THE INFLUENCE OF PRIVATE EQUITY ENTREPRENEURIAL INVESTMENT ON FIRM TRANSACTION COSTS IN OFFSHORE EMERGING ECONOMIES

1. Introduction

Recent studies in the strategy literature have highlighted the distinctive attributes of private equity owners (Kollmann, Müllner & Puck, 2023; Nary, 2024). One such attribute relates to the kind of target investments private equity owners seek (Kaul, Nary & Singh, 2018) and the unique skillsets (Nary, 2024) private equity bring to the table in successfully participating within investee firms. The distinctiveness of private equity as a unique governance form, along with its industry-specific investment model (Nary, 2024), lies in its significant influence on the value creation strategies of investee firms. This is especially important when private equity investors operate in emerging economies (Taussig & Delios, 2015; Hearn & Filatotchev, 2019), and investee firms are exposed to dense contextual embeddedness. Our study adds to the research frontier by exploring how the distinctive attributes of private equity ownership impact investee firm transaction costs in emerging economies.

Whereas prior studies of private equity governance of investee firms emphasise the role of high-powered incentives, we emphasize the role of private equity owners' competencies. Our approach draws on the recently developed ownership competence theory (Foss, Klein, Lien, Zellweger & Zenger, 2021) in elaborating on the residual control rights over investee firms' assets and resources. This approach departs from a traditional agency-based view of ownership as a form of incentive mechanism. By focussing on the distinct competencies of private equity owners, we can differentiate their unique influence on value creation capabilities of investee firms, setting them apart from other types of owners. Furthermore, we draw on the shared theoretical foundations of ownership competence, classical property rights and transaction cost economics to distinguish between different governance forms based on their associated firms' capabilities and transaction costs. Our first theoretical contribution is to provide a theoretical means to differentiate the firm

value creation capabilities of investee firms versus all other firms, which are distinctively shaped by private equity ownership versus all other firms with respect to their firm-wide transaction costs.

There are a number of unique features of corporate governance in offshore financial centres (OFCs) (e.g., Dharmapala & Hines, 2009; Sigler, Martinus, Iacopini & Derudder, 2020; Hearn, Oxelheim & Randøy, 2022). Thus, we attempt to unbundle corporate governance specific to offshore jurisdictions by considering, first, whether a firm has a subsidiary within its corporate network located in an offshore financial centre (OFC), and second, the degree of adoption of shareholder value corporate governance by a firm. These two specific features represent contingencies related to the corporate governance context of investee firms, and we address how these contexts influence firms' transaction costs as derived from private equity ownership. These contingencies, we argue, facilitate an exploration of tensions within our ownership competence theoretical lens. The first-mentioned contingency captures the degree to which a firm can access the offshore financial system and the huge offshore-specific international investment community. The overwhelming majority of the recent burgeoning literature on OFCs (e.g., Akamah, Hope & Thomas, 2018; Kohlhase & Pierk, 2019; Temouri, Ahmed, Pereira & Jones, 2020) has attributed the presence of such a subsidiary to a multitude of innovative financial engineering strategies designed to minimise tax liabilities. We depart from this literature in focussing on the prolific growth and expansion of the offshore financial industry (Buckley, Sutherland, Voss & El-Goharly, 2015; Clark, Lai & Wojcik, 2015), as underpinned by a dynamically innovative and rapidly expanding array of organizational forms and products centring on legally mandated opacity and asset protection. Consequently, we explore the theoretical tensions as shown by the association between investee firm transaction costs and private equity ownership, and how this is moderated by firms' ability to access the unique corporate governance attributes of OFCs. This exploration constitutes our second theoretical contribution.

The degree of shareholder value corporate governance adoption by investee firms, as our second contingency, is reflective of firms dis-embedding themselves from the opaque indigenous network governance model prevalent within the communitarian socio-cultural fabric of many

emerging economies (e.g., Berger, Silbiger, Herstein & Branes, 2015; Greif & Tabellini, 2010; Williams & Ramdani, 2018). The adoption precipitates a transition of the firm towards conformity with international capital markets norms underpinned by external, third-party contracting (e.g., Aguilera & Jackson, 2003, 2010). Moreover, the adoption leads to a range of changes in the competencies associated with owners, given the transition between what are effectively two different institutional frameworks. This recognition is our contribution to the notion of strategy in the context. In this way we extend the new institutional economics perspective in terms of our accommodation of the contingency implications associated with informal as well as formal institutional environment. This extension forms our third theoretical contribution.

The empirical context of our study is the severely understudied Caribbean region, which comprises a chain of predominantly island territories geographically dispersed across a large swathe of ocean between North and South American subcontinents. The region exhibits considerable heterogeneity in formal and informal institutional frameworks attributable to a richly varied historical heritage. At the same time, there is considerable commonality given each islands relative remoteness, small size and structural inequalities visible in relatively small and moribund formal economic spheres in contrast to their often-burgeoning informal counterparts (e.g., Schneider, 2005). Consequently, the region is a microcosm of emerging economies worldwide, while many firms emanating from otherwise demographically, or socially, narrow formal economies within islands are "born global" in terms of establishing prolific sub-regional inter-island corporate networks and business groups. The Caribbean region also hosts the highest concentration of the world's largest OFCs (Hines, 2010), underscoring its often-overlooked formidable role within the global economy and underpinning the usefulness of our study in elaborating on how emerging economy firms access international offshore financial markets. Moreover, the region is an ideal laboratory within which to explore Taussig & Delios' (2015) assertion of the uniqueness of emerging economy private equity from its counterpart prevalent in large, developed economies, (e.g., Kleinert & Hildebrand, 2024; Schückes, Unger, Gutmann & Fels, 2025) which forms the focus of the overwhelming majority of the existing literature.

Our analysis proceeds with the next section, focussing on the theoretical model and hypotheses. Section 3 focusses on the data and sample, while section 4 outlines the research design, empirical model including definitions of variables. Section 5 elaborates on empirical results with section 6 comprising the discussion. The final section concludes.

2. Theoretical framework

Our theoretical framework is based on the ownership competence theory (Foss *et al.*, 2021). Ownership competence theory centres on a definition of ownership based on the *ex-post* residual rights of control, which broadly enables decision-making in all eventualities outside the *ex-ante* contractually stipulated conditions. In this way, actors such as private equity owners have distinctive competencies which they can exercise over the property right entitlements to the underlying resources within a transaction. Consequently, an economic definition of ownership is adopted, which has a theoretical lens of "*the property right*", underscoring its intimate association with the classical property rights theory of Coase (1937, 1960) and Alchian (1961). Importantly, both ownership competence and classical property rights theories share a common theoretical foundation in new institutional economics, underscoring their intimate accommodation of institutional antecedents within theorization. Of central importance is the disaggregation of ownership competences into three dimensions - "matching competence", "governance competence", and "timing competence" - with these mirrored in the exercise of skills over property rights associated with "rights of use", "rights to appropriate economic rents", and "rights to transfer control" over underlying resources. These three distinguishable competency dimensions also overlap and exhibit considerable mutual interdependency.

2.1 Private equity in emerging economies

Private equity is a formalized, intermediated form of financing, which is significantly different from the financing by portfolio investors in terms of their often deep, intrusive involvement within investee firms and active engagement with incumbent management. Nary (2024) defines private

equity as professional buyers, owners and resellers of firms, given their business model is focussed on a profitable exit through liquidation of their holdings in the form of a sale or public offering on the stock exchange only a few years after having acquired them. To create value, private equity acquirers employ distinct strategies that may rely on one or more potentially idiosyncratic and private equity-specific sources of advantage — for example, their ability to select undervalued targets, increase target value during their ownership period, and optimally time their exit (Kaul *et al.*, 2018; Nary & Kaul, 2023). Private equity adheres to a common conceptual model - which is ubiquitous to the industry worldwide - involving three distinct stages: (1) *deal origination*, (2) *monitoring*, and (3) *exit*. We proceed next by elaborating on the three phases of private equity investment through the lens of the ownership competence perspective.

Deal origination is closely associated with both matching and timing competencies. Matching competency refers to owners' ability to theorize the potential value arising from the unbundling or disaggregating of combinations of resources and their subsequent partial or whole selective (re)combination (Foss *et al.*, 2021: 311). There are a potentially infinite number of such value-generating theories with these subject to cognitive "economizing" (e.g., Foss & Foss, 2005, 2008) attributable to private equity owners prior experience – either within a given industry or a geographic and institutional context. Private equity's matching competencies are essential in the initial pre-screening of potential investments in terms of assessing the potential value of the opportunity, as well as the value enhancement that is possible through the additional active management of private equity within the investee firm. Such pre-screening facilitates private equity owners' decisions regarding the potential fit of the investment opportunity with their industry and geographic expertise, the quality of the business proposal and the initial opinions regarding the quality of incumbent leadership and management within the investee firm.

At this initial stage, timing competencies are also important. These competencies are defined as the skills of the owners to time their investment in investee firms in ways that maximise value creation. These competencies define private equity's ability to "pick winners" (Sorensen, 2007) from a range of potential investment opportunities. This ability entails foresight into a firm

being undervalued given the timing of a potential investment - for example, at opportune times during the firm's lifecycle - as well as seasoned matching judgements regarding the suboptimal combination or utilization of resources and assets. In large, developed economies, such as the US, referrals are important conduits for the flow of potential investment opportunities to private equity. However, this is augmented by "walk in the door" approaches by firms seeking initial capital infusions.

Contrastingly, social networks in emerging economies constitute the fundamental basis of deal origination (Hearn & Filatotchev, 2019). Such extensive social networks constitute a means to bridge formal institutional voids (Greif & Tabellini, 2010) while also being subject to powerful informal communitarian cultural norms promoting social connectivity. Moreover, social networks constitute important informational conduits (Granovetter, 1973; Greif & Tabellini, 2010) regarding the sourcing of potential economic opportunities, as well as in their preliminary *ex-ante* screening of actors' participant to the network, and the transaction itself. Networks exert a powerful *ex-post* monitoring and surveillance mechanism over participant actors (Granovetter, 1973; Berger *et al.*, 2015), with this providing a spectrum of disciplinary sanctions ranging from social ostracism to outright exclusion from the network itself. Furthermore, the viability of theories of value creation are wholly contingent on the status of private equity and their dexterity in managing informal social networks, which also determine access to resources and assets. This architecture is at odds with the formalized nature of private equity and its institutionalized reliance on formal institutional architecture in order to undertake pre-screening and due diligence on investment opportunities. This typically involves extensive analysis of business proposals, including balance sheets and projected income statements – all of whom are shaped by the quality of the formal institutional protections afforded to external contracting environment. Together, these issues impede private equity owners' matching and timing competencies aimed for enhanced value creation within investee firms in emerging economies.

Monitoring is essential to private equity maintaining their involvement in investee firms and centres on governance and timing competencies. Governance competency is defined as owners'

skills to establish effective corporate governance or organizational structure in order to realize an envisioned resource composition (Foss *et al.*, 2021: 313). Such competence encompasses the agency view of "getting the incentives right" to optimised "motivational alignment" between owners and their delegated management, while extending this to include their skills in hiring optimal managerial talent. However, the extensive formal institutional voids prevalent in emerging economies significantly curtails the range of incentives available to private equity owners to instigate within their investee firms (Taussig & Delios, 2016) owing to a ubiquitous lack of organized derivatives markets. This picture is further compounded by formal institutional voids impeding effective intermediation within managerial labour markets (Khanna and Palepu, 2000), which in any case typically draw on demographically shallow reservoirs of suitably qualified and experienced talent (Khanna & Rivkin, 2001; Khanna & Yafeh, 2008). These issues are pertinent given the necessity to hire management capable of navigating the institutional obstacles prevalent in emerging economies. Together, these constraints conspire to make it much harder and less constructive for private equity owners to replace incumbent executives within investee firms (Ahlstrom & Bruton, 2006).

In developed economies, private equity owners often provide their investee firms with access to extensive networks facilitating access to resources (Taussig & Delios, 2016; Fitza, Matusik & Mosakowski, 2009), factors of production, managerial labour and customers. Access to such extensive networks is further enhanced by the active management involvement and matching competencies of private equity owners (Bruton, Filatotchev, Chahine & Wright, 2010). However, in emerging economies, economic transactions are subsumed within extensive networks centred on powerful indigenous constituencies, such as social elites and/or extended families who dominate national polities (Hearn & Filatotchev, 2019). This very different social fabric leads to an emphasis on the role of private equity owners in maintaining access to complimentary resources held by powerful indigenous constituencies, while mitigating their potential opportunistic holdup and shirking, which would detrimentally impact on investee firms' value creation. Moreover, private equity owners' governance competence is challenged through the necessity to inhibit potential

expropriation of economic rents from the investee firm either through the tunnelling of control or cash flows (Atanasov, Black, Ciccotello & Gyoshev, 2010). These issues underscore emerging economy private equity investors propensity towards syndication (Sahlman, 1990). In this way, governance competencies are typically exercised as a syndicate of other such private equity investors, who can share the risks, pool investment experience, and draw on cumulative reputations of all syndicate constituents to deter potential opportunism by investee firm insiders or local constituencies.

The considerable informational asymmetries and accompanying weaknesses in protections afforded to external contracting due to formal institutional voids also leads to private equity in emerging economies routinely invest within firms that have dominant incumbent owners. These owners are drawn from powerful local constituencies and may be state, corporate block, family or business group in nature. Such investment is akin to an active partner within the investee firm with the reputation of private equity acting as an effective deterrent towards expropriation. Moreover, concerns over risks of expropriation and inadequate protections from it also routinely motivate private equity in emerging economies to stage their investments into investee firms. This additionally draws on timing competencies as sequential rounds or stages of investment are conditional upon performance in initial rounds. The investment staging approach may tend to reduce potential investment risks since the deferral of the investment goes hand in hand with a progressive revelation of its true value. In this manner, risky upfront investments are reduced in size, and eventual follow-on investments into that investee firm become less risky (Folta & Janney, 2004; Kaplan & Schoar, 2005; Weitzman, 1979).

Exit refers to the liquidation of private equity investment within investee firms and is centred on timing competency. In large, developed economies with active organized securities markets, private equity investors are skilled in their "market timing" of investment, defined as the value generated by expanding the valuation multiple between the time of acquisition and the time of sell (Harris, Jenkinson & Kaplan, 2014). Contrastingly, the formal institutional voids prevalent in emerging economies, which impair the effectiveness of external capital market intermediation

restricts private equity owners' liquidation options from investee firms. Such underdevelopment of external capital markets also impedes private equity owners' ability to initiate partial liquidations, corporate restructurings and investment exits, which leads to an emphasis on strategic acquisitions as a means of achieving investment exits.

In summary, there is a marked reduction in overarching ownership-based competencies associated with private equity in emerging economies vis-à-vis their developed economy counterparts. This reduction is largely an outcome from the institutionalized formality of private equity and its inherent reliance on formal institutional architecture, which has at best limited compatibility with the extensive network governance prevalent in emerging economies. The incompatibility is further compounded by these emerging network economies being beset by both formal (e.g. Khanna & Palepu, 2000) and informal (Webb, Khoury & Hitt, 2020) institutional voids. The former impedes external contracting, while the latter undermines the very networks essential to bridge the deficiencies in external contracting protections associated with the former.

We argue that the relative strength of a given owners' competencies in exercising their property rights over underlying investee firms' resources is mirrored in the firm's distinctive capabilities. These capabilities are reflective of the unique corporate governance attributes associated with the ownership and, by virtue of this, the competencies it bestows. Drawing on the common theoretical foundations between ownership competence, classical property rights and transaction cost economics, we argue that differentiation between firms can be made in terms of the relative transaction costs associated with their corporate governance structures. We contend that an appropriate estimation of the transaction costs associated with the investee firm - as well as considering the influence of private equity ownership on these - is undertaken by indigenous stockbrokers. These brokers utilize their familiarity with the local context - acquired through their participation within indigenous social networks - in providing a market-based estimation of transaction costs reflecting their quoted spread between the buy (bid) and sell (ask) prices. These theoretical arguments lead us to test the following hypothesis:

Hypothesis 1: In emerging economies, the percentage of private equity ownership of a firm is positively associated with the size of the bid-ask spread of traded shares of that firm.

2.2 Contingencies relating to offshore corporate governance.

We argue that there is theoretical tension within our main hypothesized relationship, coming from two governance attributes of the focal investee firm. The first is the investee firm having a subsidiary within its corporate network located within an OFC, while the second is the investee firm's degree of adoption of shareholder value corporate governance.

The first of these two governance attributes explores the moderating influence of the binary condition of whether a firm has (has not) a subsidiary located in an offshore jurisdiction on the firm-wide transaction costs associated with private equity ownership. While offshore jurisdictions are best known for their negligible taxation regimes, their defining attributes are in the maintenance of essential bifurcated institutional frameworks. These attributes involve the paradoxical juxtaposition of high quality formal institutional architecture engendering optimal external contracting protections on the one hand against a typically extensive range of legally mandated asset protections fostering substantial infringements to them on the other hand. In particular, the high quality formal institutional protections afforded to arm's length contracting is essential for the attraction of international investors and firms alike seeking to exploit offshore jurisdictional capabilities. Consequently, the high quality formal institutional quality is critical in determining the viability of the offshore jurisdictional ability to competitively attract business away from onshore financial markets. Offshore jurisdictions' competitive advantage arises from indigenous authorities targeting of aspects of onshore markets architecture deemed to be over-regulated and then designing less onerous offshore counterparts, which are more user friendly and cost effective for overseas firms and investors to use. This has led to a vast array of legally mandated inhibitions against corporate disclosure (e.g., Hines, 2010) and opaque organizational forms (Buckley *et al.*, 2015; Clark *et al.*, 2015). These forms are exemplified by a non-exhaustive list of categories of international business corporations, including corporate tax exemptions, corporate shell companies,

shelf-registrations, trusts and partnerships. A number of these, which are commonly used across the Caribbean region alongside financial engineering strategies, are outlined in Hearn, Tauringana & Ntim (2025).

We argue that firms that are locating a subsidiary in an OFC are strategically at an advantage in terms of potentially accessing a huge range of offshore-specific financial instruments. This is furthermore underpinned by an equally huge audience of international offshore investors. In this light, private equity ownership of firms would be anticipated to emphasise the enhancement of profitability of firms alongside a reduction in their balance sheet deductible costs and overheads which would be facilitated by establishing an OFC subsidiary and gaining access to offshore jurisdictions. Therefore, private equity ownership would be anticipated to lead to a reduction in firm-wide transaction costs. However, we argue this effect is further exacerbated by the relatively huge scope of offshore financial markets in facilitating access to a vast plethora of specialised offshore organizational forms, regulations and financial instruments in conjunction to high quality formal institutional architecture. These features underscore increased compatibility with private equity's more formalized matching and governance competencies. Moreover, the huge international scale of offshore financial markets facilitates elevated timing competencies derived from a much wider demographic offshore investor audience than that otherwise present in comparable onshore emerging economies. This facilitates access to a greater range of exit strategies from investee firms. Moreover, access to a broader investor base (Buckley *et al.*, 2015; Clark *et al.*, 2015) also facilitates partial liquidations and the sale of underlying assets and resources of the investee firm by private equity owners. In summary, we argue that all of these traits associated with firms' OFC subsidiaries leads to a reduction in transaction costs, which is mirrored in a lower quoted spread between the buy (bid) and sell (ask) prices. These theoretical arguments lead to our moderating hypothesis:

Hypothesis 2: *In emerging economies, the positive association between the percentage of private equity ownership of a firm and the size of bid-ask spreads of traded shares of that firm is negatively moderated by the firm having a related party located in an OFC.*

Our second moderator is that of shareholder value corporate governance adoption, with this variable enabling the exploration of its moderating influence over the association between private equity ownership and firm-wide transaction costs. The adoption of various elements of shareholder value corporate governance represents bonding costs voluntarily borne by firms seeking to evade the constraints of limited domestic investors prevalent in emerging economies and access a demographically wider international investor audience. The tenets of shareholder value corporate governance are especially important given their constituting the basis of international investment norms (e.g., Aguilera & Jackson, 2003, 2010). Their adoption engenders firms in circumventing the voids besetting emerging economies through their firm-specific assurances of the protections afforded to external minority property rights. The costly nature of their adoption also constitutes a difficult signal of quality for rival firms to replicate thereby facilitating adopting firms' inclusion on a much wider international investor investment opportunity set.

We argue that higher adoption of shareholder value corporate governance by firms leads to elevated compatibility between the formal institutional norms that shape private equity owners and a broader international audience of international minority investors. In particular, private equity owners' matching competencies are enhanced through the attraction of a far wider demographic pool of stakeholders, who are attracted through the elevated reassurances regarding increased protections of their property rights. This leads to a far wider span of opportunities available by combining resources either partially or wholly. It also leads to increased compatibility with potential investment pre-screening and appraisal, which constitutes the basis of deal origination. Furthermore, there is elevated congruence between institutionalized norms upon whom private equity's governance competency is based and those of shareholder value corporate governance as adopted by the firm. Next, private equity timing competency is elevated through the increased

attraction of a far broader range of external constituencies, facilitating the firms' circumvention of the more restricted indigenous context. This engenders more opportunities for effective exits from investee firms. Together, the enhancement of these competencies leads to elevated firm-wide capabilities and therefore a reduction in firm-wide transaction costs associated with private equity ownership.

Conversely, firms adopting fewer tenets of shareholder value corporate governance are associated with increased embeddedness within opaque indigenous corporate governance typically associated with network economies. This pattern is reflective of an altogether narrower potential investor audience largely restricted to those drawn from and equally embedded within the indigenous social context. This leads to private equity owners having a reduction in their matching competencies due to a more limited range of stakeholder constituencies with whom to engage in terms of accessing (partially or wholly) resources, which would then be potentially subject to (re)combination and theories regarding value creation. Next, given the opacity of the network governance model, then this is at odds with the institutionalized norms central to private equity industry model, which erodes governance competencies. Then, timing competencies are also reduced owing to a much reduced and restricted potential external financial market leading to an inability to liquidate investee firms in a timely manner thereby exposing private equity to substantial additional "lock in" risks.

Theoretically, we argue that shareholder value corporate governance adoption leads to a negative moderation or reduction in the transaction costs associated with private equity ownership in firms with the opposite being valid for non-adoption. Our arguments lead us to propose the following hypothesis:

> ***Hypothesis 3:*** *In emerging economies, the positive association between the percentage of private equity ownership of a firm and the size of bid-ask spreads of traded shares of that firm is negatively moderated by the firm adopting shareholder rights governance.*

To summarize our theoretical arguments, we propose a contingency model with a base effect and two contingency (moderating) effects, as outlined in Figure 1.

Figure 1

3. Data

Our study focusses on listed firms drawn from eight national securities exchanges from across the Caribbean developing region. The dataset is unique and was constructed in three stages. The first involved the compilation of a comprehensive list of domestic firms with listed ordinary shares, obtained from each national stock exchange. To have solely domestic firms, we omitted foreign firms and funds attracted in considerable numbers by the desire to seek an offshore listing as part of a financial strategy. Such ordinary shares have single class voting rights, corresponding to the concept of "one share one vote". Thus, entities with primary listings of dual or multiple-class shares, preference shares, or convertible instruments were removed from consideration. Lists of listed firms were compiled for each Caribbean stock exchange from the year 2000 or its inception, whichever date was earliest. We also considered new listings, suspensions, and de-listings that occurred during the period 2000-2017 inclusive to account for potential survivorship bias in the final dataset. The listing data were obtained from the national stock exchanges (see Appendix Table 1). This resulted in 179 listed firms.

The second stage of the construction of the dataset involved the procurement of individual listed firms' annual reports from across the Caribbean region. Some firms' annual reports were obtained directly from the national stock exchange websites of the Bahamas, Bermuda, Jamaica, and Trinidad & Tobago. Other firms' annual reports were obtained directly from the exchange of Barbados and the Eastern Caribbean securities exchange, while additional reports were procured directly from the national regulator (GASCI) in the case of Guyana. Individual listed firms' websites were used in the case of the Cayman Islands, this being relatively time efficient given the handful of listings there. Additional recourse to individual listed firms was also undertaken across the Caribbean region to supplement the original data collection and obtain any missing annual

reports. This led to an unbalanced panel sample of 179 listed firms' annual reports. However, there is some variation in the consistency of the time availability of annual reports: before 2004, there are many omissions. All firm-specific balance sheet and governance variables were then sourced directly from the collected annual reports. All data were converted to US$ end-of-period equivalent values to facilitate comparison in the multi-country sample. This rendered us a final cross-section of 179 listed firms, with a time series of up to 17 years for each firm.

The third and final step in constructing the dataset was the procurement of secondary-market financial trading data. This entailed the systematic collection of daily bid (buy), ask (sell), and closing prices, daily traded volumes, and numbers of shares issued and outstanding. These data were sourced from Bloomberg exclusively in the case of Jamaica and Trinidad & Tobago. However, they were collected directly from the exchanges of Guyana, the Bahamas, Barbados, Bermuda, and Eastern Caribbean. Once again, all data were converted to US$ end-of-period equivalent values to facilitate comparison in the multi-country sample. It is notable that the Cayman Islands' securities exchange operated a call auction order-matching system, which did not rely on quotations of bid-ask prices to drive the market activity, explaining the lack of a bid-ask spread for this territory. This led to a final sample of 149 listed firms with such secondary trading data across a reduced sample period of 2003 to 2017. The 30 firms omitted due to data availability were largely evenly distributed between the largest markets of Jamaica and Trinidad & Tobago. This led to a final unbalanced panel sample of 1,337 firm-year observations.

Our definition of private equity emphasizes its formality in terms of a formal organizational structure and reliance on formalized procedures in the pre-screening and post-transactional performance monitoring and surveillance of investments. Due to the small size of our sample, we do not distinguish between private equity undertaken through dedicated funds managed by commercial banks, state development bureaux, or funds controlled by corporate interests. We employed a variety of additional resources to identify and confirm the private equity investors within the focal listed firms in our sample. We obtained additional support from internet-based local media, stock exchange descriptions and regulatory filings, and non-exhaustive interviews within all

the sample-group markets. To ensure accuracy in a region defined by opacity, we also cross-compared or triangulated each source with other sources, where available, as listed in Appendix Table 1.

The identification of private equity investors has additional complexity owing to the blurring of boundaries with the closely related venture capital industry. Given the sizeable informal subsistence economies across the region, investment tends to be restricted to the comparably smaller formal economies and in more mature firms than would otherwise be expected in large, developed economies, which are the mainstay of the literature. Our identification was in line with that undertaken by Bruton *et al.* (2010) in their study of the UK and France, as well as by Hearn & Filatotchev (2019) in their study of Africa. We drew on local associations such as the Caribbean Alternative Investment Association and the Association for Private Capital Investment in Latin America[i]. We also supplemented our identification through the extensive use of internet-based access to local indigenous media to provide further verification (see Appendix Table 1). Using local media and business journals is essential in a region dominated by opacity and informality and with relatively few organized associations of private equity investors.

The evidence displayed in Table 1 allows us to make a number of observations regarding private equity investment across the Caribbean. The first is the high concentration of domestic private equity activity mirroring the relative size of the indigenous economy that is evident in Jamaica. This is also true of the tiny handful of foreign private equity investments, albeit more disbursed between Jamaica, Trinidad & Tobago, and Bermuda. International Finance Corporation (IFC)/World Bank-related private equity investment dominates in Jamaica and Trinidad & Tobago. The second observation is that almost two thirds of all private equity investments in listed firms across the region are undertaken through specialized funds. The remainder of the foreign private equity is undertaken through the IFC/World Bank, while domestic private equity goes through a combination of local banks and insurance and then through captive private equity via corporate interests. The third observation relates to the style of investment. A notable feature of domestic private equity is the high level of syndication (Sahlman, 1990), evidenced by almost two thirds of

private equity investments being undertaken through syndicates which involve on average almost three private equity investors. Syndication facilitates risk sharing, as an individual private equity investor can pool resources and information with others regarding the risks within an investee firm (Lerner *et al.*, 2018). Moreover, in a syndicate, the ex-post bargaining power, monitoring, and prominence in relational contracting, attained through collective social status, will mitigate potential opportunism by insiders and powerful local constituencies within the islands, who wield considerable influence over firms and the economy.

Each domestic private equity manager invests in an average of 2.5 listed firms ($p \leq 0.001$), in contrast to only one firm being invested in by their foreign private equity counterparts, while the average domestic private equity ownership is 6.24%, which is just over one third of the foreign private equity ownership of 16.37% ($p \leq 0.001$). There is less difference in the average holding periods of investments, which are 5.86 years for domestic private equity and 6.33 years for their foreign private equity counterparts. However, post-transactional control, monitoring, and surveillance involving participation as director-representatives on investee firms' boards of directors is almost ubiquitous for the domestic private equity, occurring in 91.67% of their listed firm investments, while for foreign private equity participation occurs in only 33.33% of investee firms.

Table 1

4. Methods

4.1 Variables

Dependent variable: The quoted bid ask spread measure is formed from the subtraction of bid price from ask price with the result divided by the midpoint between the bid-ask prices. Deflating by share price combats nonlinearity in bid–ask spreads (Callahan *et al.*, 1997). This is then averaged across the prior twelve months to form annual average bid-ask spread. Our use of averages minimises outliers and averages out the highs or lows in quotes that result from monthly sampling.

Explanatory variable: Our study uses a single explanatory variable, namely the percentage ownership by private equity, which corresponds to *Hypothesis 1*. This is sourced from the ownership sections of the annual reports of listed firms, for which we additionally drew upon the non-exhaustive list of additional background sources outlined in Appendix Table 1 to identify individual private equity investors. Additionally, we also disaggregate ownership by private equity into it's respective foreign and domestic components for use in an empirical extension of our main analysis.

Moderating variables: Our study utilizes two moderating variables regarding our main effect identified above. The first, corresponding to *Hypothesis 2*, is a firm-level binary variable, taking a value of unity if the listed firm has a traceable related party or affiliate entity located in an OFC and zero otherwise.

The second is the firm-level adoption of shareholder rights in corporate governance, which corresponds to *Hypothesis 3*. We adopt the "rights of shareholders" sub-index of the Organisation for Economic Co-operation and Development, namely OECD (2004)'s Principles of Good Governance[ii], which is formed from the equally weighted average of nine elements and sub-indices (A.1 to A.12 in Appendix Table 2). The latter are drawn from 33 individual governance elements isolated annually, per individual firm, from annual reports. The focus of this specific index is on capturing the quality of minority informational rights protections annually for each firm. Constructing such a firm-level index was highly labour-intensive and involved unrestricted access to all annual reports for each firm in each year of listing. This alone resulted in 2,506 firm-year observations for each of the 33 governance elements. Our construction of this index represents an extension of the inaugural firm-level governance "G-index" comprising 24 provisions, of which 22 were firm level, described in the seminal study by Gompers, Ishii and Metrick (2003), which was restricted in application to the US setting alone. To mitigate collinearity concerns, the firm shareholder rights index was centred and normalized.

Control variables. We include four groups of control variables which are justified by the relevant literature. These are outlined in detail in Table 2 alongside their justification for inclusion.

Table 2

4.2 Empirical model

We construct pooled OLS regression models based on unbalanced panels with the firm-year as the unit of observation. The pooled estimators draw on both cross-sectional (firms) and time-series dimensions, in line with Schnatterly *et al.* (2008), and we address potential autocorrelation and heteroskedastic issues regarding the time-series component in the errors by adopting industry[iii] and time (year) binary effects. These binary effects also help control for latent or unobservable differences between firms, such as differences in industry, level of regulation, or governance and ownership. We omit country binary effects owing to their collinearity with institutional quality evidenced by high VIFs. Then, we apply White cross-sectional standard errors and covariance, which take account of potential period (time-series) clustering, while clustering by country in the standard errors.

5. Empirical Results

The evidence from bivariate correlation analysis is revealed in Table 3. Pearson correlations are generally negligible, although statistically significant. The sole exception is that between volatility and the stock price (-0.695, $p \leq 0.01$), which is similar to that reported in Stoll (2000). While this alleviates concerns over potential collinearity, this is further mitigated by variance inflation factors (VIFs) being less than 5 for all variables.

Table 3

The evidence from multivariate analysis is outlined in Table 4. The evidence statistically supports the maintenance of all three of our hypotheses. We observe a large, positive association, +0.150 ($p \leq 0.05$), between private equity ownership and bid-ask spreads (Table 4 model 1) as proposed by

Hypothesis 1. Drawing on marginal effects and a one-standard-deviation change in private equity ownership leads to an increase of 15.00% in the quoted bid-ask spread. This is negatively moderated, -0.284 $p \leq 0.005$, by the binary condition for whether the focal firm has a related party (or subsidiary) located in an OFC (Table 4, model 2), which provides statistical support for *Hypothesis 2*. Again, drawing on marginal effects and, this implies a one standard deviation change in private equity ownership is associated with a net reduction of 1.40% in quoted bid-ask spreads when focal firm has a related party located in an OFC as compared to when it does not.

Furthermore, the main effect is also negatively moderated, -0.175, $p \leq 0.005$, by the firm-level shareholder value corporate governance adoption index (Table 4, model 3), which provides statistical support for *Hypothesis 3*. Finally, utilizing marginal effects again, and this implies a one standard deviation change in private equity ownership is associated with an albeit reduced increase of 6.30% in quoted bid-ask spreads when the focal firm has adopted higher levels of shareholder value corporate governance vis-à-vis lower levels. Importantly, concerns over multicollinearity are mitigated, given the consistency of the size and direction of the coefficients across all models. This is also visible in the coefficients of the two variables underlying the moderation, namely the OFC related party dummy and shareholder rights, normalized – which are consistent in size and direction across all three models.

In terms of the controls, and there is a negative association between quoted bid ask spreads and all other block holders' ownership ($p \leq 0.05$) and a positive association with the ratio of debt to total assets ($p \leq 0.10$) while it has a consistently negative association with both institutional quality and the ratio of market capitalization to national GDP ($p \leq 0.005$). Quoted bid-ask spreads have a positive association with volatility ($p \leq 0.005$), while this association is consistently negative with traded volume ($p \leq 0.005$) and total assets ($p \leq 0.005$). These results are in line with those of Schnatterly *et al.* (2008).

Finally, the F statistics are consistently large across all of our models with their related probabilities being low, indicating these are highly statistically significant ($p \leq 0.005$) which

provides statistical support for our overall model and constituent variables. There is also minimal variation in the root mean square errors across all models. The adjusted R^2s figures for our models are relatively high, over 26%, and in line with the literature (e.g., Stoll, 2000; Schnatterly *et al.*, 2008). These provide further diagnostic statistical support for the robustness of our empirical models.

Table 4

5.1 Extensions

We undertook four extensions of our models. Our first involves the visualization of the interactive effect between predicted values of quoted bid ask spread at each combination of OFC subsidiary (equal to 1 if firm has an OFC subsidiary and 0 otherwise) and private equity ownership. As illustrated in Figure 2, the linear plots of private equity ownership against predicted quoted bid-ask spread are downward sloping for firms with an OFC subsidiary and upward sloping for firms without an OFC subsidiary. This visually corroborates the result of our preceding statistical analysis and visually supports *Hypothesis 2*.

We repeat this exercise in visualizing the interaction effect from the moderating influence of shareholder value governance adoption on private equity ownership's influence on predicted values of quoted bid-ask spreads. This results in a three-dimensional probability surface visible in Figure 3. There is a single inflexion point visible. At the extreme far left of probability surface denoted by the lowest levels of shareholder value corporate governance adoption by firms, increasing levels of private equity ownership leads to substantial increases in predicted quoted bid-ask spread. Conversely, at the highest levels of shareholder value corporate governance adoption, in the extreme far right of the probability surface, increasing private equity ownership is accompanied by decreasing quoted bid-ask spreads. However, it is notable that this rate of decrease is only a fraction of the rate of increase visible in the extreme far left of probability surface. In summary, this visual evidence provides further support for *Hypothesis 3*.

Figures 2 and 3

5.2 Robustness checks

We undertook three robustness checks of our models. These are not reported for brevity but are available from authors upon request. The first involved additional tests of endogeneity following Heflin & Shaw (2000) in applying two distinct steps. The initial step adopted private equity ownership as dependent variable with quoted bid-ask spread being explanatory variable on top of controls. This was followed by the residuals from this initial step being inserted into latter regression model alongside founder ownership now as explanatory variable and quoted bid-ask spread as being dependent variable. The evidence from latter step reveals the coefficient of association of inserted first step residuals wholly lacks statistical significance thereby providing statistical support for the absence of endogeneity. This is important since Semadeni, Withers & Certo (2014) emphasise the potential detrimental effect of endogeneity on regression-estimated coefficients. The absence of endogeneity is also essential in relation to strength of our preceding analysis involving 2- and 3-dimensional interaction plots.

The second involved re-running all our models on a restricted subsample comprising only Jamaica, given the dominance of this single equity market within our main sample. The results are consistent with those of our original full sample models. The third involved testing the monotonicity of ownership, following Bruton *et al*. (2010), who reported a non-monotonic association between private equity ownership and IPO under-pricing. Following their study, we introduced an additional ownership-squared term into the model for private equity ownership[iv]. However, across all models, the squared terms lack statistical significance at any discernible confidence margin, implying that the main associations between private equity ownership and the bid-ask spread are linear and monotonic. We argue this theoretically substantiates the importance of the contextual embeddedness and dense overlapping social networks in governance, which underpin cognitive legitimacy, rather than variations in the intensity of monitoring, which would support the squared ownership terms.

6. Discussion

Our study highlights the importance of owner identity in relation to transaction costs arising from share trading. In particular, we examine the competencies of owners, which are socially defined and contingent on the embeddedness of governance and contractual relations within a given institutional context. Furthermore, this study highlights how the social fabric from which the owners emanate is important. This is exemplified by private equity, which is formalized in its investment approach and reliant on efficient, high quality formal institutional frameworks affording optimal protections for third-party, arm's length external contracting. In practice, this emphasises a reliance on a non-exhaustive list of elements, such as transparent financial reporting, quality disclosures in financial statements, and universal adoption of formal accounting and auditing standards.

Here, we have argued that emerging economies institutional frameworks are largely incompatible with these private equity industry norms. This is due to the prevalence of voids in formal institutional architecture in emerging markets and an overwhelming reliance on dense social networks embodying communitarian socio-cultural values. Such incongruence is visible in our empirical analysis of private equity ownership as increasing firm transaction costs – mirrored in increased quoted bid-ask spreads of traded shares. This finding is counterintuitive from the anticipated relationship within a large, developed economy context, which typically has an institutional framework supportive of third-party, arm's length contracting. Our findings support our assertion that intra-industry ownership-based competencies shaped within an environment defined by third-party external contracting are essentially incompatible with the network governance model prevalent in developing economies.

Our theoretical approach provides a means of differentiating between owners based on their ability to dynamically utilize the three competency dimensions: matching, governance, and timing. This approach helps value maximizing investors to determine - what to own, how to own it, and then when to own. To date, theorization has largely overlooked the skillsets associated with ownership and singularly emphasized differentiation between owners to be a function of their

relative incentivization or their ability to credibly commit to an investment and thereby signal value. Therefore, our competency approach elaborates on owners' dynamic interplay of skills in visualizing the configurations of resources necessary to create value. This interplay takes into account priors regarding the underlying state of the economy, the impartiality and efficiency of factor and resource markets, as well as the idiosyncrasies of cognitive reasoning centred on cultural frameworks and norms. This also accounts for the importance of when to initiate exits – as alluded to by Wasserman (2017) in his thesis of "cash versus king" in the context of corporate control.

The dynamic interplay between the three discussed competencies provides a theoretical rationalization of the moderating influence of two additional corporate governance contingencies on our main association between private equity ownership and firm transaction costs. The motivation behind the first is largely specific to geographic regions dominated by high concentrations of OFCs, such as the Caribbean, Asia-Pacific, the Indian Ocean, the Mediterranean, and the Arabian Gulf. The proximity of, and ease of access to, regional offshore centres facilitate firms' establishment of related parties in such centres, within their corporate networks – with this enabling a myriad of financial engineering strategies for reducing tax liabilities. While such a mechanism would intuitively be anticipated to elevate informational asymmetries and transaction costs and further reduce the competencies of private equity, our findings allude to the opposite being true. We argue there is a shift in the emphasis of the competencies, with those relating to governance and timing increasing in importance. Here, the combination of concentrated ownership by the private equity, alongside its retaining participation, and foregoing the liquidation or divestment of holdings, sheds light on the usage of an OFC related party as a means to beneficially enhance the profitability of the investee firm, as opposed to the expropriation of economic rents.

We further highlight the interdependent nature of the three competencies and the interplay amongst them in the lifecycle of firms, which is alluded to by Foss *et al.* (2021). Given the prevalence of relational contracting and the subsuming of economic activity within social networks in emerging and offshore economies, the first major milestone in firms' lifecycles is their seeking additional supplementary resource infusions externally (e.g., Hearn, Tauringana & Ntim, 2024).

This entails the adoption of shareholder value corporate governance, which denotes their strategic reorientation towards conformity with international investment norms based on external, third-party contracting. Our findings support that such a shift in the internal managerial discourse within investee firms, from relational to external contracting, leads to a re-shifting of the competencies associated with private equity ownership. Here, matching, governance, and timing are all improved, leading to a reduction in firms' transaction costs. However, the reduction in transaction costs arising from moderation of domestic as opposed foreign private equity by firm's adoption of shareholder value corporate governance is not uniform. Notably, in the case of foreign private equity ownership moderation leads to a positive increase in transaction costs. We argue that this is due to foreign private equity inherently being at a disadvantage in lacking any contextual embeddedness or even cognisance of local indigenous networks. Contrastingly, their domestic private equity counterparts do maintain these indigenous institutional competencies while benefitting the firm in facilitating access to external investors. Consequently, foreign private equity are liable to make demands on firms performance and on management which are at odds with the local situational context.

Our study has managerial implications. The identities of owners belie their competencies in exercising the rights to create value associated with their ownership (control). However, these competencies are enhanced or degraded depending on the compatibility of the social norms governing the owner, in this case private equity, and those of the investee firm and the social fabric within which it is contextually embedded. Importantly, managers can gain a more fine-grained theoretical insight into the sources of heterogeneity between different owners and how their competencies systematically shift owing to contingencies with the underlying socio-cultural context. Such flexible theorizing regarding the implications of ownership is especially important in emerging economies, given the dominance of studies set in large, developed economies which exhibit very different institutional frameworks and forms of contracting.

A limitation of our study is that it is constrained only to listed firms across the predominantly English-speaking Caribbean region. A major impediment to further research is the

severe lack of publicly available data and extremely limited available resources with which to collect data in a region dominated by conservatism, informality, and secrecy, attributes that form the bedrock of OFC jurisdictions. This culture of legally mandated secrecy is exemplified by The Guardian (2018) quotation "…According to a 1985 law, anyone on Nevis disclosing financial information without a court order is liable to a prison term of up to a year, as well as a fine of $10,000. This is another area where Nevis is resisting the trend towards openness. Cayman previously had a similar law against breaching confidentiality but decriminalised the offence in 2016". Finally, in terms of further research, additional avenues of inquiry may build on the role of private equity within the non-anglophone Caribbean, such as Hispanic, francophone, and Dutch-speaking territories.

7. Conclusions

Our study evidence how the presence of private equity lower transaction cost of share trading in emerging offshore economies. We argue that this effect can be attributed to private equity partners' unique competencies in exercising property rights associated with underlying resources. Importantly, such competencies are socially defined and context specific which underscores the versatility of the recently advanced ownership competence theory (Foss *et al.*, 2021). Moreover, owing to ownership competence theory, originating from a classical property rights perspective, we conclude that competencies associated with specific owners can influence not only firm-wide property rights and the efficacy of a firms' corporate governance structure but also the size of transactions costs of traded shares.

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Table 1. Descriptive statistics – private equity (PE)

This table provides a count of the number of investments made by domestic and foreign PE and the number of listed firms with involvement by each of the PE entities. Therefore, while the total sample size of listed firms is 146, 66 of these have PE ownership, which is an aggregated figure comprising 121 individual holdings by the various PE entities, as highlighted in supplementary appendix Table 1. Next, it provides a breakdown of the number of listed firms with PE per country (namely investee countries). After these count measures, it outlines ownership, board of directors' participation and the investment strategy (syndication). Eastern Caribbean refers to the Eastern Caribbean Economic & Monetary Union which comprises the sovereign nation states of St Kitts & Nevis, Dominica, St Lucia, Grenada, and St Vincent & the Grenadines. *T*-difference in means test statistics are reported for ownership and investment strategy in respect of domestic versus foreign PE. These are referred to in the context of *t*-difference in means test for each of the syndicated elements, ***, **, * and † indicate statistical significance at the 0.5%, 1%, 5% and 10% levels, respectively

Target nation	**PE**		**Sources of funds**	**PE**		**Style of investment & syndication**	**PE**	
	Domestic	**Foreign**		**Domestic**	**Foreign**		**Domestic**	**Foreign**
Bermuda	1	2	Private pension funds	3	0	Mean no. investee firms (#)	2.50***	1.00
Cayman Islands	0	0	Public pension funds	0	0	Mean ownership (%)	6.24***	16.37
Bahamas	0	0	Corporations	14	0	Mean holding period (years)	5.86	6.33
Jamaica	102	2	Individuals	1	0			
Barbados	9	0	Endowments	0	0	# Target firms with Min. 1 director	55	2
Eastern Caribbean	0	0	Insurance co./banks	25	0	Proportion of target firms with Min. 1 director (%)	91.67	33.33
Guyana	0	0	Specialist inv. fund	71	4	Mean # directors in firms with board participation	1.63†	1.00
Trinidad & Tobago	3	2	National dev. agency	1	0			
			IFC/World Bank	0	2	Proportion of investments with syndicates (%)	62.61	0.00
						Mean # PE investors in syndicate	2.94***	0.00
# Total Investments	115	6	# Total Investments	115	6	# Firms with involvement	60	6

Table 2. Definitions of control variables

This table provides detailed definitions of each of the control variables used in the study, alongside location of source of data and brief literature justification. The market microstructural controls are specifically tied to the bid-ask spread measure being a financial or stock market trading representation of transaction costs associated with the firm's governance structure. Therefore, these are justified in finance literature. All variables and their precursors are sourced from firms annual reports

	Definition	Justification
Ownership control		
All other block-holders ownership	Aggregate total of all other block ownerships in the listed firm other than that supporting the main effect, namely private equity ownership	This is included to mitigate potential omitted variable bias (see Aguinis, Bergh and Molina-Azorin, 2023) and is reported in annual percentage terms. The values were extracted from the ownership holdings statement or notes/appendices section within the annual report.
Firm controls		
Log (Firm age, years)	Natural logarithmically transformed firm age, defined in years from the date of foundation or establishment to the current year of sampling	This controls for liabilities of "newness" in younger firms (Adbi and Shukla, 2023) lacking the deeper embeddedness within indigenous institutional environments and the accompanying entrenchment compared (Guenther, Oertel and Walgenbach, 2016) to their older counterparts
Ratio Pref. shares to total assets	Ratio of value of preferred shares to total asset value, with both defined in US$m.	This accounts for the distribution of the control within the firm (see Samuelsson, Söderblom and McKelvie, 2021), with preferred shares conferring control rights on insiders given their restrictions in terms of voting rights
Ratio Debt to total assets	Ratio of debt to total assets value, with both defined in US$m.	Debt imposes restrictions on insiders to meet a schedule of restitution payments (Arcot, 2014), subject to the possibility of sanction and asset seizure should a default occur.
Institutional controls		
Institutional quality	This is formed from the equally weighted average of the six World Governance Indicator (WGI) metrics (Kaufman, Kraay and Mastruzzi, 2009). These six range in value from -2.5 to +2.5, but here have been rebased to a 0 – 10 scale before aggregation	This reflects the quality of the external contracting environment in terms of protections afforded by formal institutional architecture for third party, arm's length contracting
Market cap/ GDP	Ratio of total stock market capitalization to GDP, expressed as an annual percentage and obtained from the World Bank database	This captures the relative importance of the stock market as a source of finance within the wider economy as a whole
Microstructural controls		
Log (Price, US$)	Natural logarithmically transformed monthly average of the daily closing prices for each stock, calculated across the preceding trading month	This controls for discreteness, which is where there is a lack of smooth transition in order flow given that pricing systems are not continuous and are instead comprised of intervals, being fractions (e.g., eighths) or a designated number of decimal places. Consequently, order flow tends to bunch or cluster at certain intervals (see Christie and Schulz, 1994)
Log (Volatility)	Natural logarithmically transformed daily standard deviation of stock price returns formed from the differences between the daily closing stock prices expressed in the local currency	While prior literature argues this controls for inventory holding premiums (Bollen, Smith and Whaley, 2004), in our model it controls for the risks of brokers mispricing limit orders on behalf of clients. The price of a newly placed limit order (buy or sell side) is contingent on the previous optimal bid/ask price, which is assumed to capture all previously available information, in addition to any new information. Thus, the risk of mispricing, and hence volatility or uncertainty, arises through the updating of information sets with new information reflected in the bid-ask spreads

Log (Volume)	Natural logarithmically transformed of total shares traded daily for each listed stock, with this averaged over each month and then averaged across the preceding year	Transactional volumes are related to order-processing risks, with lower volumes incurring higher order-processing costs, in turn reflected in spreads (Stoll, 1978). However, lower and more erratic order volumes can also disguise information asymmetries, where those with insider information seek to fragment orders into multiple smaller orders to conceal the superior information being used across many single trades rather than one large block deal
Log (Total assets)	Natural logarithmically transformed of total assets, measured in US$m over the preceding year, obtained from annual reports	This mitigates potential collinearity with the equity price in the time-series dimension of the panel dataset in our later empirical modelling. Intuitively, there are lower transaction costs for outside minority investors buying into larger firms than for those buying into their smaller counterparts since the former firms lack the contextual embeddedness of the latter, as reflected in the domination of the latter by institutionally embedded block owners, such as families, accompanied by extreme opacity

Table 3. Correlations

Table providing descriptive statistics and Pearson bivariate correlations. Quoted bid-ask spread is computed as the annual average of monthly computed values from daily data and is reported in firm-year units. PE ownership are annual percentage values. All other block ownership is the total ownership by state, business groups, nuclear family, directors and foreign MNEs. Age is natural logarithmically transformed and is in years from firms' date of establishment to reporting year in annual report. Ratio Pref. shares and then ratio of debt to total assets are the proportions of preferred shares value and then the proportion of debt value to that of total assets. Institutional quality is the equally weighted average of the six WGI dimensions, while shareholder rights is the sub-index of OECD principles of good governance. OFC related party is binary effect taking unity if firm has a related party located in an offshore financial centre (OFC) and zero otherwise. Market capitalization to GDP is a percentage. Price, volatility, traded volume, and total assets are all translated into US$ and natural log scaled. ***, **, * and † indicate statistical significance at the 0.5%, 1%, 5% and 10% levels, respectively

		Mean	Std. Dev.	Min	Max	1	2	3	4	5
1	Quoted bid-ask spread, %	0.122	0.178	0.000	2.000	1.000				
2	PE ownership, %	0.030	0.072	0.000	0.497	0.044†	1.000			
3	OFC related party (1-0)	0.746	0.436	0.000	1.000	-0.019	-0.142***	1.000		
4	Shareholder rights index, Normalized	0.000	1.000	-1.806	2.365	-0.123***	0.172***	-0.127***	1.000	
5	All other block ownership, %	0.574	0.280	0.000	1.000	0.024	-0.206***	0.100***	0.165***	1.000
6	Log (Firm age, years)	3.411	1.001	0.000	5.193	-0.092***	0.025	0.015	0.125***	0.074***
7	Ratio Pref. shares to total assets, %	0.012	0.058	0.000	0.688	0.040	-0.070***	0.119***	-0.229***	-0.082***
8	Ratio Debt to total assets, %	0.166	1.025	0.000	37.305	0.082***	0.002	-0.005	-0.031	-0.076***
9	Institutional quality, Normalized	0.520	0.547	-0.527	1.548	0.041	-0.162***	0.412***	-0.423***	-0.079***
10	Market Cap/GDP ratio, %	0.480	0.595	0.021	4.697	-0.015	-0.018	0.090***	-0.122***	-0.064***
11	Log (Price, US$)	-0.451	2.369	-7.699	5.928	-0.057**	-0.323***	0.354***	-0.368***	0.106***
12	Log (Volatility)	-4.299	1.142	-9.957	1.401	0.295***	0.153***	0.003	-0.030	-0.042
13	Log (Volume)	11.328	3.000	1.609	19.660	-0.171***	0.314***	-0.131***	0.449***	-0.049*
14	Log (Total Assets)	18.381	2.201	7.316	23.201	-0.269***	-0.122***	0.308***	0.096***	0.211***

Table 3 continued

***, **, * and † indicate statistical significance at the 0.5%, 1%, 5% and 10% levels, respectively

		6	7	8	9	10	11	12	13	14
1	Quoted bid-ask spread, %									
2	PE ownership, %									
3	OFC related party (1-0)									
4	Shareholder rights index, Normalized									
5	All other block ownership, %									
6	Log (Firm age, years)	1.000								
7	Ratio Pref. shares to total assets, %	-0.051*	1.000							
8	Ratio Debt to total assets, %	-0.103***	0.002	1.000						
9	Institutional quality, Normalized	-0.107***	0.100***	0.044*	1.000					
10	Market Cap/GDP ratio, %	0.048*	-0.066***	-0.027	0.276***	1.000				
11	Log (Price, US$)	0.117***	0.033	-0.107***	0.614***	0.245***	1.000			
12	Log (Volatility)	-0.119***	0.064**	0.051*	-0.037	-0.050*	-0.372***	1.000		
13	Log (Volume)	0.034	-0.038	0.050*	-0.509***	-0.103***	-0.695***	0.250***	1.000	
14	Log (Total Assets)	0.234***	0.029	-0.178***	0.154***	0.050**	0.440***	-0.207***	0.004***	1.000

Table 4. Firm-level OLS regression results[a, b]

The results of pooled regression tests on a firm-year basis using quoted bid ask spread as dependent variable against PE ownership as main independent variable which is also moderated by OFC related party, as a binary effect, and shareholder rights, normalized, as a continuous variable. These as well as all controls are defined in preceding Table 2. No. observations is 1,337 firm-years corresponding to an unbalanced panel of 146 firms over 14 years. [a] industry and year binary fixed effects included in all cases; [b] Robust standard errors are in parentheses; ***, **, * and † indicate statistical significance at the 0.5%, 1%, 5% and 10% levels, respectively.

	Dependent variable: bid ask spread		
	Main effect	Moderation	Moderation
	Model 1	Model 2	Model 3
Intercept	0.847 [0.10]***	0.828 [0.10]***	0.847 [0.10]***
Explanatory variables			
H1: PE ownership (%)	+0.150 [0.05]***	+0.270 [0.07]***	+0.238 [0.07]***
H2: x OFC related party	-- --	-0.284 [0.10]***	-- --
H3: x Shareholder rights, Normalized	-- --	-- --	-0.175 [0.06]***
OFC subsidiary (1/0)	+0.020 [0.01]**	+0.033 [0.01]***	+0.020 [0.01]*
Shareholder rights, Normalized	-0.009 [0.00]*	-0.010 [0.00]*	-0.004 [0.00]
Ownership control			
All other block-holders own (%)	0.043 [0.02]*	0.041 [0.02]*	0.044 [0.02]**
Firm controls			
Log (Firm age, years)	0.008 [0.01] †	0.008 [0.01] †	0.005 [0.01]
Ratio Preferred shares to total assets (%)	0.022 [0.10]	0.009 [0.10]	0.038 [0.10]
Ratio Debt to total assets (%)	0.033 [0.03]	0.033 [0.03] †	0.035 [0.03] †
Institutional controls			
Institutional quality (%)	-0.012 [0.01]	-0.013 [0.01]	-0.014 [0.01] †
Market cap/ GDP (%)	0.001 [0.01]	0.001 [0.01]	0.001 [0.01]
Microstructural controls			
Log (Price, US$)	0.004 [0.01]	0.003 [0.01]	0.006 [0.01] †
Log (Volatility)	0.042 [0.01]***	0.042 [0.01]***	0.043 [0.01]***
Log (Volume, '000s)	-0.013 [0.00]***	-0.013 [0.00]***	-0.013 [0.00]***
Log (Total Assets, US$)	-0.023 [0.00]***	-0.023 [0.00]***	-0.023 [0.00]***
N (observations)	1,337	1,337	1,337
F-statistic (prob.)	9.71 [0.00]	10.03 [0.00]	9.66 [0.00]
Root MSE	0.1478	0.1475	0.1474
Adjusted R^2	0.2637	0.2673	0.2677

Figure 1. Theoretical associations

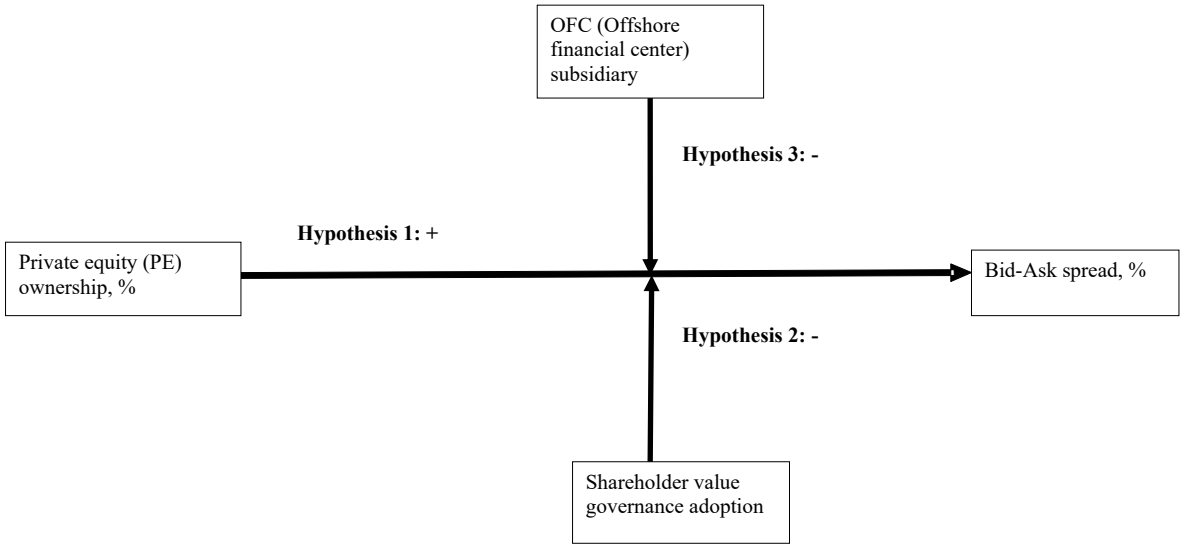


Figure 2. PE ownership and moderation by binary OFC related party

Note: Error bars are based on standard error at *5%* confidence margin

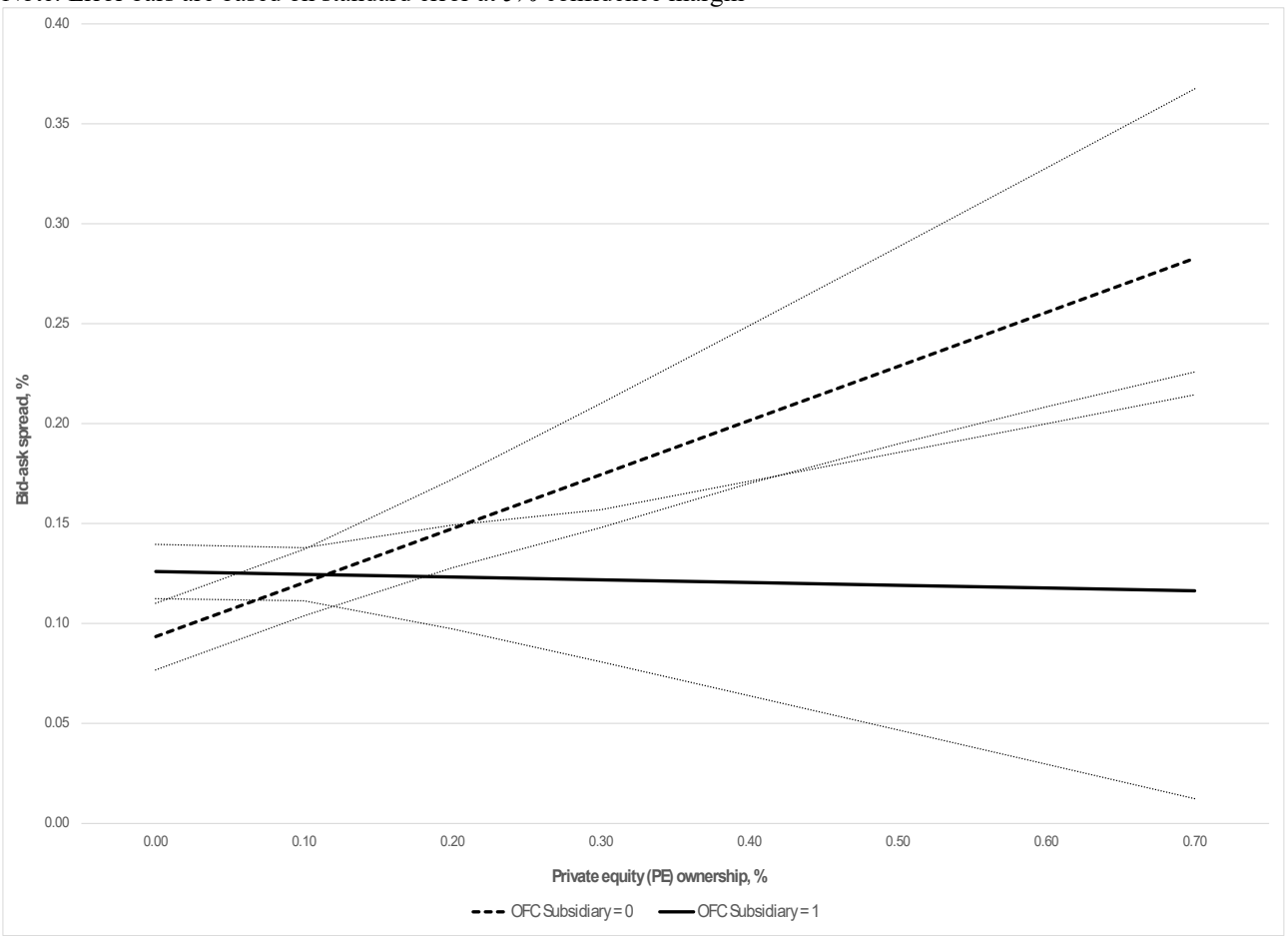
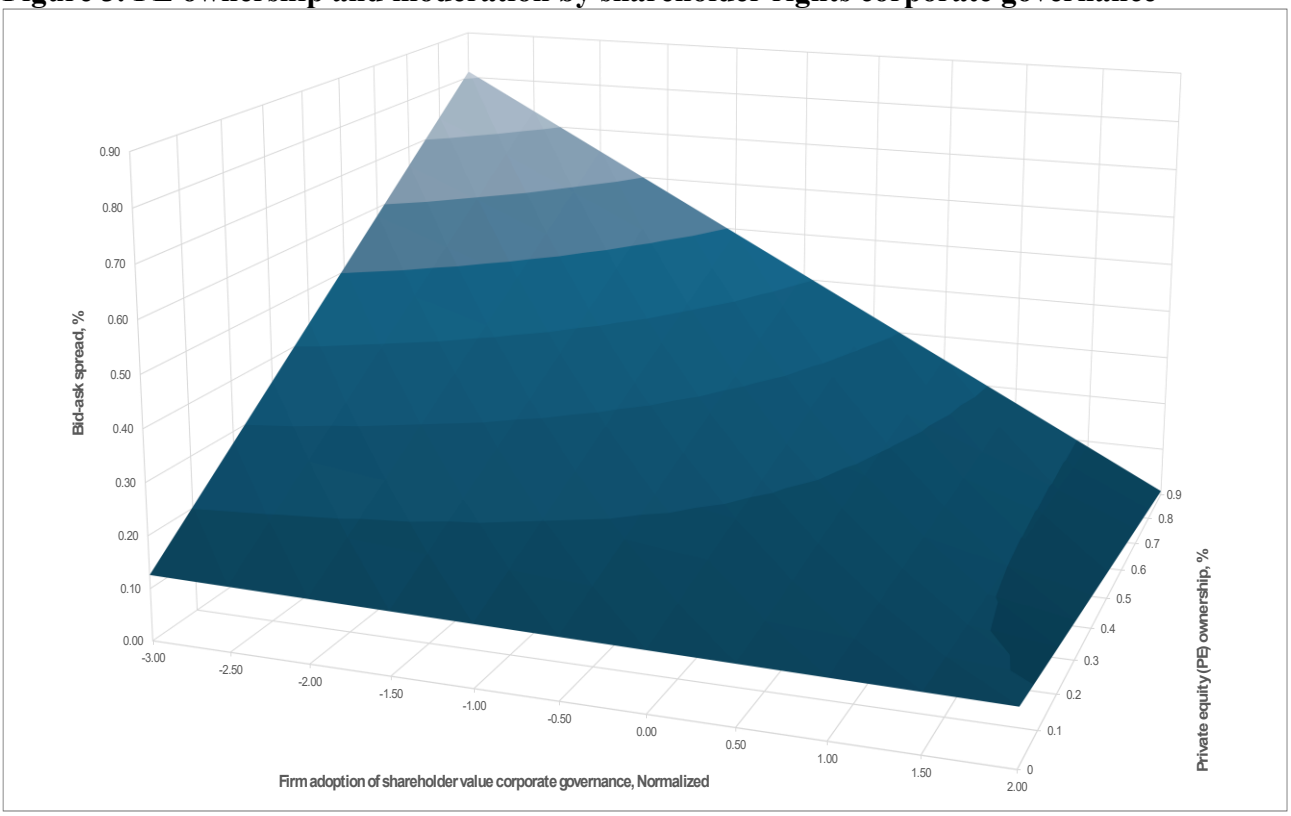


Figure 3. PE ownership and moderation by shareholder rights corporate governance



Appendix Table 1. Data sources

Non-exhaustive list of sources of variables

Market	Information source
Caribbean	Databases: Bloomberg LLP; Thomson Perfect Information portal & Datastream.
Bermuda	Bermuda stock exchange library, Hamilton, Bermuda and website: http://www.bsx.com/ Hamilton-based interviews (11/2016 & 05/2019): Bermuda stock exchange: James S. McKirdy (Chief Compliance Officer). Bermuda Monetary Authority (BMA): Tessa Ingham (Analyst). Bermuda Chamber of Commerce: Kendaree Burgess (Executive Director). Bermuda Government: Victoria Taylor, Executive Officer. Listed firm: Ozics Holdings Ltd (Auvo Kaikkonen, CEO); Cohort Ltd (Tracey Packwood); Bermuda Commercial Bank Ltd (Charlene Gilbert).
Barbados	Barbados stock exchange, Bridgetown, Barbados and websites: http://www.bse.com.bb/ Bridgetown-based interviews (07/2011 and 11/2016): Barbados exchange: Marlon E. Yarde (CEO); Barry Blenham & Donna Hope (Operations Managers). Central Bank of Barbados: Financial Division.
Bahamas	Bahamas stock exchange, Nassau, The Bahamas and websites: http://bisxbahamas.com/ Nassau-based interviews (05/2019): Bahamas international securities exchange [BISX]: Keith Davies (CEO); Holland Grant (COO). Chamber of Commerce: Jeffrey N. Beckles (CEO). Securities Exchange Commission of the Bahamas (Senior Analysts). Bahamas Venture Capital Fund c/o Baker Tilly Managers: Joan Octaviano (Head of Audit). Bahamas Development Bank: Director (Mme Pelicanos). University of the Bahamas graduate school of business: Remelda Moxley (Dean). Listed firm: Bank of Bahamas (Leashawn McPhee); Emera (Dina Bartolacci Seely); Commonwealth Bank (Gina Greene); ICBL (Jenifer Clarke); Doctors Hospital (Joanne Lowe).
Cayman Islands	CISX, Cayman Islands exchange, Georgetown, Grand Cayman and websites: http://www.csx.ky Georgetown, Grand Cayman-based interviews (05/2019): Cayman Islands exchange: Sandy McFarlane (Operations Manageress). Cayman Islands Development Bank: Tracy Ebanks (General Manager/CEO). Cayman National Securities: Erol Babayigit (Vice President).
Jamaica	JSE, Jamaican stock exchange, Kingston, Jamaica and website: https://www.jamstockex.com/ Kingston-based interviews (07/2016): Jamaican stock exchange: Marlene J. Street Forrest (General Manager); Sandra Shirley (Principal e-campus); Charlette Eddie-Nugent (Listings Manager); Neville R. Ellis (Operations Manager). JSE electronic media marketing event (07/2016): Spanish Court Hotel Annex, Kingston, Jamaica. Bank of Jamaica: Financial services division interviews.
Eastern Caribbean	ECSE, Basseterre, St Kitts & Nevis and website: http://www.ecseonline.com/ Basseterre-based interviews (11/2011): Eastern Caribbean stock exchange: Trevor E. Blake (GM); Sherizan Mills (Operations Officer). Eastern Caribbean Central Bank visit (11/2011). Telephone-based interviews (06/2016 - 08/2016): Eastern Caribbean stock exchange: Trevor E. Blake (GM); Sherizan Mills (Operations Officer) Nevis, Charlestown-based interviews (11/2011): Financial district in Charlestown, Nevis; St Lucia-based interviews (11/2011): Financial district, Castries, St Lucia.
Guyana	GASCI, Guyana Securities Council, Georgetown and website: http://www.gasci.com/ Telephone-based interviews (08/2015 – 01/2017): Cheryl Ibbott (CEO, Guyana Securities Council c/o Bank of Guyana); Vick (Compliance Officer, Guyana Securities Council).
Trinidad & Tobago	TTSE, Trinidad & Tobago stock exchange, Port of Spain and website: http://ttsec.org.tt/ Trinidad, Port of Spain based procurement (06/2016 - 07/2016): Trinidad, Ministry of Finance: Melissa Mattoo and Christine Frank (Communications Officers). Trinidad, Central Bank of Trinidad & Tobago: Candice Dilbar (Research Economist). Trinidad, Listed firm: National Enterprises Limited (Keisha Armstrong, Head of Secretariat). Tobago: Scarborough and Canaan-based interviews in financial district (06/2016 - 07/2016).

Appendix Table 2. Shareholder rights index

This table provides the definition of each of the governance elements within the OECD shareholder rights index. All are sourced from individual firm annual reports, and all are measured as binary effect Yes/No which is coded as 1/0. The only exceptions are elements A.7 (ii) and (iii) and E.11, where a count of the number of directors is undertaken. A difference in means tests is reported between firm-year observations in high as opposed to low institutional quality, where high are observations above the median 58.83%. †p ≤ 0.10; *p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.005.

Index elements	**Institutional quality**	
	High	Low
A.1 Does the company offer other ownership rights beyond voting? %	23.58***	13.77
(i) Preference shares%	11.28***	11.11
(ii) Convertible Bond/Shares & Options%	1.37†	1.50
(iii) Multiple share classes%	15.72***	4.40
A.2 Is the decision on the remuneration of board members or executives approved by the shareholders annually? %	49.77***	90.97
A.3 How is the remuneration of the board presented? %	70.50***	95.60
(i) Are individual directors base cash salaries disclosed? %	2.16**	17.27
(ii) Are individual directors' bonuses disclosed? %	0.00	2.45
(iii) Are individual directors' long-term incentives (options, pension etc.) disclosed? %	1.82*	7.00
(iv) Are benefits paid to directors? %	12.19***	2.80
(v) Are benefits enumerated/ evaluated? %	10.71***	2.80
(vi) Is salary aggregated into one lump sum paid? %	77.79***	82.18
(vii) Is director fees aggregated into lump sum emolument? %	77.45***	81.37
A.4 Quality of Notice to call a Shareholders Meeting in the past one year. %	42.81***	91.55
(i) Appointment of directors, providing their names and background %	47.27***	92.71
(ii) Appointment of auditors, providing their names and fees. %	40.77***	92.71
(iii) Dividend policy, providing the amount and explanation. %	34.51***	87.04
A.5 Did the Chairman of the Board attend at least 1 AGM in the past 2 years? %	33.26***	95.08
A.6 (i) Did the CEO/Managing Director attend at least 1 AGM in past 2 years?	31.52***	94.88
Board effective monitoring %	13.11***	38.12
(i) Is a name list of board attendance available? %	16.74***	42.48
(ii) How many directors did not attend 100% meetings? #	2.54*	3.01
(iii) How many directors did not attend 70% of meetings? #	1.37***	0.92
A.7 Do AGM minutes record that there was an opportunity for shareholders to ask questions/raise issues in the past one year? %	6.04***	17.25
A.8 Does the company have anti-takeover defences? %	79.61***	96.06
(i) Cross shareholding %	76.08***	83.45
(ii) Pyramid holding %	77.79***	82.64
(iii) Board members hold more than 25% of share outstanding %	8.43***	30.90
A.9 Company dual listed? %	5.47***	12.96
(i) Company dual listed on OECD stock exchange %	1.82*	0.81
(ii) Controlling parent listed on OECD stock exchange %	14.81*	18.06
E.11 What is the size of the board? #	9.08***	8.84
Shareholder rights index:	30.84***	51.05

[i] See websites https://caraia.org/ and https://lavca.org/tags/caribbean/

[ii] https://www.oecd.org/corporate/principles-corporate-governance.htm.

[iii]Binary 1/0 dummy accounting for country or jurisdiction of primary listing and binary 1/0 dummy for 24 industry categories as defined in Global Industry Classification (GICS) codes developed by MSCI (see https://www.msci.com/gics). Four of these contain no firms from our sample, resulting in 20 industry categories being used in our study.

[iv]These results are available from the authors upon request in Table 4 of the supplementary appendix.