Varieties of capitalism and the internationalization of state-owned enterprises

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Abstract

This article sheds light on how the internationalization of state-owned enterprises is influenced by the state involvement in ownership and by the home country's institutional settings. Integrating international business literature with the debate on the varieties of capitalism, we contend that state-dominated enterprises internationalize more (less) than privately-owned enterprises in coordinated (liberal) market economies, whereas they exhibit an inconstant behavior in state-influenced market economies. Our analysis on a sample of enterprises pertaining to twenty OECD countries supports our hypotheses. This article adds to studies on the influence of institutions on firms' internationalization and has implications for both managers and policy-makers.

Keywords: business/government interaction and relations; internationalization; state-owned enterprises; varieties of capitalism; institutional theory; multiple regression analysis

INTRODUCTION

In the recent decades a significant number of state-owned enterprises (SOEs) have joined the club of world-class multinational corporations by pursuing a rapid process of international growth (Cuervo-Cazurra, Inkpen, Musacchio, & Ramaswamy, 2014). In response to this trend, scholars have investigated the effect of state ownership on the degree and performance of internationalization (Benito, Rygh, & Lunnan, 2016; Buckley, Clegg, Cross, Liu, Voss, & Zheng, 2007). They have drawn on a range of theoretical approaches, such as agency theory (Duanmu, 2014; Liang, Ren, & Sun, 2015), institutional theory (Cui & Jiang, 2012; Li, Cui, & Lu, 2014; Meyer, Ding, Li, & Zhang, 2014), transaction costs economics (Pan, Teng, Supapol, Lu, Huang, & Wang, 2014), the resource-based view (Bass & Chakrabarty, 2014; Wang, Hong, Kafouros, & Wright, 2012) and the resource dependence theory (Xia, Ma, Lu, & Yiu, 2014). Attempts to reconcile different theories have also been made (Cuervo-Cazurra et al., 2014; Liang et al., 2015; Wang et al., 2012). However, the results have been so mixed that whether state ownership is good or bad for the internationalization of enterprises is still an open question (Benito et al., 2016; Duanmu, 2014; Meyer et al., 2014; Wang et al., 2012).

In order to shed further light on this research question, this paper analyzes the long-term evolution of the internationalization degree of SOEs, also in comparison with privately-owned enterprises (POEs), and its relationships with both different levels of state ownership and different home country institutions and willingness to adopt policies favoring and orchestrating the internationalization of firms. We first draw conflicting predictions from the theoretical developments proposed by the IB and management literature. We consider them from two opposite perspectives: the *'liability of stateness'* perspective, which juxtaposes the social, political and agency costs views of state capitalism and its performance gap that includes the reduction of the likelihood and extent of SOEs' internationalization (Musacchio, Lazzarini, & Aguilera, 2015), and the *'government as strategist'* perspective, which stresses the proactive role of governments in facilitating the internationalization of domestic firms (Lenway & Murtha, 1994; Stopford & Strange 1991). We then reconcile the opposing views by proposing the idea that which of these

perspectives dominates depends on the nature of capitalism, as it moderates the effect of state ownership on the SOEs' internationalization degree. Specifically, our conceptual framework integrates the debate proposed by political economy on varieties of capitalism (VoC), i.e. differences in capitalistic systems relevant to the way in which institutional and economic actors strategically interact and coordinate their actions to maximize their capabilities (Hall & Soskice, 2001).

The basis of our argument consists in core differences among the institutions of countries that mold the attitudes, goals and policies of states by equipping them with very different abilities and intervention devices. With reference to a well-established taxonomy of Western capitalism (Hall & Soskice, 2001; Molina & Rhodes 2007; Schmidt, 2009), we maintain that the effect of state ownership on firms' internationalization switches from being negative (weakening effect) to positive (strengthening effect) as one moves from a liberal market economy (LME) to a coordinated market economy (CME). However, in accordance with previous literature (Benito et al., 2016; Estrin, Meyer, Nielsen, & Nielsen, 2016; Cuervo-Cazurra et al., 2014), we distinguish between two categories of SOEs – *state-dominated enterprises* (SDEs), in which the state is a dominant high-committed owner, and *state minority invested enterprises* (SMIEs) in which the state is a minority low-committed investor. We claim that the above-mentioned (negative and positive) effects work only in the case of SDEs.

Benefiting from the cross-fertilization of insights from IB and comparative economics, we think that this article enhances understanding of SOEs' internationalization. In particular, it links old and new IB literature on the issue by proposing novel ideas to explain previous controversial findings on the role of state-owners in promoting or deterring the expansion of firms abroad. Our analysis of the influence that governments exert by 'wearing two hats' – as owners and strategists in creating an enabling environment for SDEs – extends also other three complementary strands of theory. First, it extends the discussion about state ownership in the public choice literature (for a comprehensive survey see Mueller, 2003). Second, it incorporates into the discussion on firm strategy the enabling role of the state under different country institutions, a matter which is less discussed in the context of SOEs, especially when they are located in developed countries (Benito et al., 2016; Estrin et al., 2016). Finally, the paper adds to the VoC literature.

As pointed out by Bruton, Peng, Ahlstrom, Ciprian, & Xu (2015), past research in this field has focused on the impact of different institutional domains across countries on national economies as a whole, while little attention has been paid to the implications for firms and state/firm interactions.

To test our hypotheses, we refer to a sample of 99 electricity and gas (E&G) and telecommunications (TLC) enterprises pertaining to 20 OECD countries in the 1995-2014 period. Our predictions about the moderating role of institutional variety of capitalism are supported by the empirical analysis. The statistical significance and the sign of moderation are in accordance with expectations.

The article is organized as follows. In the next section, we illustrate the role of the state as owner in SDEs' internationalization. We then develop the conceptual analysis of the moderating role of the institutional varieties of capitalism in the relationship between state involvement in firms' ownership and their internationalization strategies. The third section presents the dataset and provides some preliminary evidence, both quantitative and qualitative. The fourth section describes the variables and the econometric strategy. The fifth section reports the econometric findings and some robustness checks, while the closing sections provide the discussion and some concluding thoughts on avenues for future research.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

State ownership and internationalization

Disagreements about the relationship between state ownership and firms' internationalization are in the realms of both theory and empirical inquiry, thus giving rise to an unresolved quandary.

The literature inspired by both the 'liability of stateness' and the 'government as strategist' perspectives agrees that SMIEs do not significantly differ from POEs in international behavior, because of the low commitment of the state and the discipline imposed by private shareholders and financial markets. For instance, Cuervo-Cazurra et al. (2014: 924) posit that "the most likely types of SOEs that would seek to internationalize would be the ones that are effectively wholly owned or majority owned by the state", as government officials and public managers may have different but convergent incentives to internationalize. Analogously, Benito et al. (2016) argue that the SOEs more prone to internationalize are

the majority owned ones because they have better access to government-related firm-specific advantages than do the minority owned ones. Estrin et al. (2016: 296) go against the positive view about the role of the state-owner, but agree that the state does matter only when it is the controlling shareholder, as "state ownership introduces the possibility of diversion of company resources from outcomes that would pertain under private ownership, introducing a bias in favor of domestic over overseas investments".

However, despite the consensus on the view that the state is influential on the firm's internationalization only in the case of SDEs, the 'liability of stateness' and the 'government as strategist' perspectives lead to opposite predictions about the sign of the relationship.

The 'liability of stateness' negative view. On breaking down the 'liability of stateness' perspective (Musacchio et al., 2015), the *social view* and the *political view* of state capitalism shed light on mechanisms weakening the SDEs' willingness to internationalize, while the *agency cost view* explains difficulties and inefficiencies in implementing the internationalization strategy.

The social view of state capitalism claims that SDEs are inefficient because governments direct them to pursue social objectives that often clash with firm performances (Bai & Xu, 2005), including internationalization. SDEs are often charged with the task of sustaining the national economy and securing domestic multiplier effects of their activities. Accordingly, they are not encouraged to invest extensively abroad because outward foreign direct investments are seen as taking the place of exports and therefore as having negative balance of payments and national employment effects (Mazzolini, 1980).

The political view of state capitalism contends that SDEs are inefficient because the politicians who control them are more interested in their own political rents than in the efficiency of the enterprises they are in charge of running (Chong & López-de-Silanes, 2005; Cui & Jiang, 2012; La Porta & López-de-Silanes, 1999). Politicians, acting as insiders, may provide benefits for their supporters and gain private rents (Boycko, Shleifer, & Vishny, 1996; Faccio, 2006; Marzano, 2015), which are normally easier to extract on domestic markets than abroad, mainly by favoring the formation of captive markets protected by legal barriers and by entrenched regulators. In sum, SDEs are politically biased.

Finally, according to the agency costs view, SDEs are inefficient because of higher costs stemming from an agency relationship involving a politician rather than a private owner as a principal (Boardman & Vining, 1989; Dharwadkar, George, & Brandes, 2000; La Porta & López-de-Silanes, 1999). Governments have fewer abilities and incentives to monitor managerial behavior than private owners (Garrone & Marzano, 2015; Vickers & Yarrow, 1991). Poor monitoring may cause shirking behavior by SDE managers, who may undertake self-serving actions that undermine firms' efficiency and lower their value. This principal-agent problem is exacerbated by the reduced transferability of SDE ownership, which implies the absence or ineffectiveness of a market for corporate control as a device with which to discipline managers (Scharfstein, 1988). The public management literature argues that a possible response to this dysfunctional behavior is bureaucracy, i.e. formal rules and procedures that bind managers' action (Scott & Falcone, 1998). But bureaucracy can have negative effects on SDEs' internationalization. Penalties for rule violation induce high risk-aversion among managers with respect to foreign projects which, although potentially successful, are characterized by environmental uncertainty and the need for flexibility in decision-making. Moreover, governments as owners may select managers on the basis of their political alignment rather than professional qualification. Given the national electoral domain, political criteria display a home country bias, and the selection favors managers with national rather than international business experience (Estrin et al., 2016). Thus, even if the state as owner had motivations to favour the internationalization of SDEs, it may find it difficult to delegate the implementation of such strategies to managers whose objectives may be misaligned with those of their political principals.

The 'government as strategist' positive view. Turning to the 'governemnt as strategist' perspective, many reasons for proactive action by states in favor of the internationalization of their domestic SDEs are instead suggested. Countrywide *positive economic and social externalities* may induce governments to push SDEs into going abroad, whereas specific *government-related resources and capabilities* may make governments particularly efficient in orchestrating the expansion overseas of SDEs.

Countrywide positive externalities refer to different dimensions. First, governments desire to strengthen the country's prestige and power in the international arena. By operating across borders, SDEs can transmit national policies, culture and norms to other jurisdictions (Lenway & Murtha, 1994; Vernon, 1971). Second, governments can pursue the establishment of world-class multinational corporations able to access external knowledge and channel it back to the domestic economy. SDEs' internationalization strategies can be targeted on both the acquisition of technologies and the penetration of markets and regulatory contexts in which some technologies can be developed and fully deployed. Third, governments want to increase national economic long-run growth, which benefits the population and makes it possible to fortify social coalitions with political parties and trade unions. A successfully internationalized SDE serves the purpose by making profits, and hiring more employees in the domestic country.

It has been argued that specific government-related resources are responsible for SDEs' successful internationalization strategies (Benito et al., 2016). Because of their larger budgets, governments can be patient investors and adopt strategic rather than just profit-maximizing models of finance (Cuervo-Cazurra et al., 2014; Mazzucato, 2013). SDEs in which the state has an influential position are more likely to make even hazardous investments, e.g. in countries with weaker institutional environments and higher expropriation risks (Knutsen, Rygh, & Hveem, 2011). Moreover, soft budget constraints, e.g. government financial bailouts, cheap loans, subsidies and so on, confer on SDEs a higher level of trust from financial institutions, resulting in a greater willingness to lend to them (Stan, Peng, & Bruton, 2014). This status cannot be equaled by POEs, and it allows SDEs to undertake projects that are unprofitable for many years.

The literature also identifies some unique government-related advantages needed to overcome liability of foreignness (Zaheer, 1995). In particular, government members may act as diplomats of the transactions abroad and give SDEs privileged access to knowledge and experience about foreign institutions and political networks (Benito et al., 2016; Cuervo-Cazurra et al., 2014).

Finally, the coordination capabilities made available by governments facilitate the implementation of investments overseas. The government as strategist is supposed to have the skills to establish alliances with different interest groups converging on long-term goals. Indeed, the management of relationships

with important stakeholders, such as trade unions, banks, host governments, helps SDEs to overcome the emergence of blocking groups that may prevent them from undertaking foreign investments, raise costs of the operations disproportionally or lead to a suboptimal allocation of resources used to internationalize. Moreover, coordination capabilities devoted to creating and sustaining coalitions among state, other blockholders and firms' managers may help mitigate the agency costs and accordingly have an indirect positive effect on the SDE's relative internationalization degree.

Toward a reconciliation: the moderating role of the institutional varieties of capitalism

The controversies outlined in the previous section suggest the utility of an institutional context-based investigation of the internationalization effects of state ownership. Indeed, it is not so much a matter of determining which of the two perspectives - 'liability of stateness' or 'government as strategist' - is more correct, but rather of ascertaining just when they actually apply and identifying the boundary conditions of the state ownership/internationalization relationship. Building upon an emerging but still scant literature, we show how disagreements can be mitigated by recognizing the importance of linking SDEs to the variety of institutional domains (Colli, Mariotti, & Piscitello, 2014; Estrin et al., 2016; Hoskisson, Wright, Filatotchev, & Peng, 2013; Liang et al. 2015). Indeed, differences in state capitalism have been generated by and co-evolve with varieties of the capitalism across countries; attitudes, goals and policies of governments in supporting firms' internationalization are deeply rooted in historical behavioral models that vary geographically and according to path-dependent institutional changes (Jackson & Deeg, 2012).

We draw on the theoretical contributions of the VoC school, according to which three main varieties of capitalism can be identified (e.g. Hancké, Rhodes, & Thatcher, 2007; Schmidt, 2009), differentiable according to how institutions regulate the interactions among actors, and the state's attitude to direct economic development through goal-oriented policies that influence the behavior of people and firms to different extents. The taxonomy refers to: (i) LMEs, which mainly encompass the Anglophone countries, ranging from the United Kingdom (UK) and the United States (US) as ideal-types to other countries like Australia, Canada, New Zealand; (ii) CMEs, encompassing Germany and Japan, and countries in Central

and Northern Europe; (iii) State-influenced market economies (SMEs), including France, the other Mediterranean countries in Europe, and 'developmental states' like South Korea and Taiwan in Asia.[1]

Liberal market economies and state-dominated enterprises' internationalization

In LMEs, institutions take an arm's length approach to regulating the economy. The state is 'liberal' because it acts as an agent of market preservation, i.e. it limits its role to creating a positive regulatory environment, to setting rules and settling conflicts. Furthermore, LMEs are characterized by the spread of short-termism on a large scale (Hodges & Woolcock, 1993). Indeed, in such economies the resource allocation is driven by capital markets and led by autonomous firms acting on their own. Capital markets are sufficiently large and liquid to support a strong market for corporate control (O'Sullivan, 2000).

In this context, two out of the three mechanisms that make up the 'liability of stateness' perspective are effectively working, i.e. political bias and agency costs. First, SDEs suffer the influence of politicians who are interested in satisfying their personal agendas. Since political rents are predominantly extracted at home, politicians biases SDEs toward domestic investments, thus making them less likely to internationalize than POEs. Second, even if some circumstances make it more appealing for governments to spur firms' internationalization, SDEs will be unsuccessful in pursuing an internationalization strategy because of the agency costs resulting from poorly selected managers lacking high-powered incentives (Musacchio et al., 2015). Agency costs can be particularly severe in LMEs due to the misalignment of goals between the public managers and a government somehow oriented to internationalize. Indeed, LMEs' impatient and volatile capital markets limit the willingness of managers who operate under their discipline to invest in international expansion projects that are intrinsically risky and long-term oriented.

By contrast, the 'government as strategist' perspective turns out to be rather softened in LMEs. First, the regulatory nature of institutions implies that the state's intervention as firms' owner does not reflect expectations to fulfil broader social ends, e.g. the country's prestige through the creation of national champions, but responds mainly to domestic market failures, thus inducing the government to adopt an inward-looking approach. Second, in the LME pro-capital market context, governments tend to resolve the

trade-off between short-term profitability and long-term goals in favour of the former, thereby relinquishing their role as creators and supporters of SDEs in the global arena. Finally, since the essence of LMEs consists of competitive relations, contracting and supply-and-demand price signalling, governments do not care about the delivery of collective goods, state-related resources and coordination capabilities that can be usable to facilitate the going abroad of SDEs.

Overall, in LMEs only mechanisms hindering SDEs' internationalization are at work. Thus, SDEs suffer from a domestic business bias and a lack of international experience. In line with the arguments set out above, we put forward the following hypothesis:

H1. In LMEs the degree of internationalization is lower for SDEs than for POEs.

Coordinated market economies and state-dominated enterprises' internationalization

In CMEs, the institutions encourage cooperation among economic actors, so that the resource allocation is led by firms, but jointly negotiated among business, labor, and the state. Thanks to durable ties between firms and banks, CMEs involve a lower level of market capitalization and more patient capital, thus incorporating long-term-oriented models of finance (Dore, 2000). The state is 'enabling' because it does not just arbitrate among actors but rather facilitates their activities by acting as a co-equal (Schmidt, 2016) and favoring the emergence of coalitions between government and enterprises through the sharing of goals and strategies. Governments prioritize the protection of the national system of non-market coordinating mechanisms to promote a 'stakeholder capitalism' as opposed to the LME model of 'shareholder capitalism' (Vitols, 2001). They particularly attend to the delivery of collective goods, such as a national wage bargaining system, industry-wide training schemes and standards.

In contrast to what has been argued for the LMEs, in CMEs the mechanisms behind the 'government as strategist' perspective prove to be strengthen, whereas those related to the 'liability of stateness' perspective turn out to be weakened. Indeed, in CMEs, the state assumes the role of a proactive strategist intent on assuring externalities to its coordinated economy. This disposition to strategic reasoning helps the state to develop an outward-looking orientation that promotes macro-economic growth models better

matched to the opportunities offered by international markets (Hall, 2014), and the creation of private and public champions able to compete internationally and fertilize the national economy (Colli et al., 2014).

As regard as SDEs, the government sets itself the goal of their internationalization by establishing strategic alliances with the public managers and other blockholders that undertake greater joint efforts to go abroad and register a higher probability of succeeding in internationalization also thanks to the access of SDEs to government-related advantages (Benito et al., 2016; Cuervo-Cazurra et al., 2014). Moreover, the concentration of developmental efforts and the search for higher pay-offs are pushed by the dominant role of the state as shareholder. In particular, because the government has a leadership role, it exercises its authority in a networked collaborative manner, engaging local institutions, trade associations, labor unions and other corporatist intermediaries. As a result, SDEs are likely to outperform their national business peers that are controlled by private investors and/or have a marginal presence of the state as a shareholder.

Important institutional mechanisms are directed at shared economic goals: the management of social and political relationships, the implementation of market liberalization programs, regulation activities by independent agencies, industrial, trade and fiscal policies, and international diplomacy. Although these mechanisms are in theory available to all types of states, there are marked differences in the intensity and effectiveness of their implementation. In CMEs, governments use them in a selective manner, while in LMEs these mechanisms are often less effective because of an *erga omnes* approach (Colli et al., 2014).

Finally, with respect to the 'liability of stateness' perspective, it is to be noted that also in CMEs, SDEs are not immune to biases due to pressure by self-interested politicians. Nonetheless, governments can deploy an array of political devices to neutralize the worst effects of rent seeking and favor the international growth of SDEs. Especially, the large and long-lasting coalitions among minority shareholders, public managers and other stakeholders of SDEs help to solve principal-principal and principal-agent problems, so as to mitigate agency costs by aligning interests. Indeed, although governments have to negotiate actions to promote SDEs as global players with many actors and decentralized institutions that can have significant blocking power, the subsequent strategy implementation is largely guaranteed once the social partners have agreed to act.

Overall, in CMEs all the internationalization boosting mechanisms are strongly at work, thereby tipping the balance in favour of the international expansion of SDEs. In line with the arguments expounded above, we put forward the following hypothesis:

H2. In CMEs the degree of internationalization is higher for SDEs than for POEs.

State-influenced market economies and state-dominated enterprises' internationalization

SMEs have similarities to CMEs, but with institutions and actors that do not have similar coordinating capabilities, nor use these capabilities to coordinate activities. Rather, fragmented organized interests use their resources to create clientelistic links or mutually supportive relations with political parties, and lobby the state for protection and compensation, e.g. subsidies and other state aids (Molina & Rhodes, 2007). Thus, these economies have a more 'influential' state and a more state-driven or hierarchical logic of interaction among actors than in both LMEs and CMEs (Schmidt, 2009); but the state's role in correcting for coordination deficits is accompanied, and sometimes subverted, by compensation in return for cooperation demanded by interest organizations able to exert veto power and social pressure.

In this non-transparent context, there is more room for malevolent behavior by politicians that establish opaque coalitions based on personal agendas. Moreover, because the sources of compensation and extractable rents are mainly within the national borders, the government oscillates between outward-looking and inward-looking approaches, trying sometimes to promote the country's competitiveness, and sometimes to please the lobbies, with opposing effects on business.

When private co-owners are also present, principal-principal conflicts can be severe and alternatively solved in an adversarial way against the right of minority shareholders through manipulations by controlling owners (e.g. coalitions of blockholders, and corporate alliances between controlling/dominant shareholders and managers), or in a more accommodating way. For instance, privates may expect to share the benefits and rents provided by the government via political interference, thus becoming more patient of risks and reductions in short-term profitability (Colli et. al, 2014).

On considering SDEs' internationalization processes within this framework, we contend that, in SMEs, states alternate interventions inspired by *laissez-faire* and *dirigisme*, thereby giving rise to contingent enhancing or hindering effects on the SDEs' internationalization. Thus, each single mechanism highlighted in the 'liabilility of stateness' and the 'government as strategist' perspectives can be *a priori* at work, but in an unsystematic manner. In line with the arguments of the current section, we do not have any testable hypothesis about the moderating role of SMEs on SDEs' internationalization.

PRELIMINARY EVIDENCE

Data and descriptive statistics

The empirical analysis was based on a sample of enterprises with headquarters in twenty main OECD countries and operating in the E&G and TLC industries. Relevance and potential for results' generalizability are reasons for considering the sample an ideal test bed. The two industries are densely populated by SOEs, and also by a quite large group of POEs.[2] Further, the high generalizability is due to two factors. First, these industries have been historically seen as at the forefront of the worldwide movement toward market liberalization (Henisz, Zelner, & Guillén, 2005; Pollitt, 2012). Thus, we have a sufficiently long observation period to investigate firms' internationalization processes, which notoriously take time to materialize. Second, the presence of SOEs in the E&G and TLC industries is induced by many of the market failures that the economic theory considers as the rationale for state intervention and/or ownership (Atkinson & Stiglitz, 1980): natural monopoly; technological externalities; large-scale, high-risk and long-run investments in infrastructure; services that have to be universally provided; strategic nature of activities on which large part of the private economy depends, which give rise to both political concerns about national interest and security, and the use of SOEs as a tool of macroeconomic policies. Because these industries comprise so many factors shared with other industries in which state ownership is relevant, we are confident about the generalizability of results based on our sample.

The dataset was assembled from diverse sources. Company accounting data came from the Worldscope database. Information on shareholding structures over time was sourced from Thomson Reuters Eikon. In

addition, in order to deal with missing data and to cross-check information, we relied on annual reports retrieved from companies' websites or obtained from investor relations services. After cleaning the data and eliminating those records for which complete information was not available, we obtained a final panel dataset of 99 enterprises observed for two decades (1995-2014). The sample included 21 TLC enterprises and 78 enterprises operating in E&G markets. The disproportion in numbers was due to historical features of E&G markets, which were often dominated by vertically integrated local (sub-national) incumbents.

On considering state ownership over time, we had to deal with complex pyramidal ownership structures. We followed the "weakest link" approach, and accordingly identified the minimum state ownership stake along a shareholder chain (Faccio & Lang, 2002). In the case of multiple chains, ownership stakes were added up across all chains. Enterprises were classified into three mutually exclusive categories: SDEs, in which the state is a dominant owner (more than 25% of voting shares); SMIEs, in which the state has a minority non-dominant ownership (less than or equal to 25% of voting shares); and privately-owned enterprises (POEs).[3] This operationalization enabled us to deal with the non-linearity in the state effect on firm's internationalization.

Over the two decades under consideration, many incumbents changed their ownership and an array of new SOE configurations emerged as a consequence of different behaviors by the state-owners, whose policies ranged from full to more reluctant privatization (Bortolotti & Faccio, 2009). According to our longitudinal data, at the beginning of the follow-up period, 56.1% of the sample consisted of SDEs, 4.9% of SMIEs, while the remaining 39% was made up of POEs. At the end of the period, SDEs accounted for 52% of the sample, 9.3% were SMIEs and 38.7% were POEs.[4]

As regards varieties of capitalism, we referred to the tripartition proposed by comparative economics (Hancké et al., 2007; Schmidt, 2009) and allocated the twenty countries where our sampled enterprises were headquartered as follows: Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States to LMEs; Austria, Belgium, Denmark, Finland, Germany, Japan, the Netherlands and Sweden to CMEs; France, Greece, Italy, Portugal, South Korea and Spain to SMEs. Table 1 shows the distribution of enterprises across varieties of capitalism, countries and industries. The distribution across

varieties of capitalism mirrors the corresponding country-level distribution. We had 31, 33 and 35 enterprises headquartered in countries identified as LMEs, CMEs and SMEs, respectively.

[Insert Table 1 about here]

In parallel with changes in ownership structures, the worldwide lowering of market entry barriers created opportunities and challenges for SOEs to internationalize their activities, which were previously predominantly focused on domestic markets. To outline the evolution of enterprises' internationalization, we refer to the ratio of foreign revenues to total revenues. The literature argues that other variables can be used to measure firm's internationalization, e.g. foreign asset ratio and foreign employee ratio (Sullivan, 1994). Specifically, Hennart (2011) contends that, although the ratio we employ has been used in almost half of all the empirical studies, it can have two limitations as a measure of multinationality. First, foreign sales can result from export as well as foreign production. Second, firms may have factories and mines abroad that do not count as foreign sales if they supply home operations. However, as far as our study is concerned, both theoretical and practical arguments are in favor of the measure chosen.

Apart from the gas segment, for which the location of the upstream activities (exploration and production) is determined purely by geology, the internationalization of TLC and electricity services and distribution is not constrained by the geographical distribution of essential inputs. With regard to the gas segment, we conducted an in-depth analysis of our sample. The E&G firms operating in upstream gas activities are nine out of 99, but for only two firms did these activities assume relevance (a share of more than 30% of the total revenues, against less than 10% on average for the remaining seven firms). Overall, in our sample, the relevance of these locational constrained activities can be assumed to be negligible.[5]

Moreover, TLC and electricity services are non-tradable, and their expansion abroad must occur almost exclusively through foreign direct investments (FDI; greenfields and/or acquisitions). Because export is quite negligible, foreign sales ratio are strictly correlated with assets, employee and production ratios, and it works fairly well as an indicator of the firm's international presence in these sub-sectors.

Finally, the use of foreign sales ratio permits us to increase the size of our sample. Indeed, public data on firms' assets and employees abroad are often unavailable. Thus, the use of alternative measures of the degree of internationalization would dramatically reduce the relevance of our econometric results.

As said above, the internationalization of enterprises has grown considerably. Starting from about the same average ratio between foreign and total revenues in 1995, which ranged between 5% and 10%, both E&G and TLC enterprises have registered substantial growth in their degree of internationalization. At the end of 2014, the average ratio ranged between approximately 20% and 30%.

Qualitative evidence

Some qualitative evidence furnishes preliminary insights on the role of the state in supporting the internationalization of SDEs within countries representing different VoC regimes. We mainly refer to two countries that are well-known instances of LME and CME, i.e. the UK and Germany, respectively.

The UK was a case of utter lack of any strategic orientation by the government. British Telecom (BT) was fully privatized from 1984 to 1993. To promote domestic competition, the government supported the emergence of a rival (Mercury) by means of a regulation in favour of new entrants. Expectations of higher competitive pressure at home induced BT to tentatively pursue a growth based on global alliances (e.g., with MCI and AT&T). However, the state did not give any support to this strategy, so that the lack of international experience of the British operator and its tendency to preserve its 'Edwardian' bureaucratic traditions (Clifton, Comin, & Díaz-Fuentes, 2011) doomed these attempts to failure. The subsequent partial de-internationalization made BT the least internationalized of the largest European operators for a long time.Fian

As regards the E&G, in the 1990s the British government reorganized the industry to run on competitive lines, by assuring deverticalization and low barriers to entry in both wholesale and retail markets and privatizing all of the incumbents. However, the government and the British regulator acted quite inefficiently, and paradoxically they failed in both creating a competitive internal market and in establishing strong country-headquartered international players (Thomas, 2006). Rather, they contributed

to harming the growth prospects of early privatized domestic operators that were eventually taken over by foreign peers. The case of British Energy is emblematic. It was fully privatized in 1996. From 2002 the company faced financial difficulties, due to failure to obtain reliefs from energy taxes (e.g., the Climate Change Levy), and renegotiations of its back-end fuel costs with British Nuclear Fuel Ltd (the state-owned manufacturer and transporter of nuclear fuel). British Energy was bailed out with a massive loan from the government, which moved to a *de facto* re-nationalization of the company in 2004. However, the British government did not show any inclination to transform British Energy into a multinational player. This ill-fated trajectory compromised the growth of the company, which was later taken over by the French EDF.

The case of UK can be generalized to other LMEs (e.g. Australia, Canada, Ireland, New Zealand). In these countries, TLC and E&G incumbents have been fully privatized more often than not, whereas companies that are still SDEs have remained relatively small and mainly focused on domestic markets.

By contrast, Germany has acted proactively to strengthen the dominant position of domestic incumbents so as to pursue the creation of global players. Despite formal liberalization, German companies enjoyed some pampering as national champions, and their foreign acquisitions were conducted from the base of nearly monopolistic conditions (Clifton, Díaz-Fuentes, & Revuelta, 2010).

At the beginning of the 2000s, Deutsche Telekom (DT) had a dominant domestic position, with a market share equal to 80 per cent (Bismut, 2006). In 2006, the government approved a new telecommunications act, which protects DT from competition in the high-speed broadband network segment since 2011. The government provides a type of 'Schumpeterian explanation', arguing that the ruling was a means to promote investments and create incentives for innovation (Colli et al., 2014). At the same time a stable *noyau dur* of public shareholders represented by the Federal Republic of Germany and the *Kreditanstalt für Wiederaufbau* (KfW, the state-owned development bank) supported its going abroad strategy. As a result, DT is currently one of the most internationalized telecommunications operators in the world, with more than half of its revenues coming from operations overseas. The most recent operation has been the merger between T-Mobile US Inc (the DT operating arm in the US mobile segment) and

Sprint Corp. As a result, the new positioning of T-Mobile US is on a level with the two national champions, AT&T and Verizon.

The same story may be told about RWE, a publicly-owned E&G utility that pursued an aggressive internationalization strategy. From 2000 onwards, RWE acquired assets in the US, the UK, the Netherlands, Middle East, Africa and largely in Eastern Europe (Czech Republic, Poland, Slovenia, and others). The state protected RWE by promoting a stable duopoly with e.On, a condition providing the economic rents needed to undertake the international expansion. As we write this paper, an asset swap that is expected to revolutionize the energy sector is taking place between these two companies (Financial Times, 2018), confirming the aptitude of the German government towards a strategic reasoning. When the swap has been completed, RWE will become the principal shareholder of e.On (with 16.7% of the capital) and will focus on production, whereas e.On will concentrate on infrastructure and retail. The operation was also believed to be justified by the need to prevent Innogy (a RWE subsidiary operating in the renewable, network and retail businesses) from ending up in the hands of foreign competitors.

Other CMEs have achieved success in supporting the internationalization of SDEs. Sweden is an exemplary case. Vattenfall, a fully state-owned enterprise, is one of the Europe's leading energy companies. It is the third player in Germany and has power generation branches in Poland, the Netherlands, UK, Denmark and Finland. Telia, the main domestic telecommunications operator controlled by the government, operates in Scandinavian countries, Russia (where it controls the second operator), the Baltic countries (Estonia, Latvia and Lithuania), other former Soviet Republics, Nepal, and Spain.

METHODOLOGY

Dependent variable

In order to test the hypotheses put forward in the previous section, we used a regression model, which will be more extensively described later. The dependent variable in our model was the enterprises' *Internationalization* degree, measured by the ratio of foreign revenues to total revenues.

Explanatory variables

To account for the level of the state ownership, we used three dummy variables. Specifically, *SDE* was a dummy variable set equal to 1 if the enterprise was a SDE and 0 otherwise. Likewise, *SMIE* was set equal to 1 if the enterprise was a SMIE and 0 otherwise. Finally, *POE* was a dummy variable set equal to 1 if the enterprise was a POE and 0 otherwise, and constituted the base level of our analysis.

The varieties of capitalism were measured by three dummy variables. *CME* was a dummy variable set equal to 1 if the enterprise was headquartered in a country defined as a CME, according to the classification reported in Table 1, and 0 otherwise. Similarly, *LME* and *SME* were set equal to 1 if the enterprise was headquartered in a country defined as a LME and SME, respectively, and 0 otherwise. The latter worked as the base level in the econometric analysis.

We also used an alternative operationalization of varieties of capitalism, the *Coordination Index* developed by Witt & Jackson (2016), which ranges from 0 to 1, with values closer to 0 denoting higher similarity with the prototypical LME and those closer to 1 denoting higher similarity with the prototypical CME. Since SMEs share characteristics with CMEs, distinguishing themselves from the latter by lacking similar coordinating capabilities, we can assume that SMEs are located somewhere in the middle of the 0-1 range. The *Coordination Index* was derived by considering five institutional domains discussed by Hall & Soskice (2001): corporate governance, inter-firm relations, hierarchies within firms, employment relations, and education. For each domain, institutions are conceptualized "as varying along a single dimension spanning between liberal institutions characterized by a high use of market relationships or transferable assets and coordinated institutions characterized by high use of long-term strategic relationships or relationship-specific assets" (Witt & Jackson, 2016: 788). Since data were available for the 1995-2003 period only, we used a fixed coordination index by setting it at its 2003 value, which is also the midpoint of our follow-up period.

Control variables

Influential foreign investors holding a stake in a sampled enterprise can positively or negatively affect its internationalization level, depending on their resource- and market-seeking strategies (Dunning, 1993).

Particularly, since the presences of the state and foreign investors in the ownership structure are likely to be correlated, controlling for this aspect was crucial for our estimations not to produce biased results. To this end, we used a dummy variable, *Foreign investor*, which was set equal to 1 if a foreign investor owned a minority shareholding in the capital of the enterprise that exceeded 25% and 0 otherwise.

Moreover, as mentioned throughout the paper, the decision on whether or not to undertake an internationalization process can be related to the level of competition in the domestic market. There are few analyses on the influence of domestic rivalry on firms' internationalization (e.g. Grøgaard, Gioia, & Benito, 2013) so that the relationship between competition at home and internationalization is contested. On the one hand, liberalization processes erode incumbents' market shares and spur them to expand into new and more lucrative markets abroad. On the other hand, high-risk investments abroad are more likely to be undertaken if supported by extra-profits at home (Chari & Gupta, 2008). In order to measure the level of competition in the E&G and TLC markets within each country over time, we used two indicators: *Entry Barriers* and *Market Structure*. They were sourced from the OECD database on "Product Market Regulation in the Non-Manufacturing Sectors", which furnishes a set of yearly observed indicators measuring differences in the regulation of non-manufacturing sectors of OECD countries over the past four decades, i.e. from 1975 to the present.[6] *Entry Barriers* ranged from 0 (free entry) to 6 (blockaded entry) and focused on terms and conditions for third party access, the extent to which consumers can choose their own supplier, the existence of liberalized wholesale markets (for the E&G sector) and access to import/production activities. In the case of the TLC sector, the unbundling of the local loop and the compulsoriness of mobile phone interconnection were also assessed. *Market structure* ranged from 0 (low market concentration) to 6 (high market concentration), and it was a function of the market shares of the largest companies in the various segments of the focal industry.

Finally, in order to control for a country's propensity to internationalize as a whole, we included an additional independent variable, *OFDI on GDP*, i.e. the ratio between outward FDI and GDP over the years. The indicator was built by using data from the UNCTAD.[7]

Econometric model

The econometric analysis was carried out in a panel-data setting as we followed the sampled enterprises across two decades. Since we expected the current degree of internationalization to be heavily influenced by its past level, the impact of state ownership on the degree of internationalization was investigated by means of a dynamic panel-data model. Accordingly, the *Internationalization* degree was regressed against its autoregressive term, our explanatory variables measuring the state's involvement in the ownership of enterprises, i.e., *SDE* and *SMIE* (having assumed *POE*s as base level of the analysis), the two dummies identifying coordinated and liberal market economies, i.e., *CME* and *LME*, respectively (having assumed *SME* as base level), stood alone and interacted with the state ownership variables (these two dummies would be replaced by the *Coordination Index* in an alternative specification). To sum up, we estimated the following model:

$$Internationalization_{it} = \beta_0 + \alpha(Internationalization_{it-1}) + \beta_1(SDE_{it}) + \beta_2(SMIE_{it}) + \beta_3(CME_i) + \beta_4(LME_i) + +\beta_5(SDE_{it}xLME_i) + \beta_6(SMIE_{it}xLME_i) + \beta_7(SDE_{it}xCME_i) + \beta_8(SMIE_{it}xCME_i) + + \gamma X_{it} + \theta_i + \delta_t + \varepsilon_{it} \quad (1)$$

Here X_{it} is the vector of controls, θ_i is a sector fixed effect, δ_t is a year fixed effect and ε_{it} is the error term. Our Hypothesis H1 implies $\beta_5 < 0$; our Hypothesis H2 implies $\beta_7 > 0$.

The inclusion in the model of the lagged dependent variable and the endogeneity of state ownership in the internationalization function required the use of appropriate estimation techniques. The latter aspect is quite crucial. The government can strategically choose its degree of involvement in the ownership structure of domestic enterprises in order to fulfill its ambition to create global players able to expand on foreign markets. Conversely, the government can choose to retain control over domestic enterprises to make them pursue an inward-looking strategy whenever the cost-benefit trade-off is solved in disfavor of internationalization. In both cases, a spurious correlation between state ownership and degree of internationalization ensues. An additional bias is possible if SOEs' prospects in terms of global success drive privatization processes. When the government has to decide whether or not to privatize an enterprise, the final decision can be influenced by expected proceeds from privatization, which *ceteris*

paribus are larger, the more promising the enterprise is in terms of expected future performance. On the other hand, the government can keep control over enterprises with superior international growth prospects, which better serve the purpose of being successful in creating global players.

To address these endogeneity problems, we used the Generalized Method of Moments (GMM) estimation. We initially used a Difference-GMM (GMM-diff) estimator (Arellano & Bond, 1991), by first-differencing the internationalization equation and using an appropriate lag structure for the variables in levels as instruments for the differenced regressors. We assumed that the lagged dependent variable, the two dummies measuring the ownership structure and the two variables measuring competition in the domestic markets were endogenous. However, when series are highly persistent, as in the case of internationalization degree, instruments in levels for first-difference equations can be weak (Blundell & Bond, 1998). The problem is usually tackled by increasing the set of moment conditions used in the estimation and switching to a System-GMM (GMM-sys) estimator, which entails using lagged levels of the series as instruments for first-difference equations, and first differences as instruments for equations in levels.[8] We provide evidence that our results are robust to switching from GMM-diff to GMM-sys estimator.

RESULTS

Table 2 shows the summary statistics when single observations, i.e. enterprise-year records, are considered. Table 3 shows the correlation matrix of our independent variables. The regressors have fairly low correlation coefficients and do not suffer from multicollinearity because the single variance inflation factors (VIF) are never higher than 10 – the widely accepted threshold to detect collinearity – while the mean VIF is 1.48, well below the standard threshold of 6 (Hair, Black, Babin, & Anderson, 2010).

[Insert Table 2 and Table 3 about here]

The effect of state ownership on internationalization

We start by estimating the average effects of state ownership on internationalization. Table 4 shows the results of the estimation of the dynamic panel-data model using the different GMM estimators described

in the previous section (columns 1-4).[9] We also report pooled Ordinary Least Squared (OLS) and simple Within-Group (WG) estimates for comparison purposes (columns 5-6). In specifications reported in columns (3-6), we control for the level of competition in the domestic market (by including *Entry Barriers* and *Market Structure*), and the country-specific propensity to internationalize (by including *OFDI on GDP*), whereas we do not do so in models whose results are reported in columns (1-2). Depending on the estimator employed, we control also for year and industry fixed effects.

[Insert Table 4 about here]

Regardless of the specification and the applied estimation technique, the results shown in Table 4 provide evidence that, on average, state ownership has no effect on the degree of internationalization. Whether an enterprise is dominated, or minority invested by the state, its degree of internationalization is not significantly different from its fully private counterparts. We only find a significant positive difference in the degree of internationalization between SMIEs and POEs on using GMM-diff (statistically significant at the 10% level) and the WG (statistically significant at the 5% level) estimators. However, this result is not robust across estimators, and we have to bear in mind that the WG estimator does not properly tackle the endogeneity problems of our dynamic panel-data model. Overall, these results may suggest that conflicting mechanisms drive the effect of state ownership on firms' internationalization.

The moderating role of varieties of capitalism

To test Hypotheses H1 and H2, we estimated the model shown in Equation (1). Table 5 also reports the results of two restricted models. In columns (1-2), only *CME* and *LME* have been added to the base model whose results are reported in Table 4. All of the specifications were estimated using GMM-sys, since by using GMM-diff it would have been impossible to estimate the coefficients of our time-invariant dummy variables measuring varieties of capitalism.

[Insert Table 5 about here]

It is apparent from column (4) in Table 5 that the form of capitalism in which the enterprise is embedded does not explain *per se* the degree of internationalization. The coefficients of the two dummies

CME and *LME* are not statistically significant. This means that, on average, enterprises headquartered in CME, LME and SME countries do not differ in terms of the ratio between foreign and total revenues.

Let us now consider the interaction terms. LME negatively moderates SDEs' degree of internationalization. The coefficients of *SDE*LME* and *SMIE*LME* are both negative, though only the coefficent of *SDE*LME* is statistically significant (at the 10% level). It is interesting to assess the magnitude of the effect of the state as a dominant owner on the internationalization degree of enterprises headquartered in LME countries with respect to POEs. The gap in the degree of internationalization between SDEs and POEs headquartered in LME countries is, on average, equal to 2.4% (obtained by summing up the coefficients of *SDE* and *SDE*LME*). Since the sample mean of the internationalization degree is 17.5%, the effect is substantial (it implies approximately a one-seventh decrease in the ratio between foreign and total revenues). Therefore, Hypothesis H1 is supported.

CME positively moderates the propensity of SDEs to internationalize. The coefficient of *SDE*CME* is statistically significant at the 5% level. The difference in degree of internationalization between SDEs and POEs headquartered in CME is, on average, equal to 3.0% (obtained by summing the coefficients of *SDE* and *SDE*CME*). Thus, Hypothesis H2 receives support from our econometric analyses.

Conversely, the interaction term between *SMIE* and *CME* is not statistically significant. Even where state ownership plays a role in driving the firm's internationalization strategy, its effect is null if the state is a minority shareholder. Only when the state passes from being a minority shareholder to a dominant one does a clear state ownership effect on firm's internationalization emerge.

The coefficients of *SDE* and *SMIE* continue to be not statistically significant, consistently with results shown in Table 4. In this regard, to be noted is that, in the model reported in Equation (1), the coefficients have to be interpreted as the relative treatment effects in SME countries, which constitute our baseline as far as varieties of capitalism are concerned. That said, the above-described results show that SME does not have any effect on the relationship between state ownership and SOE's internationalization, thus suggesting that in a SME, SOEs and POEs do not differ significantly in terms of international expansion.

Our preferred estimates, reported in column 4, reveal also that the presence of a foreign minority blockholder does not have any statistically significant effect on the degree of internationalization. By contrast, the level of competition in the domestic market has a role, at least partially, in explaining the extent to which enterprises go abroad. Specifically, when the domestic market is characterized by higher entry barriers, all other things being equal, market incumbents have a lower degree of internationalization. The effect is statistically significant at the 5% level. This evidences that "softer touch" liberalization does not spur incumbents to expand abroad; conversely, it is competition that causes incumbents to seek new opportunities in foreign markets. The same effect is not found as regards market power.

As expected, the higher a country's propensity to invest abroad through FDIs, the greater the degree of internationalization of its domestic enterprises, both SOEs and POEs. The coefficient of *OFDI on GDP* is positive and statistically significant at the 5% level. When the ratio increases by 0.1, the degree of internationalization of a domestic enterprise rises by 0.02.

Continuous indicator of market coordination

A difficulty with the results stems from the way in which we operationalized the varieties of capitalism. Critics have disputed the categorization of countries, and have proposed one-dimensional constructs. In order to check whether our results were robust to alternative operationalizations of varieties of capitalism, we used the *Coordination Index* described in the previous section (Witt & Jackson, 2016).

Table 6 reports the results obtained by re-estimating the models in columns 1, 3 and 4 of Table 5, but using the *Coordination Index* to measure the varieties of capitalism. To be noted is that, in the specifications reported in Table 6, the coefficients of *SDE* and *SMIE* provide the effects of state ownership when the *Coordination Index* is 0, i.e. in the prototypical LME, whereas the coefficients of the interaction terms account for the effects of moving from LME to CME passing through SME.

[Insert Table 6 about here]

Inspection of Model (3) shows that using the *Coordination Index* makes our previous results even more statistically significant. Here the coefficient of *SDE,* which is the equivalent of *SDE*LME* in Table 5, is

negative and significant at the 5% level. Likewise, the coefficient of *SDE*Coordination Index* is positive and significant at the 1% level, meaning that by moving from a LME to a CME, the effect on internationalization of a dominant state owner switches from negative to positive. Figure 1 shows the moderating effect of the *Coordination Index* on the marginal effect of *SDE* on *Internationalization.* In the prototypical LME, the difference between the degrees of internationalization of SDEs and POEs is approximately 0.03 in favor of the latter, whereas in the prototypical CME, it is approximately 0.06 in favor of the former. Accordingly, Hypotheses H1 and H2 turn out to be confirmed.

[Insert Figure 1 about here]

Estimates shown in Table 6 suggest that the positive effect of state ownership on internationalization in CMEs also extends to SMIEs. The relative coefficient exhibits a lower statistical significance level (5% level) if compared to the coefficient of *SDE*Coordination Index* (1% level) and, as we have already seen, it is not robust to different operationalization of the varieties of capitalism.

Other robustness checks

The standard GMM approach enables us to control for the endogeneity of state ownership under the assumption of sequential exogeneity (e.g. Wooldridge, 2002), i.e. when future shocks to the degree of internationalization are independent of the state's current involvement in the ownership structure of sampled enterprises. As mentioned in the previous Section, it might be argued that, because of simultaneity between privatization processes and government intervention to foster or hinder the internationalization of domestic enterprises, the sequential exogeneity assumption may be unmet. If so, the estimated coefficients of the state ownership variables would be still upwardly or downwardly biased.

To address this issue, we estimated a probit panel model to compute the probabilities of the focal enterprises being state-dominated at time *t* and inserted this variable as an additional instrument in the GMM-sys estimation. The logic followed was that for each enterprise, the computed probabilities can be expected to be correlated with the actual level of state ownership but, at the same time, they should be

independent of the degree of internationalization of our focal enterprises because the unobservables that can explain both state ownership and internationalization have been cleaned out.

The selection of independent variables used in the probit model followed previous studies on privatization decisions (Bortolotti & Pinotti, 2008; Dinc & Gupta, 2011). We included the GDP per capita to control for heterogeneity in terms of economic development and the debt on GDP to take into account the effect of fiscal imbalances, which could possibly play a role in the implementation of privatization reforms. Moreover, we included a set of indicators measuring the political dimension behind the decision to privatize. First, we considered the ideological orientation of the government, which could matter in explaining the timing and success of privatization processes (Biais & Perotti, 2002). Second, we took account of political fragmentation, which relates to the number of veto players in a given institutional system. In this regard, after assuming that political parties are the basic cohesive entities representing specific interest groups, we controlled for the electoral system, the government and the legislature fragmentation. All of the political indicators used were sourced from the World Bank Database of Political Institutions and covered the period from 1995 to 2012.[10] Besides the above-described indicators, we also controlled for the varieties of capitalism by using our *CME* and *LME* dummies.[11]

Table 7 (Models (1-2)) reports the results obtained by re-estimating via GMM-sys the models in the last columns of Table 5 and 6, but this time applying the estimation strategy discussed above, i.e., by using the probability of an enterprise being state-dominated as instrument.

[Insert Table 7 about here]

The estimates are consistent with our main results and accordingly make them highly robust. Model (1) shows that CME and LME are statistically significant in moderating the relationship between *SDE* and the degree of internationalization. Consistently with results shown in Table 5, the sign of the moderation is negative for LME (Hypothesis H1) and positive for CME (Hypothesis H2). When a clear state effect emerges, this continues to be not statistically significant for SMIEs. Moreover, the coefficients of *SDE* and *SMIE* stand-alone are still not statistically significant, suggesting that SME moderates neither positively nor negatively the relationship between state ownership and SOE's internationalization.

In order to rule out geology as a determinant of firms' foreign expansion, columns (3-4) report results obtained by reestimating the models in the last columns of Table 5 and 6 after having excluded two firms whose share of revenues relative to exploration and production (E&P) activities is higher than 30%. Results seem to be unaffected (except for the loss in statistical significance of *SDE*LME* in column (3)), thus suggesting that our estimates are not severely sample-driven. The two robustness checks were carried out also by estimating models in which the varieties of capitalism variables were measured through the *Coordination Index*. Results were still unaffected, thus confirming that our evidence is fairly robust.

DISCUSSION AND CONCLUSION

Main findings and theoretical contributions

Our results provide evidence that the influence of state on the internationalization of SDEs is contingent upon the variety of capitalism in which the SDE is embedded. With reference to a well-established taxonomy of Western capitalism (Hall & Soskice, 2001; Schmidt, 2009), we find that, when SDEs are headquartered in a LME (CME), their internationalization degree is lower (higher) than that of POE counterparts, while as far as SME is concerned, SDEs do not differ from POEs in terms of internationalization degree. Finally, SMIEs do not differ from POEs regardless of the variety of capitalism characterizing the country in which they are embedded. These results are confirmed when we operationalize the varieties of capitalism with the continuous coordination index proposed by Witt & Jackson (2016), in order to take inter-country varieties relevant to each single category into account.

Our findings suggest that isolating the state and enterprises from the institutional context in which they are embedded furnishes a too simplistic view of the phenomenon, which may be responsible for both conceptual misinterpretations and ineffective policies of privatization and/or renationalization. Indeed, state ownership in a dominant configuration can be a necessary but insufficient condition for favoring the internationalization of firms able to benefit from government-related specific advantages. The result depends on the effectiveness of the state in designing and deploying government-SDE coordination mechanisms to orchestrate internationalization processes, which in turn rely on the emergence of solid

coalitions among government, private shareholders, and stakeholders that share long-term goals and strategies. According to our evidence, this occurs in CME, where the state acts as a cooperative co-equal rather than through *dirigisme* (as in SME) or through *laissez-faire* policies (as in LME).

Our analysis belongs in an emerging strand of research that studies the moderating role of national institutions on SOEs' internationalization strategies, both at home country (Estrin et al., 2016; Karolyi & Liao, 2017) and host country level (Knutsen et al., 2011; Meyer et al., 2014). Our conceptual framework benefits greatly from the contribution of comparative economics, according to which institutions are not only constraints but also resources for solving key problems of economic coordination and generating comparative institutional advantages in support of the various economic actors (Jackson & Deeg, 2008).

By exploiting the potential for cross-fertilization between the IB and VoC approaches, the paper has attempted to reconcile theoretical and empirical disagreements in research on SOEs' internationalization. In so doing, it has also extended the discussion about state ownership beyond the realms of public choice theory, and yielded new insights into the role of the state as a strategist seeking to create an environment favorable for SDE's growth strategies. Moreover, the paper has sought to enrich VoC research by propounding a micro-analytic view on how institutional diversity impacts on firms' characteristics and behaviors with important implications also for the country as a whole.

Implications for practice

Our study has implications for both policy makers and practitioners. SOEs' internationalization is greater when the state is a dominant blockholder, but conditionally on the institutional settings in which it is rooted. Because the institutional settings vary among countries and the relevant changes are strongly path-dependent, it is hard to achieve convergence on best practices (Jackson & Deeg, 2012). Nonetheless, to a certain extent, governments can learn from each other in order to modify their attitudes and policies.

According to our findings, the probability of SDEs' successful internationalization depends on the ability of governments to align goals and strategies between all the actors involved, *in primis* the other shareholders and stakeholders of SDEs. Some important considerations ensue.

First, assuming that SDEs are today frequently hybrid organizations, the resolution or softening of government/private shareholders' conflicts are crucial, since the latter can hinder the internationalization process (see also Chen, Musacchio, & Li, 2016). Hence, specific attention must be paid to the composition of the board of directors, which is the hub in which different goals and resource endowments of the firm's constituencies converge and harmonize. For example, the appointment of independent directors can both enhance the SDE's accountability and transparency and provide it with an experienced view on foreign markets, thus favoring effective convergence in the decision making process.

Second, governments must carefully design institutional mechanisms able to fulfill the variety of interests of the different stakeholders. To avoid exposure to sanctioning, e.g. through elections and public protests, a consensus-building process is needed to guarantee agreement on decisions that may have long-term effects on the stakeholders' welfare, as in the case of firm's internationalization.

For SDE managers, our study suggests that harnessing government-related benefits for SDEs' internationalization can make them able to leverage institutional advantages in global markets (see also Liang et al., 2015). Further, as agents of a composite shareholder community, managers do not have to assume that the interests of the state and private owners always coincide. Rather, they have to strike a balance between them, being aware of political connections at home, and being flexible when imperatives imposed by the government arise as a consequence of overriding economic and social contingencies. All this requires cognizance and a well-rounded professional background (Benito et al., 2016).

Limitations and future research

The analysis reported in this study has limitations, which however provide opportunities for future research. We have categorized SOEs by measuring stakes owned by the state. However, we are aware that this measure does not capture qualitative differences among SOE ownership and governance structures. Hybrid organizations of state capitalism are complex constructs that warrant careful consideration. We call for more research on other facets of SOE heterogeneity. First, different types of state institutions acting as owners may have different attitudes and strategies that heavily influence the outcome of decision

making processes (Musacchio et al., 2015). Second, SOEs may differ in their board and top management teams, which may be more or less internationally experienced, and therefore differently able to devise and implement an effective internationalization strategy (Kircha, Hult, Perryy, & Cavusgil, 2010).

We have also acknowledged that mapping institutional diversity into categories may give rise to over-simplification (Jackson & Deeg, 2008). Consequently, we ran an alternative model using a continuous indicator (Witt & Jackson, 2016), which demonstrated the robustness of our findings. However, there remains a limitation of our study: the LME-CME-SME trichotomy is difficult to apply to large part of Asia and other emerging and transition economies (e.g. Bohle & Greskovits, 2012; Witt & Redding, 2013; Hu, Cui, & Aulakh, 2018). Moreover, the proposed one-dimensional indicators do not cover countries outside the OECD. Since our sample concerns OECD countries, we contend that these limitations do not invalidate our study. However, future research might refer to a broader range of countries so as to yield more comprehensive insights. A precondition is the availability of better and all-encompassing measures of varieties of capitalism.

Another concern with our empirical investigation is the choice of the proxy for the degree of internationalization. We used the ratio between foreign and total revenues, whereas alternative measures were potentially available. We have already discussed the motivations behind the choice and provided explanations as to why we deem our choice hardly decisive in driving the results. Moreover, we conducted robustness checks to mitigate the issue. However, some residual concerns may still exist.

Finally, we have focused on E&G and TLC sectors and argued about their relevance and generalizability. Attention should be paid to some sectorial specificities. First, the chosen sectors are regulated in a similar way to other utilities (e.g. transportation), but differently from other industries. Second, E&G and TLC are politically sensitive sectors, which are likely to be influenced by government policies and intergovernmental relations. We think that these specificities do not weaken the general relevance of our findings because SOEs massively populate industries with similar features (e.g. other utilities, oil, aerospace and defense-related activities, banks). However, further research can enrich the empirical setting by considering a broader sample of sectors.

NOTES

[1] It is worth noticing that the same taxonomy cannot be used to categorize the typologies of capitalism that shape the economies of other Asian countries as well as those of transition economies in Europe (see Bohle & Greskovits, 2012; Witt & Redding, 2013; Hu, Cui, & Aulakh, 2018). Accordingly, the scope of the study cannot encompass some relevant economies (first of all China and India), whose business systems cannot be understood through categories identified in the West.

[2] According to the OECD dataset on the size and composition of SOE sectors in member and partner countries (OECD, 2017), when referring to non-financial activities, 69% of SOEs by market and/or book equity value operate in the utility industries. Together, TLC and E&G sectors have the leading share, equal to 33% of the total value (i.e. 51% of the SOEs' value in utilities).

[3] We are well aware that, although cut-offs are necessarily somewhat arbitrary, a 25% cut-off may indeed be a sensible one. Other authors have proposed different thresholds, e.g. 20% (Pedersen & Thomsen, 1997). We have re-estimated our econometric models (see the next paragraphs) by using the 20% as an alternative cut-off. The results, which are available upon request, turned out to be unchanged.

[4] The slight reduction in the share of POEs is due to the exit of some acquired enterprises, which make our panel unbalanced.

[5] However, we conducted a robustness test excluding these two firms, to rule out possible spurious relations. See the relevant section.

[6] The database is publicly available at the following link (retrieved at October 24, 2017): http://www.oecd.org/eco/growth/indicatorsofproductmarketregulationhomepage.htm.

[7] The database is publicly available at the following link (retrieved at March 16, 2018): http://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics.aspx.

[8] The GMM-sys estimator also has some weaknesses. The use of a large number of instruments can result in significant finite sample bias, and measurement errors can cause potential distortions (Bond, 2002). To deal with these issues, we estimated the model with a reduced instrument set using moment conditions in the interval between t-3 (t−2) and t−7 (t−6) for instruments in levels (differences). Postponing instruments to the third lag is useful for ensuring that the estimates are robust to measurement errors regarding the exact timing of privatization decisions, or, rather, its effect on the degree of internationalization.

[9] As far as GMM estimates are concerned, in all specifications the null hypothesis of the absence of a negative first-order serial correlation between differenced residuals AR(1) is rejected, whereas the null hypothesis of the absence of a second-order serial correlation AR(2) is not. Hansen tests also indicate that the null hypothesis of equality to zero of the specified orthogonality conditions is never rejected.

[10] The political indicators are not available for South Korea. Therefore, the two South Korean companies were dropped when estimating models whose results are reported in columns (1-2) of Table 7.

[11] The estimates of this auxiliary model are available upon request.

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Figure 1

The moderating effect of the *Coordination Index* on the marginal effect of SDE on Internationalization

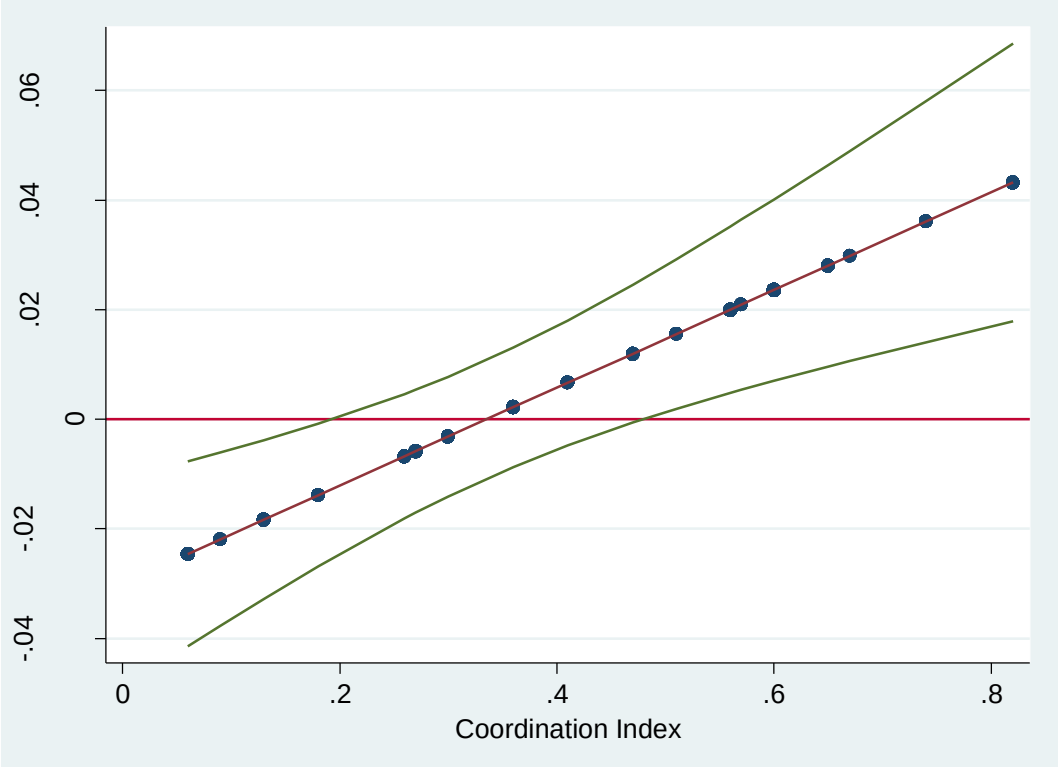

Table 1. Sample

Enterprises by country, sector and variety of capitalism	Enterprises		
	E&G	TLC	Total
Liberal Market Economies	*24*	*7*	*31*
Australia	2	1	3
Canada	3	1	4
Ireland	2	1	3
New Zealand	3	1	4
The United Kingdom	11	2	13
The United States	3	1	4
Coordinated Market Economies	*25*	*8*	*33*
Austria	3	1	4
Belgium	0	1	1
Denmark	1	1	2
Finland	2	1	3
Germany	9	1	10
Japan	4	1	5
The Netherlands	5	1	6
Sweden	1	1	2
State-influenced Market Economies	*29*	*6*	*35*
France	4	1	5
Greece	2	1	3
Italy	12	1	13
Portugal	3	1	4
South Korea	1	1	2
Spain	7	1	8
Total	*78*	*21*	*99*

Table 2. Summary statistics

	Obs	Mean	Median	SD
Internationalization	1,363	0.18	0.06	0.22
Ownership structure				
SDE	1,363	0.56	1	0.50
SMIE	1,363	0.08	0	0.27
POE	1,363	0.36	0	0.48
Foreign investor	1,363	0.07	0	0.26
Varieties of capitalism				
LME	1,363	0.32	0	0.47
CME	1,363	0.33	0	0.47
SME	1,363	0.35	0	0.48
Coordination Index	1,363	0.41	0.41	0.24
Sector				
E&G	1,363	0.75	1	0.43
TLC	1,363	0.25	0	0.43
Market liberalization indicators				
Market structure	1,363	1.61	1.47	1.78
Entry barriers	1,363	0.88	0	1.61
Country openness				
OFDI on GDP	1,363	0.37	0.29	0.31

Table 3. Correlation matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	VIF
(1)	Internationalization (t-1)	1.00										1.20
(2)	SDE	-0.03	1.00									1.67
(3)	SMIE	-0.00	-0.34	1.00								1.28
(4)	Foreign investor	0.07	0.09	0.06	1.00							1.11
(5)	CME	0.22	0.27	0.08	0.22	1.00						1.77
(6)	LME	-0.20	-0.33	-0.16	-0.18	-0.48	1.00					1.85
(7)	TLC	0.13	-0.18	-0.01	-0.00	0.00	0.03	1.00				1.12
(8)	Market structure	-0.06	0.32	-0.06	0.16	-0.14	-0.23	0.07	1.00			1.87
(9)	Entry barriers	-0.18	0.20	-0.03	0.15	0.00	-0.15	-0.10	0.55	1.00		1.61
(10)	OFDI on GDP	0.23	0.04	-0.11	0.06	0.20	0.20	0.08	-0.20	-0.28	1.00	1.36
										Mean VIF		1.48

Table 4. Effect of state ownership on internationalization degree

Dependent variable: Internationalization												
	GMM-diff		GMM-sys		GMM-diff		GMM-sys		OLS		WG	
	(1)		(2)		(3)		(4)		(5)		(6)	
Internationalization (t-1)	0.49	.000	0.97	.000	0.58	.000	0.98	.000	0.98	.000	0.79	.000
	(0.07)		(0.02)		(0.07)		(0.02)		(0.01)		(0.02)	
SDE	-0.06	.288	0.01	.513	-0.03	.335	0.01	.302	0.00	.539	0.01	.192
	(0.05)		(0.01)		(0.03)		(0.01)		(0.01)		(0.01)	
SMIE	0.04	.220	0.02	.310	0.06	.083	0.01	.470	0.01	.446	0.02	.043
	(0.04)		(0.02)		(0.03)		(0.01)		(0.01)		(0.01)	
Foreign Investor	0.03	.615	-0.01	.512	0.02	.625	-0.00	.970	0.00	.731	0.03	.005
	(0.05)		(0.01)		(0.04)		(0.01)		(0.01)		(0.01)	
Entry barriers					0.01	.050	-0.01	.025	-0.00	.019	0.00	.417
					(0.01)		(0.00)		(0.00)		(0.00)	
Market structure					-0.01	.136	-0.00	.524	0.00	.965	-0.00	.137
					(0.00)		(0.00)		(0.00)		(0.00)	
OFDI on GDP					0.35	.099	0.16	.036	0.17	.023	0.17	.179
					(0.21)		(0.07)		(0.07)		(0.13)	
Year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Sector fixed effect	No		Yes		No		Yes		Yes		No	
AR(1)	-2.42	.016	-2.45	.014	-2.67	.008	-2.45	.014	-		-	
AR(2)	-0.82	.410	-0.76	.450	-0.71	.479	-0.75	.455	-		-	
Hansen test	79.82[237]		84.56[277]		75.72[381]		66.59[453]		-		-	
Enterprises	97		99		97		99		-		99	
Observations	1,261		1,363		1,260		1,363		1,363		1,363	

Standard errors in parentheses, p-values in right-hand columns.

Table 5. Effects of state ownership and varieties of capitalism on internationalization degree

Dependent variable: Internationalization	(1)		(2)		(3)		(4)	
Internationalization (t-1)	0.96	.000	0.98	.000	0.97	.000	0.97	.000
	(0.02)		(0.02)		(0.02)		(0.02)	
SDE	0.00	.923	0.00	.686	-0.00	.895	0.00	.906
	(0.01)		(0.01)		(0.01)		(0.01)	
SMIE	0.02	.178	0.02	.324	0.01	.507	0.01	.531
	(0.02)		(0.02)		(0.02)		(0.02)	
LME	-0.00	.768	-0.01	.055	0.01	.583	-0.00	.958
	(0.01)		(0.01)		(0.01)		(0.01)	
CME	0.01	.099	0.00	.888	-0.01	.301	-0.02	.187
	(0.01)		(0.01)		(0.01)		(0.01)	
*SDE*LME*					-0.02	.104	-0.03	.061
					(0.01)		(0.01)	
*SMIE*LME*					-0.03	.217	-0.02	.366
					(0.02)		(0.02)	
*SDE*CME*					0.04	.018	0.03	.038
					(0.01)		(0.01)	
*SMIE*CME*					-0.03	.390	-0.02	.634
					(0.03)		(0.03)	
Foreign Investor	-0.02	.166	-0.01	.439	-0.01	.316	-0.01	.481
	(0.01)		(0.01)		(0.01)		(0.01)	
Entry barriers			-0.01	.045			-0.01**	.016
			(0.00)				(0.00)	
Market structure			-0.00	.854			0.00	.777
			(0.00)				(0.00)	
OFDI on GDP			0.21	.010			0.17**	.025
			(0.08)				(0.07)	
Year fixed effects	Yes		Yes		Yes		Yes	
Sector fixed effect	Yes		Yes		Yes		Yes	
AR(1)	-2.46	.014	-2.46	.014	-2.46	.014	-2.46	.014
AR(2)	-0.75	.450	-0.74	.456	-0.78	.436	-0.78	.436
Hansen test	76.29[342]		75.73[518]		66.27[543]		66.74[540]	
Enterprises	99		99		99		99	
Observations	1,363		1,363		1,363		1,363	

Standard errors in parentheses, p-values in right-hand columns.

Table 6. Continuous indicator of market coordination

Dependent variable: Internationalization	(1)		(2)		(3)	
Internationalization (t-1)	0.96	.000	0.94	.000	0.97	.000
	(0.03)		(0.03)		(0.02)	
SDE	-0.00	.746	-0.06	.045	-0.03	.012
	(0.01)		(0.03)		(0.01)	
SMIE	0.02	.314	-0.02	.234	-0.02	.181
	(0.02)		(0.02)		(0.01)	
Coordination Index	0.02	.169	-0.04	.205	-0.04	.075
	(0.02)		(0.03)		(0.02)	
*SDE*Coordination Index*			0.11	.017	0.09	.002
			(0.05)		(0.03)	
*SMIE *Coordination Index*			0.08	.043	0.07	.010
			(0.04)		(0.03)	
Foreign Investor	-0.02	.125	-0.01	.390	-0.00	.797
	(0.01)		(0.01)		(0.01)	
Entry barriers					-0.01	.039
					(0.00)	
Market structure					0.00	.874
					(0.00)	
OFDI on GDP					0.16	.028
					(0.07)	
Year fixed effects	Yes		Yes		Yes	
Sector fixed effect	Yes		Yes		Yes	
AR(1)	-2.45	.014	-2.44	.015	-2.46	.014
AR(2)	-0.75	.455	-0.70	.483	-0.73	.465
Hansen test	84.40[342]		74.41[368]		75.74[544]	
Enterprises	99		99		99	
Observations	1,363		1,363		1,363	

Standard errors in parentheses, p-values in right-hand columns.

Table 7. Relaxing sequential exogeneity and excluding companies with relevant E&P activities

Dependent variable: Internationalization	Relaxing sequential exogeneity				Excluding E&P activities			
	(1)		(2)		(3)		(4)	
Internationalization (t-1)	0.95	.000	0.94	.000	0.96	.000	0.96	.000
	(0.02)		(0.02)		(0.02)		(0.02)	
SDE	0.00	.999	-0.03	.078	-0.00	.861	-0.02	.038
	(0.01)		(0.01)		(0.01)		(0.01)	
SMIE	0.01	.776	-0.03	.077	0.01	.620	-0.02	.218
	(0.02)		(0.02)		(0.02)		(0.01)	
LME	-0.01	.504			-0.01	.322		
	(0.01)				(0.01)			
CME	-0.02	.156			-0.02	.140		
	(0.01)				(0.01)			
*SDE*LME*	-0.03	.094			-0.02	.207		
	(0.02)				(0.01)			
*SMIE*LME*	-0.02	.502			-0.01	.531		
	(0.03)				(0.02)			
*SDE*CME*	0.03	.098			0.03	.021		
	(0.02)				(0.01)			
*SMIE*CME*	-0.03	.461			-0.01	.690		
	(0.04)				(0.03)			
Coordination Index			-0.01	.778			-0.02	.276
			(0.02)				(0.02)	
*SDE*Coordination Index*			0.05	.059			0.07	.008
			(0.03)				(0.03)	
*SMIE *Coordination Index*			0.07	.093			0.06	.012
			(0.04)				(0.02)	
Foreign Investor	-0.01	.590	-0.00	.946	-0.01	.561	-0.00	.727
	(0.01)		(0.01)		(0.01)		(0.01)	
Entry barriers	-0.00	.199	-0.00	.443	-0.01	.024	-0.01	.057
	(0.00)		(0.00)		(0.00)		(0.00)	
Market structure	-0.00	.919	-0.00	.898	-0.00	.916	-0.00	.753
	(0.00)		(0.00)		(0.00)		(0.00)	
OFDI on GDP	0.20	.035	0.21	.017	0.17	.024	0.16	.034
	(0.09)		(0.09)		(0.07)		(0.07)	
Year fixed effects	Yes		Yes		Yes		Yes	
Sector fixed effect	Yes		Yes		Yes		Yes	
Enterprises	97		97		97		97	
Observations	1,144		1,144		1,334		1,334	

Standard errors in parentheses, p-values in right-hand columns.