			14.74***	16.03***				
			(1.127)	(1.297)				
Host Degree			14.40***	15.88***				
			(1.214)	(1.072)				
SOEs*Host Degree			-9.115***	-12.76***				
			(1.376)	(1.586)				
Home AvND					1.418***	2.961***		
					(0.313)	(0.295)		
Host AvND					0.272	-0.850**		
					(0.309)	(0.350)		
SOEs*Host AvND					-0.0126	0.993**		
					(0.425)	(0.502)		
Home Cluster							59.95***	77.93***
							(16.88)	(14.34)
Host Cluster							159.0***	171.0***
							(15.10)	(12.59)
SOEs*Host Cluster							-26.97	-92.74***
							(21.21)	(22.75)
Constant	-10.79***	-14.34***	-30.20***	-35.52***	-17.54***	-21.09***	-10.09***	-13.32***
	(0.744)	(0.720)	(1.688)	(1.639)	(2.654)	(2.524)	(0.680)	(0.674)
Observations	36,596	36,596	36,596	36,596	36,596	36,596	36,596	36,596
Country, Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Listed and unlisted refer to acquirers; other controls include home GDP per capita, Home CC, Home Oil and Gas Reserves and Home Eigenvector (not reported for space reasons); clustered standard errors at the aquiring country level in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

6 Discussion and Conclusions

A feature of the contemporary economy is the emergence of State-owned enterprises (SOEs) as pivotal players in the global arena. Their internationalization seems to contradict the widespread belief that SOEs only or mainly act within domestic borders to achieve politically-relevant goals. Therefore, one can question why SOEs internationalize and, once the move beyond national borders, whether they are still mandated by their controlling governments to pursue social and politically relevant goals or, rather, whether they behave similarly to private enterprises, whose strategies and investments are aimed at maximizing profits and the shareholders' value. These questions mainly motivated our research.

In our view, the phenomenon of SOEs' internationalization cannot be fully understood unless we do explicitly consider the reforms that, during the last decades, brought to a deep transformation of the SOEs, thus shaping their internal governance, ultimate goals and strategies. Many SOEs have been corporatized, opened to private equity and listed in the stock markets. Firms that have undergone this partial privatization process can no longer be considered State-owned, according to the traditional definition. The dichotomy between public and private ownership - we argue - has been overcome by a variegated scenario, characterized by a plurality of State-owned enterprises, which diverge in their objective functions (oriented towards either profit or socio-political goals) and investment choices depending on the intensity of internal reforms they went through.

Our main thesis is that reformed SOEs (those that have been partially privatized, open to private equity or listed in the stock market) deeply differ from traditional SOEs in their ultimate goals: the former being market oriented, while the latter continuing to pursue politically relevant goals. Of course, we cannot observe directly firms' objective functions, but we contend that significant differences among reformed and traditional SOEs in the goals that their managers are mandated to achieve can be extrapolated by analyzing their investment choices.

To address this thesis, we inverstigated whether the firms' pattern of internationalization varies depending on their ownership nature and, in case of public ownership, on the intensity of reforms they went through. For this purpose, we analyzed a dataset of more than 100,000 M&As that took place worldwide during the period 2005-2012. First, we distinguished them according to the type of acquirer: whether it was a private enterprise, a traditional (unlisted or majority-owned) SOE or a reformed (listed or minority-owned)

SOE. SOEs overall, account for almost 10% of the deals which compose our database. Then, we investigated whether private enterprises, traditional SOEs and reformed SOEs differ with respect to the firms and countries where they address their foreign investments.

Notably, we compared them with respect to a plurality of issues: their propensity to internationalize; the profitability of the enterprises they target in their domestic and cross-border M&As; the attempt to access strategic natural resources; the risk associated to their investments, which we proxy by looking at institutional factors and trade network centrality of the countries where acquirers address their foreign investments.

Our analysis highlights significant differences between POEs, traditional SOEs and SIEs' strategies. Compared to traditional SOEs, reformed SOEs show a higher propensity to internationalize, they purchase better performing targets, they address their investments towards closer countries (in both cultural and geographic terms), with better institutional quality and which are more central in the trade network. Together, all these factors contribute to lower the risk associated to their decision to internationalize. We have also found that reformed SOEs are well aligned with private enterprises in their internationalization pattern and strategies. Together, all these findings are consistent with our argument that reformed SOEs are increasingly adopting market-oriented strategies, thus differing from traditional SOEs in their objective functions.

Conversely, we have found that traditional SOEs' behaviour differs from private enterprises and from reformed SOEs. First, they are less internationalized. Their activity is mainly focused within domestic borders, where they direct their investments towards bad performing targets. This evidence is consistent with the argument that traditional SOEs are still called to purse political goals (i.e. the bail out of firms in financial distress). Moreover, we have found that, when they decide to go abroad, their internationalization pattern differs from the one undertaken by their private and reformed SOEs' peers. In particular, they are more inclined to target countries with a higher endowment of strategic natural resources. They address their investments towards riskier countries (geographically and culturally distant, with lower institutional quality and which are less central in the trade network), a factor that can be explained in light of the political protection they still benefit.

Nowadays, SOEs are increasingly diversified, depending on the intensity of reforms they went through. This results in different objective functions which ultimately bring them to adopt diverse investment strategies. These findings allow to evaluate the widespread political concern that accompanies the SOEs' international expansion in the global arena. It has been argued that governments use SOEs as a vehicle for

pursuing non-commercial and political objectives, this involving anti-competitive effects, disrupting market efficiency and generating economic distortions at the global level. Although it should not be underestimated or overlooked, this concern should not be exaggerated neither. Our analysis shows that the SOEs' internationalization mainly involves reformed SOEs, which adopt market-oriented strategies and behave similarly to private enterprises. On the other hand, one could raise a question that in our opinion remains without a clear proper answer. SOEs were alternative and different economic actors to private companies. Their historical function was to supply those areas uncovered by the private sector, because of a lack of interest or for the inability to make the consumption conditional on the payment of a price (i.e. provision of public goods). Conversely, one might question what is the underlying rationale and benefit stemming from contemporary SOEs which are increasingly replicating the activities and strategies of private enterprises.

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Appendix

Table 9: Summary statistics on the whole deal-level dataset.

	Mean	SD	Min	Max	N
POE	0.91	0.28	0.00	1.00	110,064
SOE	0.09	0.28	0.00	1.00	110,064
SOE minority	0.03	0.18	0.00	1.00	110,064
SOE majority	0.05	0.22	0.00	1.00	110,064
Listed	0.37	0.48	0.00	1.00	110,064
High-tech	0.17	0.38	0.00	1.00	110,064
Finance	0.43	0.49	0.00	1.00	110,064
ROS ebit	6.45	22.89	-100.00	100.00	41,595
Target listed	0.25	0.43	0.00	1.00	110,064
Target high-tech	0.29	0.45	0.00	1.00	110,064
Cross-border	0.27	0.44	0.00	1.00	110,064
Distance (km)	1,705.93	2,973.48	2.74	19,586.18	110,044
Colonial ties	0.01	0.09	0.00	1.00	110,044
Oil reserves (bbl)	21.18	38.30	0.00	297.57	110,064
Gas reserves (tcm)	4.30	8.53	0.00	34.64	110,064
Mineral rents	0.50	1.34	0.00	23.68	109,891
Control of corruption	81.55	23.12	2.39	100.00	110,064
GDP per capita	39,915.17	17,998.60	168.21	157,100.41	109,883
Degree	0.97	0.04	0.40	1.00	109,639
Eigenvector	0.09	0.07	0.00	0.62	109,639
Clustering	0.00	0.00	0.00	0.01	109,639
Av. neighb. degree	182.85	22.09	65.82	217.12	109,639
Target oil reserves (bbl)	20.72	39.34	0.00	297.57	110,064
Target gas reserves (tcm)	4.14	8.70	0.00	34.64	110,064
Target mineral rents	0.60	1.51	0.00	43.71	109,823
Target control of corr.	79.17	24.61	1.90	100.00	110,064
Target GDP per capita	37,362.43	18,561.43	190.39	148,297.39	109,806
Target degree	0.97	0.05	0.40	1.00	109,723
Target eigenvector	0.09	0.08	0.00	0.62	109,723
Target clustering	0.00	0.00	0.00	0.01	109,723
Target av. n. degree	181.56	22.73	65.82	217.12	109,723

Table 10: Distribution of cross-border deals by country.

Rank	POE			SOE		
	Country	N deals (%)	Cum. (%)	Country	N deals (%)	Cum. (%)
			Origin			
1	USA	27.6	27.6	NOR	8.4	8.4
2	GBR	14.9	42.5	GBR	8.0	16.4
3	FRA	6.1	48.5	USA	7.7	24.1
4	NLD	4.9	53.4	FRA	6.3	30.4
5	CHE	4.6	58.0	SGP	5.4	35.8
6	SWE	3.5	61.5	CHE	5.3	41.1
7	CAN	3.2	64.7	CHN	4.5	45.6
8	ESP	2.3	67.0	RUS	4.3	49.9
9	AUS	2.2	69.1	NLD	3.9	53.8
10	JPN	2.1	71.2	JPN	3.7	57.5
11	DEU	1.8	73.0	ARE	3.3	60.8
12	SGP	1.7	74.7	BEL	3.0	63.8
13	BEL	1.7	76.4	SWE	2.8	66.5
14	ITA	1.7	78.1	FIN	2.7	69.3
15	LUX	1.6	79.7	KWT	2.0	71.3
	Others (104)	20.3	100	Others (81)	28.7	100
	Total	100		Total	100	
			Destination			
1	GBR	13.1	13.1	GBR	9.8	9.8
2	USA	9.8	22.9	USA	7.0	16.8
3	DEU	6.4	29.3	RUS	4.7	21.4
4	FRA	4.6	33.9	DEU	4.2	25.6
5	CAN	4.2	38.1	NLD	3.7	29.4
6	ITA	4.1	42.2	SWE	3.7	33.1
7	NLD	3.5	45.7	FRA	3.7	36.8
8	AUS	3.4	49.1	AUS	3.6	40.4
9	IND	3.3	52.4	CHN	3.2	43.7
10	CHN	3.1	55.5	CAN	3.2	46.9
11	SWE	2.8	58.3	ITA	3.2	50.1
12	ESP	2.8	61.1	IND	2.8	53.0
13	JPN	2.3	63.4	ESP	2.3	55.2
14	RUS	2.2	65.6	BRA	1.8	57.1
15	BEL	2.1	67.8	UKR	1.5	58.6
	Others (159)	32.2	100	Others (126)	41.4	100
	Total	100		Total	100	

Table 11: Distribution of cross-border deals by sector.

Rank	POE			SOE		
	Sector	**N deals (%)**	**Cum. (%)**	**Sector**	**N deals (%)**	**Cum. (%)**
			Origin			
1	Finance	44.3	44.3	Finance	45.6	45.6
2	Manufacturing	22.9	67.2	Manufacturing	15.1	60.7
3	ICT	9.1	76.3	ICT	7.7	68.3
4	Scientific	6.8	83.1	Elec. and gas	6.9	75.2
5	Wholesale and retail	5.0	88.1	Transportation	6.0	81.2
6	Adminstration	2.3	90.4	Mining	5.2	86.4
7	Mining	2.3	92.7	Scientific	4.8	91.2
8	Transportation	1.9	94.6	Wholesale and retail	2.3	93.5
9	Construction	1.6	96.1	Defence	2.0	95.5
10	Real estate	0.7	96.8	Construction	2.0	97.4
11	Hotels and rest.	0.6	97.4	Adminstration	0.7	98.1
12	Elec. and gas	0.6	98.0	Water, waste	0.5	98.6
13	Water, waste	0.4	98.4	Hotels and rest.	0.5	99.1
14	Agriculture	0.4	98.8	Real estate	0.3	99.4
15	Health	0.3	99.1	Agriculture	0.3	99.7
16-19	Others	0.9	100	Others	0.3	100
	Total	100		Total	100	
			Destination			
1	Manufacturing	31.6	31.6	Manufacturing	22.2	22.2
2	ICT	14.2	45.8	Finance	19.6	41.8
3	Finance	10.6	56.4	ICT	11.1	52.9
4	Scientific	10.2	66.6	Scientific	8.9	61.8
5	Wholesale and retail	9.3	76.0	Elec. and gas	8.6	70.4
6	Mining	6.6	82.5	Mining	7.5	77.9
7	Adminstration	3.5	86.0	Transportation	7.2	85.1
8	Construction	3.2	89.3	Wholesale and retail	5.1	90.2
9	Transportation	3.1	92.4	Construction	3.7	93.9
10	Elec. and gas	1.6	94.0	Adminstration	1.4	95.3
11	Hotels and rest.	1.3	95.3	Hotels and rest.	1.1	96.4
12	Real estate	1.1	96.4	Water, waste	0.9	97.3
13	Health	0.8	97.2	Real estate	0.7	98.0
14	Water, waste	0.7	97.9	Agriculture	0.6	98.6
15	Arts	0.7	98.6	Health	0.5	99.0
16-19	Others	1.4	100	Others	1.0	100
	Total	100		Total	100	