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

STEFANO CLÒ, ENRICO MARVASI, GIORGIO RICCHIUTI

The Internationalization of State-Owned Enterprises:

An Analysis of cross-border M&As

Stefano Clò[a]   Enrico Marvasi[a]   Giorgio Ricchiuti[a,b]

[a] *Università degli Studi di Firenze*

[b] *Complexity Lab in Economics (CLE), Università Cattolica del Sacro Cuore, Milano*

Abstract

Using a database of more than 100,000 M&As, we study the internationalization of State-Owned Enterprises (SOEs) in the 21st century, and the underlying firm-level and country-level drivers. Meaningful differences are found - compared to private enterprises and across various types of SOEs as well - along many dimensions, including the time trend, the geographical-sectoral coverage, and firms' proprietary structure. Majority-owned SOEs are more focused on domestic markets, while State-Invested Enterprises and government-backed financial institutions are more internationalized. SOEs' internationalization has been less affected by the Great Financial Crisis, it is less sensitive to geographical and cultural proximity, it involves countries with a lower institutional quality and which are more peripheral in the world trade network.

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

JEL codes: F2, L22, L33

Corresponding author: Stefano Clò, stefano.clo@unifi.it

1 Introduction

At the end of the twentieth century, trade liberalization and market opening reforms 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 in the global arena has been motivated by various arguments, such as: i) a focus of their business within domestic borders aimed at achieving national priorities (social view); ii) a lower entrepreneurial attitude, stemming from the lack of adequate external and internal incentives (agency costs view); iii) the politicians' attitude to use SOEs as a vehicle to extract private rents, which conditioned the SOEs' permanence within national markets (political interference view).

Against these backdrop, the New Millennium has been characterized by a revival 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 government-controlled enterprises and financial institutions. Deals performed by SOEs have increasingly moved beyond the national borders. Many SOEs have established themselves as world multinational corporations expanding through an increasing number of national and cross-border M&As (Kowalski et al. 2013, CuervoCazurra et al. 2014 Karolyi and Liao 2017).

The last decades have also been characterized by major reforms which, in our view, contribute to explain this new phenomenon of SOEs' internationalization. The markets where SOEs used to hold a monopolistic position have been widely liberalized and open to international competition, thus bringing SOEs to compete against private firms. While market reforms created a new set of external incentives, SOEs have undergone major internal governance reforms as well. Their proprietary structure, for instance, changed radically. Although remaining under State control, many SOEs have been increasingly corporatized and opened up to private equity. Many SOEs have been listed in the stock markets where they currently compete with private enterprises in the collection of financial resources (Pargendler et al., 2013). These reforms have ultimately led a deep transformation in the internal governance and management organization of SOEs, resulting in an improvement in their financial accountability and economic performance (Musacchio and Lazzarini, 2018).

Within this framework, the purpose of the present paper is to bring new insights on the internationalization of State-Owned Enterprises (SOEs) in the 21st century by adopting an empirical approach which relies

on a novel database of more than 110,000 M&As from all over the world during the period 2005-2012. Our research focuses on the underlying firm-level and country-level drivers and we analyze the main differences compared to privately-owned enterprises (POEs) and across various types of SOEs as well. Indeed, we are interested in highlighting the current heterogeneity which characterizes contemporary SOEs, depending on their different proprietary structure, their sector of activity, their country of origin and the underlying institutional environment.

Instead of looking at the traditional measures of firms'productivity or economic performance, our research adds a focus on their strategies and choices in the global marketplace. By comparing empirically the domestic and cross-border M&As performed by both SOEs and POEs, we analyze whether the firms' activity in the market for corporate control and their propensity to internationalize varies depending on the ownership nature and on other firm-level features, such as their listing status, the degree of control of the top shareholder, their main sector of activity. Moreover, since we focus on the period 2005-2012 we question whether the great financial crisis had differentiated impacts on SOEs and POEs' M&As activity.

On top of that, we investigate whether different internationalization patterns across SOEs and private firms can be traced back to country-specific characteristics, including institutional quality, geographical distance, degree of cultural proximity or the presence of strategic natural energy resources. For this purpose, we aggregate the total number of M&As for each pair of countries: respectively the acquirer's home country and the target's host country. This country-to-country approach allows us to consider broader aspects that may contribute to explain the direction of SOEs' and POEs' cross-border deals. By looking at country-to-country deals we are able to connect them with other types of bilateral country linkages. In particular, we consider the possible connection between cross-border M&As and international trade.

To this end, we employ trade data to construct the world trade network and calculate several centrality measures detecting key players (countries) within the network. This network approach has been recently spreading among different economic fields, among the others financial investments (Garlaschelli et al., 2005), to FDI (De Masi et al., 2013; De Masi and Ricchiuti, 2018, 2020), to world trade (Fagiolo et al., 2009; De Benedictis and Tajoli, 2011, 2018). This approach enriches the analysis in at least two ways. First, it makes it possible to study the links across agents in relation to the whole network. Network analysis captures aspects that go beyond simple country characteristics. This is because each agent is analyzed through its interactions with other agents within the network. Second, it allows the construction of richer measures

that look at the relationships between agents in a more in-depth way that also takes into account the context of all the other links between agents. By explicitly measuring the centrality of each country (acquirer or target) in the trade network, we test the relationship between trade and M&As, and we verify whether this changes depending on the ownership nature of the investing firms.

This paper contributes to the existing literature in many ways. At firm level, our analysis documents that SOEs play a non-negligible role in the market for corporate control and confirms differences across firms' M&A activity depending on their ownership nature. Interestingly, SOEs show a higher level of cross-border M&As compared to POEs and to their own domestic activity. We show that the SOEs' internationalization took place mainly before the great financial crisis, while redirecting their investments within the domestic markets after the crisis. As expected, majority-owned SOEs implement relatively more domestic than cross-boarder deals, while State-invested firms and government-backed financial institutions (e.g. sovereign wealth funds) are more foreign oriented. The country level analysis documents interesing differences between SOEs and POEs. First, while SOEs perform a lower amount of cross-border deals (SOEs are less in number), their international investments show a weaker decline after the crisis compared to private enterprises. Moreover, we find that both geographical and cultural proximity hypotheses (the tendency to invest more in geographically or culturally close countries) hold more for POEs than for SOEs. The finding that cross-boarder M&As increase with institutional quality of both country of origin and destination and with the host country's endowment of natural resources holds only for private enteprises. On the contrary, the SOEs' cross-border M&As activity is less sensitive to home and host countries' institutional quality. This suggests that, compared to private acquirers, SOEs come from countries with lower institutional quality and address their investment towards riskier places. This result is consistent with the evidence that POEs' cross-border M&As involve either countries in the northern hemisphere or are directed from the North to the South of the globe, while SOEs' show a higher percentage of M&As across countries either both located in the southern hemisphere (south-south) or directed from the southern hemisphere to the boreal hemisphere. Finally, we find that being pivotal countries in the trade network implies higher number of deals.

The rest of the paper is organized as follows. After a discussion of the literature review in section (2), we present the database and the related descriptive statistics (section 3). Then, in section (4) the employed empirical strategy is introduced, and centrality measures based on the trade network are explained (4.2.1). Main results at firm and country level are discussed in section (5). Section (6) reports our conclusions and

final considerations.

2 Literature Review

A wide literature discusses the driving forces behind foreign direct investments and cross-border M&As that took place after the trade liberalization and market opening reforms. Within this literature, we are interested in the contributions which analyze the country-level macroeconomic, political and institutional factors behind firms' internationalization. Cross-border M&As, mainly from developed to developing countries, allowed to exploit differences across countries in terms of fiscal regime, cost of labor, capital controls (Caves 1971; Cushman 1987; Morck et al. 1991; Desai et al. 2004 and 2006); currency and stock market differences (Shleifer and Vishny, 2003, Baker et al 2008), as well as unexpected exchange rate shocks (Klein and Rosengren, 1994; Dewenter, 1995). Erel et al. (2012) find that the likelihood of a cross-border M&A to occur was positively related with differences in currency movements and in the stock market development across the home and host countries of the acquirer and target companies.

Institutional factors contribute as well to explain why firms decide to internationalize and the geographical destination of their investments. The quality of corporate governance standards in the acquirer's country have been found to be positively associated with the volume of cross-border M&As (Rossi and Volpin 2004; Bris et al. 2008; Stark and Wei 2013). 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 that a cross-border M&A takes place.

Social and cultural factors have been also identified as determinants of cross-border deals. Bilateral trade and geographical proximity are found to be positively correlated with cross-border M&A and contribute in explaining the propensity of a cross M&A (Di Giovanni 2005, Erel et al. 2012). According to the authors, these variables represent a proxy for non-monetary transaction costs and barriers which can emerge due to differences in language, ethnicity, and religion. Guiso et al. (2009) and Bottazzi et al. (2012) stress the importance of informal institutions and reciprocal trust for a cross-border M&A to succeed. Other researchers find that cultural values and language proximity have significant positive impact on the intensity of cross-border M&A (Stulz and Williamson 2003; Ahern et al. 2012).

2.1 The Reform of State-Owned Enterprises

Traditionally, the market for corporate control has been dominated by private economic agents and, during the decades of privatization, SOEs were mainly positioned on the target side of the transaction. Focusing on cross-border M&As, the SOEs' lower propensity to internationalize has been motivated by traditional arguments related to the inefficiency associated to state ownership and to their socio-political mission.

According to the social view about state capitalism, SOEs were called to deliberately deviate from a profit maximization behavior in order to achieve 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 potential renting 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 would have a lower capacity to exert their political control and influence. Finally, according to the agency cost theory, the main source of SOEs inefficiency is traced back to the government's inability to effectively monitor managers' behaviour and to design an adequate set of incentives aimed at reducing principal-agent problems (Holmstrom and Milgrom, 1991). Agency costs increase the managers' risk aversion, resulting in a higher reluctancy to undertake risky internationalization investments.

A recent strand of literature analyzes the SOEs' revival in the new millennium. Markets' liberalization and privatizations have transformed the state-capitalistic model from the post-war 'state-led' to the 'state-enhanced' capitalism. In this renewed market-oriented scenario, firms and financial institutions controlled by the government have been increasingly exposed to a new set of incentives. On top of being called to compete in liberalized and globalized markets (Khandelwal et al., 2013; Koske et al., 2015), they have undergone major governance reforms and opened up to private equity.

While continuing to maintain the residual right to appoint the relative majority of the board, many governments have partially divested. This partial privatization has reduced government holdings to a point where companies and banks can no longer be considered state-owned, according to traditional definitions,

but governments still hold ultimate control through a minority interest or through pyramidal organizational structures (Bortolotti and Faccio, 2009; Fan et al., 2013; Pargendler et al., 2013). In light of these transformations, firms under State control are increasingly referred to as State-invested enterprises (SIEs) (Christiansen and Kim, 2014). The renewed internal governance and management organization lead to an improvement in their financial accountability and economic performance (Musacchio and Lazzarini, 2018).

2.2 The Internationalization of State-Owned Enterprises

Researches have discussed the motives behind the recent internationalization of entities controlled by public institutions, with a particular focus on the cases of sovereign wealth funds (SWFs) and state-controlled enterprises.

Sovereign Wealth Funds (SWFs) are relevant government-controlled financial institutions which collect monetary flows and reinvest them in the economy. During the 21st century they rapidly increased their investing activity and they reached an aggregate expenditure higher than $15 trillion. Of the 100 SWFs counted by the SWF Institute, more than half originate in commodities. SWFs typically flourish in resource-rich countries whose exports give them budgetary surpluses, little or no international debt and considerable financial liquidity. Instead of accumulating the excess financial liquidity and facing the risk of inflationary erosion, SWFs invest the revenues earned by national enterprises from exports of commodities and manufactured goods mainly outside the home country. SWFs tend to diversify their portfolios into high-return and long-term investments, such as real estate, precious metals, and European and US government bonds, thus increasing the financial, political and economic inter-dependency of liberal and state-capitalistic countries.

It has been argued that SWFs foreign investments can be either economically oriented (obtain high return and long-term investments; portfolio diversification) or politically oriented (increase political power; achieve foreign policy goals). Dyck and Morse (2011) find that SWFs tend to invest abroad in specific industries to influence their country's long-term industrial mix. Other studies argue that SWFs tend to acquire stakes in foreign enterprises operating in sectors that are underrepresented in the home country, concluding that SWFs are used by the governments to diversify their activity. SWFs investments in foreign countries are also aimed at ensuring access to strategic natural or primary resources which are not available domestically (Butt et al. 2008, Bremmer 2010).

Bortolotti et al. (2009) find that SWFs tend to invest in large, leveraged and profitable firms usually

located in OECD countries. Chhaochharia and Laeven (2009) develop a comparative analysis between SWFs and other private investment funds and look for political and cultural motives behind their investment strategies. They find that SWFs have a higher propensity than private funds to invest in close countries that share similar cultural features, such as language or ethnicity. Focusing on partially or fully state-owned enterprises, the literature has identified several and different motives behind the SOEs' international expansion through foreign direct investments and cross-border M&As.

SOEs perform cross-border M&As to ensure resource security (Luo and Tung 2007, Ramasamy et al. 2012), to acquire new capabilities and intangible assets (Deng 2009), to increase their financial independence from domestic political actors (Choudhury and Khanna 2014). Other studies point out that states may be using 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 (Kowalski et al. 2013). On one side, SOEs' internationalization can be motivated by a genuine economic rationale. Cross-border acquisitions represent a fast way to enter new markets and to acquire new capabilities that can be channeled back to the domestic economy. According to some researches, SOEs use cross-border M&A to access strategic intangible assets such as patent-protected technologies, superior managerial skill and know-how, or to acquire distributional networks, buyer-supplier relationship or global brands that facilitate the entry into new markets and increase their market share (Deng 2009; Wang and Boateng 2007; Sun et al. 2012). Other research contributions stress the proactive role played by governments in facilitating the internationalization of domestic firms for political and strategic national purposes. Karolyi and Liao (2017) investigate whether the determinants of cross-border M&A vary depending on the acquirers' ownership nature (private or SOE). They find some differences in the SOEs' behavior compared to private corporate acquirers with respect to both the type of country they select and type of companies they acquire. They find that SOEs have a higher propensity than private enterprises to acquire firms located in countries that are geographically close, with depreciating currencies and with weaker accounting standards. Estrin et al. (2012) investigate whether listed SOEs show different propensity toward internationalization compared to private enterprises. SOEs are found to be on average less internationalized than privately-owned enterprises, though political and institutional factors affect the firms' propensity to internationalize. Freedom from corruption in the home country and the development of national capital markets are positively correlated with the SOEs degree of internationalization. Knutsen et al. (2011) focus on the relation between firms' in-

ternationalization and institutional environment. They conclude that SOEs are more likely to make even 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. Several studies argue that SOEs firms undertake cross-border M&As for political purposes and direct their cross-border acquisitions toward foreign target companies which ensure access to energy resources and raw materials (Bass and Chakrabarty 2014; Luo and Tung 2007, Jeong and Weiner, 2012). Ramasamy et al. (2012) focus on the Chinese case and find that cross-border acquisitions by private firms are driven by a rent-seeking objective, while SOEs mainly address their M&As in countries rich of natural resources and with risky political environment. They conclude that Chinese SOEs foreign investments are strictly connected with the government political will to ensure national energy security and economic growth. Wang et al. (2012) argue that the SOEs ability to internationalize, the location decision between developed or developing countries, the level of FDI and the choice of targets are influenced by the degree of government control and its capacity to exert pressure on the owned SOEs. Mariotti and Marzano (2019) argue that institutional factors drive the pattern of SOEs' internationalization, as they tend to invest more in coordinated market economies and less in liberal market economies compared to private enterprises.

3   Data and Descriptive Statistics

We match and merge several data sources, covering the period 2005-2012. Information on M&As are taken from the Zephyr database, while firm-level data are extracted from the Orbis database, both managed by Bureau Van Dijk. Both the acquires and targets of each deal are properly identified through an identification code (ID) which is used to match M&As and firm-level data. For each firm, we observe the sector (2-digit NACE rev. 2 codes) and the country of origin, their listing status, the shares owned by the top shareholder and their ownership nature. We detect SOEs by following the chain of shareholders up to the ultimate owner.

Country-level variables such as GDP, control of corruption, and oil and gas reserves are taken from the World Development Indicators and from the World Governance Indicators by the World Bank; 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 measurements.

After cleaning the data (errors, misreportings, missing information), we are eventually left with a total of 110,064 deals over the period 2005-2012. Of these, 91.4% (100,545) involve POEs as acquirers and 8.6% (9,519) regard SOEs. Domestic deals are 73.3% (80,693), while cross-border deals are 26.7% (29,371). Of the cross-border deals, 92% (27,019) are performed by POE and 8% (2,352) by SOE.

Data reveal differentiated trends for POEs and SOEs. Figure 1 reports the number of deals by firms' ownership separating domestic and cross-border deals (the y-scales have been chosen in order to improve comparability). POEs' deals of any type show a very clear reduction due to the 2008 financial crisis, with cross-border deals being more affected and remaining basically flat since 2009 when domestic deals start to increase again. Deals performed by SOEs do not follow this trend. First, there is no drop in 2008-2009. Domestic deals increase much faster than for POEs before the financial crisis, but they decrease only after 2009. In fact, the years around the crisis, 2007-2010, are characterized by spike in domestic deals by SOEs. Second, while for POEs domestic and cross-border deals follow similar trends, the cross-border deals by SOEs remain relatively stable over time with no sudden drops nor spikes, but only a gradual reduction in the post crisis period, until 2011.
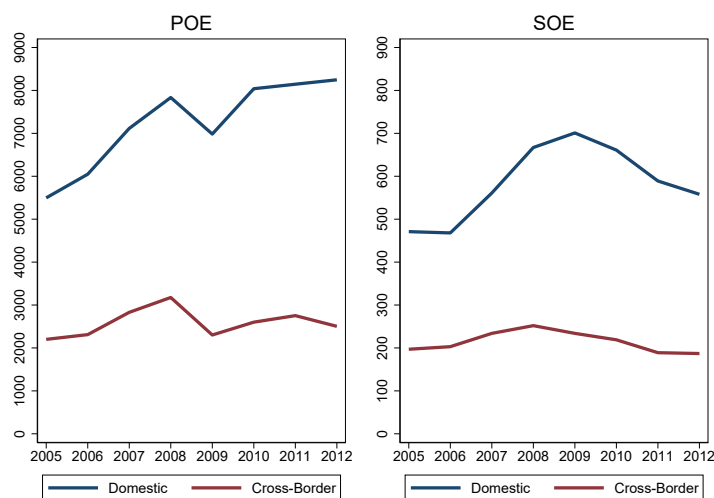
Figure 1: Number of deals.
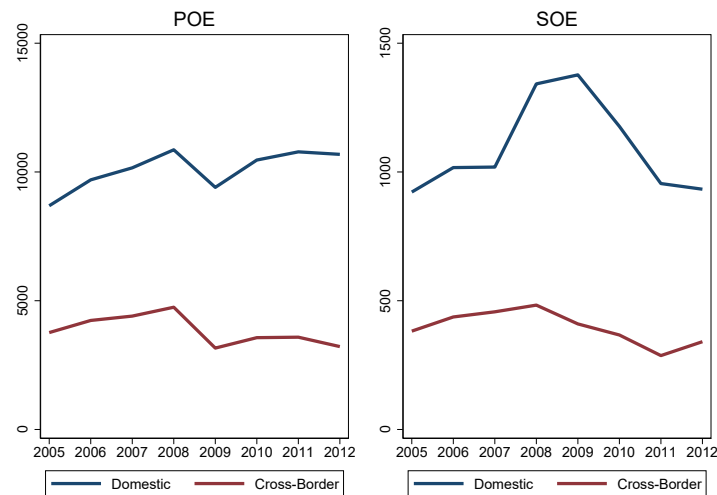
The dynamics observed for the total number of deals can be due to variability along two margins: the number of firms and the number of deals per firm. Considering these two margins separately is informative. The dataset includes 48,338 firms over the period 2005-2012 of which 94% (45,436) are POEs and 6%

(2,911) are SOEs. The average number of acquirers involved in deals per year is about 9,002; of these 92.7% (8,343) are POEs and 7.3% (657) are SOEs. In Figure 2, we show the number of POEs and SOEs involved in domestic and cross-border deals. The trends are quite similar to those observed for the number of deals, implying that the main driver of that dynamic has to do with the number of firms involved in M&A and other operations. Interestingly, the number of POEs' doing domestic deals shows a clear upward trend.[1]

Figure 2: Number of firms.

The number of deals per firm, showed in Figure 3, gives a somewhat different picture.[2] The effect of the financial crisis is much less evident. Moreover, there is a gradual reduction in the number of deals performed by each POE. On the contrary, the average SOE tends to do more domestic deals in the 2007-2010 period, while it also reduces the number of cross-border operations with a trend that is mostly in line with that observed for POEs. All in all, POEs appear to have suffered more from the financial crisis as many firms refrained from doing deals in 2009, either domestic or cross-border, while in the same year SOEs' domestic deals reach their maximum and SOEs' cross-border deal do not show any clear crisis effect.

The different behavior of POEs and SOEs in the domestic market is somewhat expected and studies have focused on the different motives behind the decisions of the two types of firms. But the different trends observed for cross-border deals, especially the fact that SOEs suffer less from the financial crisis, received

---

[1]Clearly, since some firms do multiple deals, the sum of the number of firms involved in domestic deals and the number of firms involved in cross-border deals implies some doble counting and is therefore larger than the total number of firms.

[2]The average number of deals per firm is calculated as number of domestic or cross-border deals over total number of firms, separately for POEs and SOEs.

Figure 3: Number of deals per firm.
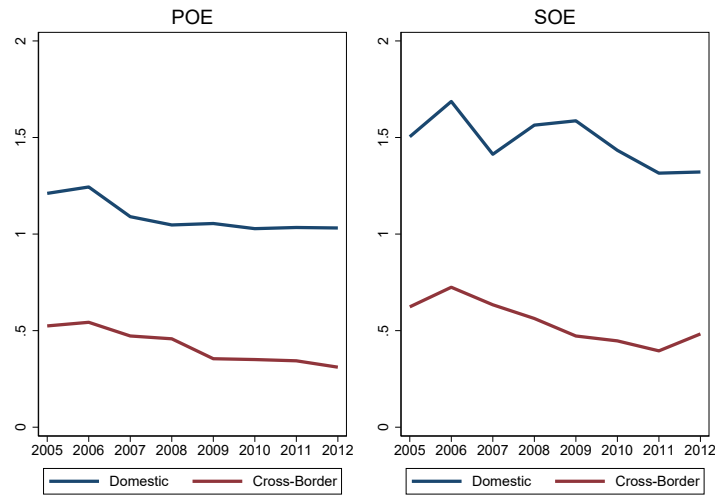
less attention and the reasons why they may differ are perhaps less apparent. In line with our research question, we now focus more directly on cross-border deals.

One important dimension of cross-border deals, possibly connected with firms' motivations, regards the sector of activity. In Table 1, we disaggregate cross-border deals by sectors of the acquirer (origin) and of the target (destination). Not surprisingly, most deals are performed by acquirers belonging to Finance and Manufacturing, but SOEs are relatively more likely to belong to Electricity and gas, Transportation and Mining. Target sectors are slightly more diverse and in particular, while manufacturing and finance remain among the main sectors, the share of deals whose target belongs to ICT is relatively high. SOEs' deals tend to be targeted relatively more intensively towards electricity and gas, mining and transportation. Overall, the sectoral distributions of cross-border deals present a good degree of overlap either between origin and destination as well as between POEs and SOEs (correlations and rank correlations are all very high, in most cases above 90%). The main difference between POEs and SOEs seem to regard the larger role that sectors as electricity and gas, transportation and mining have in the deals performed by SOEs.

Table 1: 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	

Another crucial aspect of cross-border deals regards the geographical coverage. To this end, in Table 2 we disaggregate cross-border deals by origin and destination country. The cross-country distributions of deals are relatively concentrated on the top countries of origin and destination: the top 15 origins account for more than 70-80% of deals, while the top 15 destination account for 60-70% of deals. A larger 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. For instance, China is the seventh top origin of SOEs deals, while it is not even in the top 15 for POEs; among destinations, China is the nineth top destination for SOEs and the tenth for POEs, just after India. Other than a relatively larger presence of non-western economies among SOEs' origins and destinations, the geographical distributions of cross-border deals largely overlaps between origin and destination as well as between POEs and SOEs (correlations and rank correlations are all very high, in most cases above 80-90%).

Table 2: 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	

To investigate further the geographical patterns, we also look at origin-destination combinations. Based on the country-level evidence and for clarity, we consider aggregates. In Figure 4, we look at cross-border deals between North America and Western Europe (North for simplicity) and the rest of the world (South for simplicity), which gives rise to four combinations. The country-level evidence is confirmed as POEs' distribution is more skewed towards North America and Western Europe than that of SOEs. Most POEs' deals regard North-North operations; the second category is North-South; while South-South and South-North deals are a minority. SOEs' deals are much more evenly distributed across the four categories. While North-North deals remain the most frequent one, it does not cover more than half of the deals as it does for POEs. Interestingly, and related to our study, non-North-North deals by SOEs were on an increasing trend before the crisis, largely driven by South-South deals. With the 2008 crisis, however, the North-North category does not show any sign of reduction, while S-S deals visibly drop.

Figure 4: Number of cross-border deals by origin-destination areas.

North = North America and Western Europe
South = Rest of the world
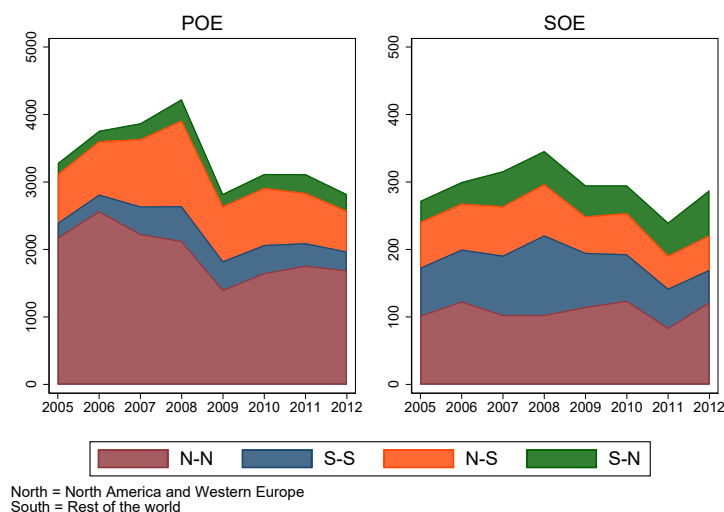
All figures clearly show that the 2008 financial crisis affected cross-border deals. It is therefore useful to summarize the information by comparing pre- and post-2008 dynamics. To this aim, we consider how the yearly number of cross-border deals and the average number of cross-border deals per firm changes in terms of geographical and sectoral patterns. This is done in Table 3.

The upper part of the table reports the yearly number of cross-border deals, their distribution across origin-destination combinations (North-North, North-South, South-North and South-South), and by sector (Finance and real estate versus Manufacturing and others).

In line with Figure 4, for POEs more than half of the deals regard the N-N category both before and after 2008, while the geographical distribution of SOEs' deals is more equally distributed across areas, with N-N deals accounting for slightly more than one third and N-S as well as S-S deals for about one quarter of deals each. After the crisis, the total number of cross-border deals by SOEs remains relatively stable, while that of POEs decreases by 11.4% (this is in line with Figure 1). SOEs' N-N deals are basically unaffected by the crisis, while those by POEs decrease almost by 26% after 2008; on the contrary, SOEs' N-S deals decrease by 16.5%, while those by POEs are basically stable. S-N deals increase for both POEs and SOEs (+34% and +31.5%, respectively), while S-S deals increase for POEs only (+35.5%).

In other words, with the crisis the geographical distribution of cross-border deals changes both for POEs and for SOEs. For both, the number and the share of deals originating from the South increase. But, while for POEs this is associated with a reduction in N-N deals, for SOEs the (smaller) reduction regards N-S deals. Overall, the total number of cross-border deals by SOEs is largely unaffected by the crisis, with an ncrease in S-N deals.

In terms of sectors, again POEs and SOEs show differentiated trends. With the crisis, the number of deals by SOEs shifts away from manufacturing towards finance, while for POEs the opposite holds.

The bottom part of Table 3 reports the corresponding statistics in terms of average number of cross-border deals per firm.[3]

Again SOEs do not show any crisis effect on average as are involved in about 2.3 deals per firm either before and after the crisis, while POEs involvement in cross-border operations decreases from 2.13 to 1.85 deals per firm after the crisis. Looking at the geographical and sectoral patterns confirms the figures discussed for the total number of deals. In particular, N-N deals per firm decrease for POEs but not for SOEs, and there is a general shift towards deals originating from the South, especially S-S deals in the case of SOEs.

In the last two columns of Table 3, we add information on the listed/non-listed status of the firms. The data show that the share of cross-border deals performed by non-listed firms increases after the crisis. A similar evidence applies to the number of deals per firm. This trend seems particularly strong for SOEs.

All in all, the descriptive evidence suggests that SOEs behave differently than POEs in their cross-

---

[3]Here we focus on cross-border deals only and therefore consider the average POE or SOE involved in cross-border operations. In Figure 3 instead the focus is also on domestic deals, hence the average number of deals per firm is calculated relative to all firms, i.e. for the average POE or SOE involved in any deal.

border deals and that they reacted differently to the financial crisis. SOEs international operations are much less concentrated within North America and Western Europe. With the financial crisis, there is a relative increase in cross-border deals by non-listed SOEs operating in the financial sector, and while N-N deals remain relatively stable, there is a shift towards S-N deals.

Table 3: Cross-border deals before and after 2008.

	Total	N-N	N-S	S-N	S-S	Finance and real est.	Manuf. and other	Listed	Non listed
Number of yearly deals (cross-border)									
					POE				
2005-2007	3637	64.0%	23.0%	5.0%	8.0%	50.3%	49.7%	48.9%	51.1%
2008-2012	3222	53.6%	26.6%	7.6%	12.2%	41.4%	58.6%	45.6%	54.4%
diff.	-415	-10.4	3.6	2.6	4.2	-9.0	9.0	-3.3	3.3
var. %	-11.4	-25.8	2.3	34.0	35.5	-27.2	4.6	-17.3	-5.7
					SOE				
2005-2007	296	36.9%	23.5%	13.0%	26.6%	42.9%	57.1%	62.8%	37.2%
2008-2012	293	37.4%	19.9%	17.2%	25.5%	47.7%	52.3%	47.5%	52.5%
diff.	-3	0.5	-3.7	4.3	-1.1	4.8	-4.8	-15.4	15.4
var. %	-1.1	0.2	-16.5	31.5	-5.2	9.9	-9.3	-25.3	39.8
Number of deals per firm (cross-border)									
					POE				
2005-2007	2.13	1.36	0.49	0.11	0.17	1.07	1.06	1.04	1.09
2008-2012	1.85	0.99	0.49	0.14	0.23	0.77	1.09	0.84	1.01
diff.	-0.27	-0.37	0.00	0.03	0.06	-0.30	0.03	-0.19	-0.08
					SOE				
2005-2007	2.31	0.85	0.54	0.30	0.61	0.99	1.32	1.45	0.86
2008-2012	2.29	0.86	0.45	0.39	0.58	1.09	1.20	1.09	1.20
diff.	-0.02	0.00	-0.09	0.10	-0.03	0.10	-0.12	-0.36	0.34

4   Empirical Strategy

Our main interest is to examine whether the companies' activity in the market for corporate control and their propensity to internationalize vary depending on their ownership nature and in reaction to the great financial crisis. To deepen our understanding of this phenomenon, we also question whether some differences emerge depending on other firm-level features, such as their listed status, the degree of control of the top shareholder, their main sector of activity. The related empirical strategy is presented in subsection (4.1). Moreover, we are interested at developing a country-level analysis where we explicitly investigate the characteristics of both home and host countries involved in the cross-border M&As, such as their institutional quality, geographical and cultural proximity, the presence of strategic natural resources or their weight in the international trade network. In subsection (4.2) we describe the country-level empirical strategy.

4.1   Firm-level Analysis: Model Specification

We want to study the relationship between firms' ownership and their M&A activity. However, compared to private enterprises, SOEs are fewer in number and they account for a small percentage of M&As. In order to account for their different weight, we perform a firm-level analysis on an unbalanced panel dataset of 72,012 observations: the yearly number of M&As performed by each company. This is our main dependent variable and, given its count nature (it contains only positive and integer values and presents a positive-skewed distribution with a long right tail), we rely on a Poisson specification with standard errors being robust to heteroskedasticity as main estimation approach:

$$Pr(Y = y) = \frac{e^{-\mu}\mu^y}{y!}$$

with $E[Y] = var[Y] = \mu$. Where The number of M&As realized by each firm.

Although our dependent variable shows a departure from the assumption of equi-dispersion (i.e. mean and variance of our dependent variable are significantly different) characterising the Poisson regression model, this model has several advantages compared to alternative regression models (e.g. negative bino-mial): 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.,

19

1984; Wooldridge, 1999). Moreover, the Poisson regression model is robust to a number of misspecifications such as over-dispersion (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). Adopting a Poisson regression model, we specify the conditional mean in the following form:

$$E[Y_{i,t}] = exp(\alpha + \beta SOE_i + X'_{i,t}\gamma_1 + X'_{j,t}\gamma_2 + \delta_1 Z'_i + \delta_2 Z'_j + \theta W_t) \tag{1}$$

where the dependent variable, $Y_{i,t}$ is the expected number of M&As performed by firm i in year t. SOE_i indicates the ownership nature of the acquirer firm i and takes the value of 1 when the acquirer is controlled by a government and 0 otherwise. The vectors X_i and X_j are a set of control variables for both the acquirer firm i and the target firm j respectively. This includes their listing status and the institutional quality of the country where they are located.

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). Our results do not depend on the chosen indicator. Indeed, the CC is highly correlated with the other WGI indicators thus pointing to a high degree of overlap between these measures (the correlation coefficients range between 0.7 and 0.9).

Fixed-effects are added to control for potential confounding factors and for correlated unobserved heterogeneity. Year fixed-effects W_t capture time-dependent common shocks including yearly macroeconomic exogenous shocks, while Z_i and Z_j controls for time-invariant differences across the firms i and j involved in the M&A. This includes their economic sector of activity and their macroarea of origin. The initial baseline model specified in equation (1) allows to analyze whether, at a firm level, the intensity of the M&A activity in the market for corporate control varies depending 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. Moreover, we extend the baseline model by adding a set of dichotomic variables, K_{it} and by

interacting them with the ownership variable as follows:

$$E[Y_{i,t}] = exp(\alpha + \beta SOE_i + K'_{i,t}\mu + \varphi SOE_i K'_{i,t} X'_{i,t}\gamma_1 + X'_{j,t}\gamma_2 + \delta_1 Z'_i + \delta_2 Z'_j + \theta W_t) \qquad (2)$$

where the vector K_{it} includes:

i) the $Post2008_t$ variable takes a value equal to 1 in the years following the great financial crisis (2008-2012) and 0 in the preceding years (2005-2007). The related coefficient allows to assess how the number of M&As per firm has varied after the financial crisis, while by interacting this variable with the ownership ($SOE_i Post2008_t$) we investigate whether the 2008 great financial crisis had a differential impact on enterprises to expand through M&A depending on their ownership nature;

ii) the $CrossBorder_{i,t}$ variable is the number of deals the acquirer implements in another country, through a trans-boundary M&A. This variable equals 0 when the acquirer is engaged only in domestic M&As. The coefficient indicates the weight of cross-border M&As within our sample, while by interacting this variable with the ownership variable ($SOE_i CrossBorder_{i,t}$), we can assess whether SOEs and private companies have a different propensity to internationalize through cross-border M&As;

iii) through a triple interaction ($Post2008_t SOE_i CrossBorder_{i,t}$), we analyze how the yearly number of firm-level cross-border M&As changed after the great financial crisis compared to domestic deals, and whether this change affected differently SOEs and private enterprises.

In a final specification we study the differences in their domestic and transnational M&A activity across different types of SOEs depending on some firm-specific features.

$$\begin{aligned} E[Y_{i,t}] =& exp(\alpha + \beta SOE_i + H'_i\mu + \varphi CrossBorder_{i,t}H'_i \\ &+ \omega SOE_i H'_i + \tau SOE_i CrossBorder_{i,t}H'_i \\ &+ X'_{i,t}\gamma_1 + X'_{j,t}\gamma_2 + \delta_1 Z'_i + \delta_2 Z'_j + \theta W_t) \end{aligned} \qquad (3)$$

The vector H_i includes:

i) $Listed_i$ is a dichotomic variable indicating the listing status of the acquirer firm (1 if the acquirer

is listed on the stock market and 0 otherwise). When interated with the SOE_i variable it allows to distinguish listed SOEs from unlisted ones ;

ii) $Share_i$ is a dummy variable equal to 1 when the percentage of shares owned by the acquirer company's top shareholder is higher than 50% a 0 otherwise. When interated with the SOE_i variable, it allows to distinguish majority owned SOEs (where public institutions own the majority of shares), from State-Invested Enterprises (where the public top shareholder still holds the ultimate control of the company but through a minority of stakes);

iii) $FinanceSector_i$ is a dichotomic variable equal to 1 when the acquirer is a financial institution and zero otherwise (thus including firm operating mainly in the mining, manufacturing or services sectors);

iv) Through the triple interaction between vector, H_i, SOE_i and $CrossBorder_{i,t}$ we specifically investigate how the propensity to internationalize varies across different type of SOEs depending on: their listing status, their degree of government control and their main sector of activity, while the coefficients ω of the interaction term $SOE_i H_i'$ capture these differences across SOEs in the case of domestic M&As. Finally, the coefficients μ and φ - respectively of the vector H_i' and the interaction term $CrossBorder_{i,t} H_i'$ - capture differences across private enterprises respectively in their domestic and cross-border M&A activity.

4.2   Country-level Analysis

The firm-level analysis described in the previous section is aimed at understanding differences in the cross-border M&A activity among enterprises depending on their ownership nature and other firm-specific features. A second major interest of our research is to investigate whether different internationalization patterns across SOEs and POEs can be explained by country-specific characteristics related to both the acquirers' country of origin and the targets' country of destination, such as 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. Network measures allow us to look at aspects that cannot be captured directly by traditional statistics (see below). The different measures capture how *central* a country (acquirer or target) is in the trade network.

4.2.1 Network measures

One crucial and relatively intuitive measure that can be obtained through network analysis is centrality. Centrality is a measure of the importance of an individual (a node) within the network. Although the measure applies to the individual level, it greatly differs conceptually and computationally from standard individual-level measures for the fact that it takes into account the entire structure of the network (see Newman, 2018).

Following De Masi and Ricchiuti (2020), we construct an indirect trade network for each year from 2005 to 2012, using bilateral trade flows between the country of acquirers (origin) and that of targets (destination). The nodes (countries) are linked if country i and j trade. Weights can be attributed to links if this is meaningful, as in the case of international trade flows. In our case, the weights are given by the ratio of trade flows (imports plus exports) between country i and j and the total world trade flows for each year t, thus capturing the importance that trade flow between the two countries has on the world trade flows:

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

We consider several measures of centrality. There are several measures of network centrality. The measures calculated and used in the regressions include both local measures (specifically, degree of centrality, average degree of neighbors, clustering) and higher-order measures such as eigenvector centrality.[4] These measures depends strictly on the network topology, catching different node's attitudes. It is worth noting that these measures are statically highly correlated but the hubs identified could diverge (Newman, 2018). For all the measures analyzed but degree centrality, links are weighted.

The **degree centrality** is the simplest measure for detecting a leader of the network. It is defined as the fraction of countries it is connected to country i.

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:

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

---

[4]We have calculated also betweenness, closeness, eccentricity but given that the network is dense, their variability is really low and less informative.

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.

The last local measure considered 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 algorithm may be used to define the clustering coefficient, we follow the library NetworkX implemented in Python employing the geometric average of the sub-graph edge weights ($\omega_{ij,t}$ defined above).

These three measures are local, they are related with each country and its neighbors within the trade network. Therefore we also calculated a global measures, the eigenvector centrality, whose value depends - although calculated for each country - on the structure of the network as a whole.

Eigenvector centrality (Newman, 2018) regards the neighbors' centrality, in a recursive way. Specifically, the 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.

4.2.2 Model specification

For the country-level analysis, we aggregate M&As at a country level. We build a database where, for each pair of countries i and j (respectively the home country i of the acquirer and the host country j of the target), we count the total number of M&As performed each year by all the SOEs and private companies originating from the country i. Being interested in analyzing the country-specific driving factors behind the type of firms' internationalization, we restrict our sample only to the cross-border M&As, namely those involving different countries i and j with $i \neq j$.

The dependent variable is now the total number of cross-border deals performed bilaterally between

countries. Working with a count dependent variable which contains only positive and integer value we continue to adopt a Poisson specification model with standard errors being robust to heteroskedasticity and clustered at the country of origin level. We are first interested in analyzing how the number of cross-border M&As across pairs of countries vary depending on the ownership nature of the acquiring firm, and how this relation has changed after the great financial crisis. For this purpose, we adopt the following identification strategy based on the difference-in-differences estimation method:

$$E[Y_{ij,t}] = exp(\alpha + \beta SOE_i + \gamma Post2008_{ij,t} + \delta SOE_i Post2008_t +$$
$$X_{i,t}^{'}\theta_1 + X_{j,t}^{'}\theta_2 + \Delta_1 Z_i^{'} + \Delta_2 Z_j^{'} + \Delta_3 Z_{ij}^{'} + \theta W_t) \tag{4}$$

where the dependent variable $Y_{ij,t}$ is the number of cross-border M&As between the home country i and the host country j made either by private enterprises ($SOE = 0$) and SOEs ($SOE = 1$) in year t. According to the diff-in-diff method, the coefficient β of SOE_i captures how the difference of cross-border deals between SOEs and POEs in the pre-crisis period. The coefficient γ of the $Post2008_t$ variable measures the pre-post crisis change in the number of cross-border M&As for POEs, while the coefficient δ of the interaction term ($SOE_i Post2008_t$) captures the pre-post crisis change in the number of SOEs' cross-border M&As compared to the POEs' change. The vectors X_i and X_j include the following set of country-level time variant control variables respectively for the home country i and for the host country j: their institutional quality, measured by the WGI Control of Corruption indicator; their annual GDP per capita, their amount of gas and oil reserves. Moreover, various alternative network centrality measures are used for both the home and host countries i and j: eigenvector centrality, degree centrality, clustering coefficient and the average neighbor degree.

Z_i and Z_j include geographical time-invariant fixed effects for the home country i and the host country j. Finally, the vector Z_{ij} captures time-invariant fixed effects which are specific to the pair of countries ij. This include their geographical distance ($Distance_{ij}$), $Colony_{ij}$ a dichotomic variable which equals 1 when the pairs have ever been in a colonial relationship and $CommonLanguage_{ij}$ which equals 1 when both home and host countries share the same official common language.

In the last specification of the model we focus on the whole period (without distinguishing among pre-crisis and post-crisis years) and we question whether the SOEs and private enterprises diverge in their cross-border M&A targeting strategy depending on country-level specific features of both the home and

host countries. To understand the relevance of country-level drivers for the SOEs and private companies internationalization patterns, we look at the coefficient of the following interaction terms:

i) $SOE_i CorruptionControl_i$ measures whether, compared to private firms, state-owned acquirers originate from countries i with a better or worse institutional quality. Its coefficient captures how the SOEs'cross-border M&As vary as the institutional quality of the home country increases;

ii) $SOE_i CorruptionControl_j$ allow to compare the institutional quality of the host country j where state-owned and private acquirers address their international investments. Its coefficient measures whether, compared to private acquirers, SOEs tend to perform cross-border M&As in riskier countries;

iii) $SOE_i GasReserves_i$ and $SOE_i OilReserves_i$ allows to estimate whether SOEs originate from countries with a higher or lower amount of oil and natural gas reserves than private acquirers, while $SOE_i GasReserves_j$ and $SOE_i OilReserves_j$ measure whether, compare to private enterprises, SOEs tend to address more cross-border investments towards countries rich of primary energy resources. These interaction terms are introduced to test the hypothesis formulated in the previous literature according to which SOEs are used by governments as a tool to expand internationally their political power and to access to strategic natural resources;

iv) The interaction terms $SOE_i Distance_{ij}$, $SOE_i Colony_{ij}$ and $SOE_i CommonLanguage_{ij}$ are introduced to test the geographical and cultural proximity hypotheses: that is whether SOEs tend to enter countries that are either geographically or culturally closer than private enterprises;

v) Finally the interaction terms $SOE_i EigenVector_i$ and $SOE_i EigenVector_j$ are introduced to to analyze how the central role in the trade network can explain the number of deals carried out by SOEs. We wonder whether SOEs behave differently or not from private companies. Therefore, if the Deals are carried out to seek synergies between trade and production, or are carried out in non-central countries of the network. In the latter case, leading us to believe that the motivations that push the SOEs are somehow different.

26

5 Results

5.1 Firm Level

We initially discuss the results of the firm-level analysis where the unit of observation is the yearly number of M&As done by each firm. Pooled summary statistics for the used variables are reported in Table 4. On average, private enterprises performed yearly roghly 1.5 deals, ranging from a minimum of 1 deal to a maximum of 173 deals a year. Compared to POEs, SOEs show a higher average of yearly deals ($\simeq 1.8$), which vary within a narrower range (1-133 yearly deals).

Table 4: Summary statistics, firm-level, 2005-2012.

	Mean	SD	Min	Max	N
N. of deals	1.53	2.60	1.00	173.00	72,012
SOE	0.07	0.26	0.00	1.00	72,012
N. cross-border deals	0.41	1.60	0.00	152.00	72,012
Financial sector	0.32	0.47	0.00	1.00	72,012
Listed (Acquirer)	0.34	0.47	0.00	1.00	72,012
Listed (Target)	0.18	0.38	0.00	1.00	72,012
SOE (>50% shares)	1.49	0.50	1.00	2.00	71,391
Control of Corruption (Home)	80.54	23.70	2.39	100.00	72,012
Control of Corruption (Host)	78.57	24.62	1.90	100.00	72,012

Column 1 of Table 5 reports the results from the estimation of the Poisson model specified in equation (1) where we test whether the firms' M&A activity varies depending on the ownership nature of the firm, when controlling for potential confounding factor. The coefficient of the *Listed* variables is positive and highly statistically significant for both the acquirer and the target companies involved in the deal, thus implies that on average, listed companies tend to do more deals than unlisted companies. They tend to address their investments more on listed target companies than on unlisted ones. This result is consistent with the general expectations, as the world stock exchange markets raise large part of the corporate financial capitals.

The coefficient of the SOEs variable is also positive and highly statistically significant, implying that the firm-level number of M&As increases when the acquirer is controlled by a government. This result is consistent with the descriptive statistics, which show that within our sample the SOEs are lower in number and they overall perform a lower total number of M&As, while on average they present a higher number of deals. Indeed, on average, government-controlled enterprises are bigger in size than private firms (Clò et al. 2017). This first evidence implies that, at a firm level, the intensity of the M&A activity depends on the

acquirer's ownership nature and confirms the non-negligible role that SOEs have been playing since the new century in the market for corporate control and is consistent with previous findings about the SOEs' revival in the global economy.

Columns 2-4 of Table 5 report the results of the estimation of equation (2) where M&As done by POEs and SOEs are inspected by looking at their spatial and temporal dimensions. In Column 2, the negative coefficient of the $Cross-border$ variable indicates that, for private firms, the number of transnational deals is lower than domestic ones. Interestingly, the opposite emerges when looking at SOEs, which conversely show a higher level of cross-border M&As compared to both their own domestic M&As' activity and to the private international one. This result is captured by the positive and highly significant coefficient of the $SOEs * Cross - border$ interaction term. Consistently with previous findings (Karolyi and Liao 2017), this evidence about the internationalization of SOEs that traditionally used to operate within domestic monopolies is a novel phenomenon which documents a structural change in the SOEs' economic activity. The SOEs reforms brought them to increasingly operate in a globalized world, characterized by a growing integration via trade and investment; thus creating the opportunity for SOEs to expand their businesses beyond domestic borders.

In Column 3, the negative coefficient of the $Post2008$ variable indicates that the great financial crisis led to a contraction in the number of deals, while its combination with the positive coefficient of the $SOEs *$ $Post2008$ term indicates that such a slowdown was less pronounced for acquirers under the government control. The fact that investments through M&As declined with the economic downturn is not surprising, and the smaller marginal size of this phenomenon in the case of public ownership can be interpreted in light of the SOEs' bigger size and their greater resilience due also to their lower risk of bankruptcy and direct access to public financial resources.

However, to better understand the drivers of this phenomenon it is useful to look at the results of Column 4 of Table 5, where time (pre-post crisis) dimension is combined with its spatial dimension (domestic vs cross-border). After the financial crisis private firms decrease both domestic and cross-border M&As, with the former declining more than the latter ($Post2008$ coefficient is negative, while the $Post2008 * Cross -$ $border$ coefficient is positive but of lower magnitude). The opposite takes place when looking at State ownership sphere. After the financial crisis, their number of cross-border M&As declines (the coefficient of the $SOEs * Post2008 * Cross - border$ is negative), while SOEs' domestic deals increase ($SOEs *$

28

$Post2008$ has a positive coefficient). SOEs' internationalization (see Column 2 of Table 5) is mainly driven by their pre-crisis activity, during an expansive phase of the economic cycle, while during the economic recession their investments and financial capital have been redirected within domestic borders. This suggests that, in spite of their increased market-oriented strategy, SOEs still represent a vehicle that governments dispose to implement national industrial policies and to pursue political objectives. However, it would be shortsighted to confine this phenomenon to non-democratic and non-liberal countries, interpreting it as an efficiency-detrimental case of bureaucratic and political interference within the economic activity. The great financial crisis - as weel as the covid pandemic - brought many Western countries to intervene directly in the economy with the clear intent of stemming the harmful effects of the financial markets' failure, by injecting a huge amount of liquidity and bailing out private banks and strategic enterprises. A result of this stimuli has been, in some instances, an expansion rather than a retraction of the SOEs in the markets, also through M&As.

Since the return of State capitalism within domestic economies represents nowadays a well-documented phenomenon, the remaining part of our research focuses on the SOEs' internationalization. Results reported in Table 6 discuss how domestic and cross-border deals vary across SOEs depending on some firm-specific features. Column 1 focuses on the firms' listing status and it shows that listed SOEs do not diverge significantly compare to private firms in both M&A activity and internationalization strategy (both the coefficient of the $SOEs * listed$ and $SOEs * listed * Cross - border$ terms are not statistically significant). This result is consistent with the previous evidence about a shift towards characteristically private-sector models of corporate structure and profit orientation on behalf of listed SOEs operating in deregulated and globalized markets (Clò et al., 2017). In this case, the long-term objectives and market strategies of SOEs are unlikely to differ significantly from those of their private peers.

In Column 2 of Table 6, SOEs are classified depending on the degree of public control. Results show that majority-owned SOEs (the government top shareholder owns more than 50% of the shares) tend to carry out more domestic than cross-border M&As (the coefficient of $SOEs(> 50\%shares)$ is positive while the coefficient of the $SOEs(> 50\%shares) * Cross - border$ term is negative), while State-invested enterprises tend to implement more cross-border than domestic M&As. Public ownership displays nowadays a considerable heterogeneity in their market strategy and objective function, depending on the intensity of the governance reforms they have undergone. These results suggest that the intensity of government control

Table 5: Poisson - Firms' deals and the internationalization of SOEs.

	(1)	(2)	(3)	(4)
Listed (Acquirer)	0.059***	0.066***	0.060***	0.059***
	(0.010)	(0.010)	(0.010)	(0.009)
Listed (Target)	0.301***	0.299***	0.301***	0.287***
	(0.012)	(0.012)	(0.012)	(0.012)
Control of Corruption (Home's country)	0.004***	0.004***	0.004***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Control of Corruption (Host' country)	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
SOE	0.133***	0.067***	0.101***	-0.025
	(0.014)	(0.014)	(0.022)	(0.024)
Cross-border		-0.010*		-0.027***
		(0.005)		(0.008)
SOE*Cross-border		0.076***		0.136***
		(0.011)		(0.024)
Post 2008			-0.117***	-0.160***
			(0.018)	(0.018)
Post2008*SOE			0.049*	0.141***
			(0.028)	(0.029)
Post 2008*Cross-border				0.052***
				(0.006)
SOE*Post 2008*Cross-border				-0.106***
				(0.027)
Constant	-0.065***	-0.047**	-0.063***	-0.018
	(0.021)	(0.021)	(0.021)	(0.022)
Observations	72,012	72,012	72,012	72,012
Year Sector and Country FE	YES	YES	YES	YES
r2_p	0.193	0.195	0.193	0.204

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

is likely to affect the operational objectives that SOEs' managers are instructed to achieve. Indeed, compared to majority-owned SOEs, State-Invested Enterprises show a higher entrepreneurial attitude towards internationalization through cross-border deals. These investments imply capital outflows beyond national borders and are consistent with a profit-maximization strategy. Conversely, majority owned SOEs are still more inclined at acquiring firms within the domestic borders. This is in line with the *social view* about public ownership according to SOEs are still called to pursue a social welfare objective, inducing them to undertake domestic investments with a positive repercussion on the national economy. A last interesting insight can be deduced by distinguishing SOEs according to their macroeconomic sector of activity. When looking at SOEs active in the manufacturing and services sectors we do not find any relevant differences in their domestic or cross-border M&As activity, while SOEs operating from the financial sector show a higher propensity to invest abroad.

Table 6: Poisson - Firms' deals and SOEs' features.

	(1)	(2)	(3)
Listed (Acquirer)	0.043***	0.019**	0.123***
	(0.008)	(0.010)	(0.011)
Listed (Target)	0.298***	0.289***	0.157***
	(0.011)	(0.012)	(0.010)
Control of Corruption (Home)	0.001***	0.003***	0.002***
	(0.000)	(0.000)	(0.000)
Control of Corruption (Host)	0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)
SOE	0.103***	0.043*	0.093***
	(0.020)	(0.024)	(0.017)
Cross-border	-0.008	-0.011*	0.005
	(0.007)	(0.006)	(0.006)
SOE*Cross-border	0.064***	0.078***	0.024
	(0.014)	(0.016)	(0.018)
SOE*listed	-0.014		
	(0.028)		
Listed*Cross-border	0.006		
	(0.004)		
SOE*listed*Cross-border	-0.024		
	(0.019)		
Private (>50% shares)		-0.136***	
		(0.008)	
Private (>50% shares)*Cross-border		0.078***	
		(0.006)	
SOE (>50% shares)		0.125***	
		(0.030)	
SOE (>50% shares)*Cross-border		-0.079***	
		(0.020)	
Financial sector			0.487***
			(0.015)
Cross-border*Financial sector			-0.017***
			(0.005)
SOE*Financial			-0.040
			(0.034)
Cross-border*SOE*Financial			0.055**
			(0.024)
Constant	-0.043**	0.033	-0.182***
	(0.021)	(0.020)	(0.025)
Observations	72,012	71,391	72,012
Year Sector and Country FE	YES	YES	YES
r2_p	0.211	0.203	0.212

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

5.2   Country Level

After having analysed differences in the cross-border M&A activity among enterprises, we discuss the results of the country-level analysis which has been developed to investigate whether country-specific characteristics contribute to explain the different internationalization patterns across SOEs and private firms. We recall that, for this purpose, we focus only on cross-border M&As which are aggregated at a country level. Specifically, we analyze the total number of yearly M&As undertaken respectively by SOEs and private enterprises originating from the home country i and directed towards the host country j. The final dataset is composed by 8,527 observations, with 112 unique home countries i (105 of them count at least one private acquirer while 82 count at least one SOE acquirer) and 82 host countries j. The cross-border deals consist in 2,447 unique pairs of countries i-j (2,231 count at least one private acquirer while 907 count at least one SOE acquirer). Pooled summary statistics for the variables used in the country-level analysis are reported in Table 7. The average number of cross-country deals performed by a origin country in each destination is 3.96, ranging from 1 to 463. SOEs' deal account for 21% (POEs for 79%) of the bilateral deals. The number of yearly POEs' deals are on average 4.58, slightly above the pooled average. Conversely, the yearly number of SOEs' M&As is significantly lower, around 1.49 deals per destination-year, ranging a minimum of 1 to a maximum of 29.

We first present the estimates of the model presented in equation (4) where we test how the number of cross-border M&As across pairs of countries varied depending on the ownership nature of the acquiring firm, and how this relation has changed after the great financial crisis. Table (8) shows that the coefficient of the $SOEs$ is always negative and statistically significant, indicating that the number of cross-border M&As for SOEs is lower than for private firms. This result is very reasonable since we are now looking at the total number of deals done by private and state-owned enterprises and we already showed that SOEs are lower in number and overall they make a lower amount of cross-border M&As. Interestingly, when looking at country-level M&As, we do not observe a relevant reduction in the number of deals after the financial crisis. Indeed, they coefficient of the $Post2008$ either is not statistically significant or is negative and significant only at a 10% confidence level. Moreover, the coefficient of $SOEs*Post2008$ is positive and significant, implying that the amount of deals increase at the margin after the great financial crisis. This implies that, with the financial crisis, the total number of SOEs-backed transnational M&As is still lower compared to the private case, but the former experienced a lower decline compared to the latter. This evidence is consistent

33

Table 7: Summary statistics, country-level, 2005-2012.

	Mean	SD	Min	Max	N
N. of deals	3.96	11.68	1.00	463.00	8,457
SOE	0.21	0.41	0.00	1.00	8,457
Common language	0.22	0.41	0.00	1.00	8,457
Colonial ties	0.09	0.29	0.00	1.00	8,457
Distance (km)	4,795.79	4,436.34	59.62	19,586.18	8,457
Home GDP per capita	39,994.20	22,318.97	168.21	113,239.56	8,457
Host GDP per capita	29,176.32	23,340.77	168.21	113,239.56	8,457
Control of Corruption (Home)	81.70	21.25	4.27	100.00	8,457
Control of Corruption (Host)	71.04	25.80	1.91	100.00	8,457
Gas reserves (Home)	1.97	5.84	0.00	34.64	8,457
Gas reserves (Host)	1.74	5.63	0.00	34.64	8,457
Oil reserves (Home)	14.72	39.32	0.00	297.57	8,457
Oil reserves (Host)	12.83	37.07	0.00	265.85	8,457
Degree centrality (Home)	0.95	0.08	0.40	1.00	8,457
Degree centrality (Host)	0.93	0.09	0.41	1.00	8,457
Eigenvector centrality (Home)	0.09	0.09	0.00	0.62	8,457
Eigenvector centrality (Host)	0.08	0.08	0.00	0.62	8,457
Avg. neighbour degree (Home)	181.30	22.10	65.82	217.12	8,457
Avg. neighbour degree (Host)	181.66	22.01	65.82	217.12	8,457
Clustering (Home, x100)	0.28	0.21	0.00	1.26	8,457
Clustering (Host, x100)	0.25	0.20	0.01	1.26	8,457

with the firm-level analysis and it holds independently on the chosen estimation model.

Table (8) allows also to test how country-specific characteristics contribute to explain the pattern of cross-border M&As. The negative and significant coefficient of the $Countries'Distance$ variable confirms the geographical proximity hypothesis, as it indicates 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 of the M&As increases. Both the positive and significant coefficients of the $CommonLanguage$ and $Colony$ variables are consistent with the cultural proximity hypothesis. Indeed, they imply that the number of cross-border M&As is higher when the pairs have ever been in a colonial relationship and both home and host countries share the same official common language. We also find that the number of cross-border M&As increases with the institutional quality of both the home and host countries (proxied by the control of corruption index). This result is consistent with the relevant literature. It is widely recognized that the economic agents' propensity to save and invest risk capital crucially depends on the quality of institutions. Institutions constrain the firms' endowment of resources, affecting their production costs and consequently shaping their strategies and decision-making processes. Firms benefit from a safe environment and their propensity to expand their economic activity increases with their confidence in the quality of the underlying

institutional framework (Rajan and Zingales, 1998; Acemoglu et al., 2001; Rigobon and Rodrik, 2004). The positive and significant coefficients of the host country's and variables indicate that the number of transnational M&As increases with the endowment of natural resources in the host countries. However, this is true only for gas reserves and not for oil ones. This evidence seem to suggest that cross-border M&As may be used as a vehicle to access to resources which are strategically relevant to ensure energy security. Finally, we observe positive and significant coefficients for all network centrality measures with the exception of average neighbor degree. This captures the fact that the most central countries in the trade network are also the countries that make the most deals with each other. And this is true whether we consider the simple degree centrality, the density of connections around a country (captured by clustering) or, we take, as global measure, the eigenvector centrality. In this last case, there is a key role of countries' neighbors: if the latter are central in the network, the acquirer (or the target) are central too and do more deals. However, the average degree has a negative coefficient - its magnitude is low - even if it is statistically significant only for the target country. This means that deals increases as the average number of connections that the country has in the trade network decreases. It is also true that the trade network, as we have said, is very dense and the minimum number of average connections from neighbors is 62 countries.

Tables (9) and (10) report how the country-specific characteristics influence the direction of cross-border M&As vary depending on the ownership nature of the acquirer. In other terms, SOEs and POEs address their international investments towards different types of countries. First, we observe that, both the interaction term between the SOEs variable and the $Control of Corruption$ variables have a negative coefficients. This implies that, differently from the private benchmark, SOEs come from countries with lower institutional quality and address their investment towards riskier countries. This result can be interpreted in light of the descriptive statistics showing that, compared to POEs, SOEs show a lower percentage of cross-border M&As either between countries belonging to the North of the globe or directed from the North to the South of the globe, while they show a higher percentage of M&As across countries either both located in the southern hemisphere (south-south) or directed from the southern hemisphere to the boreal hemisphere. The evidence that internationalized SOEs are more likely to originate from countries with a lower institutional quality can explain a concern expressed by developed countries about the risk that SOEs may be used as a vehicle for pursuing non-economic and political objectives, thus potentially entailing anti-competitive effects and economic distortions at the global level. Other researches argue that, being backed by a government

Table 8: Poisson - Countries' total deals I

VARIABLES	(1) Ndeals	(2) Ndeals	(3) Ndeals	(4) Ndeals
Common Language	0.369***	0.519***	0.468***	0.332***
	(0.107)	(0.116)	(0.110)	(0.103)
Colony	0.903***	0.771***	0.821***	0.858***
	(0.194)	(0.201)	(0.145)	(0.238)
Countries' distance	-0.332***	-0.249***	-0.318***	-0.282***
	(0.0233)	(0.0391)	(0.0233)	(0.0538)
Control of Corruption CC (Home)	0.0182***	0.0268***	0.0228***	0.0345***
	(0.00432)	(0.00794)	(0.00376)	(0.00719)
CC (Host)	0.00557*	0.00931***	0.00718**	0.0134***
	(0.00317)	(0.00295)	(0.00322)	(0.00236)
Home GDP pc	-0.0464	-0.127	-0.0459	-0.0855
	(0.0943)	(0.123)	(0.0781)	(0.146)
Host GDP pc	0.0269	-0.0140	0.00740	0.0823
	(0.0662)	(0.0747)	(0.0691)	(0.0642)
Home Gas Reserves	0.301*	0.623**	0.233	0.498**
	(0.169)	(0.259)	(0.161)	(0.241)
Host Gas Reserves	0.147***	0.267***	-0.00502	0.221***
	(0.0482)	(0.0687)	(0.0813)	(0.0819)
Home Oil Reserves	-0.0587	0.0531	0.0877	0.0689
	(0.101)	(0.109)	(0.0774)	(0.0980)
Host Oil Reserves	0.00196	0.0971***	0.116***	0.105***
	(0.0217)	(0.0251)	(0.0299)	(0.0356)
Public	-1.427***	-1.408***	-1.466***	-1.380***
	(0.162)	(0.180)	(0.166)	(0.163)
Post 2008	-0.0972*	-0.178*	-0.696***	0.0752
	(0.0550)	(0.106)	(0.171)	(0.0848)
Post2008*Public	0.160**	0.188**	0.109	0.194**
	(0.0804)	(0.0790)	(0.0865)	(0.0810)
Home Eigen Vector	3.563***			
	(0.256)			
Host Eigen Vector	2.976***			
	(0.418)			
Home Degree		4.636***		
		(1.663)		
Host Degree		5.274***		
		(1.169)		
Home Clustering			711.3***	
			(91.10)	
Host Clustering			680.5***	
			(106.3)	
Home Av. N. Degree				-0.0572
				(0.0370)
Host Av. N. Degree				-0.0331***
				(0.0114)
Constant	0.969	-8.343***	0.224	18.04**
	(0.934)	(2.711)	(0.956)	(7.396)
Observations	8,569	8,569	8,569	8,569
Year FE	Yes	Yes	Yes	Yes
S.E.	A cluster	A cluster	A cluster	A cluster

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

shareholder, SOEs' strategies are less influenced by institutional risk factors. This hypothesis seems to be confirmed by the evidence that the geographic proximity arguments is not relevant in case of SOEs trans-boundary investments. Indeed, the coefficient of the $SOEsDistance$ interaction term is not significant, suggesting that, differently from private enterprises, the amount of M&A deals does not depend on the geographical distance among the home and host countries. Moreover, differently from the private benchmark, both $SOEsCommonLanguage$ and $SOEsColony$ terms have a negative and significant coefficients, suggesting that the cultural proximity hypothesis does not hold in case of State ownership. This result indicates that cross-border M&As decreases when the pairs have ever been in a colonial relationship and when both home and host countries share the same official common language, suggesting SOEs do not address their investments towards culturally close countries. Overall, these results seem to be influenced by the pattern of SOEs' transnational investments originating from the southern developing countries and directed towards northern developed countries or other southern countries.

Quite surprisingly, we find that for SOEs endowments of natural resources are not relevant but for oil reserves in the host countries the number of deals decreases. This evidence seems to contradict the general view that governments use SOEs as a vehicle to access to resources which are strategically relevant to ensure energy security. It could suggest that the SOEs' internationalization may be motivated by the will to access to different types of strategic resources other than energy ones, like other natural resources or intangible assets .

It is wort noting that while the eigenvector centrality measure, as in table (8), has a positive and significant coefficient, its interaction with $SOEs$ variable reveals a negative sign, for both home and host country. This means that public deals are carried out and are directed more by less central countries in the network, thus differentiating themselves from private companies. This result could confirm that SOEs pursue different strategies: they are the less central countries have more deals and, at the same time, more deals are made in less central countries.

Table 9: Poisson - Countries' total deals II

VARIABLES	(1) Ndeals	(2) Ndeals	(3) Ndeals	(4) Ndeals	(5) Ndeals	(6) Ndeals
Common Language	0.369***	0.373***	0.369***	0.369***	0.367***	0.370***
	(0.107)	(0.107)	(0.107)	(0.107)	(0.106)	(0.106)
Colony	0.903***	0.903***	0.906***	0.901***	0.907***	0.902***
	(0.194)	(0.195)	(0.196)	(0.195)	(0.196)	(0.194)
Countries' distance	-0.332***	-0.333***	-0.333***	-0.339***	-0.332***	-0.334***
	(0.0232)	(0.0235)	(0.0234)	(0.0257)	(0.0241)	(0.0228)
Control of Corruption CC (Home)	0.0182***	0.0212***	0.0183***	0.0182***	0.0180***	0.0185***
	(0.00432)	(0.00454)	(0.00432)	(0.00433)	(0.00430)	(0.00433)
CC (Host)	0.00560*	0.00553*	0.00698**	0.00562*	0.00563*	0.00554*
	(0.00317)	(0.00319)	(0.00310)	(0.00316)	(0.00318)	(0.00314)
Home GDP pc	-0.0460	-0.0584	-0.0488	-0.0465	-0.0457	-0.0487
	(0.0944)	(0.0978)	(0.0943)	(0.0948)	(0.0934)	(0.0949)
Host GDP pc	0.0265	0.0265	0.0254	0.0260	0.0267	0.0261
	(0.0663)	(0.0666)	(0.0654)	(0.0663)	(0.0667)	(0.0658)
Home Gas Reserves	0.302*	0.294*	0.300*	0.301*	0.294*	0.295*
	(0.169)	(0.171)	(0.169)	(0.170)	(0.167)	(0.169)
Host Gas Reserves	0.147***	0.148***	0.139***	0.146***	0.145***	0.142***
	(0.0483)	(0.0481)	(0.0484)	(0.0481)	(0.0489)	(0.0498)
Home Oil Reserves	-0.0593	-0.0601	-0.0576	-0.0583	-0.0601	-0.0561
	(0.101)	(0.102)	(0.101)	(0.101)	(0.100)	(0.100)
Host Oil Reserves	0.00193	0.000951	0.00272	0.00244	0.00490	0.00274
	(0.0217)	(0.0217)	(0.0219)	(0.0217)	(0.0215)	(0.0222)
Home Eigen Vector	3.563***	3.608***	3.563***	3.560***	3.793***	3.581***
	(0.256)	(0.270)	(0.256)	(0.257)	(0.272)	(0.254)
Host Eigen Vector	2.977***	2.998***	2.996***	2.978***	2.974***	3.220***
	(0.418)	(0.416)	(0.416)	(0.417)	(0.406)	(0.408)
Public	-1.334***	0.208	-0.373**	-1.924***	-0.828***	-0.858***
	(0.190)	(0.220)	(0.183)	(0.391)	(0.141)	(0.184)
Public*CC (Home)		-0.0180***				
		(0.00347)				
Public*CC (Host)			-0.0124***			
			(0.00285)			
Public*Distance				0.0755		
				(0.0528)		
Public*Home Eigen Vector					-2.165***	
					(0.357)	
Public*Host Eigen Vector						-2.812***
						(0.284)
Constant	0.959	0.823	0.883	1.020	0.912	0.932
	(0.933)	(0.966)	(0.934)	(0.947)	(0.942)	(0.936)
Observations	8,569	8,569	8,569	8,569	8,569	8,569
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
S.E.	A cluster	A cluster	A cluster	A cluster	A cluster	A cluster

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

Table 10: Poisson - Countries' total deals III

VARIABLES	(1) Ndeals	(2) Ndeals	(3) Ndeals	(4) Ndeals	(5) Ndeals	(6) Ndeals
Common Language	0.423***	0.363***	0.368***	0.370***	0.367***	0.370***
	(0.102)	(0.107)	(0.106)	(0.107)	(0.105)	(0.106)
Colony	0.904***	0.975***	0.904***	0.901***	0.904***	0.901***
	(0.195)	(0.204)	(0.196)	(0.193)	(0.196)	(0.194)
Countries' distance	-0.334***	-0.333***	-0.333***	-0.333***	-0.332***	-0.332***
	(0.0231)	(0.0235)	(0.0233)	(0.0227)	(0.0234)	(0.0229)
Control of Corruption CC (Home)	0.0183***	0.0190***	0.0181***	0.0183***	0.0181***	0.0182***
	(0.00434)	(0.00443)	(0.00433)	(0.00431)	(0.00434)	(0.00432)
CC (Host)	0.00572*	0.00613**	0.00562*	0.00561*	0.00562*	0.00559*
	(0.00318)	(0.00298)	(0.00318)	(0.00318)	(0.00318)	(0.00317)
Home GDP pc	-0.0478	-0.0608	-0.0441	-0.0470	-0.0440	-0.0463
	(0.0944)	(0.0913)	(0.0943)	(0.0942)	(0.0944)	(0.0943)
Host GDP pc	0.0247	0.0145	0.0265	0.0249	0.0265	0.0258
	(0.0660)	(0.0609)	(0.0664)	(0.0664)	(0.0664)	(0.0665)
Home Gas Reserves	0.297*	0.301*	0.304*	0.300*	0.315*	0.300*
	(0.169)	(0.168)	(0.170)	(0.169)	(0.177)	(0.169)
Host Gas Reserves	0.147***	0.147***	0.147***	0.149***	0.146***	0.163***
	(0.0484)	(0.0491)	(0.0486)	(0.0488)	(0.0489)	(0.0527)
Home Oil Reserves	-0.0576	-0.0589	-0.0534	-0.0580	-0.0594	-0.0582
	(0.101)	(0.101)	(0.0986)	(0.101)	(0.101)	(0.101)
Host Oil Reserves	0.00292	0.00249	0.00279	0.0115	0.00294	0.00127
	(0.0217)	(0.0225)	(0.0215)	(0.0231)	(0.0216)	(0.0219)
Home Eigen Vector	3.576***	3.580***	3.557***	3.571***	3.556***	3.567***
	(0.258)	(0.266)	(0.252)	(0.255)	(0.250)	(0.254)
Host Eigen Vector	2.976***	2.979***	2.975***	2.981***	2.973***	2.981***
	(0.413)	(0.425)	(0.414)	(0.417)	(0.412)	(0.415)
Public	-1.112***	-1.187***	-1.222***	-1.172***	-1.240***	-1.230***
	(0.188)	(0.146)	(0.106)	(0.190)	(0.130)	(0.240)
Public*Common Language	-0.602***					
	(0.145)					
Public*Colony		-0.783***				
		(0.202)				
Public*Home Oil Reserves			-0.0641			
			(0.0792)			
Public*Host Oil Reserves				-0.114***		
				(0.0234)		
Public*Home Gas Reserves					-0.105	
					(0.177)	
Public*Host Gas Reserves						-0.156
						(0.0959)
Constant	0.962	1.110	0.941	0.961	0.939	0.954
	(0.931)	(0.860)	(0.939)	(0.930)	(0.941)	(0.931)
Observations	8,569	8,569	8,569	8,569	8,569	8,569
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
S.E.	A cluster	A cluster	A cluster	A cluster	A cluster	A cluster

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

6 Discussion and Conclusions

This paper investgated SOEs' internationalization in the market for corporate control during the period 2005-2012. Importantly, the study covers the 2008 financial crisis. This is particulary useful to disentangle possible differences between SOEs and POEs in terms of the M&A deals performed domestically and iternationally as well as between different types of SOEs. To this end, the analysis focused on the determinants of the number of deals at both firm and country level. We find that POEs and SOEs reacted differently to the financial crisis. While this is in line with the literature and largely corresponds to expectations, especially in the domestic market, SOEs' behaviour in the global arena is also found to systematically differ to that of POEs. SOEs cross-border deals reveal meaningful differences along many dimensions, including the time trend, the geographical and the sectoral coverage. The world-level decline in cross-border deals, observed for POEs after the financial crisis, is much less pronounced in the case of SOEs. In the internatonal context common explanations such as bail-outs and other socio-political objectives to sustain the national economy are unlikely to provide satisfactory explanations for the observed trends. One aspect associated with the emergence SOEs at the international level are the sovereign funds. Moreover, one explanation to why SOEs cross-border deals appear to have suffered less from the crisis may have to do with weaker financial constraints relative to private companies. Beyond the difference between POEs and SOEs, our analysis also investigated the difference between State-owned ("pure" SOEs) and State-invested enterprises (SIEs). The latter are found to be key players on the international scene, behaving like private companies and seeking investment opportunities in countries that have the best indices in terms of institutional quality. On the other hand, the companies with a significant majority of the State in the shareholder base are less active and more prone to domestic deals, as suggested by the existing literature.

At the country level, we show that the geographical coverage of SOEs' cross-border deals is associated with country characteristics as well as with the internationa trade network. The country-level analysis gives us several insights into where SOEs are heading internationally. While geographical distance plays a part, the cultural linkage between origin and destination countries does not seem very relevant. We relate this evidence to the growing role of China and other emerging countries is cross-country M&As and to the need to diversify their investments in several directions. Moreover, the SOEs' cross-border deals appear more geographically diverse and less oriented towards countries with higher institutional quality or mineral or

fossil resources. One possible explanation is that technological know-how might represent a more relevant strategic resource. Similarly, SOEs deals overlap relatively less with international trade network as SOEs are more likely to conclude deals in more peripheral countries. All these elements support the view that SOEs strategically search future growth prospects in areas that are less easily chosen by private companies.

Further research is needed to disentangle causality and investigate why SOEs behave differently in the international market and why they seem to choose different countries. Strategic objectives and financial contraints are among the main areas on which future research on the topic should focus.

References

[1] Acemoglu D., Johnson S., Robinson J.A. (2001) The colonial origins of comparative development: an empirical investigation, American Economic Review 91, 1369 - 1401

[2] Ahern K., Daminelli D., Fracassi C., (2012) Lost in translation? The effect of cultural values on mergers around the world, Journal of Financial Economics Volume 117, Issue 1, 65 - 189

[3] Baker M., Foley C. F., Wurgler J. (2008) Multinationals As Arbitrageurs: The Effect Of Stock Market Valuations On Foreign Direct Investment, Review of Financial Studies, 2008, v22(1), 337-369

[4] Bass, E. and Chakrabarty, S. (2014) Resource security: Competition for global resources, strategic intent, and governments as owners, Journal of International Business Studies, 458, 961 - 979

[5] Benito, G. R. G., Rygh, A., Lunnan, R. (2016) The benefits of internationalization for state-owned enterprises, Global Strategy Journal, 6(4): 269?288

[6] Bertanha, M., Moser, P., (2016) Spatial errors in count data regressions, Journal of Econometric Methods 5 (1), 49 - 69

[7] Bortolotti B., Fotak V., Megginson W. and Miracky W. (2009) Sovereign Wealth Fund Investment Patterns and Performance, FEEM working paper 22.09

[8] Bortolotti B., Faccio A. (2009) Government control of privatized firms, Review of Financial Studies 22 (8), 2907 - 2939.

[9] Bottazzi L., Da Rin M., Hellmann T. (2012) The importance of trust for investment: Evidence from venture capital, University of British Columbia working paper.

[10] Bremmer, I. (2010) The end of the free market: who wins the war between states and corporations' New York: Portfolio/Penguin.

[11] Bris A., Brisley N., Cabolis C. (2008) Adopting Better Corporate Governance: Evidence From Cross-Border Mergers, Journal of Corporate Finance, v14(3,Jun), 224-240

[12] Buckley P. J., Clegg L. J., Cross A. R., Liu X., Voss H., Zheng P. (2007) The determinants of Chinese outward foreign direct investment, Journal of International Business Studies, 38(4): 499 - 518

[13] Butt S., Shivdasani A., Standavad C., Wyman A. (2008) Sovereign Wealth Funds: A Growing Global Force in Corporate Finance, Journal of Applied Corporate Finance, 20(1), 73-83

[14] Caves R. (1971) International Corporations: The Industrial Economics Of Foreign Investment, Economica, v38(149), 1-27

[15] Chernykh L. (2011) Profit or politics? Understanding re-nationalizations in Russia, Journal of Corporate Finance, 17, 1237?1253

[16] Chhaochharia V. and Laeven U, (2009) 'Sovereign Wealth Funds: Their Investment Strategies and Performance, University of Miami working paper,

[17] Choudhury P., Khanna T. (2014) Toward resource independence? Why state-owned entities become multinationals: an empirical study of India's public R & D laboratories, Journal of International Business Studies 45, 943 - 960.

[18] Christiansen H., Kim Y. (2014) State-Invested Enterprises in the Global Marketplace: Implications for a Level Playing Field, OECD Publishing OECD Corporate Governance Working Papers, No. 14.

[19] Clò S., Fiorio C., Florio M. (2017) The targets of state capitalism: evidence from M&A deals, European Journal of Political Economy 47, 61 - 74

[20] Clò S., Florio M., Rentocchini F. (2020) Firm ownership, quality of government and innovation: Evidence from patenting in the telecommunication industry, Research Policy 49(5).

[21] Cuervo-Cazurra A., Inkpen A., Musacchio A., Ramaswamy K. (2014) Governments as owners: State-owned multinational companies, Journal of International Business Studies, 45, 919 - 942

[22] Cushman D. (1987) The Effects Of Real Wages And Labor Productivity On Foreign Direct Investment, Southern Economic Journal, v54(1), 174-185

[23] De Benedictis L. and Tajoli L. (2011) The World Trade Network, The World Economy, Wiley Blackwell, vol. 34(8), pages 1417-1454, 08.

[24] De Benedictis L. and Tajoli L. (2018), Global and Local Centrality of Emerging Countries in the World Trade Network in Networks of International Trade and Investment, ed. Vernon;

[25] De Benedictis L., Nenci S., Santoni G., Tajoli L., Vicarelli C., (2014) Network Analysis of World Trade using the BACI-CEPII Dataset, Global Economy Journal, BERLIN, Walter de Gruyter and Company; pp. 287 - 343

[26] De Masi G., Giovannetti G., Ricchiuti G. (2013) Network Analysis of Italian Foreign Direct Investments, Physica A 392, 1202-1214

[27] De Masi G. and Ricchiuti G. (2020) From FDI network topology to macroeconomic instability, Journal of Economic Interaction and Coordination, 15(1), 133-158

[28] De Masi G., Ricchiuti G. (2018) The network of European outward foreign direct investments, in Smith M., Amighini A., Gorgoni S. *'Networks of International Trade and Investment',* March 2018, ed. Vernon Press

[29] Deng P. (2009) Why do Chinese firms tend to acquire strategic assets in international expansion, Journal of World Business, 44(1): 74 - 84.

[30] Desai M., Foley F., Hines J. Jr., (2004) The Costs Of Shared Ownership: Evidence From International Joint Ventures, Journal of Financial Economics, v73(2,Aug), 323-374

[31] Desai M., Foley F., Hines J. Jr., (2006) Capital Controls, Liberalizations, And Foreign Direct Investment, Review of Financial Studies, v19(4,Winter), 1433-1464

[32] Dewenter K. (1995) Do Exchange Rate Changes Drive Foreign Direct Investment? Journal of Business, 1995, v68(3), 405-433

[33] Di Giovanni J., (2005) What drives capital flows? The case of cross-border M&A activity and financial deepening, Journal of International Economics 65, 127-149

[34] Dyck, A. and Morse, A. (2011) Sovereign wealth fund portfolios. Chicago Booth Research Paper No. 11-15

[35] Erel I., Liao R., Weisbach M. (2012) Determinants of Cross-border Mergers and Acquisitions, Journal of Finance, v67(3), 1045-1082

[36] Estrin S., Meyer K., Nielsen B., Nielsen S. (2012) The Internationalization of State Owned Enterprises: The Impact of Political Economy and Institutions, working paper

[37] Fagiolo G., Reyes J.A., Schiavo S. (2009) The Evolution of the World Trade Web: A Weighted-Network Analysis, Journal of Evolutionary Economics, Vol. 20, No. 4, pp. 479-514

[38] Fan J., Wong T., Zhang T. (2013) Institutions and organizational structure: The case of state-owned corporate pyramids, Journal of Law, Economics, and Organization, 29(6), 1217 - 1252

[39] Garlaschelli D., Battiston S., Castri M., Servedio V. D.P. , Caldarelli G. (2005) The scale-free topology of market investments, Physica A, Volume 350, Issues 2-4, 15 , Pages 491 - 499

[40] Gourieroux C., Monfort A., Trognon A. (1984) Pseudo maximum likelihood methods: applications to Poisson models, Econometrica: Journal of the Econometric Society 52 (3), 701 - 720.

[41] Guiso L., Sapienza P., Zingales L. (2009) Cultural biases in economic exchange? Quarterly Journal of Economics 124, 1095-1131.

[42] Guriev S., Kolotilin A., Konstantin S. (2011) Determinants of Nationalization in the Oil Sector: A Theory and Evidence from Panel Data, Journal of Law, Economics and Organization, 27 2: 301-323

[43] Holmstrom B. and Milgrom P., (1991) Multitask principal-agent analyses: incentive contracts, asset ownership, and job design. Journal of Law Economic Organization. 7, 24 - 52

[44] Luo Y., Xue Q., Han B. (2010) How emerging market governments promote outward FDI: Experience from China, Journal of World Business, 45(1), 68 - 79

[45] Luo Y.D. and Tung R.L. (2007) International expansion of emerging market enterprises: A springboard perspective, Journal of International Business Studies 38(4): 481 - 498.

[46] Jeong Y. and Weiner R. (2012) Energy Security and Foreign Investment, Are Chinese (and other Asian) Companies Buying up the World's Oil?, working paper

[47] Karolyi G. A., and Liao R. C. (2017) State capitalism's global reach: Evidence from foreign acquisitions by state-owned companies, Journal of Corporate Finance, 42(C): 367?391

[48] Kaufmann D., Kraay A., Mastruzzi M. (2010) The Worldwide Governance Indicators: Methodology and Analytical Issues, World Bank Policy Research Working Paper No. 5430

[49] Kaufmann D., Kraay A., Mastruzzi M. (2011) The worldwide governance indicators: methodology and analytical issues, Hague Journal on the Rule of Law, 3(2), 220-246.

[50] Kaufmann D., Kraay A. (2008) Governance indicators: where are we, where should we be going?, World Bank Research Observer, Vol. 23, pp. 1 - 30.

[51] Klein M. and Rosengren E. (1994) The Real Exchange Rate And Foreign Direct Investment In The United States: Relative Wealth Vs. Relative Wage Effects, Journal of International Economics, 1994, v36(3/4), 373-389

[52] Knutsen C.H., Rygh A., Hveem H. (2011) Does state ownership matter? Institutions' effect on foreign direct investment revisited, Business & Politics, 13(1): article 2.

[53] Koske I., Wanner I., Bitetti R., Barbiero O. (2015) The 2013 Update of the OECD's Database on Product Market Regulation: Policy Insights for OECD and Non-OECD Countries. OECD Publishing, Paris OECD Economics Department Working Papers, No. 1200.

[54] Kowalski P., Büge M., Sztajerowska M., Egeland M. (2013) State-Owned Enterprises: Trade Effects and Policy Implications, OECD Trade Policy Papers, No. 147, OECD Publishing

[55] Mariotti S. and Marzano R. (2019) Varieties of capitalism and the internationalization of state-owned enterprises, Journal of International Business Studies volume 50, 669 - 691

[56] Mauro P., (1995) Corruption and growth, Quarterly Journal of Economics 110 (3), 681?712.

[57] Morck R., Yeung B., Zhao M. (1991) Why Investors Value Multinationality, Journal of Business, v64(2), 165-188

[58] Moeller S. B., Schlingemann F. P., Stulz R. M. (2004) Do shareholders of acquiring firms gain from acquisitions? Journal of Financial Economics, 73, 201?228

[59] Musacchio A. and Lazzarini S. (2018) State ownership reinvented? Explaining performance differences between state-owned and private firms, Corporate Governance, Volume 26, Issue 4, Pages 255 - 272

[60] Newman M. (2018), Networks, ed. Oxford University Press

[61] OECD (2009a), The Corporate Governance of SOEs operating abroad, DAF/CA/PRIV(2009)8, OECD, Paris

[62] OECD (2009b) SOEs Operating Abroad: An application of the OECD Guidelines on Corporate Governance of State-Owned Enterprises to the cross-border operations of SOEs, Paris, OECD Publishing

[63] Pargendler M., Musacchio A., Lazzarini S. (2013) In strange company: The puzzle of private investment in state-controlled firms, Cornell International Law Journal, 46(3), 569 - 610

[64] Rajan R. and Zingales L., (1998) Financial dependence and growth. American Economic Review 88, 559 - 586

[65] Ramasamy B., Yeung M., Laforet S. (2012) China's outward foreign direct investment: Location choice and firm ownership, Journal of World Business, 47(1) 17 - 25

[66] Rigobon R. and Rodrik, D. (2004) Rule of Law, Democracy, Openness, and Income: Estimating the Interrelationships, NBER Working Paper No. 10750

[67] Rossi S. and Volpin P. (2004) Cross-Country Determinants Of Mergers And Acquisitions, Journal of Financial Economics, v74, 277-304

[68] Shleifer A. and Vishny R (2003) Stock Market Driven Acquisitions, Journal of Financial Economics, v70(3,Dec), 295-311

[69] Shleifer A. and Vishny R.W., (1994) Politicians and firms. Quarterly Journal of Economics 109, 995 - 1025

[70] Starks L. and Wei K. (2013) Cross-Border Mergers and Differences in Corporate Governance, International Review of Finance Volume13, Issue3 265-297

[71] Stulz R. and Williamson R., (2003) Culture, openness, and finance, Journal of Financial Economics 70, 313-349

[72] Sun S.L., Peng M.W., Ren B., Yan D. (2012) A comparative ownership advantage framework for cross-border M&As: the rise of Chinese and Indian MNEs, Journal of World Business 47: 4 - 16

[73] Wang C.Q., Hong J.J., Kafouros M., Wright M. (2012) Exploring the role of government involvement in outward FDI from emerging economies, Journal of International Business Studies 43, 655 - 676

[74] Wang Q. and Boateng A. (2007) Cross-Border M&As by Chinese Firms: An Analysis of Strategic Motivation and Performance, International Management Review, 3 (4), pp. 19 - 29

[75] Wooldridge J.M. (1999) Distribution-free estimation of some nonlinear panel data models, Journal of Econometrics 90 (1), 77 - 97

[76] Yang Y. and Lee P. (2018) State capitalism, state-owned banks, and WTO's subsidy regime: Proposing an institution theory, Stanford Journal of International Law, 54(2), 117 - 158