The degree of internationalization of Chinese Multinationals along the belt and road initiative countries

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The degree of internationalization of Chinese Multinationals along the belt and road initiative countries

Woyin Adedigba, PhD student, Nankai Business School, Nankai University, Tianjin China; Email: olawoyingregory@gmail.com

Dr. Runhui Lin, Professor, Nankai Business School, Nankai University, Tianjin China; Email: linrh@nankai.edu.cn

Nizam Ud Din, PhD Student, Nankai Business School, Nankai University, Tianjin China; Email: nixamuddin@yahoo.com

Correspondence

Woyin Adedigba, PhD student, Nankai Business School, Nankai University, Tianjin China; Email: olawoyingregory@gmail.com
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Abstract
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Keywords: BRI, China, Chinese MNCs, Degree of internationalization, State ownership

1. Introduction

The one belt one road initiative (interchangeably referred to as OBOR and BRI) is an all encompassing policy initiative. It seeks to integrate countries along the ancient silk route and the new maritime silk route, through linkages is five areas namely; policy, trade, infrastructure, finance and people [1]. This will primarily be achieved through massive infrastructure development projects in the currently 84 countries (October, 2018) that make up the BRI and since 2013 $153 Billion has so far been invested by China in BRI countries [2].

There is a positive realtionship between policy announcements and the internationalization
activities of Chinese MNCs. Given China's unique institutional setting, major policy announcements have usually spawned and increased outward flows of foreign direct investment and policy announcements are one of the determinants of Chinese outward FDI. In China the government enjoys significant influence on the economic landscape especially with the presence of State owned enterprises (SOES) and uses SOEs to achieve specific policy outcomes. It is logical therefore, that the Belt and Road initiative, the biggest and most comprehensive policy initiative yet by the Chinese government would generate a response by Chinese firms. Recent studies into the effect of BRI on Chinese OFDI support this.

However, despite its economic and political significance of the BRI, there are only a few empirical studies on the internationalization activities of Chinese MNCs in countries along the. The empirical studies available have focused on the magnitude and flow of foreign direct investment into the countries along the BRI. While this gives a big picture view there is room for a fine grained analysis of the BRI and Chinese firms. In this study, using the BRI as the research context, we compute the degree of internationalization of Chinese firms in the BRI countries and then assess the relationship between ownership type and the degree of internationalization.

The aim of this paper is to determine the degree of internationalization (DOI) of Chinese multinationals in the Belt and road countries and to assess how state ownership would affect the DOI of the Chinese multinationals along the BRI countries. The diversity of the countries comprising the belt and road initiative means that virtually all of Dunning’s conditions precedent to the internationalization of firms can be found within the BRI. The BRI then essentially becomes a large pool of CSAs that Chinese firms can unlock provided they have the requisite combinatory nous to bundle them with their FSAs. The BRI thus provides a tantalizing context to test further the relevance of extant theories on Chinese MNCS.
The degree of internationalization of Chinese firms in the BRI countries DOI_{BRI} is computed using a composite index based on Sullivan’s [13] DOI_{ints}. He had highlighted the drawbacks of single item measures of degree of Internationalization prevalent in the literature and proposed his multi-item index as a useful alternative. Other researchers since then[14,15] have also employed the same index or slight variations of thereof. Although, as far as we know it is yet to be utilized with Chinese firms. Comparative analysis of the DOI_{BRI} of SOEs and privately owned enterprises (POEs) turned up interesting results. Firstly, given that state ownership could be positively associated with degree of internationalization [16] and because of the important status of the Belt and road initiative to China we expected the SOEs to dominate the rankings in the DOI_{BRI}. Our hypothesis that because of the close involvement of the government in state owned enterprises the DOI_{BRI} of the SOEs would be higher than their private counterparts, was unsupported. Lending credence to the view that under certain conditions, the behaviours of SOEs and POEs in terms of international activities converge and become indistinguishable [7,17]. Suggesting that perhaps along the BRI, the advantages bestowed by state ownership are irrelevant to successful internationalization. Secondly we find that SOEs scored higher on our measure of psychic dispersion contrary to our prediction of the opposite. Furthermore, we found that POEs scored higher on the purely economic dimensions of the index.

Our research contributes both to the literature on the internationalization research in general and the internationalization of Chinese firms in particular. Also it contributes to the research into the belt and road initiative. In the next section we examine the literature and establish the theoretical foundation of this paper as well as introduce the study’s hypotheses. The subsequent section covers the methodology and data analysis, after which the findings are presented. The paper concludes with a discussion of findings and implications for theory and practice.
2. Review of Literature & Theoretical Framework

2.1 Belt and road initiative research

Research into the BRI spans various academic disciplines, including Policy [18], Economics [19], Management and international business [4–6]. However, given that the BRI was announced and introduced in 2013, research into its influence and impact is still at infancy [5,8]. Be that as it may, scholars across disciplines acknowledge and recognize the significance and potential of the initiative. Subject matter so far investigated in the context of the BRI include inter alia the role of the RMB along the one belt one road [20,21], regional integration [22] as well as the impact of the initiative on Chinese OFDI [5,8].

One common feature of extant research is that most studies have been conducted at aggregate levels, that is, mainly at regional, national and industry level. These studies have mostly highlighted the OFDI trends along the belt and road initiative countries and only a handful of studies have examined the initiative from the firm’s perspective. Also, only a few BRI studies [5,8,19,23] have been quantitative studies. This comes as a bit of a surprise considering the scope and magnitude of the initiative. The countries that make up the BRI account for more than a third of both the world’s GDP (22.9 trillion USD) and population (4.6 Billion) [19].

While the question of whether the BRI will bring about an increase in China’s outward foreign direct investment has been answered [5,8], and there have been studies that breakdown the destinations and structure of Chinese OFDI as well, such as the excellent work of [4]. Under-investigated aspects in the literature include the actual firm level internationalization activities.
Another theme in the literature is the industry distribution of the OFDI. It is evident that compared to their private counterparts SOEs dominate in the infrastructure projects along the BRI [4]. Suggesting perhaps, that SOEs are more willing to take on the significant financial burden and risks that accompany large infrastructure projects.

Furthermore, because the quantitative studies have mainly examined the causal relationship between the BRI and changes in the levels of Chinese OFDI, a preference for the Difference in differences technique for data analysis [4,5,8] was observed. These scholars have focused on determining the link between the launch of the BRI and changes in Chinese OFDI patterns and as there is a clear pre and post event demarcation i.e pre and post 2013, the year of BRI’s launch, the technique lends itself well to such investigation. Their findings have mainly supported a positive relationship[4,5,8].

2.2. Internationalization of Chinese firms

In 2016, for the first time, Chinese outward FDI surpassed FDI inflows [24], becoming the second largest source of OFDI after the United States. And as China has transformed from a net FDI recipient to a net outward FDI destination, interest in the internationalization of Chinese firms has grown over the years [25]. There is a relative abundance of research into the motives and strategies of the internationalization of Chinese multinationals [26–29] and the determinants of Chinese outward foreign direct investments include among other things market size, institutional settings and government policy [3]. While the motives for internationalization of Chinese firms are inter alia asset seeking, and escape from inefficient home-country institutions or “institutional arbitrage” [3,26,30–33]
The internationalization of Chinese firms (ICF) continues to generate debates in IB research as scholars are divided on the ability [29,34,35] or otherwise [36] of extant theories to explain ICF. For instance some believe that Chinese firms have by and large conformed to the predictions of the OLI paradigm [37,38] while others doubt the ability of the OLI to explain the ICF [39]. Reasons put forward for why extant theories seemingly struggle to explain Chinese MNC behaviour include neglecting the home country institutions [40], neglecting the role of local owners of complementary assets [41].

Also Rugman has argued that the successes of ICF have been blown out of proportion [29] as when compared with western MNCs in the same industry their performance lags behind. He also contends that Chinese Multinationals are regional in nature [42] and as such cannot be accurately described as engaging in internationalization.

Internationalization, loosely described is the expansion of business activities across national borders. Usually through gradual increments in their commitments in international markets [43,44]. In order to achieve this they must posses certain advantages [45]. Which according to Dunning [10,46–48] are ownership, Location and internalization advantages (OLI) or firm specific advantages (FSA) and country specific advantages (CSA) as conceived by Rugman [11,12,29,42,49]. In a nutshell the crux of the OLI framework of internationalization is that Firms begin to internationalize after they have developed sufficient capacities (ownership advantages) at home. They can then combine these with locational advantages which can be exploited in overseas markets. The third and necessary condition for internationalization is the ability to internalize missing or inefficient external markets [9].

For example the early internationalizing Chinese MNCS like Haier and Galanz went in pursuit of both strategic assets and market share through their acquisitions of western firms in
the USA and France respectively while newer MNCS like Xiaomi have set their targets on gaining overseas market share, having already established a strong presence in the domestic market.

Research into ICF has been vibrant mainly because Chinese firms are relatively unique[40], studying them allows the testing of theories mainly developed with western multinationals in mind[37]. Secondly the relative speed with which Chinese multinationals have successfully internationalized flies in the face of received wisdom and has prompted calls for the development of new theories for emerging Multinationals[36], or at the very least extensions of extant theories. For instance Berning&Holtbrügge[30] assert that existing theories need to be extended or modified in order to be applicable in the Chinese context. However, others believe that extant theories have sufficient explanatory power [29,35,50]. Whether for or against extant theories, it is evident that ICF as a field of study provides a unique context for management and business research and has the potential to enrich international business and management studies.

Furthermore given that new policy announcements encourage the flow of OFDI [3,51] we can therefore expect that the launch of the BRI would precipitate an increase in OFDI and the internationalization of Chinese firms. Indeed early assessments of the BRI have found empirical support for increased OFDI resultant from the BRI [4,8]. However, as stated earlier while these studies have painted the overall picture of Chinese capital flows the individual firms and the transactions behind these flows remain unexplored. This paper aims to fill that gap.

2.3 Measuring Degree of internationalization

While the importance and relevance of internationalization to the multinational firm is intuitively clear, its measurement has remained an issue of contention in IB research[52–56]. With
questions raised over the employment of single item measures of a multidimensional concept such as internationalization[13]

There is no consensus amongst scholars concerning the choice of measurement of the degree of internationalization of firms. Sullivan decried this state of affairs claiming “despite its theoretical and practical centrality, estimating the degree of internationalization (DOI) of a firm remains arbitrary” [13]. Ietto-Gillies and London echo a similar sentiment albeit less critically, stating there is no “acceptable” way to assess the degree of internationalization of firms[57], however it is still important to have a consistent measure of internationalization[52,53]. Because internationalization is multi-dimensional [57] the choice of measurement is often context specific [58].

Internationalization is a multi-dimensional concept, as such a wide array of variables can be used to operationalize its measurement[12,58]. There is a location dichotomy inherent to the concept of internationalization, that is, what goes on in one location versus what goes on outside of it [59]. Generally, the home country of the multinational firm on one hand and foreign territories on the other hand. Consequently, in developing measures for the degree of internationalization, scholars have utilized ratios that capture the percentage of foreign initiated or oriented activities to the total activities of the including the ratio of foreign sales to total sales [16,29,60] and foreign assets to total assets [61]. In addition to the location dimension mentioned earlier, other key dimensions identified in the literature include structural, attitudinal and performance [13]; intensity, geographic- scope extensity and geographic- scope concentration [57] as well as breadth and depth scope [54]. Internationalization could be both a state and a process, a firm “is” in the former and a firm “does” in the latter. The Uppsala model [43,44] clearly emphasizes the process element of Internationalization, particularly on the gradual nature
of how firms overcome the liability of foreignness.

While some scholars have relied on the use of single item measurements, usually the ratio of foreign sales to total sales [16,29,60] others have preferred a multi item approach [14,15,52]. Although the view that composite measures are better suited to the measurement of DOI is widely held [13–15,52,59]. Ramawamy et al [62], in a critique of Sullivan [13] observed that indexed measures may not necessarily improve the understanding of internationalization. However, Sullivan [63] maintains the usefulness of a multi item index given it adequately addresses issues of construct validity and item validity. Other scholars[14,15] have utilized his DOIINTS as the basis of their investigations as well.

Multi Item Indices allow for the inclusion of non-performance variables when assessing internationalization. Given that multi item measures allow for a fine grained assessment of internationalization, we follow prior scholars [13,17,52,59] in adopting a composite measure of the degree of internationalization countries.

2.4 Hypotheses

Since Chinese multinationals typically fall into two categories; state owned enterprises (SOEs), and privately owned Enterprises (POEs) and because they typically have different corporate structures, they contend with different operational constraints and the amount [64]of resources available to them. Therefore, the difference in the interactions between domestic institutions and SOEs relative to POEs as well as the resources owned by Chinese SOEs means that they usually approach internationalization differently[65]. Will the ownership structure of Chinese multinationals influence their response to BRI policy announcements and shape their internationalization efforts along the BRI countries? Or is ownership structure likely to be
irrelevant to internationalization of Chinese firms along the belt and road countries? Given that government policy is a strong determinant of Chinese OFDI[3] we expect a positive relationship between the internationalization of Chinese firms and the BRI. Furthermore, because of their unique structure, SOEs are characterized by a close working relationship with the government and because the government exerts influence on the degree of globalization of SOEs through ownership [17] and SOEs are required to fulfil national objectives[66], we propose:

\[
H1: \text{SOEs would have a higher DOI}_{\text{BRI}} \text{ than POEs}
\]

One of the principal challenges of a firm entering into international markets is how to overcome the liability of foreignness, that is, the extra costs of operating in new markets brought about by the psychic distance between the home country of the firm and the host country[12,14,43]. Psychic distance encompasses difference in culture, norms and values[67]. The BRI initiative spans more than 60 countries across continents; it stands to reason therefore that psychic distance will play a significant role in the determination of internationalization strategy. At the same time Buckley et al [3] show that geographical distance is also a significant determinant of foreign investment outflow and Du and Zhang[23] have shown that a significant percentage of OFDI into the BRI countries are to East and Central Asian countries. We conceive that because Chinese SOEs and POEs originate in the same home countries and share same cultural attributes, consequently they will contend with similar levels of liability of foreignness. We therefore propose that

\[
H2: \text{Along the BRI countries Psychic dispersion of SOEs and POEs would be identical}
\]
3. Materials and Methods

3.1. Sample and Data

The research employs a linear index to measure the degree of internationalization using a multi-item combination. Because the decision to internationalize is inherently a firm level decision, we are interested in not just the direction and magnitude of ODI, therefore, our investigation is best served by the use of firm level data. For the use of firm level data in the analysis of Chinese OFDI provides the opportunity for more in-depth analysis[49,68]. We collected data from multiple sources, including databases including Heritage foundation’s China global investment tracker, WIND and CSMAR. These three databases provide information that runs the gamut of FDI flows providing both M/A and Greenfield data. For instance the China global investment tracker provides data on all cross border deals concluded by Chinese firms worldwide that surpass the US $100 million threshold and contains data for as far back as 2005. The data includes both direct investment transactions and contracts. It also specifies which transactions are Greenfield investments. Most importantly the data distinguishes whether a recipient country belongs to the BRI or not. The use of multiple data sets allows for a triangulation of Data and therefore it improves the quality of data used in analysis.

The first step in sample generation was to extract from the global investment tracker all the transactions completed by Chinese firms from 2013 till 2018. To be included, in addition to being from 2013, it must have occurred in a BRI country. A shortlist of transactions satisfying these two conditions was compiled. The originating firms of these transactions were then identified and collated. This approach ensured that there was an even spread and allowed for a mitigation of the selection bias [3,25,29] which would have occurred had we selected the
companies from a pre-existing list, e.g. top 100 Chinese firms. There is still some form of selection bias however, as the China global investment tracker only includes transactions of a minimum of USD $100million. That means companies who have investments below that threshold will a priori not make it into our list. Global investment tracker database classifies Transactions based on whether the deal was an investment or a construction contract. Using the rubric stated above, we had 163 unique firms who had been involved in investment transactions and 94 firms who primarily had construction transactions giving a total of 257 firms. The shortlist is summarized in table 1 below.

[Insert table 1 here]

In the second stage only firms with publicly available data were retained. These were composed primarily of listed firms and firms like Huawei that although not listed have publically available data. This was necessitated by data availability challenges, as listed firms have disclosure requirements therefore the necessary data is readily available. The requisite data on the short-listed firms were then sourced from the WIND database as well CSMAR in addition to the published annual results. These include the foreign and total sales, overseas and foreign subsidiaries.

Finally we applied the constraint that firms must have significant operations or activities in overseas markets. Internationalization as a concept presupposes the initiation of and participation in cross border business activities, in any case Rugman et al [29] defined the multinational firm as a firm with at least ten percent of sales in foreign markets and with at least three foreign subsidiaries. The multinational firm is also one that engages in value addition activities across borders[9] as well as one that organizes the linkages between employees located in more than one country through employment contracts [39], while Fitzgerald & Rowley[69] define it as a
firm that has significant investments and large scale business activities in different countries, while maintaining ownership and control. Considering these attributes of MNCS, our definition isn’t as weighted towards the proportion of foreign sales as an indicator of multi-nationality a la Rugman. For instance ALIBABA had no foreign sales for the period under review. Yet it had 30 foreign subsidiaries, which indicates a significant investment and involvement in overseas markets albeit one suggestive of a strategic rather than commercial nature. **Were we to apply the 10% of total sales condition we would have had to exclude Alibaba from the sample which would be odd given the evidence of its international involvement.** This underscores Sullivan’s point that the use foreign sales ratio is not a sufficient measure of internationalization. In any case the motivations for Chinese firms to internationalize vary, from the purely market seeking to the strategic asset seeking motive[9] to the strategic intent perspective [70]. Therefore to be included in our sample firms must have engaged in FDI along the BRI countries in addition to either having a foreign subsidiary and or have sales from overseas markets. This conceptualization of multi-nationality is broadly in agreement with Dunning’s definition of the multinational as “an enterprise that engages in foreign direct investment (FDI) and owns or, in some way, controls value-added activities in more than one country”[9]

With this final criterion, our sample was reduced to 92 firms. A major casualty of this stage was **JD** the Chinese e-commerce giant, with neither foreign sales nor foreign subsidiaries.¹

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¹One possible explanation for this is that while the global investment tracker captures JD’s new investment along the BRI the Historical data which we used in sample selection will not contain the records of Its investments. This should be one of the limitations of our study
3.2 Variables

Owing to both the plurality of the conceptualization of internationalization and its multidimensionality, there are several approaches to the measurement of the degree of internationalization of firms.

Sullivan’s [13] DOI\textsubscript{INTS} was a 5 item composite index made up of a linear combination of ratios. The ratios were FS/TS foreign sales and total sales, FA/TA foreign assets and total assets, TMIE top managers’ international experience and psychic dispersion of operations. We use a modified version of the DOI\textsubscript{INTS} for this study. Owing to data availability constraints, the foreign asset to total assets ratio was omitted as was the TMIE, while including a measure for geographical dispersion a la [59]. We use a four item index as shown below. The DOI is measured for each shortlisted firm by plugging the ratios for each firm into the equation below. In adopting this approach, we are in agreement with Dörrenbächer[71] that Sullivan’s measure is one of the few that combines the main dimensions of Internationalization into one measure.

\[
\text{DOI} = \text{FSTS} + \text{OSTS} + \text{PDIO} + \text{GD}
\]  

(1)

The main dimensions of internationalization indentified in the literature include; performance, structural and attitudinal dimensions [13,71], intensity and extensity dimensions [59] real and financial [58]. We do find however that the dimensions and the variables to operationalize them often overlap. For instance while Sullivan[13] considers foreign sales to total sales ratio as a performance variable, Ietto-Gilles [59] considers it a measure of intensity, the value of activities per location. This difference in our view is semantic, as they still capture the same effect. Consequently we ensured key dimensions of internationalization were captured by our measure. For instance, the omission of the assets ratio, which expressed the structural
dimension in Sullivan[13] does not significantly impact the usefulness of the index as the structural dimension is still aptly captured by the subsidiary ratio. While the sales ratio still captures the performance dimension and psychic dispersion operationalizes the attitudinal dimension. In essence we have one ratio to capture each dimension as identified by Sullivan[13]. The average of the 3 years 2015,2016,2017 were used to compute FSTS, while the OSTS value was determined using single year data in this case year 2017.

3.2.1 Performance/Intensity (FSTS)

This is the most used measure of the DOI [49]. Many studies have solely utilized this variable to measure the degree of internationalization[60,72]. While it is indeed a good proxy, it has flaws because it is inherently biased towards large firms and firms with an inordinate amount of foreign sales that might originate in a single market for instance[53]. And as observed by Ietto-Gillies and London [57] the foreign sales to total sales ratio mainly focuses on the home vs foreign dichotomy without providing insights dispersion. While it adequately captures the performance dimension of internationalization, it fails to capture the other dimensions of internationalization. For example if we take two multi-national companies X and Y, X with foreign sales of $10 million and Y with $5 million, where X’s foreign sales come from two countries, and Y from 5 territories. If both had total sales of $20 million and we compute their foreign sales to total sales ratio, that measure will show X as having a higher degree of internationalization. This would completely ignore the associated complexity with operating in more geographically diverse and potentially psychically diverse markets. This is why the FSTS alone does not paint a robust picture of the internationalization activities of firms.

FSTS captures the quantum of business done by the MNC and what proportion of its
performance comes from international markets. It is a good first order measure of international involvement of the firm. If a firm is a strategic asset seeking international firm, the FSTS measure may not adequately capture this aspect of internationalization. We argue that it focuses too narrowly on the market seeking motive of internationalization; therefore it is better to use it as part of a multi variable index rather than a stand-alone measure.

### 3.2.2 Structure (OSTS)

Following Sullivan[13,63] we use OSTS to capture the structural dimension of internationalization. Since Chinese firms also base their internationalization on rational analysis[70] the types and locations of Chinese MNCs subsidiaries may reflect their strategic intent given subsidiaries vary in role and type[73] e.g overseas subsidiaries that are not directly involved in revenue generating activities may focus on R&D, administration or even be the so called centre of excellence [74].Subsidiaries located in tax havens may contribute immensely to the bottom line of the firm even though they might not generate revenues from sales. And as highlighted by Hassel et al [58] their investigation of financial internationalization of German firms conclude that extant studies often focused the production or real dimension of internationalization to the exclusion of governance dimensions of internationalization. We acknowledge the non financial dimensions of internationalization by considering OSTS not just as a purely structural measure but as well as an indicator of strategic intent.

### 3.2.3 Psychic Dispersion (PDIO)

The liability of foreignness MNCS face is a key determinant of the success of their internationalization process [12,44,75] and psychic distance influences the liability of foreignness [43]. The variable PDIO measures the psychic dispersion of the firm’s operations.
That is, how psychically diverse firm is along the belt and road initiative countries. Sullivan used Ronen and Shenkar’s[76] psychic maps to measure the psychic dispersion. As it is possible to have territories which might be geographically proximate but psychically or culturally distant and vice versa where countries are psychically proximate in spite of geographical distance it is useful to measure the psychic dispersion. An easy example would be Great Britain and the USA’s cultural proximity even though they are separated by a large geographical distance.

Although, Sousa & Bradley [67] make a distinction between psychic and cultural distance we find either conceptualization sufficient for our study because they both relate to how distinctive attitudinal traits compare and vary across locations. Having said that however, it became quickly apparent that Ronen and Shenkar’s[76] classification would not suffice for this study. Ramaswamy et al[62] already pointed out that the country clusters did not sufficiently address the diversity in the world, we share their view that the ‘independent’ group does not really provide any useful insight. For example using this study’s sample of the belt and road countries, the Ronen and Shenkar[76] Classification classifies both Nigeria and Croatia as “independent”, and one would be hard pressed to argue that these two countries have similar psychic make ups. The Global investment tracker’s classification also proved inadequate, as their classification is more geographically oriented rather than psychological or cultural. We modified Ronen and Shenkar’s[76] classification to better suit the study by including a tenth cluster– Sub-Saharan Africa. We find this more relevant to the study as a significant number of belt and road countries are found here, moreover there’s more to be said for the psychic similarity of Nigeria and Cameroon than for Nigeria’s and Croatia. Table 2 shows the classification.

[Insert table 2 here]
3.2.4 Geographic dispersion

The uniqueness of the BRI is that it encompasses many countries, therefore it is useful to identify how widespread the activities of Chinese multinationals are, along the belt and road initiative. Consequently, a fourth item was included in our index, it is intended to capture the Geographic extensity of the firms along the Belt and road initiative countries, given the relevance of geographic diversity[77] in this context. We follow Ietto-Gilles [59] in using count of the number of countries along the belt and road initiative countries where the firm had activities, normalised by the total number of belt and road countries which stood at 84 at the time of this paper. Furthermore, Ramaswamy et al [62] argued in fact that a simple count of the number of countries may be a better measure of the dispersion of internationalization of Multinational firms, and this study adopts it as our measure of geographical dispersion. Below, Table.3 presents a description of the variables and data sources.

[Insert table 3 here]

FSTS and OSTS correspond to both the intensity dimension of Ietto-Gilles and performance dimensions of Sullivan. PDIO captures the attitudinal dimension as identified by Sullivan. While the last variable, GD pertains to the geographical extensity identified in Ietto- Giles[59].

4. Results

The average DOI_{BRI} of the sample was 0.67 and when broken down into SOEs and POEs we have 0.59 and 0.75 respectively Table.4 presents the descriptive statistics showing the POEs vs SOEs and Table 5 overall descriptive statistics. Indicating a higher DOI_{BRI} for privately owned enterprises compared to state owned enterprises. As a matter of fact, only two SOEs were in the top ten as ranked by the DOI_{BRI} values. Qingjian a POE recorded the highest DOI_{BRI} value.
Consequently, $H_1$ is unsupported and rejected. On the psychic dispersion measure, SOEs had an average of 0.18 while for POEs the value was 0.11, indicating that the SOES scored higher on that measure therefore $H_2$ is unsupported. If we looked at the dispersion measures alone, the SOEs indeed ranked higher than the POEs, this suggests that perhaps SOES are unfazed by and better equipped to deal with the challenges of operating in more psychically and geographically dispersed locations. It may also be that state ownership has less influence on the internationalization of Chinese firms along the Belt and road initiative and other moderator variables are better associated. [78], for instance, found market potential to be a strong determinant of Chinese OFDI along the Belt and Road countries.

[Insert table 4 here]

[Insert table 5 here]

The rankings of the other dimensions revealed that SOEs ranked higher in the extensity dimensions, That is, the PDIO and dispersion measure, whereas the POEs ranked higher in the intensity and performance measures, FSTS and OSTS. Overall, even though the number of firms in the sample was almost identical between SOEs and POEs (47 and 44 respetively) , we discovered that the firms with the highest DOIs were POES and not SOEs. This was unexpected as given the relative financial might of SOEs and typical preferential treatment enjoyed by SOEs the expectation was that they would be at the vanguard of the internantionalization rankings along the belt and road countrties. It should be noted however, that in terms of pure numbers of transactions initiated, the SOEs still rule the roost. It is only when this is normalized do we see the result discussed above. This is perhaps illustrative of the usefulness of a multi item index measure of DOI, as it discounts firm size . We also found that Alibaba has a preponderance of its subsidiaries abroad, with approximately 70% of its total subsidiaries located overseas. This
however contrasts with its foreign to total sales ratio where no figures for foreign sales were recorded in the annual reports

The correlation matrix presented in Table.6 indicates a strong and positive correlation between the dispersion variables PDIO and GD at 0.85. Cronbach’s alpha of the index was 0.4889. These measures are however negatively correlated with the both FSTS and OSTS. This is in line with the prediction of Uppsala model (Johanson & Vahlne, 1977, 2009) that firms would expand into psychically and geographically proximate locations before venturing further afield.

[Insert table 6 here]

5. Discussion

Data availability has remained a major bane to the measurement of DOI [71] and as articulated by several scholars[13,52,71,77,80] researchers are constrained by available and accessible data. This study suffers the same fate, as we had to omit certain variables owing to data unavailability/inaccessibility, for example the top management international experience. While we acknowledge that alternative methods or data may exist, our study was carried out within this constraint.

As regards items comprising the index, computed Cronbach’s alpha of 0.48 barely lies within acceptable limits of 0.7 for exploratory research that is widely cited in the literature[13,15]. However the usefulness of the alpha in measuring validity and reliability has been questioned [81] because Cronbach’s alpha is influenced by factors that may not reflect the reliability of a scale [82] as well as by the number of items in the scale and the sample size, our limited sample size is the likely source of the low value rather than the unsuitability of the
measure. In any case Panayides[83], advises caution when reporting alpha values as higher values do not necessarily indicate higher reliability. And ex ante, alpha is neither capable of measuring unidimensionality nor reliability[84]. Given that the goal of DOI_{bri} was to capture the multidimensional nature of internationalization and higher alpha values could be associated with a narrow coverage of a construct [83] our alpha value does not debase the utility of the index.

Furthermore, our finding that the SOEs did not have a higher DOI as predicted could be down to the fact that given the development of Chinese MNCs over the last decade, POEs have been able to amass formidable resources and developed capabilities that neutralize the advantages accrued by SOEs. It is also possible that because the advantages enjoyed by SOEs were borne of the relatively weak institutions and market inefficiencies characteristic of China and because there’s a relationship between reforms and DOI [17], recent reforms have been successful to such an extent that they have degraded the advantages of SOEs over POEs. Although the institutional arbitrage[85] perspective is that POEs may be escaping disadvantageous positions in the home market, the fact that there isn’t such a wide variance between the mean DOI of the SOEs and POEs, suggests that at least within the BRI context, this may not be the case. However, these explanations may only be relevant in the context of the BRI because being the brainchild of the government, deliberate measures may have been taken to reduce the red tape that would have adversely affected internationalization efforts of POEs. Future research could test this by comparing the activities of POEs in BRI to non BRI countries.

In testing our second hypothesis, we found SOEs had a higher PDIO score which was indicative of more psychic dispersion. It is possible that SOEs are better equipped to deal with the liabilities of foreignness that goes with operating in psychically distant countries. It could be
for instance that since SOEs usually prefer government to government relationships [64] they are better able to get host countries’ governments to safeguard their investments which in turn means mitigates the liability of foreignness. The fact that SOEs have a preponderance of their activities in the infrastructure development projects in the BRI countries [4], lends credence to this, as these projects are likely to be negotiated, agreed and commissioned at the highest levels of host country governments. This suggests that while state ownership may not matter much to the overall degree of internationalization, but that it is important to overcoming liability of foreignness.

Firm Age and stage may moderate the degree of internationalization [53] and given that some of the POEs enjoyed a perfect OSTS score, our findings appear to support this. As some of them have only one subsidiary which happens to be the foreign subsidiary, which suggests they are likely at an early stage of the internationalization. When compared to the more established firms with a longer history of internationalization, who may already have shifted focus in other directions or regions, it may be that the BRI provides the appropriate platforms for newly internationalizing firms to expand their foreign operations. And with the overarching goal of the belt and road initiative being integration in the stated areas of policy, trade, infrastructure, finance and people [1], it is possible that these efforts are already bearing fruits and the internationalization process along the BRI countries may have become easier owing to the commitment of the various national governments to see it succeed.

Also, there is prima facie evidence that Alibaba’s overseas subsidiaries may not be revenue generating. A possible explanation would be that they serve a strategic rather than commercial purpose, e.g. as R&D centres or as administrative hubs. It seems a logical explanation Given the primacy of logistics in the Alibaba business model. Consequently, a
thorough study of these subsidiaries may provide additional insights.

Following from above, since firm governance influences interantional behaviour [86] and there are different governance regimes that affect SOES [17] while strict corporate governance requirements negate state ownership [87] because our sample consists of listed firms, both POEs and SOEs would be subject to the same governance requirements. In any case, Estrin et al[61] posit that listed SOEs are in fact Hybrid firms, and they may be closer in outlook to POEs than to non listed SOES. Future research could compare the internationalization of listed and non listed SOEs.

Lastly, this study is only the first attempt to compute the DOI of Chinese firms in the context of the BRI, and while an attempt has been made to utilize as robust a measure as possible, there are still avenues to improve the methodological approach. For instance using the complex number developed by Fisch and Oesterle[52], may provide an alternative quantitative measure that allows meaningful comparisons to be made.

6. Conclusion

Given the scope and magnitude of the belt and road initiative, and the unique context it presents for research into the internationalization of Chinese firms, this study attempted to compute the degree of internationalization of Chinese multinationals along the belt and road initiative countries. Using a composite measure, a multi-item index based on Sullivan [13], Chinese multinationals who had initiated transactions in Belt and road countries in the period 2013-2018 were compiled from the global investment tracker data base. A bottom up approach was preferred as the transactions, were first identified before unmasking the companies responsible for the transactions.
Even though there was no “right” way to measure the degree of internationalization found in the literature, a multi item indexed was preferred over a single measure of the degree of internationalization given the superiority of multi item measures of DOI. The index used, comprised of four items, FSTS, OSTS, PDIO and Geographic Dispersion, which measured the ratio of foreign sales to total sales, overseas subsidiaries to total subsidiaries, psychic dispersion and geographic dispersion respectively. It was hypothesized that state owned enterprises would rank higher than privately owned enterprises and that psychic distance would influence SOES and POEs equally through an identical level of psychic dispersion within the BRI countries. Both $H_1$ and $H_2$ were unsupported and consequently rejected. Privately owned enterprises indeed had a higher average DOI than the State owned enterprises and SOES scored higher on the PDIO measure, indicating on average a psychically diverse operation. This result suggests that perhaps the internationalization of Chinese firms has matured to such a stage that the effects of ownership structure vis a vis state ownership is approaching insignificance. This corporate maturity would imply that one of the main explanations often cited as the reason for the special nature of the internationalization of Chinese firms may have dissipated in relevance, Chinese firms may not now be that much different compared to their western counterparts and consequently extant theories may do a better Job of explaining their behaviour. This notion ought to be tested in future research. Although it should be added that the determinants of Chinese investments in BRI differ to their determinants in non BRI countries [78]

Inspite of the limitations of this study, it contributes to the literature on the internationalization of Chinese firms as well as the belt and road initiative. It is a first order level for assessing the impact of the policy. High DOI along the BRI would indicate the acceptance of the policy although with the caveat that some of the investments and projects may have been
planned earlier. Prima facie, the BRI as policy seems to have spurred internationalization equally between SOEs and POEs.

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Tables

Table 1  Chinese deals along BRI countries from 2013-2018

| Item                     | Investment | Contracts |
|--------------------------|------------|-----------|
| No of deals 2013-2018    | 248        | 527       |
| No of initiating companies | 163        | 94        |
| Dollar value             | $153 billion | $267 billion |
| No of countries          | 46         | 57        |
| Regions                  | 6          | 7         |

Source: China global investment tracker

Table 2. The countries of the BRI mapped on a modified version of Ronen and Shenkar’s Psychic Zones that includes Sub-Saharan Africa

| No Ordic | Germanic | Anglo | Latin Europe | Latin America | Far Eastern | Arab | Near Eastern | Independent | Sub Saharan |
|----------|----------|-------|---------------|---------------|-------------|------|-------------|-------------|-------------|
| Austria  | New Zealand | Portugal | Bolivia | Bangladesh | Brunei | Algeria | Afghanistan | Antigua and Barbuda | Dominica | Angola | Burundi |
| Variable name | Description | Source |
|---------------|-------------|--------|
| Degree of internationalization (DOI<sub>BRI</sub>) | A multi-item index that measures the level of international involvement of Chinese MNCs. It is a | WIND, CSMAR |
| Variable | Combined mean | SOEs (AVG) | POEs(AVG) |
|----------|---------------|------------|-----------|
| FSTS     | 0.2280        | 0.1691     | 0.2908    |
| OSTS     | 0.2461        | 0.1753     | 0.3218    |
| PDIO     | 0.1549        | 0.1893     | 0.1181    |
| GD       | 0.0406        | 0.0605     | 0.0194    |
| DOI_{BRI} | 0.6698        | 0.5944     | 0.7503    |

**Table 4. Descriptive Statistics POEs vs SOEs**

**Table 5. Overall Descriptive statistics**
Table 6. Correlation Matrix

|       | DOI   | FSTS  | OSTS  | PDIO   | GD    |
|-------|-------|-------|-------|--------|-------|
| DOI   | 1     |       |       |        |       |
| FSTS  | 0.7701| 1     |       |        |       |
| OSTS  | 0.7721| 0.3685| 1     |        |       |
| PDIO  | 0.1788| -0.1008| -0.2  | 1      |       |
| GD    | 0.1588| -0.1012| -0.21 | 0.855  | 1     |