Towards testing Dunning’s Eclectic Paradigm on the issue of Multinational Contractors’ Willingness to Bid for Australian Public Sector Major Infrastructure: Developing an Approach to Reviewing and Analysing Secondary Data

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Abstract: In response to the need to leverage private finance and the lack of competition in some parts of the Australian public sector major infrastructure market, especially in very large economic infrastructure procured using Public Private Partnerships, the Australian Federal government has demonstrated its desire to attract new sources of in-bound foreign direct investment (FDI) into the Australian construction market. This paper aims to report on progress towards an investigation into the determinants of multinational contractors’ willingness to bid for Australian public sector major infrastructure projects and which is designed to give an improved understanding of matters surrounding FDI into the Australian construction sector. This research deploys Dunning’s eclectic theory for the first time in terms of in-bound FDI by multinational contractors and as head contractors bidding for Australian major infrastructure public sector projects. Elsewhere, the authors have developed Dunning’s principal hypothesis associated with his eclectic framework in order to suit the context of Dunning’s framework, other expected contributions concerning research method and practical implications are mentioned.

1. INTRODUCTION

Given estimates of demand for infrastructure spending of US$53 trillion between 2007 and 2030 (OECD 2006), a key challenge for governments across the globe is not only to fund new infrastructure but at the same time deliver value for money (VfM) in its provision. In order to address both these concerns Public Private Partnerships (PPPs) are being seen as an important part of the procurement strategy in many countries, not least of which in Australia (KPMG and Infrastructure Australia 2010).

At the same time, although the role of PPPs in leveraging private finance and addressing government funding constraints is evident, the extent to which PPPs deliver VfM is a vexed question. To illustrate this, Hodge and Greve (2009) review the notable evaluations of PPPs from 1998 and conclude that the evidence for and against PPPs delivering value for money is at best mixed.

Putting aside the debate concerning overall question of relative VfM realized through PPPs, there does seem to be consensus on the importance of the role of competition in ensuring that PPPs have the best opportunity to deliver superior VfM relative to other procurement modes (KPMG and Infrastructure Australia 2010). That is, achieving a sufficient level and balance of competition as part of the process of selecting a PPP bid not only creates downward pressure on prices (for example, on the service charge) but just as importantly encourages innovation and which crystallizes the benefits of output specifications and other measures designed to improve VfM in whole life terms.

Before the Global Financial Crisis (GFC), Runeson and de Valence (2008) observed the emergence of a two-tiered construction market comprising the more traditional local/national market and a new global construction industry based on high technology and a business strategy revolving more around VfM throughout the project's life cycle and fuelled to a significant extent by procurement modes like PPPs. Runson and de Valence (2008) consider that this market is oligopolistic and it seems reasonable to suspect that this market may have become even less competitive, perhaps towards a duopoly in some sectors and locations - amidst and in the wake of the GFC. Indeed and in Australia for example, there are examples of projects that have been switched from a
proposed PPP to a more traditional funded project due to a lack of expressions of interest from PPP consortia. At least as a partial response to the lack of competition in the PPP market, the Federal government has noted its desire to see new foreign entrants into the Australian public sector major infrastructure market and in pursuance of this, is developing a number of initiatives including trade-delegation style meetings and reforms to PPP procurement practice to reduce bid costs (Hepworth, 2010 and Cameron 2008).

Based on this background, an investigation into the determinants of multinational contractors’ willingness to bid for Australian public sector infrastructure projects is warranted from both the perspectives of both government and multinational contractors (MNC) domiciled in Australia. On the government’s side, an improved understanding concerning which MNCs are better suited to the Australian market and which MNCs are closer to contemplating bidding for Australian public sector projects, along with surfacing any misconceptions held by MNCs of the Australian market appears to hold significant value. At the same time, a greater appreciation of the relative strengths of MNCs currently operating and not currently operating in Australia is of benefit to MNCs domiciled in Australia in terms of helping to develop strategies to enhance and develop sources of competitive advantage.

In pursuance of explaining the determinants of multinational contractors’ willingness to bid for Australian public sector infrastructure projects, Rahman, Bridge and Rowlinson (2010) summarize the relevance of Dunning’s eclectic paradigm of internationalisation. Dunning (1989) has explicitly explored the application of his eclectic paradigm or OLI framework to the service sector including construction services. Dunning’s eclectic paradigm has remained the dominant analytical framework for accommodating a variety of economic theories concerning the determinants of FDI and the foreign activities of MNEs for over two decades (Dunning 2002). Although Dunning’s eclectic paradigm is a dominant theory of internationalisation and it has received little attention and testing in the context of multinational contracting. Rahman, Bridge and Rowlinson (2010) proceed to justify why they consider a federally funded project they are progressing and which is supporting the research in this paper will be the first empirical study to deploy the OLI framework to explain in-bound FDI (to Australia as the host country) and using the dominant economic theories advocated by Dunning mindful of the nature of the study and its context or multinational construction.

Having more clearly articulated Dunning’s four conditions within the context of MNC and specifically the reverse of these conditions to reflect a lack of in-bound FDI, as well as having discounted the $I$ factor (given the nature of the dependent variable in this research), Rahman, Bridge, Rowlinson and Kwok (2011) develop three propositions designed to address a weakness arising in Dunning’s principal hypothesis. That is, this hypothesis is based on a nominal (yes or no) approach to the $O$ attributes and variations in the level of overall attractiveness.

- Proposition 1: Foreign top-tier MNCs within the same country/region and not operating/expressing an interest in Australia will display varying degrees of similarity/dissimilarity of $O$ attributes with key/common $O$ attributes possessed by both foreign top-tier MNCs within the same country/region but which operate/expressing an interest in Australia and indigenous/Australian top-tier MNCs. The variation in the pattern of the profile of $O$ attributes is expected to match the variation in the pattern of overall attractiveness and with no pattern match expected between the $L$ factor and variations in the level of overall attractiveness.

- Proposition 2: Groups of top-tier MNCs in different foreign countries/regions may have similar $O$ attributes (at a high through low level of match to those possessed by both foreign top-tier MNCs operating/expressing an interest in Australia and indigenous/Australian top-tier MNCs). The variation in the pattern of the $L$ factor created by the different foreign countries/regions is expected to match the pattern of the level of overall attractiveness within each group and with no pattern match expected between the $O$ factor and variations in the level of overall attractiveness – again within each group.

- Proposition 3: Notwithstanding the level of match of $O$ attributes possessed by a foreign MNC to those possessed by both foreign top-tier MNCs operating/expressing an interest in Australia and indigenous/Australian top-tier MNCs and in whichever country/region the foreign MNC is domiciled, the variation in the overall level of attractiveness correlates with, and is explained by, the $O$ and/or $L$ factors.

Table 1 uses a facial symbol to reflect similarities/differences in $O$ attributes and illustrates the outcomes from the first two propositions (and is a preview of the approach taken to the non-probability sampling in Stage 1 of the research plan and the resultant planned case studies in Stage 2 of the research plan). That is, by adopting the extreme positions and observing differences in the range of the reported level of overall attractiveness down the four columns of MNCs with dissimilar $O$ attributes in the same home countries (Proposition 1) and in contrast to the range of the reported level of overall attractiveness across each of the three rows/groups of MNCs with similar $O$ attributes but in different home countries (Proposition 2), evidence is generated to indicate the relative importance of $O$ and $L$ factors vis-à-vis a particular sector in the host market. Such that, if a greater range of the reported level of overall attractiveness is observed down the columns than across the rows, then this indicates that the $O$ factor is more important and has more explanatory power than the $L$ factor vis-à-vis the sector concerned in the host market and vice versa. And in terms of helping to reveal the relative importance of $O$ and $L$ factors, it is expected that the relative strength of the correlation/level of statistical significance of the $O$ and/or $L$ factors/dimensions generated from Proposition 3 will be consistent with the outcomes from Propositions 1 and 2, again vis-à-vis the selected sector in the host market.

The research plan has been outlined by Rahman, Bridge, Rowlinson and Kwok (2011) and is depicted in Figure 1. The research plan comprises four steps (sampling; ownership advantages; location advantages; and MNC objectives/FDI) in each of the three stages (secondary data; case studies; and survey) and in terms of four home countries, namely China; Japan; Spain; and US vis-à-vis the infrastructure sector selected (roads, bridges and tunnels) in Australia as the host market.

<table>
<thead>
<tr>
<th>Table 1: Propositions 1 and 2</th>
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<tbody>
<tr>
<td><strong>$O = O$ Attributes</strong></td>
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<tr>
<td><strong>Home countries</strong></td>
</tr>
<tr>
<td><strong>A</strong></td>
</tr>
<tr>
<td>Operating/expressing an interest in host country (Australia) (Group 1)</td>
</tr>
<tr>
<td>Not operating/expressing an interest in host country (Australia) (Group 2)</td>
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<tr>
<td>Not operating/expressing an interest in host country (Australia) (Group 3)</td>
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identified from the website search and some of the contractors from this website search do not appear in 155 contractors listed in ENR and so accounting for this, the eventual sampling frame is up to 188 contractors.

2.2 Non-probability sampling

This section establishes the principles and parameters by which the 16 case study MNCs will be identified and approached to participate in Stage 2. More specifically, Table 2 summarises a non-probability or purposive approach to identifying the case studies.

<table>
<thead>
<tr>
<th>MNCs in Stage 1</th>
<th>Dominant Australian NPS Contractor</th>
<th>MNCs from Home countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;50M AUD Contractor</td>
<td>2 x MNCs expressing an interest in host country (Australia)</td>
<td>Within region</td>
</tr>
<tr>
<td>China</td>
<td>Japan</td>
<td>Spain</td>
</tr>
<tr>
<td>Most</td>
<td>Most</td>
<td>Most</td>
</tr>
<tr>
<td>success'</td>
<td>succes</td>
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<tr>
<td>ul MNC</td>
<td>sful</td>
<td>sful</td>
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Group 1: Not operating/expressing an interest in host country (Australia)

<table>
<thead>
<tr>
<th>MNCs from Home countries</th>
<th>Group 1 Non-probability (purposive) sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNC</td>
<td>MNC</td>
</tr>
<tr>
<td>Group 2: Not operating/expressing an interest in host country (Australia)</td>
<td></td>
</tr>
<tr>
<td>Least</td>
<td>Least</td>
</tr>
<tr>
<td>success'</td>
<td>succes</td>
</tr>
<tr>
<td>ul MNC</td>
<td>sful</td>
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Group 3: Not operating/expressing an interest in host country (Australia)
In order to allow the effect of variations in location advantages on the overall attractiveness of the Australian market to be most effectively measured (looking across the rows in the Table 2), two of the home countries are selected from Australia’s region (China and Japan), whilst the other two home countries are from outside Australia’s region (Spain and US). The pair of countries within Australia’s region and the pair of countries outside of Australia’s region are selected as having contrasting construction industries and which are likely to create home-host induced differences arising from cultural; administrative; geographic and economic distances. These differences generate investment and set-up costs/risk and which is one of the two dimensions in the L factor. The other factor concerns perceptions of normal return (once the MNC is at full operating effectiveness/efficiency and beyond the set-up costs) available in the sector in Australia and which all contractors face - in terms of pipeline and the extent market structure/level of competitiveness in the sector.

### 2.3 Probability sampling

In order generalise beyond the case studies, a survey/census is planned to be conducted and issued to all the 155 (and possibly up to 188) MNCs in the sector from ENR’s listing of the world’s top MNCs but excluding case studied MNCs and MNCs that are majority owned Australian-based contractors in ENR (as the dependent variable concerns FDI). The MNCs in the survey will be questioned to determine the effect of ownership advantages (with respect to the sector) and the effect of location advantages (induced between the home countries represented by each of the 155 to 188 MNCs in the survey) on the perceived overall attractiveness of the Australian public sector major infrastructure market.

### 3. STEP 2 – OWNERSHIP ADVANTAGES IN STAGE 1

In the context of this research, an ownership/O advantage is an attribute/resource that gives an MNC a competitive advantage and promotes the MNC in terms of successfully bidding for a new project and is a resource that is not possessed by all competitors in the roads, bridges and tunnels sector in the Australian market. In this first stage, concerning public domain/external data, keywords/phrases – as a proxy of firm specific O advantages, will be identified from ENR and from each of the websites and annual reports of the contractors in the Australian NPS as well as from each of the ENR MNCs in the four home countries and which fall in one of the 6 bands mentioned in Section 2.2. In order to identify O advantages from the list of keywords/phrases and first common resources across all NPS contractors and MNCs are extracted. Although it can be inferred that these common resources are essential and, using the language of the Resource-Based Theory (RBT), are therefore valuable resources, there are not by definition rare and costly to imitate in so far as all the contractors possess these resources that do not confer any one or more of the contractors concerned a competitive advantage. The remaining resources are then ranked in order of their rarity (the least number of MNCs possessing the resource concerned) and by definition this ranking also reveals a ranking of resources that are costly to imitate. Again, the terms rarity and costly to imitate are deployed from RBT. The structural profile of the contractors associated with the ranked rare resources will then be noted. For example, in terms of the association of the size of the contractor and home (majority ownership) location of the country with the ranked rare resources. This step in Stage 1, will create an initial sketch of the map of ownership advantages (denoted by the symbol ©). That is, any MNC contemplating bidding for in the roads, bridges sector in Australia can expect to survive in this market provided it possesses these rare resources that do not confer any one or more of the contractors concerned a competitive advantage. The remaining resources are then ranked in order of their rarity (the least number of MNCs possessing the resource concerned) and by definition this ranking also reveals a ranking of resources that are costly to imitate. Again, the terms rarity and costly to imitate are deployed from RBT. The structural profile of the contractors associated with the ranked rare resources will then be noted. For example, in terms of the association of the size of the contractor and home (majority ownership) location of the country with the ranked rare resources.

Having assessed firm specific O advantages, an analysis is conducted of the broader environment surrounding the road, bridges and tunnels sector in each of the four home countries, or the home related O advantages and which is designed to corroborate and give a background explanation to the association between MNCs from each of the four home locations and the ranked firm specific rare resources. Here, Porter’s (1990) diamond model is to be used and in doing so, factors conditions; demand conditions; related and supporting industries; and strategy, structure and rivalry and considered with respect the road, bridges and tunnel sector in each of the four home locations in this research.
4. STEP 3 – LOCATION ADVANTAGES IN STAGE 1

In this step, secondary data in the public domain in relation to the roads, bridges and tunnels sector is generated to analyse the two location ($L$) factor dimensions concerning return and risk and this factor’s contribution to the host/Australia industry overall attractiveness (Seymour 1987). The expected return envisaged by the $L$ factor’s concerns normal profit/expected industry returns given level of extant competition and excluding set-up costs. This dimension will be surfaced by Porter’s (1985) five forces model analysis of the extant industry/sector in Australia and which focuses on internal rivalry; entry; substitutes and complements; supplier power; and buyer power in order to assess the level of competitive in the sector and its attractive in terms of potential profitability (excluding country specific investment set-up costs).

Country specific investment set-up costs are the focus of the risk dimensions in the $L$ factor and arise out of home-host induced risks. Rugman and Verbeke (2005) explain that Transaction Cost Economics (TCE) logic and variables (asset specificity; uncertainty; and frequency) can be used to reflect the influence of country specific investments. Here, asset specificity can be measured in terms of the cultural; administrative; geographic; and economic (CAGIE) differences created between each of the home locations and the host location/Australia. Hofstede’s (2001) five dimensions and formula is used to measure cultural distance between Australia and each of the home locations and this has been computed as follows: China at 4.66; Japan at 2.72; Spain at 1.62; and US at 0.02. This data helped informed the approach noted in Section 2.2 in terms of selecting the pair of countries within Australia’s region and the pair of countries outside of Australia’s region as having contrasting construction industries and which are likely to create home-host induced differences within Australia’s region and outside Australia’s region. Business Monitor International (BMI, 2011) is used to assess administrative risk between Australia and the four home countries in this research and with particular respect to legal/regulatory risks and political risk. With regard to geographic distances account will be made of relative communication technology between Australia and the four countries in mitigating issues and cost associated with physical distance. On the economic differences and as part of the measurement of asset specificity, again, BMI (2011) scores concerning economic/financial risk will be used, along with Euromoney country risk (ECR, 2011) report and other macroeconomic indicators including GDP. I order to pick-up TCE’s uncertainty dimension towards capturing country specific investment, once again BMI (2011) is used and this time the Business Environment Rating scores. Finally, with regard to TCE’s frequency dimension, an assessment will be made of the relative difference between the nature and size of the roads, bridges and tunnels sector in each of the home countries versus Australia and including differences in total revenue; average size of project; and population of affected perceptions amongst MNCs of the scope to recover and justify country specific investments.

5. STEP 4 – MNC OBJECTIVES AND FDI IN STAGE 1

Rahman, Bridge, Rowlinson and Kwok (2011) explain that in this research, the propositions designed to address a weakness arising in Dunning’s principal hypothesis and described in the Section 1, only hold for two of three stereotypical types of firm envisaged by Dunning. That is, market seeking firms and efficiency seeking firms. Thus, in this final step in Stage 1, secondary data in the public domain and from websites and annual reports from all of the MNCs from each of the four home countries in ENR will be used to identify keywords/phrases concerning these firms’ overseas business strategies with respect to the civil infrastructure sector. In particular, connections between these keywords/phrases and the attributes of market seeking firms and efficiency seeking firms will be explored. Any differences between keywords/phrases concerning overseas business strategies between the MNCs in the four home locations in Bands 1 to 6 (noted in Section 2.2) and the MNCs in the four home locations outside of these bands will be highlighted. Here, any peculiar overseas business strategy being developed by MNCs in the four home countries pertaining to Australia would be significant.

In this research, the dependent variable is the MNC’s willingness to bid for Australian public sector major infrastructure and this will be measured in a range of ways across the three stages. In this stage, secondary data is used to surface the dependent variable in terms of expressions of interest and various actual forms of FDI as summarized in the Bands 1 to 6 noted in Section 2.2.

3. CONCLUSIONS

This paper has reported on progress towards an investigation into the determinants of multinational contractors’ willingness to bid for Australian public sector major infrastructure projects and which is designed to give an improved understanding of matters surrounding FDI into the Australian construction sector. More specifically, an approach to reviewing and analysing secondary data, as part of the first stage investigation in this research, has been developed and some illustrations given, vis-à-vis the selected sector (roads, bridges and tunnels) in Australia (as the host location). Planned future progress will see the completion of Stage 1 in this research, before proceeding to the Stage 2 cases studies and subsequently the Stage 3 survey.

Upon completion of Stage 3, it expected that the secondary will have began to speak to the relative importance of the O and L factors and particular if the majority of the contractors in the Australian NPS and MNCs in Bands 1 to 6, possess a high proportion of the ranked rare resources. This would suggest that knowledge and skills required in delivering roads, bridges and tunnels is widely dispersed and that the key determinant(s) in terms of MNCs willingness to bid for Australian public sector infrastructure would more likely be found within the dimensions/elements of the $L$ factor. However, robust conclusions will only be able to be drawn from having completed the planned future research that includes a focus on generating primary and secondary (private) data from the Stage 2 case studies and the Stage 3 global survey of MNCs Previsouly, Rahman, Bridge, Rowlinson and Kwok (2011) have outlined nature and extent of data from the Stage 2 case studies and which comprise multiple sources of evidence generated from a structured questionnaire, interviews and private internal documents in terms of variables from the RBT to indicate the MNC’s sources of competitive advantage and its $O$ advantages vis-à-vis the selected sector in Australia. To help operationalise the RBT variables, as well as both the return and risk dimensions of the L advantages, empirical studies by Pheng and Hongbin (2006) and Cuervo and Pheng (2003 a and b) are adapted. Moreover, a semantic differential scale is used to capture MNCs’ perceptions of their competitive advantage ($O$ advantages); the return and risk ($L$ advantages). A categorical scale comprising the three sets/ranges of attributes pertaining to business strategy; control; commitment and entry mode (based on Anderson and Gatignon 1996 and Chen and Messner 2009) is used
to assign each MNC to one of the three stereotypical firm objective/motivation types. And finally in this Stage 2, a semantic differential scale is used to measure the overall attractiveness of the Australian market in the selected sector. In Stage 3, a structured questionnaire survey will be developed that distills and replicates the approach in Stage 2 and is administered to all MNCs in the sample frame established by the end of Stage 1. The aim of the survey is to go beyond analytical generalisation used in Stage 2 case study approach and to develop statistical generalisation and increase the validity and strength of the overall findings. Across the three stages of the research, a number of theoretical contributions are expected including extending the scope of Dunning’s eclectic framework for the first time to the issue of in-bound FDI to Australia and in the context of MNC, as well as the development of Dunning’s principal hypothesis as reflected by the propositions in this paper. More specifically, these propositions will reveal for the first time the relative importance of the O and L independent variables with respect to a particular sector and host location, and which is progress that Seymour (1987) indicated would be very valuable and difficult to achieve. And in total, this answers Seymour’s call to seek to significantly advance the OLI framework and increase our understanding of the FDI decision. The research will also contribute to method. To the authors’ knowledge, this will be the first operationalisation of TCE and RBT in this context. Furthermore, the research will yield some very important practical contributions including a global map of the relative attractiveness of the Australian market and, within this map, indications of the relative competitiveness and productivity of indigenous contractors, identification of location factors that can be influenced by government and the surfacing of any misconceptions of the Australian market. A key practical outcome from Stage 2 would be to indentify a MNC not operating in Australia with similar/superior O advantages and the same firm objective/motivation as one of the MNCs from the same home location but which does operate in Australia. In this case, a different risk and return profile pertaining to L advantages is expected to be creating differences in the perceived overall attractiveness of the Australian market and it will be very useful from both government and contractors’ perspectives, to explore these differences and to see whether any misconceptions exist on the part of either or both of the MNCs concerned.

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References


