SPEED OF MULTINATIONAL EXPANSION: INTEGRATED ANALYSIS OF ANTECEDENTS AND OUTCOMES

Thesis submitted for the degree of Doctor of Philosophy

by

Nattacia Dabescki

Business School – College of Business, Arts and Social Sciences

Brunel University London

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ABSTRACT

Thematically, this doctoral thesis concentrates on the multi-dimensional phenomenon of speed of multinational expansion of firms. The empirical endeavours focus on identifying its determinants and interpreting its outcomes, as reflected in the corporate performance of multinational enterprises (MNEs). More importantly, the boundary conditions of both of these relationships have been tested by considering firm-level moderating effects.

All of the findings have been interpreted through a combination of established theoretical perspectives for explaining activities of multinational enterprises: the internalisation theory, the resource based view and the organisational learning perspective. The discourse in this thesis is organised around three research questions and fifteen testable hypotheses designed to address them. Predictions presented in the hypotheses are assessed using two types of statistical models on an original panel data collected for a heterogeneous sample of UK multinationals. The empirical outputs from this study point to conclusions that intangible assets, in conjunction with context-specific and mode-specific international experience support each of the three measured facets of MNEs' multinational speed, both individually and jointly. The same set of determining factors positively moderate the direct effects of multinational expansion speed on corporate performance. Further evidence suggests that the direct association between the core constructs is also contingent upon location strategies. Having their overseas assets dispersed in developed host economies represents a more favourable strategic choice for the British multinational enterprises in our sample.

On the basis of the insights derived from the empirical efforts in this thesis we generated several contributions for the international business field, which are pertinent to the research on speed of multinational expansion. The key implication is that we have explicitly considered the multidimensional nature of the construct of speed. This study also enriches the long-standing debate about the relationship between multinational diversification and firm performance, as it augmented the established framework with a temporally dynamic perspective.

DECLARATION OF ORIGINALITY

I hereby declare that this thesis contains no material that has been previously submitted, in whole or in part, in support of an application for another degree, or qualification, to any other university, or institute of learning. I further declare that all ideas, information and conclusions reported in this thesis are entirely my effort, except where otherwise acknowledged.

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LIST OF ABBREVIATIONS

BG	Born Global (firms)
DFI	Degree of Foreign Involvement
DOI	Degree of Internationalisation
DOM	Degree of Multinationality
EIF	Entreprenurial Internationalised Firms
EU	European Union
FATA	Foreign Assets to Total Assets (ratio)
FDI	Foreign Direct Investment
FE	Fixed Effects (estimation method)
FGLS	Feasible Generalised Least Squares
FRTR	Foreign Revenues to Total Revenues (ratio)
FSA	Firm-Specific Asset
FSTS	Foreign Sales to Total Sales (ratio)
GDP	Gross Domestic Product
H	Hypothesis
HQ	Headquarters
IB	International Business
IE	International Entrepreneurship
IFRS	International Financial Reporting Standards
IM	International Management
IS	International Strategy
INV	International New Ventures
JV	Joint Venture
LAN	Leaning Advantages of Newness
ln	Natural Logarithm
M	Model
M&A	Mergers and Acquisitions
MNC	Multinational Company
mMNE	Micro Multinational Enterprise
MNE	Mutinational Enterprise
M-P	Multinationality and Performance (relationship)
N	Number (of observations)
N/A	Not Applicable
NACE	Nomenclature of Economic Activities
OLS	Ordinary Least Squares
ONS	Office for National Statistics
OSTS	Overseas Subsidiaries to Total Subsidiaries (ratio)
PCA	Principal Component Analysis
RE	Random Effects (estimation model)
R&D	Research and Development
RBV	Resource-Based View
ROE	Return on Equity
ROS	Return on Sales
ROSF	Return on Shareholder Funds

ROTA	Return on Total Assets
RQ	Research Question
SE	Standard Errors
SME	Small and Medium Enterprise
SM-P	Speed of Multinationality and Performance
TCD	Time Compression Diseconomies
TCT	Transaction Cost Theory
UK	The United Kingdom
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
VIF	Variance Inflation Factor
VRIO	Value, Rareness, Inimitability, Organisation
WOS	Wholly Owned Subsidiary
WTO	World Trade Organisation
WW2	The Second World War

CONTENTS

1. INTRODUCTION

1.1 Outline of the Research

This chapter provides an overview of this doctoral thesis. The main aim of the research herein was to contribute to the current body of knowledge in the field of international business (IB), by investigating the phenomenon of firm-level multinational expansion speed in the capacity of both an outcome and predictor. Our interest was directed towards outward internationalisation, which is the most commonly observed and explored theme in the IB body of literature (Welch & Welch, 2009).

We have operationalised the key concept of speed as a multi-dimensional construct, which makes a specific conceptual and methodological contribution to the topic. Taking into account its complex nature, we suggest that multinational speed warrants a multidimensional elaboration of both its antecedents and performance outcomes. In the first part of the analysis, we have examined whether the firm heterogeneity based on intangible resources affects its pace of international diversification via FDI mode of operation. For the second portion of our research we have tested the direct relationship between multinational speed and corporate performance among a sample of British MNEs. In addition, we have introduced some contingent aspects to the investigation.

Considering internationalisation as a continuous process that unfolds over time (Welch & Loustarinen, 1988), we have chosen longitudinal research as an appropriate methodological option. In the ensuing section we will elaborate in more detail about the research problem on which this study is centered, offer an outline of the analytical approach and describe how our research and the thesis are structured.

1.2 Research Problem and Research Questions

The motivation for our doctoral research project has arisen from the acknowledged inconsistency between the importance of the temporal aspects of firm-level multinational expansion and the research efforts to date. Guided by the existing literature, we have conducted in-depth empirical analyses to address this research lacuna. Our inquiry into the topic of speed of multinational expansion, considering both its determinants and consequences, was driven by the fact that currently this research sub-stream, although increasingly popular among the International Business researchers, remains empirically under-investigated, with inadequately conclusive evidence from prior studies (Autio et al., 2000; Jones & Coviello, 2005; Bowen, 2007; Li & Li, 2007; Hilmersson et al., 2017).

Implicitly, time features in most frameworks on organisational research but it generally plays a peripheral role. Having observed this, Ancona et al. (2001, p. 645) expressed an urgency for scholars to sharpen the temporal lens when conducting organisational research and identified several promising avenues where this can be addressed. The main paradigms of internationalisation have explicitly highlighted that they view it as both highly dynamic and time-dependent process (Johanson & Vahlne, 1990; Oviatt & McDougal, 2005). Rather paradoxically however, the empirical efforts have not reflected this throroughly and consistently, as there is still a large body of research approaching it from a static perspective, as Yang & Driffield (2012) have acknowledged in their meta-analytica review of this research stream.

The empirical body of output on the topic of international speed of firm expansion represents a more recent occurrence, and research interest has started to gain traction over the last decade and a half since Vermuelen & Barkema's article (2002). The growing number of studies that have investigated the rate of international expansion, some of them in terms of its drivers (Nadolska & Barkema, 2007; Morgan-Tomas & Jones, 2009; Lin, 2012; Casillas & Moreno-Menéndez, 2014; Mohr & Batsakis, 2014; Schu et al., 2016; Hilmersson et al., 2017) and others with regards its performance consequences (Vermuelen & Barkema, 2002; Wagner, 2004; Chang & Rhee, 2011; Zeng et al., 2013; Chetty et al., 2014; Hilmersson & Johanson, 2016; Hashai et al., 2016), highlights the importance of this dynamic temporal construct for understanding firm-level internationalisation.

Nevertheless, as many of the authors of these studies have remarked, clear insights about the phenomenon are still elusive and merit further empirical endeavours

(Casillas & Acedo, 2013; Chetty et al., 2014; Hashai et al., 2016; García-García et al., 2017). Having in mind that a systematic treatment of this topic is still incipient, it is not beyond comprehension that the empirical outputs fall short of effectively addressing the question or providing consistent and conclusive findings about the relationship between speed of multinational companies' expansion and their performance.

Multinationality has been frequently measured in terms of few different dimensions, such as scale, scope or commercial intensity (Sullivan, 1994; Bowen, 2007; Morgan-Thomas & Jones, 2009). Hence, the rate at which it changes should be multidimensional, too! Further motivation for our research came from the fact that a multi-dimensional elaboration of its temporal aspect, i.e. the speed of internationalisation, can be characterised as patchy in terms of its use in the empirical literature. From conceptual and methodological perspectives such empirical application has already been justified (Casillas & Acedo, 2013; Chetty et al., 2014). More recently, Hilmersson et al. (2017, p. 40) have reviewed the literature which have empirically addressed the temporal aspects of firm internationalisation, and observed that use of common terminology (Casillas and Acedo 2013) is still lacking, which has deepened the heterogeneity in conceptualisation and measurement of the constructs.

We have identified four specific gaps in the extant literature which are worthy of additional scholarly attention and some remedial actions:

1) no single study has simoultaneously addressed the phenomenon of multinational expansion speed as an outcome and a predictor;
2) the multidimensionality of this key construct has not been thoroughly addressed in the context of MNE samples;
3) there is little agreement about the non-linear nature of the association between firms' multinational speed and financial performance;
4) moderating effects on the speed of multinationality and performance (SM-P) relationship have not been sufficiently investigated, although contingent effects have been shown to illuminate the reason behind inconsistent results about direct relationships (Chang & Rhee, 2017; García-García et al., 2017; Mohr & Batskais, 2017; Yang et al., 2017).

Building upon insights derived from review of existing theoretical and empirical body of literature, we have formulated three research questions to guide us in addressing the above gaps.

RQ1. What is the impact of firm heterogeneity on the rate of change (i.e. speed) in the degree of various dimensions of multinational expansion among the MNEs?

Our second and third questions are directly related to the last two points (3. and 4.) we listed for the identified gaps:

RQ2. *What are the direct performance outcomes of the different dimensions of multinational expansion speed, i.e. what is the nature of the relationship between speed of multinational expansion and performance (SM-P)?*

RQ3. *How does the shape of the direct SM-P relationship change due to the contingent effects of:*

a. MNE's heterogeneity in resources (FSAs), and
b. their location strategies of asset dispersion?

1.3 Research Aims and Objectives

The primary aim of this research is to enhance our understanding about the speed of overseas expansion of the British multinational firms by way of FDI mode. The realisation that the relationship between MNE's corporate performance and the speed of its multinational expansion as a multidimensional construct remains insufficiently investigated and documented to this point, has prompted us to undertake a closer examination of this phenomenon. There are two important aspects of firm-level multinational expansion this study will examine in detail: the antecedent factors of the pace of that expansion and its impact on the MNE's corporate, i.e. accounting-based performance.

The author contends with prior and more recent observations that the concept of speed (or the rate of change) should take more central consideration in the enquiry about international expansion (Andersen, 1993; George & Jones, 2000; Sharma & Blomstermo, 2003; Bowen, 2007; Li & Li, 2007; Eden, 2009). Therefore, the intention of this research project is to make a contribution towards embedding the temporal perspective of speed in the established topic of the multinationality-performance (M-P) association in the discourse about the MNE activities. The research output should supplement the long tradition in the IB literature which studies both theoretical and empirically the performance outcomes of firm-level activities across borders.

It is anticipated that our approach for the research in this thesis will bring fresh insights into the promising body of literature on speed of international expansion, and particularly its impact on corporate performance. The key objectives of this doctoral thesis are as outlined below:

Objective 1: To critically review the literature on firms' multinational expansion, with a specific accent on several aspects of speed of international diversification, and their performance outcomes.

Objective 2: To identify theoretical and empirical gaps in the extant research which would inform the research agenda of this study.

Objective 3: To develop and evaluate suitable conceptual and analytical frameworks and a number of hypotheses for examining the phenomena of interest, which will be confronted with firm-level empirical data.

Objective 4: To analyse the collected data and apply a purposefully designed empirical, i.e. statistical model to validate the suggested research hypotheses.

Objective 5: To summarise and conclude the research by discussing its findings, theoretical contributions and practical applications, along with recommended pathways for further research.

1.4 Research Framework

One of the purposes we established for this thesis is to examine conceptually and verify empirically the internal conditions which enable rapid multinational expansion. This task is allocated to the first part of our empirical analyses, which specifically addresses the first research question. To achieve that, we sought to identify the determining effects of firm-level resources such as intangible assets and two aspects of mode-specific experience on the speed of expansion via FDI among the MNCs, from both general and contextual perspectives.

The second part of our research enquiry is directed towards investigation of both the direct and the contingent nature of the association between the speed of MNEs' multinational expansion and their financial performance within the context of a particular strategic mode: the foreign direct investment. We focus on both the direct repercussions and a couple of contingencies, to determine whether they lead to better corporate performance as a result of rapid multinational diversification. Taking a longitudinal methodlogical approach, the interpretations of the findings from this empirical model are considering both the risks and advantages (or the costs and benefits) of overseas expansion via FDI and how these vary across time, owing to the rate of change in several multinationality dimensions.

Ancona, Okhuysen & Perlow (2001) have emphasized the necessity to enrcourage more time-based scholarly research. In our analytical model, we deliberately integrated and explicitly articulated the temporal perspective of the phenomenon of internationalisation with regards its antecedents and outcomes. This was afforded by our longitudinal design and was supported by relevant data and dynamic operationalisation of temporal variables for the key constructs which represent MNEs' international activiites.

We developed a set of fifteen testable hypotheses on assumptions embedded in three complementary theoretical perspectives. Namely, our research model synthesised and empirically investigated theoretical predictions offered by the organisational learning perspective, the resource-based view (RBV), as well as the internalisation theory. All three were combined into a single framework to provide an integrated theoretical background for the explanations of the hypothesised relationships, as each of them holds proven explanatory power in the research domain on multinational enterprises.

1.5 Data and Methodology

Similar studies which have investigated the influence of multinational speed on firm performance (Chang & Rhee, 2011; Chetty et al., 2014; García-García et al., 2017), as well as its antecedent factors (Luo et al., 2005; Lin, 2012; Casillas & Moreno-Menéndez, 2014; Mohr & Batsakis, 2014) have followed a quantitative approach. For the empirical analyses in our study we have also adopted quantitative research methodology. Econometric testing was conducted using panel data of twelve consecutive annual periods of observation (2006-2017), which offers several advantages over prior studies that have relied on cross-sectional data. We tested the ideas set out in a collection of fifteen hypotheses on a varied sample comprising ninety publicly-listed UK multinational firms, a third of which constitutes a subset of small and micro-multinational enterprises. The variation comes from several parameters: age, size, industry, as well as the degree of multinationality. For instance, the least diversified MNEs had on average one foreign subsidiary in a single foreign market at a given unit of time, while the most diversified had up to 398 overseas entities in 116 host countries.

The fifteen hypotheses designed to address our three research questions have been tested with two distinct econometric models suitable for cross-sectional time-series data. For the regression analyses corresponding to RQ1 and hypotheses (1a-4), we have applied fixed effects panel data method using Driscoll Kraay robust standard errors, while for the SM-P models matching the second and third questions we used feasible generalised least squares (FGLS) method.

1.6 Research Implications

The main theoretical contributions of our research project are aimed at repositioning the concept of international speed to a more explicit and central role in the investigations of the process of firm internationalisation, as well as augmenting the multinationalisation-performance framework with a dynamic temporal dimension.

The theoretical arguments proposed in this thesis and the results from the empirical analyses make important strides in advancing the literature on speed of multinational expansion, and add dynamic longitudinal and contingent perspectives to the general multinationality-performance framework. The overall findings suggest that the applicability of the multinationality-performance (M-P) models may be extended to explanations of the dynamic SM-P relationship.

The empirical results indicate there is a reasonable rationale for expecting a multi-wave function of certain dimensions in the SM-P relationship. Significant insights are offered by the findings about the moderating effects on the SM-P, which demonstrate their importance for greater comprehension of the nature of this relationship.

In addition to improving the theoretical knowledge about MNEs' equity-based expansion, the research of this doctoral thesis offers some practical benefits. The empirical insights would assist owners and managers of existing MNEs and nascent multinational SMEs in making informed decisions and strategies when engaging in overseas investments, by being mindful that balancing the resources and the pace of their international activities is a prerequisite for firm profitability. Our findings confirm the facilitating role of the knowledge-based firm-specific resources in the process of rapid geographic diversification. That suggests that in conjunction with the strategies for rapid multinational expansion, the MNE managers should endeavour to accelerate their learning and creation of new assets and capabilities for sustained and successful international operations.

1.7 Organisation of the Thesis

The material in this thesis is structured in seven separate, yet inter-related chapters. Brief overview of each of them is provided below.

The current chapter (**chapter 1**) provides an introduction and an outline of the research presented in this doctoral thesis. **Chapter 2** proceeds with elaboration on the theoretical background of key themes, concepts and relationships pertaining to our research. Discussion and critiques of apposite theoretical and empirical studies in the existing literature are also provided in this chapter, before the research gaps that warrant further attention are identified and justified.

Following an exposition of the multi-theoretical conceptual framework which is applied in the empirical investigations, **chapter 3** presents details about how we have developed and formulated our testable hypotheses by synthesising prior findings.

Chapter 4 is dedicated to the methodological approaches and procedures followed in the thesis, such as the research design, sampling strategy and data collection. It also describes the firm sample, elaborates on the operationalisation of the variables used, and depicts the methods applied in the empirical testing and analysis.

The **fifth chapter** accounts for the first part of the empirical project, which is designed to address the first research question. Details about the empirical model, the variables used and various diagnostic and robustness tests are provided, along with the presentation and interpretation of the main findings. These are structured around each of the six individual hypotheses corresponding to the first research question.

The empirical results of the hypotheses relating to the second and the third research questions are considered in **chapter 6**. Analyses are given about the implications from several facets of the speed of multinational expansion on MNEs' short-term corporate performance. Both direct and contingent effects have been tested, and reports on the resutls have been allocated to separate empirical models. The explanations of each are provided in separate segments of this chapter.

The last chapter (**chapter 7**) comprises several sections in which we provide overall conclusions about this thesis, along with its research contributions. We also acknowledge limitations present in our study, and offer an assortment of suggestions for continuing research. Several fruitful avenues for extension of the research are suggested to validate the results found in the extant study. The portion of the findings that were less conclusive is also elaborated in the limitations section. Before we wrap up this thesis, we provide practical suggestions which could serve to guide managerial action and inform policy development.

The following chapters and sections of the thesis match the objectives presented in section 1.3 above: our second chapter directly address the first objective, particularly in the sections 2.3 – 2.7. Sections 2.7.3 and 2.8 of the same chapter fulfil the second objective. The content of chapters three and four corresponds to the third objective of this research. The fourth objective is covered in the chapters four, five and six, while the fifth objective is achieved in the seventh and the last chapter of this thesis.

2. BACKGROUND TO THE RESEARCH

2.1 The Evolving International Business Environment

Visible changes have been taking place in the international business arena over the past few decades, stemming from socio-economic, political and cultural forces (Porter, 1986). The dramatic ideological and economic turmoil that has been occurring throughout 1980s and 1990s induced adoption of market-oriented policies in over thirty formerly state-controlled economies (Narula & Dunning, 2001). Coupled with erosion of regulatory barriers for trade and investment, afforded by multilateral WTO agreements, this economic liberalisation resulted in opening up of over eighty developing economies worldwide (UNCTAD, 1997), thus creating considerably easier access to an unparalleled number of international markets for a wide range of economic actors. Reinforced by technological advances in the information technology and transportation, as well as internationalised capital and finance, these global shifts have resulted in new dynamics characterised by greater mobility, inter-connectedness, convergence and integration of production and markets (Sloman et al., 2010).

These changes sweeping the world economy since the 1980s, and have been generically termed as globalisation. A consequence thereof was that new economic realities have emerged worldwide with a noticeable reconfiguration of international trade and investment flows, both at macro and micro-economic levels (Porter, 1986). In the modern context of business operations where geographic boundaries are rendered less important, firms as becoming increasingly involved in international activities and transactions. Due to the global interdependence of markets, even domestically focused firms are by default involved in inward flows of international activities. Strategy scholars have also observed that over the last few decades the rising levels of international competition have motivated firms to pursue international market opportunities with increasing scale and scope of involvement, in search for sources for competitive advantage (Porter, 2011).

The escalation of competition in the global marketplace over the recent decades and the other factors mentioned above have manifested in an elevated degree of international involvement of companies from various size, age, industries, and countries of origin. Going across national borders to proactively engage in foreign markets has become an increasingly important and prevalent strategic option for firms. With the rising levels of international trade and investment flows, and the shifting patterns of international activities, the degree and composition of the competition has also transformed. This is most evident in the participation of young and small firms in the international business setting (Oviatt & McDougal, 1994; Knight & Cavusgil, 2005), as well as firms from the developing economies (Contractor et al., 2007). For both categories there has been a visible upturn over the past three decades.

The widened globalisation with augmented levels of liberated international flow of activities has also led to greater market homogenization worldwide. As some of the traditionally less developed economies have been fast developing and catching-up in terms of industrialisation levels, the technology and productivity gap between them and the developed countries category has been closing, while the distance within the category widening. The benefits of foreign direct investement have become increasingly available to MNEs from developing and emerging economies that target developed markets for resource-seeking FDI (Yuan et al., 2016). This rising trend has benefited the newly industrialised economies by way of attracting substantial amounts of foreign investment by MNEs from both developing and developed countries (Yuan et al., 2016). Multinational firms from developing countries have been wooed to enter the developing world markets, not only for their cheap labour and material resources, but progressively more for their growing consumer demand.

Consequently, these shifting internationalisation strategies have influenced the structure of the competitors and narrowed the gap among the categories of multinational firms on the basis of country of origin. This is reflected in the aggregated internationalisation trends of the top 100 MNEs, which show that enterprises from developing and emerging economies now participate with increasing volumes of multinational investments worldwide, which might soon match those of the multinationals from the developed countries (UNCTAD, 2017, p. 27).

In parallel with the observed trends for increased inter-dependence and the resultant accelerated dynamism in the international busness landscape, there are competing views about the real state of the international business environment. One such counter-argument to the view about pervasiveness of the global trade and investment flows has been put forward by Rugman & Verbeke (2004). Their proposition states that currently globalisation is poorly grasped and an overstated phenomenon, since most of the MNEs have their overseas sales distributed within their home region of the Triad (of North America, Europe and Asia). Semi-globalisation is a more authenthic depiction of the world of intenational business activities. The costs associated with the complexities of operating in more distant markets instigate the liability of foreignness (Zaheer, 1995) that firms unavoidably encounter by having entry and presence there, and naturally the inter-regional liabilities of foreignness would have higher penalties for growh and profit maximisation.

To an extent, this argument is in harmony with the logic of the incremental model of internationalisation in response to the concept of psychic distance ‘defined as factors that make it difficult to understand foreign environments’ (Johanson & Vahlne, 2009, p. 1412). Although the latter is adhering to the learning and experience perspectives rather than logistical considerations, the commonality lies in the strategy of choosing new markets based on some level of proximilty or familiarity to overcome the liabilities of foreignness when expanding overseas.

Some supporting evidence about this *regionalisation thesis* comes from the literature about the speed of multinationality and performance association (Mohr et al., 2014; Mohr & Batsakis, 2014), suggesting that less internationally experienced firms that chose to expand rapidly can curb negative performance if they primarily deploy their FSAs within the host countries of their home region. Related to this argument, decades prior Grant has suggested that due the geographical proximity, UK MNEs which invest in other European countries find it easier to integrate these international subsidiaries compared to those located in other regons (Grant, 1987, p. 82). When multinationals operate in countries clustered physically close to each other they should expect lower costs of coordination and management control. Perhaps for that reason Vermuelen & Barkema (2002) found that the MNEs in their Dutch sample made 67% of the foreign investments within the EU during an observation period of twenty-six years.

In favour of this regional strategy argument the latest UNCTAD report reveals that judging by the level and origin of M&A deals, two thirds of the transactions in the European countries come from investments from MNEs headquartered in other countries within the region (UNCTAD, 2017, p. 73). However, this must be viewed as relative to the context of the modern world, since this scale of regionality viewed from a historical perspective is much different from the regional character of businesses and industries observed in the 1880s, for instance (Porter, 1986).

2.2 Outward Internationalisation: Process, Patterns and Dimensions

According to one definition, internationalisation is ‘a process through which a firm increases its level of involvement in foreign markets over time’ (Welch & Luostarinen, 1988, p. 36); however, ‘once a company has embarked on the process, there is no inevitability about its continuance’ (ibid., p. 37). This view implicitly assumes outwardly directed cross-border activities, but does not guarantee their persistence, i.e. sustained international status of the firm over time. The time continuum in which the international journey unfolds is certainly progressing in a single direction, as the consensus requires (Ancona et al., 2001). Nevertheless, the business activities can take the firm’s international profile in either direction in terms of degree of involvement, as companies take strategic and operational steps towards international market expansion or/and penetration with simultaneous foreign divestments, or even de-internationalisation in some cases. At times, under the right circumstances, reverting back to a domestic market focus can be a recommended strategy for some international firms in order to minimise losses and boost back profitability (Welch & Welch, 2009).

Under the contemporary market conditions, outward internationalisation has become a prevalent and even necessary choice of growth strategy among firms of any size and age, and has major implications for their performance and survival – particularly for smaller and younger firms. One of the main reasons that firms choose to diversify in different geographic markets is to satisfy their growth objectives by seeking demand for their products and services across national borders. Firms embrace internationalisation as a growth strategy and means of spreading and minimising risk in multiple markets, or to gain and sustain competitive advantage (Geringer et al., 1989). MNEs derive other significant advantages of international diversification by exposure to a variety of overseas contexts, which enable upgrade of their existing and development of new capabilities. These opportunities can be leveraged as competitive advantages over local incumbents in further multinational expansion (Zahra et al., 2000).

What is now considered as a traditional perspective of the internationalisation process emerged from empirical observations of what was happening in the world of international business during the 1960s & 1970s of the last century, and it assumed a stepwise and linear trajectory for businesses venturing and operating abroad. It is anchored in the theoretical assumptions of the resource based view and the organisational behaviour perspectives (Johanson & Vahlne, 1977). The proponents of this view assumed that internationalisation happens gradually and in a set sequence, both in terms of modes of operation - from low to higher levels of commitment, and spatial distribution of activities and resources - from psychically and often geographically closer to more distant countries. They also consider the internationalisation process as a path-dependent phenomenon involving either gradual or rapid knowledge accumulation and resource development and deployment of the firm's activities (Coviello & McAuley, 1999). Knowledge and the related concepts of learning and experience hold principal explanatory positions both theoretical perspectives on internationalisation, i.e. the process theory (Autio et al., 2000; Johanson & Vahlne, 1977, 1990) and the international entrepreneurship (Zahra, Ireland, & Hitt, 2000; Oviatt & McDougall, 2005).

Organisational learning as a dynamic 'process of assimilating new knowledge into the organization's knowledge base' (Autio et al., p. 911) significantly impacts firm's internationalisation in general, and its speed in particular (Prashantham & Young, 2009). The absorptive capacity is of considerable relevance in the process of organisational learning from business operations, and particularly in diverse international contexts Sapienza et al. (2006). It represents a dynamic capability which is developed incrementally over time, being shaped by prior efforts of the organization or firm to absorb from learning and experience, and accumulate new knowledge (Cohen & Levinthal, 1990). This path dependent capability cumulatively facilitates rapid learning in firms, as it enables them to acquire, assimilate, transform and exploit new knowledge, and as such, it embodies a vital mechanism for development of sustained competitive advantage (Zahra & George, 2002).

Due to increased levels of market homogenization and market harmonisation (Oviatt and McDougall (1994) we can witness that for firms in the current millennium there are possibilities like never before to enjoy the advantages of high speed international expansion, and many do so soon after their inception. The entrepreneurship-related aspects of internationalisation have been represented by the international entrepreneurship perspective, which has emerged around the turn of the century. Developed as a counterpoint to the received wisdom of the established internationalisation theories, it has guided understanding of both scholars and practitioners about 'the aspirations and needs of SMEs' (Wright et al., 2007, p. 1015), and by extension the millennial MNEs, i.e. those established since the 1990s and currently operating via FDI.

Both gradual and rapid patterns of international expansion have their strengths and weaknesses, depending on the specific context (i.e. industry characteristics) and the resources and capabilities inherent to the firm. Empirical evidence has shown that under certain circumstances, the rapid international expansion (by FDI) seems to be a fitting approach (Chang & Rhee, 2011). When the firm operates in industries with high index of globalisation and competitive pressures, the time is a critical factor and the gradual approach is not a viable strategy as it brings competitive risks, rather than benefits of learning from experience. To reduce the disadvantage and lead to higher performance, the accelerated international entry (Mathews & Zander, 2007) and subsequent expansion is recommended option under such external conditions (Tan & Mathews, 2015). The inherent advantages such approach brings outweigh the risk and that reflects on firm's performance. Yet, another study found evidence that efficiency seekers, i.e. firms that have the cost motive to invest abroad, pursue

FDI mode faster (Pedersen & Shaver, 2011). Chang & Rhee (2011) recommend the rapid FDI expansion to late internationalisers from emerging markets as a competitive strategy, since it could help them catch up.

It is important to note that each of the above discussed theoretical perspectives (the gradual and the accelerated internationalisation) was formed in different empirical contexts, with specific geographical, industrial and temporal settings. The incremental, process model was based on Swedish cases of manufacturing firms back in the 1970s, whereas the model of early and rapid internationalisation originated from late 1980s' studies on knowledge-intensive US and Australian service firms, respectively. The trend of such accelerated internationalisation, more frequently observed since, has been happening in parallel with the increased speed and scope of the globalisation and its driving forces: liberalisation of trade and investment, technological advances, as well as improved efficiency of international communication and transportation, all of which led to increasingly homogenised markets worldwide, international mobility of resources (especially human capital) and availability of international financing opportunities.

The Uppsala model has been documented to accurately describe the process of international entry and expansion for certain firms and industries in the period of 1970s and 1980s. However, with the changing international business and political environment that followed later, coupled with other enhancements in the modern world, its validity got weaker. Beginning from the early 1990s, this theory was no longer well-suited to successfully explain the phenomenon of the international new ventures and born global firms (early-internationalising firms). As a compensatory reaction to this anomaly, a new paradigm of international entrepreneurship (IE) research emerged.

On close examination of the fundamental concepts of each, it becomes apparent that there is a place for reconciliation between these distinct and seemingly contrary theoretical viewpoints (Autio, 2005). Despite some controversies between these two currently dominant views on internationalisation, particularly when it comes to the most advantageous timing of the first international entry of the firm, as well as the speed and pace of subsequent international steps, some scholars try to reconcile the two viewpoints (Autio, 2005; Prashantham, 2005). They suggest that the accelerated model can be regarded as an upgrade and extension of the traditional paradigm of gradual internationalisation, as they argue that the challenge that BG/INV theory poses to the process theory of internationalisation (or PTI) actually ‘provides an important, self-sufficient complement’ (Autio, 2005, p. 10). The principal focus of the former is on ‘how early and rapid internationalisation of new ventures is possible’, while the latter focuses on the actual process after it has commenced.

Another attempt for bridging, or some level of integration between both paradigms was made by Prashantham (2005), who drew upon the knowledge-based paradigm of the strategic management to combine them into a novel eclectic approach with the social capital theory. Although to a certain extent complementary, they are still regarded as divergent perspectives, embedded in different empirical and theoretical traditions. The reality, anyway is, that the contemporary research on internationalisation of firms is being carried out in a multidisciplinary context; hence researchers have applied diverse approaches, often under integrated frameworks.

Scholars have traditionally contended that despite the smaller resource base of SMEs compared to larger firms, these may nevertheless ‘possess the appropriate resources to be involved in international activities’ (Calof, 1994, p. 384). The process models have failed to properly factor in the aspirations of entrepreneurs and the resource needs of smaller and newer firms (Westhead et al., 2001). This has been compensated by the rapid internationalisation paradigm of the BGs / INVs, which has consistently placed emphasis on the individual level factors. The originators of the international entrepreneurship paradigm emphasise the vital role of the individual founders of the entrepreneurial SMEs as key decision-makers, especially during the initial period of the firm’s internationalisation, when their international (even global) vision (Rialp et al., 2005) have significant influence, alongside the initial resource endowment of enterprises.

Viewed through a temporal lens, the different patterns of internationalisation may be interpreted as different international itineraries (Hashai, 2011). The early and fast internationalising firms, for instance, take the shortcut to the international marketplace. Alternatively, it could be that what have been observed as different patterns of internationalisation are simply different phases, i.e. stages of the same journey, but the changed context has shifted their order. Also, some of the traditionally expected stages and levels of commitment have become optional, and even redundant. For instance, phusical presence via FDI mode is not necessary and thus largely absent among i-business firms (Schu et al., 2016).

2.2.1 Key Aspects of Internationalisation

The international business researchers have observed and studied four key aspects, i.e. dimenions of the process of firm internationalisation: mode of operations in foreign markets, the geographical location, product and time (Ruzzier et al., 2006). However, from the standpoint of the process model of internationalisation (Johanson & Vahlne, 1977; 1990), two key dimensions of firms' degree of international involvement have been chiefly considered: mode of operation and market of operation (Figueira-de-Lemos et al. 2011).

As a multidimensional phenomenon internationalisation can manifest as inward and outward activities with various levels of resource commitments, ranging from importing, exporting and licensing, to various degrees of foreign direct investment (FDI). International firms display pluralism in terms of form and extent of foreign activities and may simultaneously apply different strategies or vary the type of international activities over time (Coviello & McAuley, 1999).

For firms considering outward international activities, regardless of whether it is their first or repeated market entry, the key decisions involve questions about *where*, *how* and *when* to undertake them. Namely, firms need to decide on the cross-border locations (foreign countries / markets) they will direct their activities towards, the institutional form of those activities (modes of entry and operation), as well as the timing of both. Equally important to consider is the magnitude and the complexity stemming from the diversity of the aforementioned activities in terms of *extent* and *scope* of internationalisation, which in conjunction with the temporal aspect of *speed* are considered as basic international dimensions (Zahra & George, 2002).

Scholars from the line of research on international entrepreneurship have also recognised that due to the complex nature of the process of internationalisation, 'any effort in its operationalisation should be multidimensional; it should include measures indicating at least three dimensions: speed, extent and scope.' (Pla-Barber & Escribá-Esteve, 2006, p. 258). We ought to note that they see the construct of speed in a different light, consistent with the focus of their research stream (IE); namely, they speak of speed of international entry, and the type of firms they have under investigation are typically exporters. In their conceptual study, Prashantham and Young (2009), while they made a clear distinction between speed of initial foreign entry and post entry speed.

Nevertheless, for each level of international commitment or rather, mode of foreign operation, the same dimensions (type of markets, number of markets, modes of entry, etc.) and the decisions related to of them remain equally significant.

2.2.2 Modes of Foreign Operation

Choosing a foreign market mode is one of the key strategic decisions for international firms, which has major impact on the subsequent operations and discernible consequences for firm's success (Benito et al., 2009). As discussed in the prior section, the overall decision for firm's involvement in overseas markets represents a composite undertaking, and involves evaluating not only the feasibility and the growth and profit potential of such activity, but also in which geographical location and institutional form (i.e. the mode of foreign operations) it will happen.

The different modes of servicing overseas market(s) may differ in terms of firms' characteristics, such as their skills and resources, level of risk and commitment required, and are motivated by different firm-level strategies. However, this does not mean they are mutually exclusive. It is common that an international firm operates in different markets using different modes, sometimes simoiltaneously servicing the same geographical markets. According to the incremental logic of the traditional internationalisation theory, the equity modes eventually substitute non-equity options in the same market, but it is also possible that they are concurrently used (Johanson & Vahlne, 2009).

Each mode of operation requires different strategy and competencies for successful implementation in international markets (Chen & Hu, 2002; Brouthers & Nakos, 2004). In addition to the different levels of risk, control and commitment, the benefits, challenges and the expected outcomes vary accordingly. There is also evidence about the different performance consequences of each mode, as well as the moderating effect one type of mode can have on another's relationship with performance (Lu & Beamish, 2006, p. 31). The international entry mode decisions and their consequences on firms' performance rank among the more popular research topics that have been investigated by the community of international business (as well as management and marketing) scholars. A case in point is the fact that the IB journals top the list with highest number of articles published on the topic (Canabal & White, 2008, p. 273).

Generally, empirical evidence has provided support for the notion that 'foreign market entry, regardless of mode, significantly increases returns on sales and assets' (Daniels and Brackers, 1989 in Rasheed, 2005). The choice of international strategy, including mode of entry and operation, creates a differential impact on the success (i.e. performance) of international firms (Bloodgood, 2006). Some scholars (Brouthers, 2002; Brouthers & Nakos, 2004), have stressed that best-fit choice of foreign market mode is a prerogative for positive and superior performance outcomes. The strategic choice should be aligned with the company's goals to alleviate environmental risks and uncertainties in the international markets, stemming from economic, political, currency and other types of volatility.

Modes of operation can be considered as vehicles for learning in international markets, and there are idiosyncrasies to the within mode experience. Exporting to a given market requires different kind of skills, knowledge and interactions than running a manufacturing plant in the same location. The latter has the added complexities of dealing more broadly and interacting more closely with the institutional environment of the host country, including the indigenous labour force, than merely having to collaborate with the local distribution and sales agents (Benito et al., 2009).

All modes of foreign operation entail certain level of engagement, experiential learning and adjustments, which come at a cost. The internalisation of foreign markets through FDI, however, involves higher level of resource commitment and requires a different skills set and capabilities. Particularly for the early stage of internationalisation via FDI, the initial ‘big step’ abroad requires modification of firm’s structure in terms of internal processes, systems and managerial mind-set to support international diversification via this mode (Pedersen & Shaver, 2011). Similarly, for entries in new markets, first mover firms incur rather high ‘pioneering costs’ (Mohr et al., 2014). In addition, different performance implications would be associated with each type and sub-type of the foreign operation modes, as well as their interactive configurations (Asmussen et al., 2009).

2.2.2.1 Foreign Direct Investment (FDI)

The general decision to take up international activities is made in a context of selecting from several options of modes of operation. For instance, each MNE has a choice of alternative options, such as licensing and exporting, which belong to the non-equity category. When we are discussing the determinants of FDI, we are in fact referring to the factors that the firm’s decision-makers perceive as conducive to international expansion via equity modes.

The determining factors of FDI can be classed in several categories, but more broadly into two: *internal*, which accounts for firm-level variables measured at both parent and subsidiary level, as well as *external* category, which includes environmental factors at industry, home and host country level. The internal level decisions are influenced by the perceptions the top management team, and these in turn are influenced by their individual and collective international experience or education. The firm-level characteristics which are deemed important for strategic choice of equity mode are resources and capabilities, product characteristics, managerial capability and even change in management. Market structure and the level of competition represent the industry characteristics which could influence FDI decisions, whereas market size and potential, as well as political and institutional stability belong to the country-level aspects. In addition, for the external, macro-level group of variables researchers frequently consider the following: exchange rates, taxes, institutions, trade protection and trade flows (Blonigen, 2005).

The dynamics resulting from an eleveated degree of globalisation have intensified the industry-level rivalry at any geography. That also corresponds to a larger risk for international activities in the target markets, as well as the need for greater control within the modes of operation. It is logical to expect that in more dynamic and competitive industries, firms will tend to get more involved, i.e. be willing to commit more resources abroad. So, the equity mode would become a preferred choice because of its benefits of higher control, which lowers the risk. There is also an evidence for that in Kim & Hwang (1992).

The advantages of becoming a multinational firm by engaging in foreign direct investment offers numerous benefits, such as broadening of market demand and investment opportuntities or spreading risks (Rugman, 1976). Findings also indicate that when firms engage in FDI during times of economic crisis fare better than those that do not, as that may enable them to counteract bad market conditions and cross-subsidise international activities by diversify away from home (Yang & Driffield, 2012).

As a form of organisational arrangement, foreign direct investment (FDI) represents the most advanced mode of international operation in terms of requisite skills and resource commitment (Buckley & Casson, 1981). The investments enable physical presence in a host country for the parent firm, and these represent relatively long-term commitment compared to the contract-based modes of servicing a foreign market, since it is harder to divest and quickly transfer those resources elsewhere. This makes the parent firm with an FDI locally embedded in the host market. A higher level of overseas commitment carries more risks for the entrant firm, but in return, it offers more operational control and protection of assets and profits.

A case-based study on the motives of Austrian firms to enter the US market via FDI, also showed that across all four cases ‘individual factors influenced the FDI decision to a certain extent', i.e. among the SMEs the decision to invest abroad is rather more centralised and thus more instantaneous and 'more subject to different shades of individual preferences than FDI theory suggests.' (Apfethaler; 2000, p. 96). On a study on UK SMEs, Harris and Li (2009) suggest that exporting experience among these firms increases the probability of FDI to the same target market, as either a mode replacement (switch) or mode addition.

Despite the traditional assumptions and the observed bias towards exporting among smaller international firms, there is evidence that their early presence in international markets need not be confined to trading (Oviatt and McDougal, 1995). We have also identified empirical studies that explicitly assume early multinationalisation, for instance Hashai & Almor (2002), Chetty et al. (2014), Hilmersson (2014), Hilmersson & Johanson (2016). A special mention is deserved by the studies on the micromultinationals (mMNEs), which explicitly posit that international SMEs adopt higher commitment modes beyond exporting (Dimitriatos et al., 2003, 2010; Ibeh et al., 2004; Prashantham, 2011). This indicates that scale is no longer a pre-condition for international entry, and modern SMEs seem to have cracked the code of successful multinational presence.

Prior research has shown that even for the SMEs, FDI represents a comparatively more competitive approach for operating in international markets than the non-equity modes of operation (Lu & Beamish, 2001). In terms of implications on performance, evidence from multinational SMEs also shows that when the foreign risk is bigger, those firms that use equity modes of foreign operation have higher growth rates than firms using non-equity (exporting or licensing) modes (Rasheed, 2005). This seems to be due to the fact that the equity modes provide international SMEs more control over foreign resources, and thus the foreign risk.

There is an argument supported by empirical evidence (Yu, 1990) about the link between 'experience effect' of international involvement via other mdoes and FDI occurrence among firms. The former can be general and country-specific international experience of the firm. In this study, the general experience implies any type of mode along any part of the value chain. This is explained by three advantages that the experience brings with an impact on FDI: augmented learning capacity and outcomes, economies of scale, and reduced uncertainty and costs.

Over the six decades of research tradition that constitutes the field of international business, the focus has shifted from macro-level investigations on trade and foreign direct investment (FDI), to the multinational enterprise as a core unit of analysis ‘and the parent’s firm specific advantages (FSAs)’ (Rugman et al., 2011, p. 755). The next section talks about the MNE as a distinct organisational form that is best explained through the foreign direct investment mode.

2.3 The Multinational Enterprise as an Organisational Form

For the past five to six decades (since the 1960s), there has been a substantial scholarship effort in the fields of international business (IB), international management (IM) and international strategy (IS), directed towards understanding the multinational enterprise (MNE), the basis and the purpose for its existence and its manifestations.

The MNEs represent the most researched organisational form, and a central focus of the IB’s research domain. In the period after the Second World War there has been a conspicuous rise and expansion of multinational enterprises, which has sparked a proliferation of studies about the character and behaviour of this type of organisation, beginning from the 1960s onwards (Nguyen & Cosset, 1995). After the beginning of the 1990s, there has been a surge of foreign investment from the MNEs, but overall, their expansion was uneven and interrupted by crises. Two main phases are characteristic of this trend of expansion: between 1993 and 1997, and between 2003 and 2010, after which the internationalisation index has been relatively stable (UNCTAD, 2017).

It has been observed that the modern stage of the IB theory commenced with Stephen Hymer’s doctoral thesis, a seminal work about the FDI theory of monopolistic advantage presented in 1960 (and published post-houmously in 1976), as it ushered a more MNE-centric approach in this field (Hillemann & Gestrin, 2016).

The literature defines a multinational enterprise as ‘a firm engaged in international production and distribution, in at least one foreign nation’ (Rugman, 1985, p. 570). Similar definition has been suggested by Hennart (2007, p.426): ‘MNEs have been defined as firms which own value-adding activities (Dunning, 1993) or which have employees (Hennart 1982, 2001) outside their own country.’ This by default assumes use of foreign direct investment, which is one of the several modes of operating abroad.

Some other definitions about the MNE which date back to the 1970s and 1980s are also firmly established and researchers still adhere to them in sampling strategies and operationalisation of variables. For example, a study by Goerzen & Beamish (2003, p.1294) relies on a definition stated by Stopford and Wells in 1972, which requires that firm’s scope of foreign operations spans at least six host countries before they can be categorised as a multinational enterise. Similarly, Tallman & Li (1996, p. 185) followed a definition by Shaked from 1986, which uses the same scope criteria of six host countries for FDI, but it also includes a minimum of twenty percent of sales abroad for an MNE. However, no consensus about a single definition exists yet.

The modern view of the multinational firm has moved away from that of the traditional monolithic hierarchy towards a differentiated network of foreign subsidiaries, which controls and leverages resources (and stakeholders) in geographically dispersed host environments (Ghoshal & Bartlett, 1990). Thus, the subsidiary has become the key building block of the MNE and each one is characterised by ‘idiosyncratic resource base, strategy, assigned role inside the MNE, and linkages with other subsidiaries.’ (Rugman et al., 2011, p. 764). A network of operations in multiple foreign markets allows MNEs to exploit the advantages residing in different localities, which are not otherwise transferrable (Narula & Dunning, 2001). In addition to the opportunity for achieving volume economies, other benefits of geographic diversification include operational stability and stability of profits due to arbitrage options in various host localitions (Morck & Yeung, 1991).

As noted above, the business competition game today has international, if not global, character. MNEs respond with international expansion strategies to pre-empt their competitors in certain markets, and also to protect their market share in their domestic and the existing foreign markets. Businesses choose to invest abroad to gain market position and increase their market share, sales volumes and profit (Hymer, 1960 /1976; Dunning, 1993; De Blas & Niles Russ, 2013). Gaining foothold in certain foreign countries and geographic regions, as well as access to customs and economic unions is attractive incentive for market seeking international firms.

For companies that have the requisite resources and capabilities, FDI is the most suited international servicing mode with potential for operational efficiencies (i.e. reducing operating costs) and access to unique resources, technologies and management know-how that are unavailable in their domestic markets. The internalisation theory predicts that when there are firm-specific assets (FSAs) embedded in the company's structure, the best approach to transfer and exploit these in overseas markets is via foreign direct investment. Such internalisation of markets would warrant optimal use and protection from depreciation and knowledge dissipation (Buckley, 1990).

Several decades ago it has been observed that research on MNEs is either focused on comparison and contrasting their activities and outcomes with those of non-multinational (i.e. domestic) firms, a tradition which started with Vernon's seminal work from 1971, or it involves a cross-comparison among multinational firms with particular consideration about their degree of foreign involvement (Grant, 1987). The latter interest has since flourished into a vast and still growing body of research (Hennart, 2007; Miller et al., 2016).

It is obvious that MNEs are typically complex organisations, with dispersed operations across multiple locations (in various host countries) and often different business sectors. Consequently, these enterprises are confronted with issues, complexities and challenges that are different from those faced by businesses which operate in a single nation (Caves, 1998). However, companies that are doing business internationally are in a more advantageous position to strategically deploy and leverage their tangible and intangible resources in comparison with their domestic counterparts. At the same time, these potential benefits serve as motivations for entry and expansion into overseas markets. To realise them and ensure positive performance consequences, firms ought to possess certain level of internal resources and capabilities (Kotabe et al., 2002) they can leverage abroad, as well as matching international strategies.

They need to deal with uncertainties and risks, and other challenges that come with doing business in multiple heterogeneous institutional environments. Each MNEs is required to design or adapt its strategy in order to be able to effectively take advantage through their constellation of subsidiaries of both the differences and similarities of their multiple host locations (Meyer et al., 2011). That invariably imposed larger (transaction, managerial and governance /coordination) costs, that under certain conditions may inflict corporate performance ramifications. Therefore, it is expected that the overall advantages accrued through international diversification will be differential, i.e. will vary among firms according to their individual abilities to maximize the gains, while minimizing the costs of multinational expansion (Gomes & Ramaswamy, 1999).

For each internationally diversified firm, the expected performance gains that overseas activities and operations bring, such as economies of scope, scale, location and learning (Hitt et al., 1997, p. 773), spreading risks and reducing revenue fluctuations, while increasing market power (Lu & Beamish, 2004), might be outweighed by the costs of governance of a multi-country complex organisation. The latter are particularly likely to occur if the rise in volume of resources employed for the multinational operations exceeds the managerial capabilities required for the added levels of organisational complexity. There is also the *liability of foreignness* (Zaheer, 1995), which comes with the territory of augmented complexity and risk, which multinational firms encounter when expanding via high-commitment modes into new markets. Having this in mind, the traditional assumption and recommendation of the classical theories of internationalisation about a gradual pattern of foreign expansion is expected to be valid in most cases.

Another trend in the recent years has become acceleration in international paths of all types of firms. Rapid expansion into multiple host countries has become a viable and even necessary option in certain dynamic industries with high levels of global competitiveness (Chang & Rhee, 2011). Typically, the international entrepreneurship sub-stream literature abounds with examples, and the INVs and the BGs are evidence to this phenomenon. However, many late internationals launch international operations in the mature stages after a long period of domestic market focus. This often occurs at an accelerated rate of expansion to compensate for the competitive disadvantages of being late-movers lagging behind already internationalised competitors, and to capture or nullify incumbent MNEs' first-mover advantages (Chang & Rhee, 2011, p. 980). By extension, lower rate of change in the degree of international profile would mean missed opportunities to strengthen market position and exploit their intangible resources, which in the longer term could hamper firm's performance.

The multinational firms have been classified on the basis of their motivations for relocating their production overseas, i.e. to pursue FDI strategies into: *market seeking* (or import substituting), which applies especially to labour-intensive manufacturing firms; *resource seeking* (including technologies) or supply oriented, and *efficiency seeking* type of MNE, which opts for rationalised investments (Dunning, 1988, p. 9). Among the often mentioned motivations, i.e. potential benefits of MNEs' multi-country operations are possibilities for risk diversification across markets, and leverage of their market power to gain access to cheaper inputs and wider customer base, as well as ability to control output markets (Kim, Hwang, & Burgers, 1989).

Another type of motivation which has been promoted by MNEs in the services sectors is client following, and it also applies to smaller multinational firms which are part of the distribution chain of larger MNEs (Erramilli & Rao, 1993). However, the rationale behind overseas diversification has changed over time, as MNEs have been gradually shifting their strategic focus from resources and efficiency seeking to strategic asset-seeking FDI (UNCTAD, 2017, p. 28).

The contemporary MNEs' competencies have been changing, as they are becoming more reliant on knowledge-based resources, and this increasingly motivates their overseas investments (Narula & Dunning, 2011). The digital transformation of international production has transformed the industry characteristics, as many manufacturing sectors rely increasingly on service-based activities. This has also created shifts in the motivation and the nature of the FDI. Recent reports on the economic activities of MNEs' overseas affiliates, associates and subsidiaries indicate that the sectoral breakdown of global FDI stock is in favour of services, i.e. about two thirds are concentrated in these industries. However, these statistics also include services-like activities of corporate entities belonging to manufacturing MNEs, which perform back-office functions, research and development, financial management, procurement and logistics, as well as distribution and after-sales services (ibid, p. 22).

MNEs achieve economies of scale and scope by applying their strategic resources across national borders. Through their extensive network of foreign subsidiaries spread over a number of locations, the multinational firms are presented with opportunities for greater returns to their intangible resources. Their internalisation ensures their efficient transfer and governance across locations within the organisation's boundaries, thus preserving their inimitability and rent-yielding capacity.

However, there are limits to these capacities conditional on increased degree and rate of international diversification. The benefits to firm's profitability will persist as long as the scale of multinational expansion is within the scope of firm's resources and capabilities. Otherwise, the organisational and management complexities would escalate, and make it hard for firms to keep in check the rising costs of geographically dispersed governance, which would reduce efficiency as costs outstrip the rewards of further internationalisation.

2.4 Degree of Multinationality

Outward internationalisation is a multi-dimensional phenomenon. The state of its geographic diversification or a degree of multinationality remains a key aspect featuring in all theoretical and empirical frameworks, and particularly in the investigations on the dictum of multinationality-performance relationship. The concept of **multinationality** is closely related to the organisational form of the MNE, since it depicts the extent of operations and business activities that it conducts overseas.

In the IB literature, the terms degree of internationalisation, degree of foreign involvement or DFI (Nguyen & Cosset, 1995), degree of multinationality or simply multinationality, transnationality, as well as international diversification have been used interchangeably. Others have referred to it as MNE's 'foreign footprint (multinationality)' Hennart (2011, p. 136), but also degree of internationalisation or DOI has been commonly used (Sullivan, 1994). Throughout this thesis we may not consistently refer to the phenomenon with a single term, but as our preferred phrase we have choosen *degree of multinationality* as the most fitting to our investigation of FDI expansion.

We use the term multinational in place of international, both to refer to the overseas activities of the multinational enterprises (MNEs) and to distinguish them from other international firms that do not operate via high-commitment mode. So, in our study multinational expansion specifically denotes foreign expansion via equity investments, i.e. foreign direct investments (FDI). In view of this and for the sake of precision, we have deliberately named the third measure / dimension as speed of international commercial intensity and not used the word multinational in the phrase. Its proxy measure used in this study does not reflect the FDI-specific turnover, but collectively reports an MNE's group level foreign sales, which doesn't discriminate the foreign subsidiary (i.e. equity-based) sales from the export sales or licensing fees.

In his review, Sullivan (1994, p. 328) included Raymond Vernon's book 'Sovereignty at bay: The multinational spread of U.S. enterprises', published 1971, as the earliest dated among the empirical works which have treated this topic. Thanks to this work, the degree of multinationality was put on the research agenda, and since then (during the past five decades) it has become one of the central issues of scholarly interest in the IB, as the voluminous output of over 100 empirical articles on the topic testifies (Hennart, 2011, p. 147).

Both conceptually and practically, multinationality is a multi-dimensional construct. Its context domain comprises of three types of attributes, which follow Yair Aharoni's categories catalogued in 1971 according to their functional characteristics: *structural* (what resources are located overseas), *performance* (what occurs overseas) and *attitudinal* (the international orientation of top management) (Sullivan, 1994). The structural DOI measures include ratios such as foreign to total assets, or the overseas subsidiaries relative to the overall number of subsidiaries. As performance types are considered the ratio of foreign to total sales or profit, R&D or marketing intensity; whereas among the attitudinal category are counted international experience of the top management team, or psychic dispersion of international operations (ibid).

The concept of multinationality refers to the extent to which firms operate abroad by investing assets and / or controlling activities, and it is usually assessed along the parameters of ownership, operations and orientation (Annavarjula & Beldona, 2000, p. 49). The majority of definitions on muiltinationality are framed in the context of control, diversity and orientation (ibid.), which correspond to the above described categories of Sullivan: structure, scope, scale and attitude, but are specifically targeted at MNEs, or firms that have foreign direct investment.

The various measures of multinationality represent aspects of the same construct, and by that logic are complementary, yet distinct manifestations of the multinationality spectrum. In acknowledgement of its multi-dimensional nature, Sullivan (1994) recommended and tested a multi-item, index measure, which has been subsequently criticised by other scholars (Ramaswamy et al., 1996) as questionable and unreliable. Their critique hinges upon the argument that aggregating a set of multi-scale indicators could potentially result in different effects, and hence its use over a good single estimator cannot be justified.

When it comes to the defining criteria for international activities of firms, apart from international turnover as a proportion of the overall turmover, the following can be also taken into account: foreign purchasing (inward international activity), as well as cross-border production and investment. Each of these is related to a distinct international mode of operation, i.e. exporting, importing, FDI (Jørgensen, 2014, IMR, p. 443).

The most prevalent measure used to capture the international diversification of firms has been the foreign sales to firm's total sales ratio (FSTS) (Bowen, 2007, p. 115), perhaps due to ther fact that it represents 'the simplest objective basis for assessing the degree of internationalization' (Welch et al., 1988, p. 37). Further explanation is provided in the following statement: 'Foreign sales, which are the easiest, and most likely the initial mode that companies use to internationalize, have been driving the aggregate measure of MNEs' internationalization.' (UNCTAD, 2017, p. 27). Illustrative of this is Sullivan's review (1994, p. 328/9) of twenty-four studies on the subject, published in the period 1971-1990, where every single author used FSTS as a sole (or primary) measure. In the period from the 1990s to date it has remained a dominant measure, although not used exclusively.

This measure has its disadvantages and cannot be applied to represent physical, i.e. equity presence abroad, since the way it is reported by MNEs denotes an overall proportion of foreign sales, without making a distinction to the mode of operation. In other words, foreign sales often are collectively reported at the MNE's group level for all export sales, as well as foreign subsidiary sales. Since this measure reports the proportion of sales or profit the firms generate from customers outside of their home country (Miller et al., 2016), it serves as an indicator for the strategic orientation of the firm towards international markets.

Information about firm's strategic orientation towards foreign markets is also contained in one of the structural dimensions comprising DOI (Sullivan, 1994, p. 331), which is measured the by ratio of MNE's overseas subsidiaries to its total number of subsidiaries (OSTS). In a similar vein, we can gauge the international orientation of companies by another DOI measure: the ratio of foreign assets to total assets (in %), which shows the proportion of their assets that is committed abroad. We have already discussed above the performance-type dimension, foreign to total sales ratio (in %), which reveals how much of the MNEs' commercial sales are derived from overseas markets.

The degree to which firms extend their activities beyond the national borders and diversify their operations geographically, brings a series of potential advantages. Internationally diversified firms can achieve scale, scope, location and learning economies, diversify risk and gain cost advantages of inputs, and thus enhance their competitive advantages and market power (Geringer et al., 1989; Hitt et al., 1997; Lu & Beamish, 2001; Vermeulen & Barkema, 2002). The *scale* (or extent) and the *geographic scope* of multinationality constitute the main dimensions along which MNE's international posture is represented.

2.4.1 Scale of Multinationality

As already mentioned, the ratio of foreign subsidiaries to the total number of firm's subsidiaries provides information about its multinational footprint, and indicates its strategic orientation towards international markets. This measure is a proxy for the scale aspect of MNE's degree of multinationality. Other single measures of this structural aspect of the concept have been used, such as the ratio of foreign to total employees (Kim et al., 1989). However, the downside of these measures is that they do not 'address the breadth or scope of foreign operations, focusing instead on the overall strategic importance of foreign operations to a firm.' (Tallman & Li, 1996, p. 184).

What is characteristic about MNEs is that their assets are dispersed across countries and regions. Some of these companies are of enourmous size and operate at high degrees of international involement. When a multinational company acquires another multi-location or multinational firm, changes in its asset configuration occur more rapidly. Regardless of whether the acquired firm is based within the MNE's home country or abroad, the asset ownership and revenue streams of its entire network of subsidiaries are transferred to the acquiring MNE, which increases its degree of diversification (scale and geographic scope) within a short timeframe.

2.4.2 Geographic Scope of Multinationality

Describing the patterns of international business competition, Michael Porter depicts two main dimensions of international strategy, which according to the configuration of activities are either geographically concentrated or dispersed across host countries, and the need and level of coordination vary accordingly (Porter, 1986, p. 19). The scope dimension of MNE's multinationality reflects the distribution, i.e. dispersion or concentration of its assets. While the structural measures of scale, such as number of total subsidiaries of FSTS may capture the depth of international involvement, they have been criticized as too narrow to take into regard the aspect of breadth or scope, which has significant influence on performance (Thomas & Eden, 2004). In further support to this point, evidence from a sample of firms from the G7 countries, which includes the UK, reveals that large MNEs from these economies have higher level of international reach measured in foreign subsidiaries than international sales (Aggarwal et al., 2011, p. 572).

The count of host markets provides a proxy measure for the scope aspect of multinationality, but does not fully address the diversity. Wide scope, or dispersion of assets implies simultaneous presence of diversity, but it does not distinguish between the markets (Pangarkar, 2008) or specify the nature of the diversity. The general notion is that both the depth and breadth of mode-specific overseas experience act as sources of experiential learning and development of firm-specific advantages, and therefore would have facilitating effect on MNEs' further cross-border expansion.

2.4.3 Commercial Intensity of International Operations

The ratio of foreign to total sales / profits (FSTS) represents the most popular measure to date for the degree of internationalisation or multinationality (Sullivan, 1994; Yang & Driffield, 2012). It was first measured by Stopford in 1985, and based on this ratio, firm have been classified as highly internationalised if the values are larger than 0.44%, while values below that indicate low degree of internationalisation (Riahi-Belkanoui, 1996, p. 371). As already discussed, the ratio of foreign to total sales or profits tops the ranking of most popular measures for degree of internationalisation, i.e. degree of multinationality.

Generally, this measure is associated with the international commercial intensity of the firm (Morgan-Thomas & Jones, 2009; Casillas & Acedo, 2013; Hilmersson & Johanson, 2016), and is has also been used for measuring international performance (Chetty et al., 2014). The intensity aspect of the multinationality parameter indicates the strategic orientation of the MNE towards international markets, as it reveals the proportion of sales or profit the firms generate from customers outside of their home country (Miller et al., 2016). However, researchers cannot always use this measure as a precise proxy for MNEs' physical (equity) presence in foreign markets, since the firms typically report the overall proportion of foreign sales at a group-level, and it is problematic to distinguish the sales (domestic or from exports) generated from the overseas subsidiaries.

2.5 The Temporal Aspects of Multinationality

Probably the first serious attempt in IB scholarship to consider the temporal aspect of multinationality and the repercussions for the firm was the notable work of Buckley & Casson (1981) in which the authors discussed the 'optimal' time when firms should switch from exporting to the more committed mode of FDI. The gradual path and the pace of foreign involvement advocated by the process model of internationalisation are explained against a temporal backdrop (Bilkey & Tesar, 1977; Johanson & Vahlne, 1977; 2009). Similarly, timing of international activities represents an especially pertinent characteristic for a related sub-stream of research - international entrepreneurship, which is intrinsically focusing on the early and rapid international entries of entrepreneurial SMEs. Nothwithstanding the recognition of its significance, the time-bound dimension of the international process has often been omitted from the analytical models of the traditional internationalisation theories (Andersen, 1993; Zahra & George, 2002; Hilmersson et al, 2017).

2.5.1 The Concept of Speed in the IB literature

As one of the key parameters of multinationality alongside scale and scope, speed deservingly occupies a central role in the debate on the validity of the dominant models which explain the phenomenon of overseas diversification (Hilmersson et al., 2017). In the traditional paradigm of internationalisation, the temporal dimension is only implicitly suggested as a backdrop against which the international trajectory unfolds. The fundamental logic of the incremental, process model of international involvement dictates that firms take <u>time</u> to obtain the requisite resources before they are fully capable to commit to overseas markets and weather the challenges that accompany such expansion.

Additionally, the concept of time represents a core defining parameter for the born global firms and the international new ventures as distinct types of enterprises, along with the entire category of entrepreneurial international firms (EIFs) which are characterised by early and rapid commencement of international activities (McDougal & Oviatt, 1994; Knight et al., 2004; Rialp et al., 2005). Despite the relatively divergent emphases on the time-related aspects of international patterns, both of these perspectives implicitly consider the concept of time to have an impact on the process of internationalization (Hilmerson et al, 2017, p. 24). This prompts a conclusion that both of these main streams of research, i.e. the process model and the IE stream, consider internationalisation as a process that occurs and unfolds over time, as the established definition states (Welch & Loustarinen, 1998).

The scholarship of international business (IB) has been criticised for historically neglecting the concept of time as an explicit dimension of internationalisation (George & Jones, 2000; Ancona, Okhuysen & Perlow, 2001; Sharma & Blomstermo, 2003; Eden, 2009). Several authors have acknowledged the gap for investigating the dynamic nature of the internationalisation though a temporal lens and called for a more serious treatment of the role of speed in IB research (Autio et al., 2000; Jones & Coviello, 2005; Bowen, 2007; Li & Li, 2007; Hilmersson et al., 2017).

The international entrepreneurship (IE) perspective offers explanation for alternative models of internationalisation by emphasising the early commencement and rapid expansion of foreign activities among certain type of firms (McDougal & Oviatt, 1994; Knight et al., 2004; Jones & Coviello, 2005). The temporal dimension and the concept of speed have been emphasised as critical factors in understanding the distinctive international behavior of certain type of enterprises, such as the international new ventures (Oviatt & McDougal, 2005) and the born global firms (Knight & Cavusgil, 2004). Their earliness of internationalisation, also termed as *time to internationalisation* or *international precocity (Zucchella et al., 2007*) is considered as a defining trait of their international pattern.

Through that time-based distinction, this relatively new research sub-domain of IB which has repositioned the inherently temporal dimension to the foreground. A variety of studies generated under its auspices during the last couple of decades have propelled the concept of international speed towards reaching a critical mass, and to an extent, compensated for the apparent scarcity of the temporal treatment of firm internationalisation. Consequently, the conceptual and empirical output of those studies has brought currency to the general concept of speed in the research on firm internationalisation.

However, the fascination of the IE scholars with the international entry speed has diverted the research focus from the post-entry expansion speed, and this created a limited interrogation and absence of robust contribution in this domain. The main issue is that these researchers have predominantly conceptualised and measured the speed construct as the *time lag*, i.e. the elapsed time between the date of firm's establishment and the point of its first international entry (Zucchella et al., 2007). As a corollary, the established view of this concept throughout the empirical literature is largely unidimensional and time-based only, which is inadequate for studying the speed of the overall international firm trajectory (Chetty et al., 2014; Li, Qian & Qian, 2015),

In contrast to the above mentioned studies which measure firm's propensity for rapid international entry, there is a group of studies which have expressed a specific interest in the speed of the international diversification that occurs soon or much later after the initial foreign venture. More recently, and particularly during the current decade, there have been significant contributions which have approached and analysed the phenomenon of international speed from a more long-term and multi-dimensional perspective (Chang & Rhee, 2011; Chen & Yeh, 2012; Casillas & Acedo, 2013; Casillas & Moreno-Menéndez, 2014; Chetty et al., 2014; Hilmerson & Johansson, 2016; Mohr & Batsakis, 2017; García-García et al., 2017; Yang et al., 2017). What is common for these studies is that their authors have proposed and used theoretically derived conceptualisation and measurements of speed, embedded in either one or both of the dominant research paradigms on internationalisation. This emergent research has started to yield empirical explanations about accelerated internationalisation, without being limited to the initial or early overseas entries.

Such efforts have been particularly prominent since the seminal study by Vermuelen & Barkema (2002). Oviatt and McDougall (2005) were the first to formally model internationalisation speed from a long-term perspective, by suggesting three distinct aspects which are embedded in the understanding of international entry as an entrepreneurial phenomenon. Although primarily aimed for the IE research audience, it represents a significant contribution to the topic of rapid internationalisation, due to its pioneering effort to conceptualise speed through a multidimensional lens. However, as Prashantham & Young (2009) have observed, this model has failed to make a clear distinction between initial and post-entry speed, mainly because the authors regard internationalisation as an ongoing process rather than a discrete event.

Quite useful contribution was offered by Casillas & Acedo (2012; the online version of their 2013 paper came out) with their long-term and multidimensional conceptualisation of international speed. It encouraged and influenced a more organised approach that yielded several studies applying and testing the concept empirically. Additional studies have ensued in the last few years which followed their recommendations, as well as those by Chetty et al. (2014), heeding the necessity for a long-term view of the international involvement. These have contributed to progress in the IB literature beyond the unidimensional temporal focus on the start of the process (i.e. time to internationalisation), which has dominated the international entrepreneurship scholarship. Among these are a group of empirical studies which have focused on the association between rapid international expansion and firm performance. They followed an underlying assumption that the nature of this relationship is expected to change over time (Yang et al., 2012) as the firms' progress through different stages of their foreign markets expansion, represented by variations in the degree of multinational diversification (Contractor et al., 2003).

However, as a recent assessment and analysis in the study by Hilmersson et al. (2017) concluded, the extant literature on temporal internationalisation 'not only uses different concepts for the same measure but also uses different measures for the same concept.' (p. 24). In contrast, most studies have been consistent in using time-based only measures for the concept of time to internationalisation. It is the lack of consensus among the IB research community with regards the conceptualisation and measurement of the related temporal concept *speed of internationalisation* (i.e. speed of multinational expansion) that represents an enduring issue.

Another drawback which we observed in the extant literature that treats speed of international evolution in firms is the prevalence of unidimensional conceptualisation of this construct. In the cohort of studies investigating post-entry speed, few have employed multiple measures to reflect distinct dimensions of the construct (Jung & Bansal, 2009; Chetty et al., 2014; Hilmersson & Johanson, 2016), but such examples are still sparse among the empirical efforts. This may be a legacy of the time lag literature, which almost exclusively considers elapsed time to determine the earliness of rapidity of the first foreign entry. It is important to emphasise that the concept speed of multinational expansion, which covers the long-term activities of the post-entry international journey needs to be distinguished from that of international precocity. When it comes to speed of post-entry international activities, many have acknowledged that it is multi-dimensional in nature as is the process of internationalisation itself (Zucchella, Palamara, and Denicolai, 2007; Casillas and Acedo, 2013; Hilmersson et al, 2017). Therefore, its conceptualisation should extend beyond the elapsed time.

Several research papers treat speed of internationalisation as a dependent variable, i.e. they examine the determinants of variations in the levels of internationalisation speed among both MNEs and SMEs: Pedersen & Petersen (1998), Luo et al. (2005), Morgan-Thomas & Jones (2009), Casillas & Moreno-Menéndez (2014), Mohr & Batsakis (2014). A few others focus on speed of expansion of SMEs without specifically sampling INVs/BGs, and assume equity mode of expansion beyond the initial foreign entry (Lin, 2012; Chetty et al., 2014; Himersson et al., 2016).

2.6 Research on the Relationship between Multinationality and Performance (M-P)

Generally, one of the key considerations for firms when they are entering new overseas market is the profitability of such extension of their operations. Certainly, there may be other non-monetary motivations, at least in the immediate term. Unsurprisingly, reviews of the IB literature reveal that performance as an outcome of internationalisation has been a primary research objective for a large volume of studies and it remains one of the most enduring contributions of the field, regardless of the mode of international entry and subsequent expansion (Glaum & Osterle, 2007; Osterle & Wolf, 2011).

Over a decade ago Peng acknowledged that the issue that has traditionally preoccupied the IB scholarly interest and research agenda remains and will continue to be fundamentally significant as the field's *one big question*: 'What determines the international success and failure of firms?' (Peng, 2004, p. 99). This is at the core of the research strand concerned with the multinationality–performance relationship, i.e. how international diversification of multinational firms reflects on their organisational performance (profitability and growth).

The relationship between multinationality and performance among the MNEs is claimed to be the one of the most researched IB topics (Hennart, 2007). The general consequences of multinationality have stimulated an intense debate and a rising research interest, which has accrued substantial empirical output about the survival, growth, profitability and other performance-based outcomes of various types of firms. (Yang & Driffield, 2012; Schwens et al., 2018). From the vast intellectual ground that has been covered on the topic of firm-level internationalisation over the past four and a half decades, the enquiry about the relationship between multinationality and performance (M-P) stands out as the most popular. The quest for the answer to the questions about the nature of the M-P relationship is responsible for a prolific scholarly output and a dedicated research sub-stream in the IB literature. The same topic has also a prominent space in related disciplines of strategic and international management, international marketing, as well as finance and accounting. When it comes to the antecedents of multinationality, however, with several notable exceptions (Hennart, 2007; Tseng et al., 2007; Kirca et al., 2012), they have been less frequently investigated.

High volumes of research output on the M-P link to match the high levels of interest over time have resulted in a range of approaches, sampling criteria, and measurements. Consequently, there is a body of literature that suffers from empirical variability, contradictory findings and a lack of consistent theoretical and operational definition of multinationality (Hennart, 2011). These are mainly attributed to conceptual and methodological reasons, such as flawed conceptualisation and application of unreliable measures of multinationality, idiosyncrasies in the samples and data sets used (Goerzen & Beamish, 2003; Hitt et al., 2006a; Kirca et al., 2012). Regardless of the particular reasons, as a general message which can be drawn from these incongruent findings is that the M-P relationship is quite a complex one, and contingent on multi-level factors.

Combined arguments from the internalisation perspective and the resource based view content that operations spread across multiple overseas locations enable the MNEs to deploy their firm-specific assets and leverage their incumbent competitive advantages through exploiting market imperfections and profit opportunities in different geographies (Buckley & Casson, 2009; Barney, 2001). This offers them cost-efficiency incentives, since it allows the MNEs to spread and re-coup fixed investment costs such as R&D expenditures over a range of geographic and often different product markets, and thus achieve economies of scale and scope.

As an additional benefit for the internationalised firm is the possibility to apply spatial market segmentation and price discrimination. With the expanded geographic reach comes the ability to reconfigure the value chains and arbitrage the variance in the factor input costs residing in the network of host locations (Dunning, 1988). The broader customer base offers additional cost savings over streamlined and shared supplier and distributor networks. All these lead to firm growth and provide benefits that either delay or outweigh the costs arising from the liabilities of foreignness (Zaheer, 1995).

The economies of scope are achieved when MNE's shared resources across geographically dispersed markets contribute to reduction of averge costs.
Other significant advantages of international diversification are considered the opportunities that MNEs gain by exposure to a variety of contexts, which enable upgrade of existing and development of new capabilities, and later these can be leveraged as competitive advantages over local incumbents in further multinational expansion (Zahra et al., 2000).

Organisation and successful coordination of geographically dispersed activities, operations and facilities pose certain challenges on the multinationals' management teams, as the process requires elevated resources and capabilities, such as information-processing capacity and managerial skills. This is due to a rise in the organisational complexities and the information-processing demands of these firms (Nadolska & Barkema, 2007).

Considering the importance of this topic, the question of whether a systematic relationship exists between internationalisation and firm performance is central to the field of international business. Understanding this relationship also represents a core issue among international management practitioners and researchers (Glaum and Oesterle, 2007). There is a common assumption in the literature on MNEs, and the IB field in general, about the intrinsic advantages and corporate performance benefits of firms' overseas expansion. Traditionally, the default assumption of internationalisation has been the expected positive returns and performance gains from the overseas operations, under-estimating the potential negative side of the risk, costs and uncertainly involved (Grant, 1987; Tallman and Li, 1996).

The two key components of the international firm performance are manifested through costs and benefits resulting from activities abroad. The hypothesised relationship between multinationality and performance rests on the balance between these two elements, and thus the recommendation is that the arguments about the M-P should dwell on this premise (Bowen, 2007, p. 115). However, not all studies have taken both into account and have instead focused solely on the cost effects.

On a related note, another scholar has insisted that theoretically there is no traction in the argument which suggests we should expect a generalisable association between MNEs' international diversification and its performance, and in fact 'the net impact of geographic diversification on their profit stability may in fact be negative' (Hennart, 2007, p. 430). They have made an explication for this view through the lenses of the transaction cost and the internalisation perspectives, by stating that 'neither the economies of scale, the flexibility, nor the learning arguments made in the M-P literature make a strong case for a robust positive link between international diversification and performance.' (ibid, p. 441).

We already mentioned that the literature which has examined the M-P linkage was characterised by diversity in methodological approaches, sampling, conceptualisation of the key constructs, and a corollary of that is the incoherent body of empirical findings (Thomas & Eden, 2004; Rugman & Oh, 2011; Yang et al., 2017). Although it has been established that international diversification has an influence on firm performance, the results about the direction and magnitude of that effect has remained inconclusive to date, in spite of the burgeoning empirical research. This stems from an array of non-homogenous outcomes, which vary from linearly positive, negative, to a selection of curve-linear (U, inverted U, J, and horizontal S shapes). The majority of early research efforts, up until the late 1980s, have hypothesised and even found evidence for a monotonic shape, mainly because of the empirically unacknowledged component of costs in the M-P linkage (Kirca et al., 2011).

In a nutshell, the variety of empirical outputs that try to explain the nature of the M-P relationship by examining its statistical shape can be grouped into two broad categories and summarised in five different models: positive and linear – prevalent in earlier studies (Grant, 1987; Tallman and Li, 1996), negative and linear (Al-Obaidan and Scully, 1995; Geringer et al., 2000), U-shaped (Ruigrok and Wagner, 2003), inverted U-shaped (e.g., Gomes and Ramaswamy, 1999; Hitt et al., 1997; Brida et al., 2016), as well as sigmoid or multi-wave curve akin to a horizontal S (Contractor et al., 2003; Lu and Beamish, 2004; Ruigrok et al., 2007). In addition, several empirical studies have revealed an indeterminate M-P relationship (Buckley et al., 1977; Rugman et al., 1985 in Riahi, 1998, p. 317).

Some scholars have noted that some specific trends can be identified from the empirical findings about the nature of the M-P association. In their meta-analysis of this stream of research, Yang & Driffield (2012, p. 38) conclude that the U-shaped curve is more common in papers using large firms in their sample and are published in higher ranked journals, whereas more recent studies in the same journals are more likely to show inverted U-shaped curve. A subset of studies hypothesised and found a sigmoid shape, starting with Riahi-Belkanou (1998), then also supported by Lu & Beamish (2001; 2004), the three-stage rationale of Contractor et al. (2003), Thomas and Eden (2004), Ruigrok et al. (2007), Andersen (2008) and Miller et al. (2016).

Despite the evolution of the findings in terms of the shape of the curve from linear to multi-wave, it can be concluded that this volume of empirical research is characterised by a lack of consensus on the actual association between the degree of multinationality and the corporate performance among multinational firms.

2.7 Speed-Performance Relationship (SM-P) as an Extension of the Multinationality-Performance Framework

The conditions for international business have visibly changed over the past few decades. Several contextual factors related to the dynamic forces in the global environment, such as market homogenisation (Oviatt & McDougal, 1994), global niche markets (Knight & Cavusgil, 2004) dynamic market conditions, technological advancement and rise of high-velocity sectors have reduced the time span of readiness for internationalisation (Zucchella et al., 2007). Since the late 1980s, it has been observed that outward internationalisation is frequently chosen as a growth strategy from the early stages of firms’ lifecycle, as is the case of the international new ventures (McDougal & Oviatt, 1994) and born global firms (Knight & Cavusgil, 2005).

Studies on expansion of multinational companies have also shown that firms that operate in dynamic and globally integrated industries would in fact take higher performance risks if they fail to jump on the fast train to internationalisation (Chang & Rhee, 2011). Furthermore, mature companies that have existed for long decades, when they venture abroad, expand more extensively across foreign markets at an accelerated rate. Rapid international expansion has been generally (or rather traditionally) considered a risky strategy; however, in dynamic industries characterised by time-based competition it has become imperative to move rapidly into new host countries as the alternative (slow expansion) poses higher risks (ibid; Mohr & Batsakis, 2017).

It has been suggested that the M-P research includes ‘an implicit treatment of time in the analysis’ (Bowen, 2007, p. 121). This element may have been unstated, but temporality has been assumed as a backdrop for the events and behaviour representing both multinationality and performance as the core components of this relationship.

We discussed above that multinational diversification is a dynamic phenomenon which unfolds (increases or decreases) over time. Speed of multinational diversification signifies its temporal perspective and indicates the changes in the state and degree of the other international dimensions over a specific time interval (Zahra & George, 2002). As such a central dimension to this dynamic phenomenon, it should be considered as an over-arching concept which represents the other aspects against the temporal axis. The suggestion arising from that is for international businesss researchers to deliberately incorporate dynamic modelling of the dependent variable in the analytical frameworks investigating the multinationality-performance (M-P) association.

Another drawback for majority of studies which investigated the multinationality-performance relationship lies in the fact that they have monitored firm performance over short periods of time (Cooper et al. 1994; McDougall and Oviatt, 1994). The need to examine firm performance over longer periods of time has been repeatedly emphasised (Weinzimmer et al. 1998, Westhead et al., 2001, p. 336). Also, scholars have made suggestions for use of longitudinal empirical designs to investigate the internationalisation – performance relationship, thus capturing its temporal dynamics (Gankema et al., 2000; Manolova & Manev, 2004).

The ongoing debate on the M-P association has lately intensified and been extended by including a dynamic perspective to the component of multinationality, by considering the rate of its change over time. By doing this, the argument about the assumed impact of multinational expansion degrees gets additional dimension, that of speed. Beyond the quest for optimal levels of international posture in terms of performance outcomes, we need to acknowledge the influence of the speed at which the MNEs reach or exceed those levels. For the speed of multinationality and its relationship with performance, henceforth we will refer to it as SM-P relationship.

A study by Vermuelen & Barkema (2002) has often been singled out for its significance in the body of M-P research, since it changed the course of interest by introducing pace and rhythm of multinational expansion as moderating factors of this relationship. By superimposing the temporal dimension on the concept of multinationality, they have ushered a new practice among researchers who investigate the M-P association to take into account the rate of change of the expansion activities as a relevant factor that can explain some of the differential performance outcomes. Prior to this publication, ‘little research has directly examined how different rates and patterns of expansion may result in performance differences between firms.’ (Vermuelen & Barkema, 2002, p. 637). Since their seminal paper, there have been more studies which have investigated the performance consequences of the speed of multinationality for example, Chang, 2007; Chang & Rhee (2011); Hashai et al. (2016), etc. More comprehensive list is provided in Appendix 2.2.

While we were assessing the literature on SM-P with a long-term conceptualisation of speed, so we could compile the above-mentioned list, we found an approach from a recent study instructive. García-García et al. (2017) delineated the timeline for their review from 2002 to the time of writing of their paper. The start year of the period is deliberate and symbolic as it marks the publication of the study by Vermuelen and Barkema (2002), which is widely regarded as seminal for the quantitative stream of research on the SM-P association. As previously discussed, their paper was the first to empirically employ a temporally conceptualised multinationality by introducing the dimensions of pace and rhythm of foreign expansion as predictors of firm level performance. The key implication was the differential impact of each temporal aspect on MNEs' performance levels.

Usually, internationalisation is a deliberate fast growth strategy (Vermuelen & Barkema, 2002), so the post-entry decisions about international activities should have greater importance for the overall performance and success of these firms in the longer term. This concept has been investigated more often empirically, either as an outcome (Hilmersson & Johanson, 2016) or a moderating force (Vermuelen & Barkema, 2002). This body of research has been developed within the context of the M-P investigations. As the interest has intensified over the past decade, more substantive empirical body of literature that focuses on this particular aspect of the SM-P has began to emerge. Complementary to the degree of international diversification is the rate or speed with which it is achieved.

One of the goals of this section is to look at most notable findings in the empirical literature on this important relationship, focusing on more recent studies and insights, and detect and interpret some research gaps worthy of further examination. The stream of research dedicated to the SM-P mainly originates from the extensive theoretical and empirical efforts investigating the M-P relationship in IB. However, the IE studies on time to international entry have also contributed towards temporal treatment of internationalisation, and have stimulated enquiries which have begun to extend the discourse about post-entry speed.

To identify studies for review of the extant scholarship on this topic, we conducted the classical search technique by using keywords in phrases such as 'speed of internationalisation', 'speed of multinational expansion', 'speed of MNE expansion'. We have relied on online repositories of academic articles, such as Science Direct, JSTORE, and others. Additionally, we consulted the helpful summaries provided in a couple of empirical papers on speed (Chetty et al., 2014; Hilmersson & Johanson, 2016, 2017; García-García et al., 2017).

2.7.1 Statistical Shape of the S-MP Curve

The effect of the firm's international behaviour has been often tested on its performance (in the M-P framework), although more rarely from a temporal perspective. Among the rare studies are those of Chang & Rhee (2011), Zeng et al. (2013), Chetty et al. (2014), Hilmersson & Johanson (2016), Mohr & Batsakis (2017), and García-García et al. (2017). Another group of studies examine the moderating role of speed while testing international firms' performance consequences, and their empirical results also vary between the two linear alternatives: positive (Mohr et al., 2014) and negative (Vermuelen & Barkema, 2002; Chang, 2007). In these cases, the speed variable has been measured uni-dimensionally. Zeng et al. (2013) approached the topic from a different perspective, and tested the moderating effect of FDI expansion pace on the influence of host culture expience on foreign subsidiary survival, with an expectation of a negative outcome. Outside of this list, but worhy of mention is a study by Chen & Yeh (2012), which have conceptualised speed of FDI expansion from a long-term perspective. Their empirical model included it as one of ten predictors for increased FDI experience and evolved strategic intentions among the Taiwanese MNEs they examined. For the measure of the speed construct, however, they calculated the time elapsed between consecutive FDI events. Although this follows the tradition of the time lag concept (Zucchella et al., 2007), they have clearly focused on the international activities of MNEs beyond the first foreign entry.

The empirical effort in these studies have produced a range of diverse outcomes, from non-significant direct association (Vermuelen & Barkema, 2002; Khavul et al., 2010; Chang & Rhee, 2011) which is modelled by contingent factors, to several nonlinear shapes. The latter include: inverted U-shape for speed measures of breadth of FDI (Hilmersson & Johanson, 2016; García-García et al., 2017), as well as measures on FDI scale (Mohr & Batsakis, 2014, 2017; Yang et al., 2017). For the same measure (speed of scale, i.e. FDI resource commitment) other findings reveal a contrasting U-pattern (Hilmersson & Johanson, 2016; Hashai et al., 2016).

Several studies have applied an extended version of the most frequently used DOI measure in the M-P literature, proportion of the foreign sales to the overall firm sales, by measuring the ratio's rate of change. In his empirical results, Wagner (2004) found this proxy for international speed to have a non-linear relationship (an inverse U shape) with the dynamic cost efficiency of the multinational subsidiaries within his German sample. Hilmersson & Johanson's study (2016), which tested multiple types of speed, also applied this measure for speed of international commercial intensity and hypothesised the same shape as above (inverted U), but their results offered no support.

Firm-level performance is related to efficient use of resources. Pursuing a strategy of international expansion can certainly bring opportunities for various cost efficiencies (labour, production materials, etc), but it would usually inflict simoultanous threats, both external and internal ones. Certainly, the prospect to reap benefits from moving quickly into new foreign operations and markets exist, but inevitably there are also risks of unfavourable results. The ultimate outcome would be a trade-off between these conflicting forces. Therefore, it has been acknowledged that investigations of the effect of international expansion on performance should measure the outcome variable by factoring in both the revenue gains (benefits) and the revenue absence (costs) aspects (Bowen, 2007; Miller et al., 2016). Similar to the body of work on multinationality-performance relation, empirical studies treating the outcomes of speed of multinationality have began to systematically consider the complete package, with interpretations from both the costs and benefits aspects (Wagner, 2004; Himersson et al., 2016; Mohr & Batsakis, 2014; 2017; Yang et al., 2017).

While the linear relationship was frequently found in studies on speed to the first foreign entry i.e. international precocity (Musteen et al., 2010; Ramos et al., 2011), it was rarely hypothesised or found in the empirical literature on post-entry international expansion (Hilmersson, 2014). This is not difficult to argue, since we are dealing with entirely different concepts, despite the similarity in terms. The former simply assesses the timing of the international entry, mainly as an event with a specific time and sometimes with expected threshold of overseas activity (Zhou, 2007), whereas the latter construct examines the dynamically evolving process of foreign expansion. Therefore, it is logical to assume and expect a non-linear relationship of this temporal concept with its antecedents.

In the M-P literature, Lu and Beamish (2001) have hypothesised that the nonlinear curve of the M-P relationship has higher order term, i.e. it is a sigmoid shape algebraically represented by a cubic term of the predictor variable. Later, the sigmoid M-P relationship was indeed supported empirically by several researchers (Contractor et al., 2003; Lu & Beamish, 2004; Miller et al., 2016). These studies found that a cubic function of multinational diversification explained performance outcomes among both MNEs and SMEs. The obtained performance function is a multi-wave curve which displays a sigmoid (horizontal S) shape after a certain threshold of the speed of multinationality is exceeded, which they term the zone of 'excessive multinationality' (Contractor et al., 2003).

There is evidently a substantial theoretical and conceptual overlap between the M-P and the SM-P frameworks, so we can draw upon the findings from both streams of literature and mutually extend the inferences, with the requisite caveats about the idiosyncratic aspects of each association. The main difference between these two analytical frameworks (M-P vs SM-P) is that the former considers the performance consequences of various degrees of commitment and dispersion of assets multinationally, while the latter views this process through a temporal lens and puts an accent on the performance consequences of the rate at which the level of multinational diversification has been achieved.

Speed of multinational expansion is certainly another important factor that reflects on the MNE's complexity and ultimately its corporate performance. All of the above indicates that the relationship between multinational diversification and its repercussions on performance is a not a simple one. The temporal aspect brings additional complexity to the process. Speed for example, acts as another constraining factor and poses challenges to successful diversification. As discussed in the prior chaper, when firms go beyond a specific range which is considered optimal for their degree of multinationality, they are faced with escalating complexities and coordination costs. Pursuing such extreme paths of rapid international diversification over-extends their capabilities and they experience ‘absorptive capacity’ constraints, and this often reflects poorly on their profitability. This undesired performance outcome is a corollary of what the resource-based scholars Dierickx & Cool (1989) defined as *time-compression diseconomies* (TCD).

Additional limitations are imposed when the geographic diversification happens too quickly, and therefore the internal capacity to appropriate the learning benefits and make use of opportunities in international markets is exceeded (Vermuelen & Barkema, 2002; García-García et al., 2017). It is reasonable to assume that this relationship will vary among firms, according to their mode of operations and other factors, such as age, size, industry, as well as certain moderating factors.

2.7.2 Inconsistencies in the SM-P Curve

When a phenomenon starts attracting vast interest resulting in a proliferation of studies, a certain level of incoherence in findings and conclusions is a predictable consequence. This is also becoming evident in the body of empirical research about the functional form of the relationship between speed of multinationality and performance. The research efforts have shown an ascending growth trajectory over the past two decades and have thus far produced valuable insights, as well as varied and conflicting results; see Appendix 2.2 for details. However, most of these studies share a common assumption about the non-linear nature of the association between these important construct, which has also been empirically documented. Ambiguous and divergent results are commonly attributed to inconsistent conceptualisation and measurement of key constructs. We agree that these may well be the sources of the incongruent findings of the SM-P relationship.

Another related aspect of rapid multinational expansion which has been often mentioned in the literature refers to the downside of excessive speed of asset diversification abroad. Drawing on the theoretical arguments of the RBV and the theory of capital investment, Dierickx and Cool (1989) proposed that for sustaining competitive advantage of high importance is the concept of *time compression diseconomies*, which they define as ‘the "law of diminishing returns" when one input, namely time, is held constant’ and manifests in ‘strictly convex adjustment costs’ (p. 1507). That suggests the nature of the process by which strategic assets are accumulated determines their imitability and therefore, firms should follow ‘appropriate time paths of flows’ (ibid.). This notion is decidedly suited in the context of rapid multinational expansion, as has often been mentioned when explaining performance effects. Ceteris paribus, multinational expansion that is too fast is likely to be subject to a series of risks and challenges that induce various costs and diminish the benefits of experiential learning, as dissemination of knowledge across the organisation takes time (Vermuelen and Barkema, 2002). Ultimately, this will reflect poorly on performance, i.e. the firm would forego the opportunities to capitalise on the benefits of multinational expansion and they bear the exorbitant risks and costs.

Rapid international entry provides firms with opportunities, such as first-mover advantages, access to markets and resources sooner than their competors, as well as early experiential learning and capability development for operating overseas. Besides, the early internationalisation is associated with *learning advantages of newness (LAN)*, which enable these firms to quickly learn relevant competences for international growth (Autio et al., 2000). The advantages of these new and less proficient firms rest on the fact that they are free from any old blueprints typically developed for domestic operations which would impede learning in new environments. Moreover, due to early international exposure they develop rouitnes and capabilities which can be transferred and exploited in new overseas markets. In their empirical study Hilmersson et al. (2017) confirmed that due to the acceleration of international activities in the dynamic and increasingly homogenised markets, the role of LAN has evolved, and in the current globalised business environment this concept has gained in significance.

Naturally, the rapid international entry in their early stages would also pose risks and competitive threats for these international players, and would lead to increased costs and missed or reduced revenues. Such outcomes have been empirically shown and ascribed to firm’s *liability of foreignness* (Zaheer, 1995). At the same time, they result from the constraints of managers’ cognitive abilities, firm’s absorptive capacity (Cohen & Levinthal, 1990; Wagner, 2004), the time compression diseconomies, as well as reversal of the LAN. These adverse effects are manifested in the downward-sloping segment of the inverted U-shape of the SM-P curve. In practice, MNEs usually encounter these challenges when they enlarge their multinational footprint too fast, i.e. add to their portflio a number of new foreign subsidiaries in new host countries within a short period of time.

Later research efforts have begun to consider the likely contingencies that affect the relationship between multinational speed and performance, suggesting that valuable and unique rent-yielding resources and capabilities, both intangible and tangible, aid firms to successfully respond to the risks and challenges while pursuing rapid multinational expansion (Chang & Rhee, 2011; Mohr & Batskais, 2017; Miller et al., 2016). Empirical results have demonstrated that there are tangible risks for the firms that start their international journey late, associated with the rigidity of structures and routines they cultivated for their home markets (Schu et al, 2016). The disadvantage of delaying their international entry (irrespective of the foreign mode of operation) comes from the associated costs and inefficiencies, which typically occur when these firms need to either adapt or replace the established organisational structure, practises and capabilities geared towards domestic audiences (Mohr and Batsakis, 2017).

As previously discussed, the body of empirical work of the **direct** multinational speed - performance relationship is characterised by unresolved contradictions with respect to the measures used, the contextual settings and the statistical form. Some studies have found no support for the direct effects of SM on P, while non-linear contingent effects were empirically supported (Vermuelen & Barkema, 2002; Chang & Rhee, 2011). In Wagner (2004), who also predicted and empirically detected a moderating influence of speed of expansion on the multinationality-performance association, the statistical results pointed to an inverted U shape of this effect. It has been suggested that moderating factors could potentially hold the explanation for the differing and often conflicting empirical results obtained when testing this important relationship (García-García et al., 2017).

Bowen (2007) has cautioned about the possibility for bi-directional causation (endogeneity) between these main constructs, and some authors have explicitly assumed and examined the reverse effect of performance (overall, as well as international) on multinational expansion speed. For instance, testing on activities of

Japanese MNEs during the 1990s, Jung & Bansal (2009) uncovered an inverted-U shaped effect of prior firm performance on multinational expansion, measured multi-dimensionally as both scope and scale of FDI.
In a more recent study Powell (2014) confirmed firm profitability to have a predictive effect of speedier international diversification among service-based US MNEs into the Chinese market.

2.8 Knowledge Gaps in the Extant Literature

In this section we are bringing to light the deficiencies we have perceived in the extant literature. A perusal of the most relevant empirical studies on drivers of international speed, and those that have examined its performance outcomes (i.e. the SM-P relationship) has provided us with material for discussion, and led us to some conclusions about the gaps remaining in the current body of work. As common practice instructs, each of the studies we have reviewed have pointed out possible theoretical and methodological gaps that other researchers should consider and attempt addressing. We have taken heed and followed some of their directions in the present study, alongside the conclusions we have drawn about possible areas that warrant more research attention.

Speed represents an important dimension of the internationalisation process, particularly for firm growth through foreign direct investment (FDI). There is evidence that it significantly contributes to explaining the variation in performance caused by the degree of forein involvement (see the studies included in Appendix 2.2 which we already discussed in this chapter). The effect of multinationality on performance has largely been measured without paying any attention to the temporal attributes (speed, pace, rhythm) of the overseas expansion. Early M-P studies, and particularly those published before 2002, have for the most part neglected this factor in their empirical considerations of this relationship.

We established that research interest in the topic about speed of international expansion has proliferated over the past decade. While the recent empirical outputs have been informative and have provided some useful insights, the phenomenon remains under-researched aspect in the field of IB and requires further research efforts. This particularly applies to the multi-dimensional nature of the phenomenon, which needs to be systematically captured from a robust conceptual perspective. Considering the fact that multinationality represents a multidimensional outcome of the process of firm's involvement in international activities, the construct that measures its speed should also be modelled accordingly. Unidimensional conceptualisation of speed of multinational expansion would be misleading and reflect an erroneous assumption about homogeneity of outcome from the different dimensions. Until recently this has been unacknowledged trait, particularly in empirical works. We maintain that there is both a reason and scope for systematically incorporating its mutlidimenionality in research designs, so that speed as a construct is duly represented.

As a specific area of enquiry in the IB field, the investigation of speed of internationalisation calls for more systematic and cumulative work, to enable synthesis of findings from studies which place the construct in different roles and lead to some consolidation and maturity of this body of research. Integrated empirical work on this topic would be fruitful, testing speed as both an outcome and an antecedent, and also including various contingent factors for a more nuanced investigation.

Although empirical arguments embedded in the perspectives of both dominant paradigms about internationalisation assume the importance of timing of foreign involvement (Johanson & Widersheim-Paul, 1975; Johanson & Vahlne, 1977; Oviatt & McDougal, 1994; Knight et al., 2004), the multitude of empirical research that has investigated the performance outcomes of firms' mutlinational footprint has traditionally not paid adequate and explicit attention to speed as one of the key aspects of the process.

There is a dedicated and robust body of research within the IB field which treats the multinationality-performance relationship among the MNEs. Yet, the number of studies that investigate the effects of speed of change in the degree of multinationality on performance is still limited in comparison. Despite the fact that some significant results have recently emerged from related studies, the conclusions remain contradictory or inconclusive. The dissonance between the sparse research volume and the pertinence of this topic clearly underscores the need to investigate the M-P framework from the temporal perspective of speed, using dynamic conceptualisation of the multinational profiles of MNEs.

Furthermore, we have observed that relative to the volume of empirical efforts on M-P, for which several comprehensive reviews testify, the SM-P body of literature is rather sparse and still insufficiently examined. As we can observe from the Appendix 2.2, the number of studies that treat speed as an independent variable in the analysis of the performance effect of internationalisation is also rather low, and we suggest that the centrality of this aspect of the international process merits further research efforts.

Another observation we made is that the SM-P literature has been rather silent on the contingent effects of SM-P, with few notable exceptions (Vermuelen & Barkema, 2002; Chang & Rhee, 2011; Yang et al., 2017; Mohr & Batsakis, 2017). Our review did not point to many prior speed studies that have sufficiently and explicitly considered whether any contingent factors are responsible for driving profitability variations when firms are choosing rapid international strategy. Extant research of the relationship between multinational speed and firm performance (SM-P) has produced largely mixed results, mainly within the range of non-linear curve patterns. This should be suitably addressed from a methodological perspective, by employing a multi-dimensional construct of speed, and also allowing for a higher order specification of the SM-P association.

We suggest that the absence of unequivocal empirical support for the direct (unmoderated) association between multinational speed and MNEs' corporate performance provides a strong research rationale to consider the boundary conditions of this relationship. This should provide some additional evidence and hopefully illuminate the underlying facors which could explain the seemingly contradicting results.

The theory development in the literature on the M-P relationship has happened by placing the focus on large multinational firms. We view this instructive for investigating the extended perspective of this phenomenon on a heterogeneous sample of multinational firms. We performed our research analysis on a sample of UK MNEs, which alongside mature and more traditionally developed large companies, also included younger multinational SMEs.

In summary, we have identified four key gaps in the extant literature which are worthy of more scholarly attention and require some remedial actions:

1) no single study has simoultaneously addressed the phenomenon of multinational expansion speed as an outcome and a predictor;
2) the multidimensionality of this key construct has not been thoroughly addressed in the context of MNE samples;
3) there is little agreement about the non-linear nature association between firms' multinational expansion speed and their financial performance;
4) the moderating effects on the SM-P relationship have not been sufficiently investigated.

2.9 Chapter Summary

The general overview of the extant body of literature on the topics of interest in our investigation have articulated several preliminary insights and highlighted key areas for the ensuing research endeavour. These will serve as guiding points to formulate several hypothesised relationships and definitions of the variables to be incorporated in the empirical model. In this chapter we have evaluated only what we deem are key empirical studies which investigate the concept of international speed and its relationship with performance. We need to acknowledge that this was not intended to provide an exhaustive review of the field, but to pave a contextual ground for the conceptual and empirical frameworks for our research, which will be revealed in the next chapters.

3. CONCEPTUAL AND ANALYTICAL FRAMEWORK

3.1 An Overview

In the prior chapter we have outlined and reviewed the most significant empirical studies from the literature concerning our topic, and identified some research gaps that ought to be addressed. This chapter presents the conceptual and theortical rationale for our research, identifies the three research questions for this study and offers detailed exposition of the formulation of our testable hypotheses.

A conceptual model provides an abstract narrative which indicates some general mechanisms, factors and their inter-dependencies (Van de Ven, 2004). Intent on addressing the above identified research questions in this thesis we have designed a comprehensive conceptual framework which coherently pieces together several IB concepts. The theoretical definitions and arguments that feature in this framework are grounded in three theoretical perspectives, on the basis of which we selected the empirical dimensions and measures to conduct the analyses. For the purposes of this study we have proposed that the resource-based theorising, integrated with the rationale of both the internalisation and organisational learning perspectives would offer a solid theoretical ground for analysis and interpretation of our findings about speed of multinational expansion and its relationship with financial performance.

We established the conceptual bases for this research on several assumptions:

- outward internationalisation is a path dependent process which evolves over time;
- multinationality as a defining concept of the international involvement of the MNEs is a multidimensional construct;
- different aspects of MNEs’ international activities, as reflected in distinct facets of its multinationality inevitably reflect on its performance;
- the temporal perspective of the M-P association would offer better explanatory power for the performance implications of MNEs’ international strategies.

3.2. Importance of the Research Problem and Identification of the Research Questions

The key research problem which motivated this research originates from the extant scholarly literature in the field of international business and the perceived gaps around the neglected temporal perspective of the firm-level phenomenon of multinationality. We began to frame this issue by examining the state of research on multinationality in the extant IB literature. In chapter 2 we presented some key insights derived from our critical review of the current output on this topic, which led us to conclude that firms' speed of foreign expansion represents a significant and timely research topic within the field of international business, especially considering the dynamic and hyper-competitive environment in which the contemporary MNEs operate. Therefore, it merits more detailed and comprehensive investigation, which would convey both academic and practical implications. As already discussed, an extensive and insightful body of research has been produced about the degree of foreign involvement of MNEs (i.e. multinationality) and particularly its effects on performance, but the time-based dimension of speed, so vital to understanding this dynamic relationship remains insufficiently addressed.

However, this concept, which is simoultansously one of the key dimensions of the international process (Zahra & George, 2002) is highly relevant, not only for enhanced understanding of this phenomenon, but also as a source of competitiveness for the MNEs. In light of this, the need to enquire about which factors support rapid multinationational expansion emerged rather organically. The antecedents of internationalisation, i.e. multinationality have been extensively tested in the IB literature (for example, Hennart, 2007; Tseng, 2007; Kirca et al, 2012, to name but a few); however, not so frequently the from speed perspective. Our critical review of the literature presented in the previous chapter has led us to conclude that despite some valuable theoretical and empirical contributions, the research which investigates the determinant factors of rapid international expansion remains fragmented. Appendix 2.1 presents the empirical studies which have employed a redefined construct of international speed, distinct from the commonly used counterpart with the same name, but which denotes the time to the first international event.

Empirical findings have shown that internal resource-based forces can influence the level of multinationality that the MNEs reach. To be able to effectively manage internationally dispersed operations, as well as achieve and maximise their profitability goals of such diversification, firms need to possess requisite resources and capabilities (Delios & Beamish, 2001; Kotabe et al., 2002; Villalonga, 2004; Contractor, 2016). Capabilities such as technological and marketing intensity, which rely on knowledge resources, generate more immediate international growth than the property based resources represented by organizational slack and internally generated profits, and their effects endure longer (Tseng et al., 2007). In line with the expectations of the internalisation theory and the resource-based view (RBV), empirical evidence shows that both knowledge-based and property-based firm resources should be considered important determinants of rapid multinational growth (Chang and Rhee, 2011; Mohr & Batsakis, 2014).

With the aim to make contribution in this important research area, we have chosen the first part of our study to focus on identifying firm-level antecedents to rapid multinational expansion. The reasoning behind our interest in firm-level variables is that MNEs can most easily and directly control for these (Tallman & Li, 1996), increases the practical implications of any relavant empirical insights.

Therefore, we have formulated the **first research question** for our study, as follows.

RQ1. *How does firm heterogeneity influence the rate of change in the degree of various dimensions of <u>speed of multinational expansion</u> among the MNEs, i.e. their:*
1) multinational resource commitment,
2) geographic dispersion of foreign subsidiaries, as well as
3) commercial intensity abroad?

We discussed in chapter 2 that one of the most well-examined and extensively discussed topics in the international business field over the past several decades has been the relationship between MNEs' degree of multinationality and their performance consequences. This is reflective of the practical importance of this relationship. Performance-related outcomes are unmistakably the key considerations for firms pursuing international expansion, which impact their strategic decisions. One of the most important aspects affecting the international trasjectory of the MNEs is the pace at which they engage in foreign direct investment. The issue of timing of these foreign activities was put on the IB agenda in 1981 by Buckley & Casson, but it has gradually become a key topic in the new millennium due to its increasing importance, both for research and practice.

The international business environment has become evolving drastically since 1990s. Due to the forces of globalisation, technological and communication advances, there has been an increase in the market homogenisation (Oviatt & McDougal, 1994), the importance of global niche markets (Knight & Cavusgil, 2004) and high-velocity sectors. This has contributed to dynamic market conditions and acceleration of international business activities and processes. While rapid international expansion used to be regarded as a high risk strategy for traditional firms, the transformed market conditions characterised by time-based competition have made this approach a necessity rather than an alternative option (Zucchella et al., 2007; Chang & Rhee, 2011; Mohr & Batsakis, 2017).

The scholarly literature has also observed and reflected these changes. Academic studies on expansion of multinational companies have began to demonstrate patterns of increasingly fast paced international expansion among firms, in particular for MNEs in dynamic, globally integrated and highly competitive industries (Chang & Rhee, 2011; Hashai et al., 2016). The pace at which firms' multinationality evolves over time affects its performance in a material way and therefore needs to be explicitly considered (Vermuelen & Barkema, 2002; Wagner, 2002; Yang et al., 2016; Garcia-Garcia et al., 2017). We have already discussed this in section 2.4 in the prior chapter.

Scholars have already established a solid basis for research within the SM-P framework, but there is still room for further progress. We have observed that the relationship between speed of multinationality and performance has been tested with a variety of results (see Appendix 2.2), which has contributed to a lack of clarity about the statistical shape and the direction of this relationship. Apart from the problematic measures of key constructs, the multi-dimensional character of firm's degree of foreign involvement (a.k.a. multinationality), and therefore its rate of change (or speed), most certainly constitutes a significant contributing factor to such an inconclusive state of affairs.

The investigations for this thesis were designed and perfromed with intention to integrate and build upon some of the significant and valid findings from the studies of this research stream. On the basis of these insights, we have established another key objective in this research, which is to further illuminate the relationship between MNEs' FDI expansion and their performance by applying a temporally dynamic and multi-faceted analytical perspective. The above observations have guided us towards formulating the most obvious but highly relevant enquiry about this phenomenon. As a corollary, we have identified our **second research question** to be the following.

RQ2. What are the direct performance outcomes of the different dimensions of multinational expansion speed, i.e. what is the nature of the speed of multinationalisation-performance (SM-P) relationship?

Moving beyond the direct relationship between two key constructs, by way of incorporating contingent factors, has been frequently practiced remedial strategy in academic research which abounds with inconclusive results. This has also been the case with the IB field, and particularly the contested output about the M-P relationship, resulting from several decades of prolific research. As Hitt et al. (2006, p. 855) have observed, 'there is no shortage of potential moderators to the relationship between international diversification and its outcomes' Hitt et al, 2006, p. 855), since many IB scholars have attempted to 'open the "black box" about these relationships.

Similarly, the empirical outputs for the SM-P relationship are building a body of research (presented in Appendix 2.2) that is open to methodological controversies and debate, due to the variety and disparity of its results, interpretations and conclusions.

The voluminous output that treats the direct causal link between multinationality and performance also features several studies that have incorporated contingent factors in the framework (for example, Kotabe et al., 2002). This study considered the facilitating effect of firm-level heterogeneity in technological and marketing resources as firm-specific factors (or rent-yielding capabilities), and showed empirically that at higher levels of R&D and marketing intensities, the multinationality of the firm should have greater positive impact on its financial performance. By analogy, we suggest that the unreconciled findings about the effects of rapid multinational expansion on firm performance in extant research and the failure to fully comprehend this multifaceted phenomenon would benefit from inclusion of firm-level moderating variables in our empirical models. Several SM-P studies have already made it obvious that this is a logical way forward to uncover the source of these discrepancies by modelling the contingent effects of internal, firm-level resources (Mohr & Batsakis, 2017; García-García et al., 2017) or external ones, such as the industry globalisation levels (Yang et al., 2017). Interestingly, Chang & Rhee (2011) did not found a significant direct relationship, so their study only reported the moderated one, which was a function of both internal resources (financial leverage, and intangible assets such as R&D intensity and advertising intensity), as well as external variables (industry globalisation). Evidently, there is an overlap among the selection of moderators in these related studies.

To obtain more clear and nuanced empirical insights, the next question sets out to probe several resource-based contingent factors of this important relationship and address the source of divergent results in prior studies. We have deliberately chosen to incorporate firm-level moderating variables, as they have been previously validated (both theoretically and empirically) in related studies, which would enable comparability of results.

Therefore, the **third research question** in this thesis examines the following.

RQ3. How does the shape of the direct SM-P relationship change due to the contingent effects of:

a. MNE's heterogeneity in resources (FSAs), and

b. their location strategies of asset dispersion?

3.3 Multidimensional Conceptualisation of Rapid Multinational Expansion

In the second chapter we ascertained that the multidimensional nature of international speed as an important concept for explaining internationalisation has not been thoroughly acknowledged in empirical studies in general, and particularly in the context of MNE samples. As a result, in the process of seeking empirical answers to these three research questions we have simoultaneously addressed another identified gap of a methodological nature, by implementing multidimensionally conceptualised speed measures.

One of the aims of the present study is to extend the one-dimensional specifications which dominate the existing empirical models testing the concept of international, i.e. multinational speed. Our conjecture is that such multifaceted approach would portray a more complete picture about this phenomenon. The scholarly literature in the domain of IB has acknowledged the importance of long-term temporal perspective on internationalisation, as well as the need to take into account its multidimensional nature to fully grasp the process (Eden, 2009). Yet, both aspects have not been considered in a systematic way. However, the bigger issue lies in the observation that more often than now, the construct degree of internationalisation (or multinationality) has been considered unidimensionally (Sullivan, 1993), as evident in the majority of M-P studies. The same tradition continued in the speed research sub-stream, which examines the rate of change of DOI throughout the international trajectory of the firm. We could not identify many studies which consider from within a dynamic, temporal perspective the antecedents of rapid expansion.

Testing only a single aspect of this multidimensional concept would lead to an unfounded assumption about homogenous effect of the other dimensions. We uphold that it would be misleading to continue relying on a unidimensional construct of speed of internationalisation, since by doing so, we would knowingly disregrd the complex, multi-dimensional nature of the internationalisation process itself (see also Hilmersson & Johanson, 2016).

Following the conceptual propositions by Casillas & Acedo (2013) and Chetty et al. (2014), in combination with the models adopted by related empirical studies on speed (Hilmersson & Johanson, 2016) and Johanson & Kalinic (2017), our analytical framework considers three components of speed of international expansion, two of which are observed in respect to the key market decisions of **location** and **mode** of operations:

1. Speed of multinational resource commitment;
2. Speed of geographic dispersion of FDI (i.e. speed of geographic scope of multinational expansion;
3. Speed of international commercial intensity.

This replicates the empirical approach by Hilmersson & Johanson (2016), who in a context of exporting SMEs from Sweden measured international speed multidimensionally, reflecting firms' overseas commitment in terms of extent, geographical scope and commercial intensity.

In line with the conceptualisation by Chetty et al. (2014), who followed the definition of speed applied across the natural sciences as *movement across time*, we consider *speed of multinational expansion* as the change(s) in the firm's international posture in terms of scope (geographic breadth or dispersion) and extent, i.e. scale (of commercial intensity and FDI commitment) over time. These changes represent the distance covered along firm's international path over time, triggered by choice of location and mode of overseas activities. Consistent with the previous operationalisation of a multi-dimensional speed concept, we have placed time (the number of year since the first FDI step) in the denominator of the measurements.

Each of the above dimensions of international diversification correlates to a DOI component, as its numerator reflects an aspect of the multi-national configuration of an MNE. The fact that we average the values over a time period makes this concept distinct, and adds a dynamic function to the international process. Without a denominator (represented here by 't' for 'time'), we would be in fact talking about the multinationality-performance relationship.

It has been established that different DOI dimensions would have distinct performance implications. For instance, the commercial intensity (as a proxy for ‘international scale economies’ and the geographic scope ‘indeed address different aspects of internationality and are not identical in their performance effect’ (Tallman & Li, 1996, p. 185; Miller et al., 2016). We suggest that when investigating multinationality, it is more instructive to operationalise it multi-dimensionally, in order to uncover more of the ‘how’ aspect of the process and enable a finer-grained interpretation.

Our analyses are focused to the post-entry speed of expansion in broad terms. For the younger firms and newer internationals this can be interpreted literally, i.e. our window of observation captures the period very soon after their first international entry. For the more mature MNEs in the sample, the post entry explanation still applies; however it is much later than their first FDI entry.

We have followed a conceptual model originally proposed by Casillas & Acedo (2013), as it has resonance with our purposes. Analogous to the concept of speed used in Newtonian phisics, they adopted a definition of the concept of speed as change in distance and used it the context of internationalisation in a methaphoricial way. Thus they imported the formula used in physics, i.e. ‘distance divided by time’, to measure international speed by the cumulative magnitude (or degree) reached in the other key international dimensions over a given period of time. The study of Chetty, Johanson & Martin (2014) stands out as the initial attempt to develop and empirically validate a theory-driven multidimensional measure for speed of internationalisation, embedded in the Uppsala model. Building upon these conceptual and empirical refinements, Johanson & Kalinic (2016) have advanced this conceptualisation further, by proposing a more dynamic perspective with the concepts of acceleration and deceleration. In a similar vein, Yang et al. (2017, p.74) have described speed ‘as a relationship between a specific period of time and a company’s completion of certain events’, which is actually a paraphrased version of the above definition as it refers to the link between time and commitment.

The way distance is understood in this context implies the two processes which form the building blocks of the traditional interpretation of internationalisation, learning and commitment. Accumulation of learning affords the firms to travel along the international path by committing resources, and consequently changing its international footprint (Johanson & Vahlne, 1977). The latter constitutes the state or degree of internationalisation, which is part of the numerator of the speed formula. The overall result is obtained when that degree is averaged over a determined length of experience, i.e. the time period. In their paper, Chetty et al. (2014) do it with reference to firm's inception, while others have relied on their first international involvement (Vermuelen & Barkema, 2002; Chang & Rhee, 2011; Lin, 2012; Mohr & Batsakis, 2017; García-García et al., 2017; Yang et al., 2017).

It must be added that the use of the term distance in this context refers to a quantitative notion and denotes the difference in the degree, or state of internationalisation along the established dimensions between two separate points in time. This must be distinguished from the term distance used in the other concept quite popular in international business studies, i.e. the cultural, institutional and physical distance (Eden & Miller, 2004; Tihanyi et al., 2005; Azar & Drogendijk, 2014). The resultant measure basically records the rate of change in the international posture of the firm by averaging the DOI values at specified time points, over a meaningfully specified time period.

We have identified several approaches for calculating the time interval (t) in the speed denominator:

1. The period between the year of inception and the year of observation (Chetty et al., 2014; Hilmersson & Johanson, 2016). This is consistent with the measures of 'international precocity' (Zucchella et al., 2007), calculated as number of years between the year of observation and the year of first international entry, and it is therefore comparable with studies of speed <u>to</u> internationalisation;
2. The period from the beginning of the process of internationalisation, i.e. number of years between the first foreign entry (regardless of the mode of entry used) and the year of observation (Lin, 2012);

3. The number of annual cycles elapsed since the multinational firm's first step of foreign direct investment and the year of observation (García-García et al., 2017; Yang et al., 2017).

3.4 Analytical Framework for Antecedents and Outcomes of Multinational Speed

Our main aim in this research was to identify the time-based conditions of multinational expansion under which performance can be enhanced. To support the ensuing empirical process, we developed a comprehensive (analytical) model which centered on the multidimensional construct of speed of multinational expansion and combined together key relationships, including its antecedents, performance outcomes and moderators.

Against the contemporary backdrop of globalised and interdependent macro environment and dynamic forces which accelerate business activities across the spectrum – particularly entry and subsequent international expansion, we have considered that upgrading the established M-P research framework with a dynamic temporal lens to be necessary and appropriate, i.e. timely. For full benefit and a complete analysis of the phenomenon, multinational speed ought to be multidimensionally constructed and considered.

In our integrative conceptual model we developed for this study, the multidimensionally measured construct of speed in this context serves as a conceptual bridge between the work on multinationality and the sub-stream which investigates its impact on MNEs' performance. Its theoretical basis was built on the work done on the dimensions of international diversification. Previous recommendations have indicated that the multiplicity and diversity of the phenomenon of international expansion should be duly acknowledged when investigated (Casillas & Acedo, 2013; Chetty et al., 2014; Johanson & Kalinic, 2016; Schwens et al., 2018).

For the purposes of our research we will adhere to the assumption inherent in the dominant internationalisation paradigms[1] about **path-dependence** of international commitment (Johanson & Vahlne, 1977; 1990; 2009; Oviatt & McDougal, 2005 etc). The view of internationalisation as a path dependent phenomenon regards it as a sequence of events that unfold over a linear progressive timeline (Sharma & Blomstermo, 2003; Bloodgood, 2006[2]), and as a corollary, the MNE's profitability would be contingent on its development process rather than 'automatic or fixed' (Vermuelen & Barkema, 2002, p. 640). This notion is upheld in the incremental logic of the gradual model, which suggests that learning from international presence, i.e. experience precedes and stimulates cross-border expansion and commitment of firms (Johanson & Vahlne, 1977; 1990; 2009). Past decisions and activities would influence future international operations. The selected foreign countries and modes of operation provide sources for such learning and accumulation of knowledge about international markets and operations (Casillas & Moreno-Menéndez, 2014).

One of the established notions about MNEs and their existence, also embedded in the incremental paradigm, is that learning capabilities and knowledge are indispensable resources for foreign expansion (Johanson & Vahlne,1977). The same theoretical argument is explicitly espoused by the resource-based view, as well as the complementary organisational learning theory (Kirca et al., 2012; Chang & Rhee, 2011). The latter theoretical perspective considers the internationalisation process of the firm as a journey of learning and explains how firms absorb and adapt new experiences into their existing knowledge and combine its tacit and explicit dimensions with the extant knowledge / cognitive / intellectual resources (pool) (Nonaka, 1994). Experiential learning, or learning from experience, is one of the sub-constructs and sub-processes of knowledge acquisition, which in turn is one of the four key constructs of organisational learning, along with information distribution, information interpretation, and organisational memory (Huber, 1991, p. 88). It also represents a dynamic capability which over time influences internationalisation decisions such as mode of operation and choice of location, and directs firm behaviour. This resonates with the principal assumption of the Uppsala model, about

[1] Both the incremental, process model and the international entrepreneurship model
[2] They supported this view empirically in the context of adolescent INVs.

the interdependence of experiential learning and firms' subsequent international resource commitment.

We have accounted for some of the antecedents of the rate at which changes in the degree of international diversification occur among multinational enterprises over a specified period of time, and the resulting effects on their performance. More recent research endeavours in this direction have been quite informative, and our intention is to catch this momentum of increased attention and contribute towards a more systematic approach to this incipient research framework within the international business frontiers.

To address our second and third research questions, we have leveraged an established framework which has frequently researched the relationship between multinationality and firm performance - also known as the M-P framework, to which we have superimposed a dynamic, temporal dimension not sufficiently considered in prior investigations. Applying a temporal lens to any analytical framework would contribute its own set of variables and relationships which reflect a dynamic and time-conditioned view of specific phenomena (Ancona et al., 2001, p. 645). Our suggested framework for assessing the nature of the relationship between speed of multinationality and firm perfromance (the SM-P) represents a rather straightforward but dynamically enhanced extension of the established M-P model, which has a long tradition in the IB.

We have discussed earlier that the general relationship between multinational diversification and corporate performance is complex and a function of multi-level factors. In that direction, we can safely assume that at least the same degree of complexity applies in the SM-P relationship. However, that complexity would be augmented by the dynamic aspect of the rate of change, since MNEs need to attune their multinational expansion strategies and resources and be mindful not only about the degree of diversification, but the timing, i.e. the rate of initiating international expansion activities, as well as some related contingencies. We maintain that the SM-P framework can be viewed as an extension of the exctensively researched M-P association, and by that token, some of the speed assumptions are derivatives to the key postulates and enquiries covered by that framework. The speed dimension of internationalisation elevates the M-P framework by adding a dynamic perspective embedded in time.

For more nuanced insights, the next question sets out to probe the contingent forces / factors of this important relationship. The M-P literature has offered indications (in the M-P lit) for a possibility of a multi-wave curvelinear relationship, as explanatory basis for some contradictions / inconsistencies in the M-P link empirical outcomes (Contractor et al., 2003; Lu & Beamish, 2004; Miller et al., 2016). By analogy, we have followed the theoretical rationale behind the M-P studies which have hypothesised (and found) sigmoid, i.e. multi-wave association between the key constructs. The fact that some of them found empirical support adds a further impetus for our decision to incorporate this aspect into our statistical tests.

We already stated how the topic of this thesis focuses in depth on speed as one of the key three aspects of the international diversification process. In essence, all three are represented in the conceptual and analytical frameworks. The remaining two aspects, mode of operating abroad and the location considerations, are being taken into account by examining the speed of mode-specific international expansion and some location-related contingent effects.

Most of the insights into the nonlinear association between MNEs' speed of multinationality and their corporate financial performance have to date relied exclusively on a single measure of the predictor, with few exceptions (Hilmersson & Johanson, 2016). In addition, to the best of our knowledge, all empirical studies have only tested a quadratic functional form. Our research design aims to enhance these two methodological aspects, by employing several speed measures and statistically examining the effects of their cubic terms on performance. Use of a longitudinal approach would enable observation of how the process of rapid multinational expansion and its relationship with performance unfold over time, and to an extent, this would reconcile the variation in international timelines, stages of operational and international maturity in our sample.

We have noted previously about the complementarities between the two dominant paradigms, i.e. the traditional process model of internationalisation with the incremental logic, and the early and rapid international phenomenon from the IE body of literature. This also applies to speed of internationalisation, as it can be analysed from within the context of either or both.

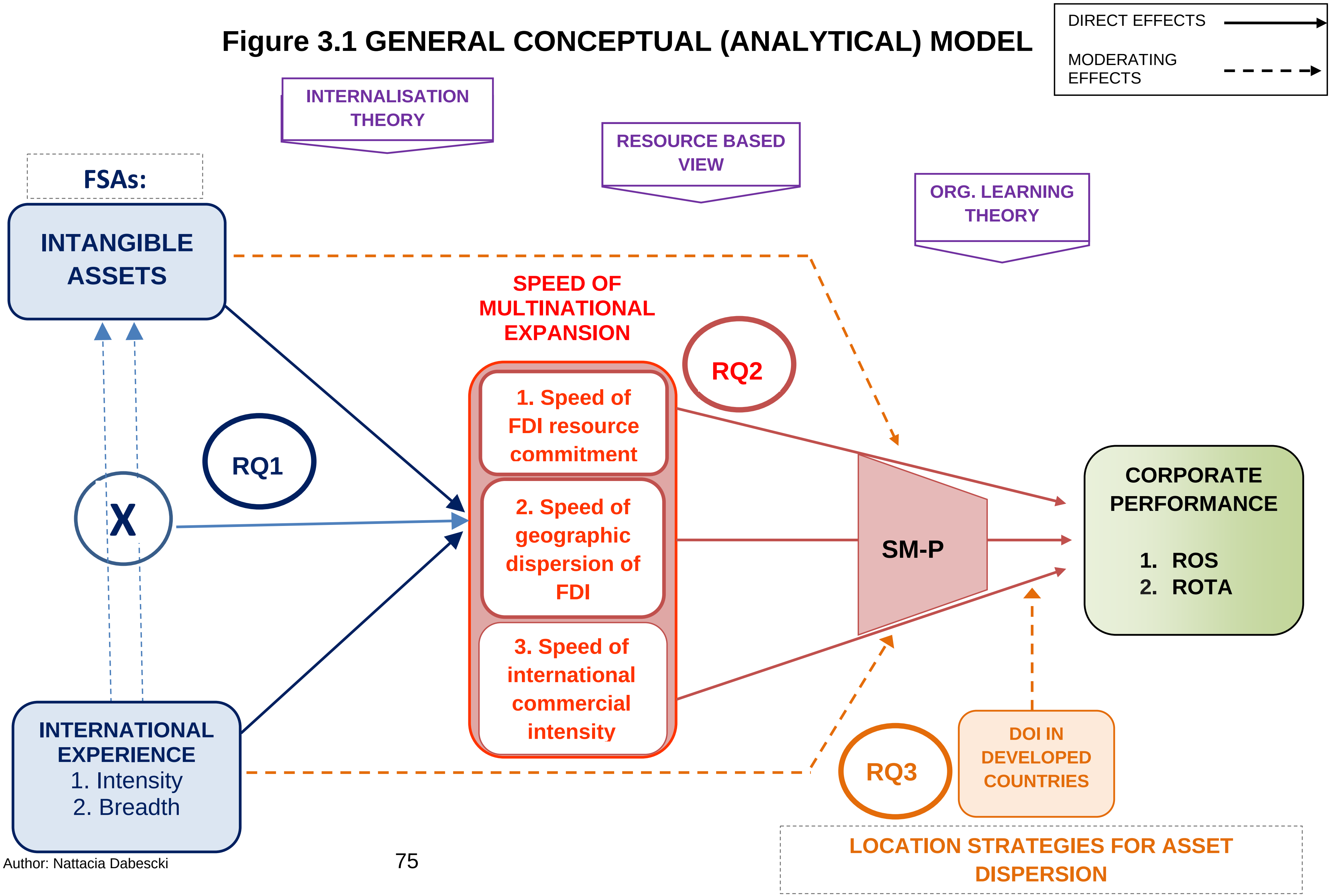
Since internationalisation of companies is a dynamic, complex and multi-dimensional process, manifested though composite patterns of behaviour, its complete and comprehensive analysis requires considerations at several levels. For a phenomenon that evolves over time, temporally-based models provide more plausible platform for investigation and hold better explanatory power of the dynamic nature of each internationalisation aspect (Jones & Coviello, 2005, p. 284). Our motivation to investigate and learn more about the predictors of speed is auxiliary to the core research framework of the SM-P relationship, in which speed drives the accounting-based / corporate performance outcomes of multinational operations.

Previously we have mentioned about the hypothesised sigmoid relationship that has been empirically examined in some studies from the M-P literature (Contractor et al., 2003; Lu & Beamish, 2004; Miller et al., 2016). Adhering to the assumption about a possible multi-wave relationship curve, the performance function is modeled by a cubic term of the degree of multinationality, or its rate of change (i.e. speed). We reckon that this approach might assist in explaining some of the puzzles that exists in the extant empirical literature about the nature of the non-linear SM-P relationship. Therefore, our empirical model would accommodate this possibility by including polynomial terms of the different types of speed as predictors.

There are various explanations and empirical evidence about the benefits and costs that multinationality delivers to corporate performance, and by extension for the SP-M linkage. We have chosen to use the arguments offered by three theoretical perspectives. By concurrently considering both the costs and benefits of multinational speed, we will analyse the implications of MNE expansion on its financial performance.

Figure 3.1 provides a graphical representation of our integrative analytical model we have developed and followed in our research. In sum, it suggests the following sequence of research steps we have perfromed: to begin with, the determining effects of internal firm-specific resources on speed of multinational diversification have been examined, both individually and jointly. Next we tested the direct effects of speed on firm performance; followed by an examination of the contingent role of firm-specific assets in explaining the relationship between multinational speed and performance. And finally, the moderating effects of MNEs' location-strategies on SM-P have being tested, but only after we established the nature of the direct association.

Figure 3.1 GENERAL CONCEPTUAL (ANALYTICAL) MODEL



Author: Nattacia Dabescki

3.5 Hypotheses Development

In the previous sections of this chapter we formulated three research questions, which will serve to guide our investigation, starting with the development of hypotheses for statistical testing.

The synthesis of the theoretical and empirical insights which we derived from the extant literature and discussed above has facilitated the process of development of our conceptual and empirical framework. In search for answers to our research questions, we have built upon the previously identified patterns and causal relationship among key constructs to formulate the hypotheses for testing.

This section assembles and presents the main arguments which underpin our research frameworks, and combines them into fifteen hypotheses. The content that follows consists of a detailed elaboration of each hypothesis and it is organised in three sub-sections, each matched to one of the three research questions.

3.5.1 Antecedents of Multinational Expansion Speed

3.5.1.1 Firm Heterogeneity and Speed of MNEs' Foreign Expansion

Firm-Specific Assets

Internalisation theory has brought us the concept of firm-specific assets and views them as intermediate products (Rugman & Verbeke, 2003), but the resource-based view (RBV) also shares common assumptions about their importance for firm's growth. The firm specific assets such as certain type of knowledge, technologies and managerial skills, are regarded as public goods within the multi-location firm and are transferable within the boundaries of the same organisation across multiple locations, such as different plants, branches, etc. (Kirca et al., 2012). By extension, these assets can also be at disposal across multiple host countries, i.e. across national borders for a multinational enterprise.

Most of the IB scholarship that investigates the MNEs highlights the dominant role of the FSAs as key determinants of performance, and their effect is explained both by the internalisation theory and the resource-based view. There are several types of firm-specific resources and capabilities that are considered crucial for firm's success, such as financial, human and reputational resources (Grant, 1991). According to the internalisation perspective, equity modes present firms with better opportunities for internal asset utilisation (exploitation) and exploration of local resources and advantages. According to the resource-based view, due to the heterogeneity and immobility of these resources, they constitute a critical base from which firms derive their competitive advantage (Wernerfelt, 1984; Barney, 1991). These include both tangible and intangible resources (Chang & Rhee, 2011, p. 982).

The knowledge-based properties of the intangible assets that a firm possesses can be exploited by internalisation across foreign markets, since the cross-border application would not affect their value for the home market (Morck & Yeung, 1991). The MNEs can benefit from economies of scope from these knowledge-based proprietary assets by transferring them in several geographical markets at small incremental costs and exploiting them profitably (Tallman & Li, 1996). These assets are an advantage for the MNEs as they strengthen their competitive position in local markets and raise the market value of the foreign subsidiaries that internalise them (Morck & Yeung, 1992).

According to the internalisation theory, firms possessing internal resources and capabilities such as intangible assets, have superior sources of competitive advantage to manage rapid multinational expansion (Buckley & Casson, 2009). International strategies are attractive for firms possessing such rent-yielding assets, since they assist them to obtain greater monopolistic advantage in local markets and overcome the liabilities of internationalisation, such as that of foreignness (Zaheer, 1995) and outsidership (Johanson & Vahlne, 2009). Along the profit generating potential of such knowledge-based resources, an additional incentive for market expansion rest on the fact that they can be leveraged across markets. This enables the firm to spread the fixed costs, recoup costly R&D investments sooner, and moderate the risk of their obsolescence (Morck & Yeung, 1991; Chang & Rhee, 2011).

Intangible assets are proprietary firm-level resources such as patents, software, copyrights, customer lists, licences, brands, supplier relationships, etc. Although without physical substance and form, intangible assets hold monetary value and income generating potential. Hence, they have been deemed as an important determinant for firm's profitability (see Villalonga, 2004 and Contractor et al., 2016).

Previous IB studies have established that the concept of international experience 'plays a leading role in explaining firm internationalization' (Clarke et al., 2013, p. 265), and it has been applied in different contexts across the discipline, such as location decisions, entry mode choice and performance outcomes of internationalisation. The management and strategy literature have also acknowledged the importance of corporate experience for building competence over time, which leads to greater efficiency and reduced operating, production and transaction costs (Ghemawat, 1985). The experience from international operations represents an important source of organisational learning and facilitates companies' development of firm-specific advantages.

International experience denotes firm's international business exposure. It is one of the central concepts in the international business research, and most theories and both dominant paradigms provide reasoning for this construct. It represents one of the conceptual cornerstones of both the traditional theory of (incremental) internationalisation (Johanson Wiedersheim-Paul, 1975; Johanson & Vahlne, 1977; 1990) and the more recent international entrepreneurship paradigm (Oviatt & McDougal, 1994). The theoretical logic of both revolves around experiential knowledge as a crucial resource that minimises the impediments for international resource commitment. For the purposes of our study, however, we suggest that the theoretical perspective of organisational learning is the most compatible with this concept in terms of proferring arguments and interpretations.

The advantageous influence of firms' prior international experience on their subsequent international activities have been postulated and tested in a number of IB studies that treat internationalisation and its various dimensions (Yu, 1990; Brouthers & Nakos, 2004; Dow & Larimo, 2009; Clark et al., 2013). The key assumption behind these is that it offers benefits of learning and knowledge accumulation, which enable the firm to create competitive resources to guard against failure hazards, overcome uncertainty risks, minimise costs associated with international expansion, and ultimately enhance performance.

In addition to the variety of empirical applications in the IB literature, it has several interpretations which stem from both its contextual source (general, mode and country-specific), and from aspects of its multidimensional nature (length, scope, diversity and intensity), (Clarke et al., 2013). General mode-specific experience is a source of learning and creating some culture non-specific set of skills that are transferable across other foreign locations. For instance, if a firm already owns a foreign subsidiary, the management team are familiar with the process and have already overcome the perception barriers for FDI in terms of potential risk uncertainties that such high commitment and control mode entails. They have likely encountered issues that arise from operating in remote markets, with different culture, language and institutional environment, and found a successful approach to deal with them. This experience in turn elevates managers' general awareness and confidence about setting up and managing other overseas operations in the same or new locations, as some of the techniques and routines can be repeated.

The empirical implications of international experience have also been established in the context of speed of multinational expansion, both as a direct determinant (Mohr & Batsakis, 2014) and moderator of the SM-P relationship (ibid, 2016). International experience is a rather complex, and nuanced, multi-level concept. It can be considered a weakness if we are unable to capture all its dimensions and measure its full complexity.

Another complementary view which regards this concept as 'an indicator of low levels of internal uncertainty' (Dow and Larimo, 2009, p. 79) is embedded in the transaction cost theory, which also predicts that higher levels of experience would grow the propensity for high-control foreign modes of operation (Brouthers & Hennart, 2007). This is similar with the view advocated by the incremental internationalisation in the process model, which attributes the progression to higher order mode to accrual of general and international experience, as a result of increased learning and reduced uncertainty (Johanson & Vahlne, 1990). Operational experience in host countries provides the means for firms to overcome competitive disadvantages they face relative to the local rivals and it assists in their development of organizational capabilities, and ultimately improves performance.

Learning from international experience could stem from the firm-level engagement and activities across borders, or from the individual-level international experience of its entrepreneurs and managers (Reuber and Fischer, 1997; Singh et al., 2010). The latter might even predate the firm's inception, as is the case with the international new ventures' entrepreneurial owners. In some cases, these internal traits that give rise to firm's competitiveness can be brought in under the roof of the firm. Experience, including international, can also be substituted, i.e. acquired through purchasing other businesses or 'grafted' in-house by hiring managerial resources with requisite international experience and skills (Huber, 1991; Fletcher & Harris, 2012; Clarke et al., 2013; Love et al., 2015). For instance, for MNEs operating in China, it is important to have key local employees on the payroll, which could facilitate the relationship building with the local partners, since this country is known for nurturing special form of social capital represented by the concept of guanxi (Zhou, Wu & Luo, 2007).

The international experience literature suggests that the key resources of the early internationalizing firms (EIFs) come from the prior knowledge and experience of their founder(s) and other key individuals (Gabrielsson et al., 2008), both within the confines of the firm and in the networks they are connected to. They could tap into the resources available through their networks of partners, customers and suppliers, in order to access useful knowledge, expand their learning opportunities, as well as their pool of tangible resources, such as capital. Such assumption would especially influence the expectations for the international modes of the young and small ventures that cross borders rather early on, while they are technically still in the entrepreneurial phase (ibid). This could explain the bias in the international entrepreneurship towards exporting as primary mode of choice - both assumed and observed.

Since learning is a process of sourcing knowledge and combining it with the existing knowledge base (March, 1991) for improvement of organisational routines, the contextual factors play significant role for its effectiveness. Firm-specific advantages developed from general, non-location-bound international experience should have value in terms of mode-specific capabilities. Overall, general international experience brings MNEs an advantage for efficient exploitation of FSAs in remote locations. Although this type of knowledge contains limited market-specific intelligence, it can definitely play an important facilitating role in the rapid expansion. In the context of of our study, the international experience we measure is mode-specific. Although certain idiosyncrasies of operating with a certain mode do not translate across, we reckon that the general knowledge of the target market would still be valuable for further diversification, and it is insensitie to the mode by which that experience was accumulated.

There is also a counter-argument about the negative contingency effect of technological knowledge as a particular type of an intangible asset on the SM-P relationship, where the speed variable represented the geographic dispersion dimension (García-García et al, 2017). These authors attribute such influence to the activation of time-compression diseconomies (TCD) in a context of rapid geographic diversification, which demands greater degree of adaptation of the assets, before they can be exploited across locations.

The three variables that represent firm-specific resources feature twice in the main model of our empirical framework: both as predictors of the speed of multinational expansion (directly and jointly), and as moderating variables on the direct relationship of speed and performance. We assume that the MNEs have continued to accrue and upgrade their asset bases throughout the observation period. For the FDI experience this is more obvious, assuming that by remaining internationally active via the equity mode would enable the firm to gradually acquire and assimilate experiential knowledge of foreign markets. However, for the intangible assets such assumption may not be founded since not all subsidiaries have a function related to learning and knowledge acquisition, i.e. exploration (March, 1991).

3.5.1.2 The Effect of Context-Specific Process Outcomes on Multinational Diversification

The benefits of internalisation of assets via geographic diversification are contingent upon the context (Berry & Kaul, 2016), primarily because the experiential knowledge acquisition and the resources being developed and leveraged as a result would depend on the environmental characteristics. Each of the host environments offers a distinct set of circumstances, and provides the MNE with different source for experiential learning and building capabilities embedded in tacit knowledge (Nonaka, 1994), which in turn support further engagement in international activities. With wider geographic scope of the foreign environments, the variety of the host contexts increases and this affords ‘greater range of activities to which the firm’s experience relates.’ (Clarke et al., 2013; p. 268).

Multinational companies pursue international strategies and overseas operations for development of new and upgrade of existing strategic assets, so at least part of their FSAs would originate from international experiential learning and knowledge accumulation. In such circumstances, the comparison between environments is not with the reference the home country, but the host context which provided the source for such learning.

The geographic context in which the MNEs accrue their FDI experience determines the locations in which that experience is later applicable, with little or no alterations. In other words, the utility of the location-bound international experience will largely be contingent upon the degree of similarity in the economic systems between the host markets it originates from, and the target markets for expansion in which it should be deployed. For instance, Rugman & Verbeke (2005) argued that FSAs developed from operating experience within the home region of the MNE headquarters should be more valuable for further expansion in other countries within the same region, and such approach have positive implications on the performance.

The characteristics of the host markets are determining criteria for identifying the country-specificity (location-boundedness) of the international experience as a firm-specific asset. These fall within several categories, such as administrative (institutional), economic and cultural, and provide indication and guidance for the extent to which an MNE can apply its prior experience in other markets. Dissimilarities between the host environments pose liabilities, stemming from a lack of synergies in the institutional and regulatory frameworks, educational system and the human and intellectual capital pools (Li & Meyer, 2009). Such incongruities can lead to value depreciation of the investing MNE's intangible resources, since they impair their successful transfer and exploitation, and elicit substantial adaptation costs. The intensity of the location-specific knowledge would also depend on subsidiary's function, as well its embeddedness in the host environment (Meyer et al. 2011).

We mentioned earlier that the learning advantages often manifest with a time delay, since it takes a while for the organisation to assimilate the new experience and knowledge accrued from interaction with the local environment, and combine them within their existing knowledge base (Huber, 1991). The less of an overlap and similarity between the countries where prior experiential learning occurred and the new host, the greater will be the liabilities and costs of localisation, which would create delays in realisation of the geographic diversification benefits. This also might influence, i.e. either trigger or deter further internalisation of assets abroad, which underscores the context dependence of the experiential learning process and its implications for the MNE's operations.

3.5.1.3 Hypotheses Addressing Research Question 1

To address the first research question we formulated six hypotheses in which we predict the determining effect of MNE's firm-level intangible resources on each type of expansion speed. We also consider the interdependent effect of these resources.

We have already discussed how the internal resources, skills and capabilities of the firm are paramount for sustaining competitive advantage. The FSAs have significant influence on strategic decisions of MNEs, including their international diversification. Presence of intangible resources has also been linked with high-comittment international modes among SMEs (Yu, 1990; Jones & Coviello, 2005, p. 296).

However, these are often specialised to firms' past strategy and technology, and the same goes for their practices and organisational forms. The dynamics of the competitive environment demand that firms are continually updating and adjusting their asset base to the changing circumstances in the existing environment, and especially when facing new markets, since otherwise it would be rendered rigid, dysfunctional and counterproductive (Porter, 2011).

In our analytical model we stipulate that intangible assets play positive role, both as a predictor for rapid multinational expansion, and as a contingent factor for the performance ramification of this process. Effect in the same direction is expected from the intensity and breadth of FDI experience, i.e. these would have a precipitating influence for further expansion of the MNEs. They would also positively moderate the association between their rapid expansion and financial performance.

The breadth dimension of FDI experience is derived from the physical presence of a multinational enterprise in multiple host environments, which essentially represents the geographic scope or dispersion of its foreign subsidiaries network. Wider scope of multinational experience brings exposure to a richer set of environmental contexts and multiple sources for learning (Johanson & Vahlne, 1977), which nurtures international capabilities for the firm. The geographic dispersion of markets presents MNEs with more opportunities to develop organisational routines and knowledge-based capabilities that offer greater applicability across markets and better profitability prospects (Preece et al., 1998).

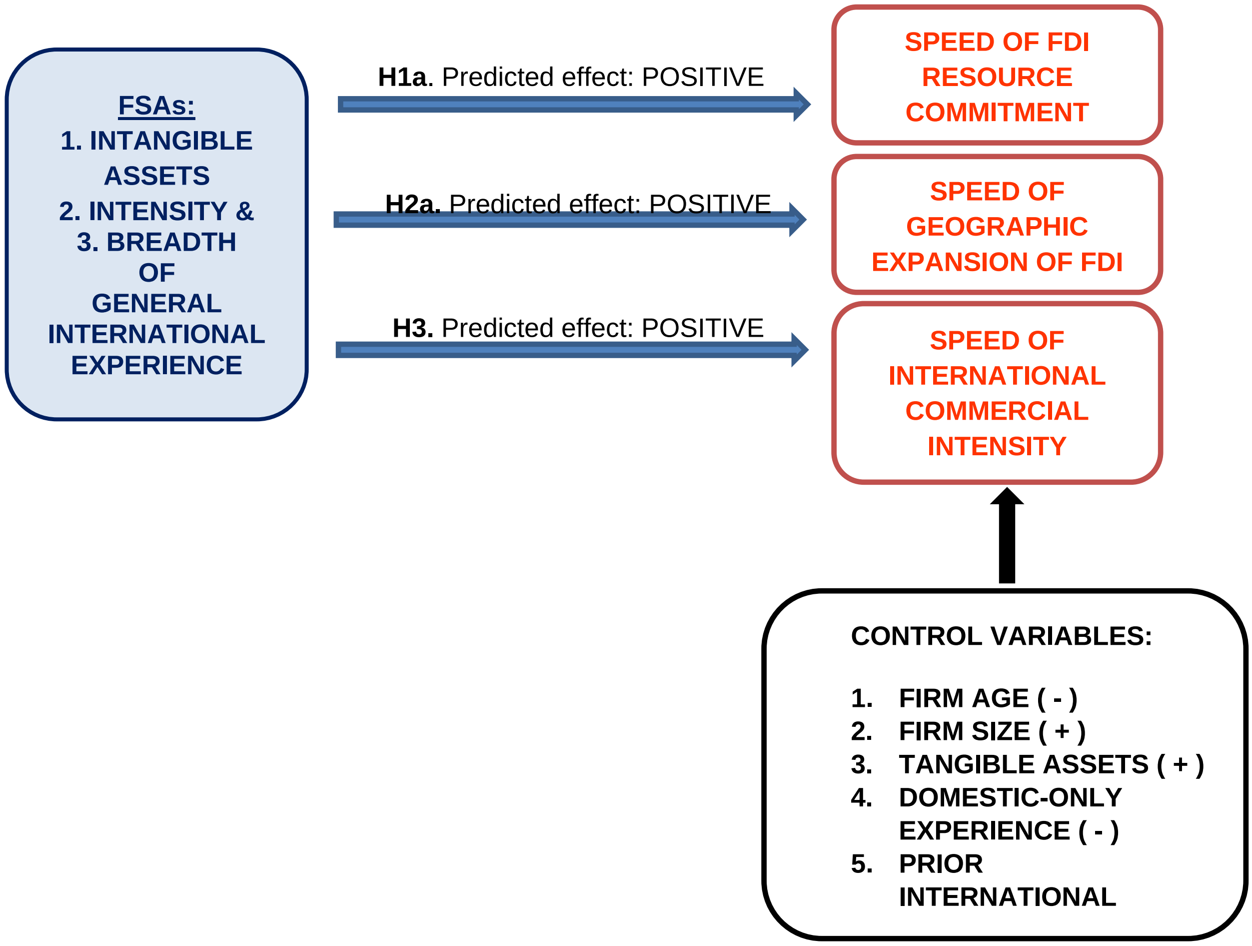
More diverse environments generate more valuable general experiential knowledge and extend its applicability across new host markets contexts (Eriksson et al., 1997; Casillas et al., 2015). This reduces the adaptation costs for new international entries, since knowledge can be transferred and shared among the MNE subsidiaries. Thus, greater breadth of FDI experience aids further overseas expansion at a rapid rate, without imposing penalties on profitability. This is afforded by the rising levels of absorptive capacity which learning and knowledge from diverse sources generate (Cohen & Levinthal, 1990). There is evidence that when the firm-level international experience increases, the subsequent foreign market investment / commitment would occur at a more rapid pace (Mohr & B, 2014).

Having operations in various countries (multinational presence) represents an instrumental source for new knowledge generation, and thus this diversity would improve the FSAs of the multinational enterprise and influence the subsequent international expansion. This includes equity commitment in the same or new countries – depending on whether the FSAs are location or non-location bound, i.e. whether they can or cannot be profitably exploited in a single or a set of similar countries (Rugman et al., 2011, p. 765).

We conjecture that the scale and duration of the multinational footprint would contribute to MNE's intensity of FDI experience, while the geographic scope and the implied diversity of multinationality indicate the breadth dimension of such experience. Both of these would give rise to knowledge-based advantages for the organisation and would facilitate quicker expansion in multinational context. Following the above reasoning, we assume that both intangible assets and the two aspect of mode specific experience would have positive determining effect on MNE's ability for rapid expansion, with respect to all speed dimensions included in this study. The six hypotheses presented below summarise these predictions.

A firm in ownership of intangible assets and sufficient levels of prior international experience has knowledge-based advantages and can shortcut through certain learning hoops when establishing a new foreign venture. Both the intensity and breadth aspect of FDI experience provide the MNE with better capacity to reap the benefits while offsetting the attendant adverse outcomes of rapid international diversification. Consequently, with regards the first dimension of speed, we formulate ***hypothesis 1a*** as follows*:* the firm-specific resources, i.e. intangible assets, intensity and breadth of FDI experience, would positively influence the *speed of multinational resource commitment* among the MNEs.

Figure 3.2 Empirical Model for Testing Hypotheses 1a, 2a and 3



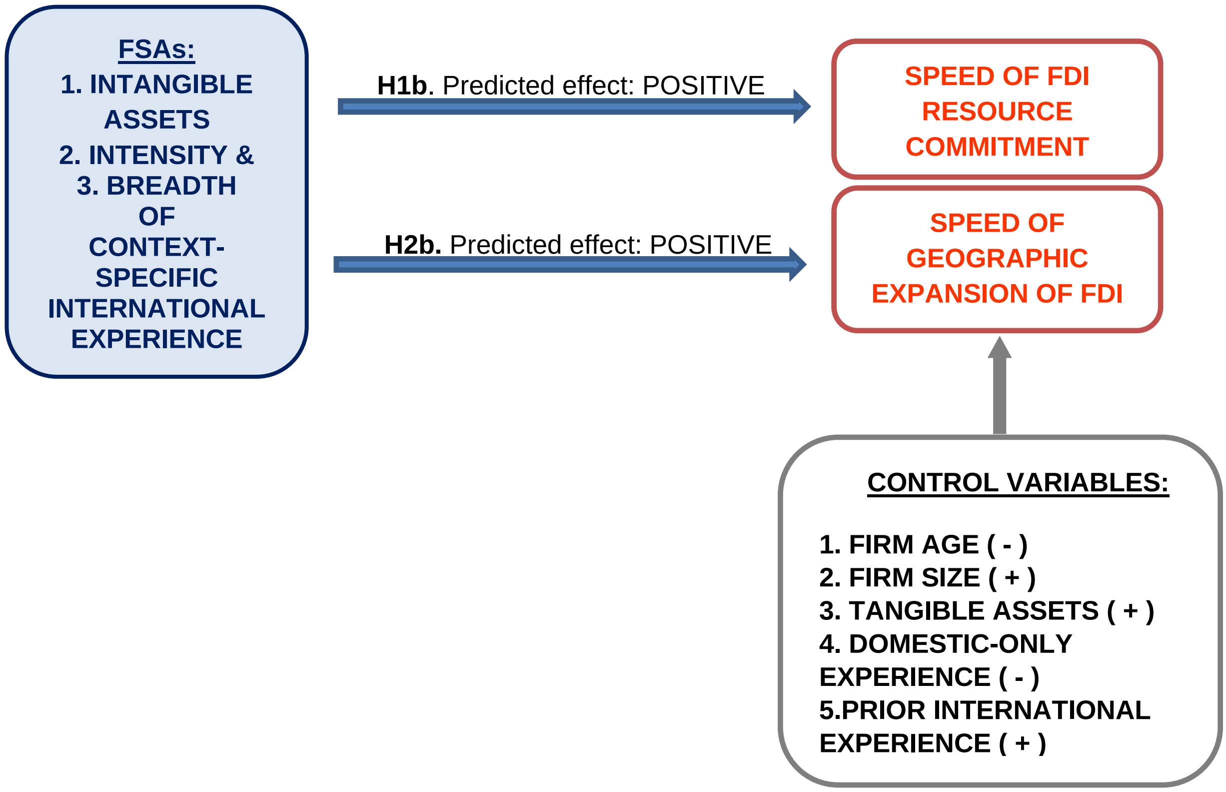
In the same vein as just discussed above, these firm-specific resources would be influential in driving and facilitating speedier dispersion in terms of geographic breadth (i.e. scope) of foreign operations. Therefore, the stated expectations in the next hypothesis are almost identical to H1a.

Hypothesis 2a:

We suggest that firm-specific resources, i.e. intangible assets, intensity and breadth of FDI experience encourage *rapid* increase in MNEs' *geographic dispersion of FDI* across host markets.

These two relationships we have just hypothesised are portrayed in the figure below.

Figure 3.6 Empirical Model for Testing Hypotheses 1b and 2b (the Impact of Context-specific FDI Experience on Speed)



While for H1a and H2a we examine the implications of two key aspects of general FDI experience, in other pair of hypotheses (H1b & H2b) we focus on its context-specific application, with the aim to obtain a more nuanced view about these speed antecedents.

The nature of multinational firms is such that they often pursue opportunities in multiple host country markets simoultaneously, and therefore need to manage the challenges imposed by exposure to a variety of socio-economic and institutional environments. Through their network of foreign subsidiaries, the MNEs bridge across and engage with multiple national contexts. The characteristics of each host market influence MNE's ability to transfer and locally deploy their FSAs stemming from prior international experience (Clarke et al., 2013). In addition to the widely investigated aspect of cultural distance, the geographic, administrative and economic types of differences are also contributing to the requirements for local adaptation (Rugman, 2004). In reality, the distance to be considered is not only between the country of origin and the target location, but the net difference between the accumulated experience in all international operations and the focal host nation. This notion is aptly described by the concept of ‘added distance’ (Hutzschenreuter & Voll, 2008).

There are additional benefits from high level of relatedness in terms of the host environments where international experience was gained. If the multinational firms already possess experience of running foreign subsidiaries in host locations with similar economic and institutional settings as the target country for a new subsidiary, then this would assist beyond the benefit offered by the general experience. The market familiarity is an important aspect that could facilitate smoother and speedier encore of FDI, by reducing any costs associated with issues of uncertainty and misunderstanding in the local environment. This advanatage would make that specific location an attractive option, and in such scenario the profitability gains would be more immediate, since it would aid the MNEs to capitalise more quickly on the overseas exploitation of their internalised FSAs (Yuan, 2016).

Based in an empirical context analysing the related international dimension of entry mode selection among MNEs from Nordic countries, a study by Dow & Larimo (2009) revealed that only international experience derived in similar foreign markets carries a predictive power. Their justification states that such experience ‘encompasses both types of learning‘ (ibid., p. 80), i.e. general and culture-specific, and hence the results show greater effect. Therefore, they recommend using a finer-grained, context-specific experience measure as empirically more valid option. Similarly, a study published in the same year (Li & Meyer, 2009), which a priori assumes the differential effects of the two kinds of experience (general international versus country-specific), demonstrated the context dependence of the latter.

We reckon that division of experience into types by one or several of its four dimensions or by the host country context, represent useful approaches for determining the relative effect of each factor on the rate of multinational expansion. The specificity of the international experience in the measure we use in this study is following a broad categorisation of host countries, determined according to their level of economic and institutional development (UNCTAD, 2017) into developed and developing.

We found further support in the IB literature in favour of our assumption that greater proportion of FDI experience derived from developed countries would be translatable in other host contexts, and potentially induce positive profitability outcomes. Specifically, the following statement describes how the current international business environment has evolved: ‘as emerging markets develop further, rendering the firm’s international experience in developed markets increasingly applicable to emerging markets’ (Clarke et al., 2013).

The next two hypotheses arise from the above discussions, and predict the following:

Hypothesis 1b:

We expect that location-bound firm-specific resources, i.e. intensity and breadth of FDI experience obtained in host markets with similar level of economic development, will stimulate greater increase in the *speed of multinational resource commitment* among MNEs.

Hypothesis 2b:

We anticipate that location-bound firm-specific resources i.e. intensity and breadth of FDI experience obtained in host markets with similar level of economic development, would motivate even greater increase in MNE’s *rate of change in the geographic asset dispersion in foreign markets*.

Graphical representation of the empirical models for both of these hypotheses are presented in Figures 3.4 and 3.5 below.

For the speed of international commercial intensity, we consider the same general effects from intangible assets and mode-specific international experience are to be expected as for the previous two types.

Hypothesis 3:

We predict a positive impact of MNEs’ firm-specific resources, i.e. the intangible assets, intensity and breadth of FDI experience, on their *speed of international commercial intensity*.

This dimension of speed represents the rate at which MNEs increase their volume of overseas turnover. We did not access and collect information about this aspect of foreign activities at country and subsidiary level, and our data do not permit us to measure the location-bound version for this type of speed. Therefore, in this instance we are not making any comparative predictions about the impact of location-bound aspects of experience on speed.

Some authors view internationalisation as a creative process, resulting from combination of specific resources (internal, FSAs) and circumstances (external, environmental factors) that are deployed over a given time-frame (Jones & Dimitriatos, 2003). The potential of these resources by themselves may not provide the entire VRIO contribution towards MNE’s competitive advantage, and resource combinations for multinational leverage ought to be considered for possible for development of new FSAs (Rugman et al., 2011).

Another argument is based on the assumption that internal resources are also developed via international activities. We content that in either of these scenarios the mutual correlation of these different types of FSAs would enable rapid rate of further FDI expansion. In the effort to precisely define the role of FSAs in the relationship with speed, we also propose to test their interdependence, i.e. how their mutual interactions are modelling speed. It can be expected that some of the firms-specific resources reinforce one another to facilitate quicker expansion. International experience and the knowledge-based advantages the firms derive from operating subsidiaries abroad would assist in exploitation of existing, and development of new intangible assets overseas.

Each of the three FSAs variables we use as predictors represent distinct concepts, yet with a degree of complementarities, stemming from their utility in the theoretical arguments of the RBV and internalisation theory. For efficient transfer and deployment of intangible firm-specific resources in new markets, relevant operating experience matters (Delios & Beamish, 2001). General, cross-country experience that is FDI mode-specific enables the MNE to accrue tacit knowledge about establishment of new foreign operations (Yu, 1990; Nonaka, 1994).

Experiential knowledge is an intermediate resource and a source for development of firm-level capabilities and strategic competencies. When it is of international origin, it represents a vehicle for transfer of knowledge-based resources within the organization and across national boundaries. It is a facilitating instrument for successful transfer, adaptation and utilisation of the intangible resources in local subsidiaries (Fang et al., 2007). Knowledge derived from operating subsidiaries abroad reduces uncertainty and perceived risk associated with further international diversification; therefore, it can assist in a more efficient deployment and exploitation of existing and development of new intangible assets overseas (Eriksson et al., 1997).

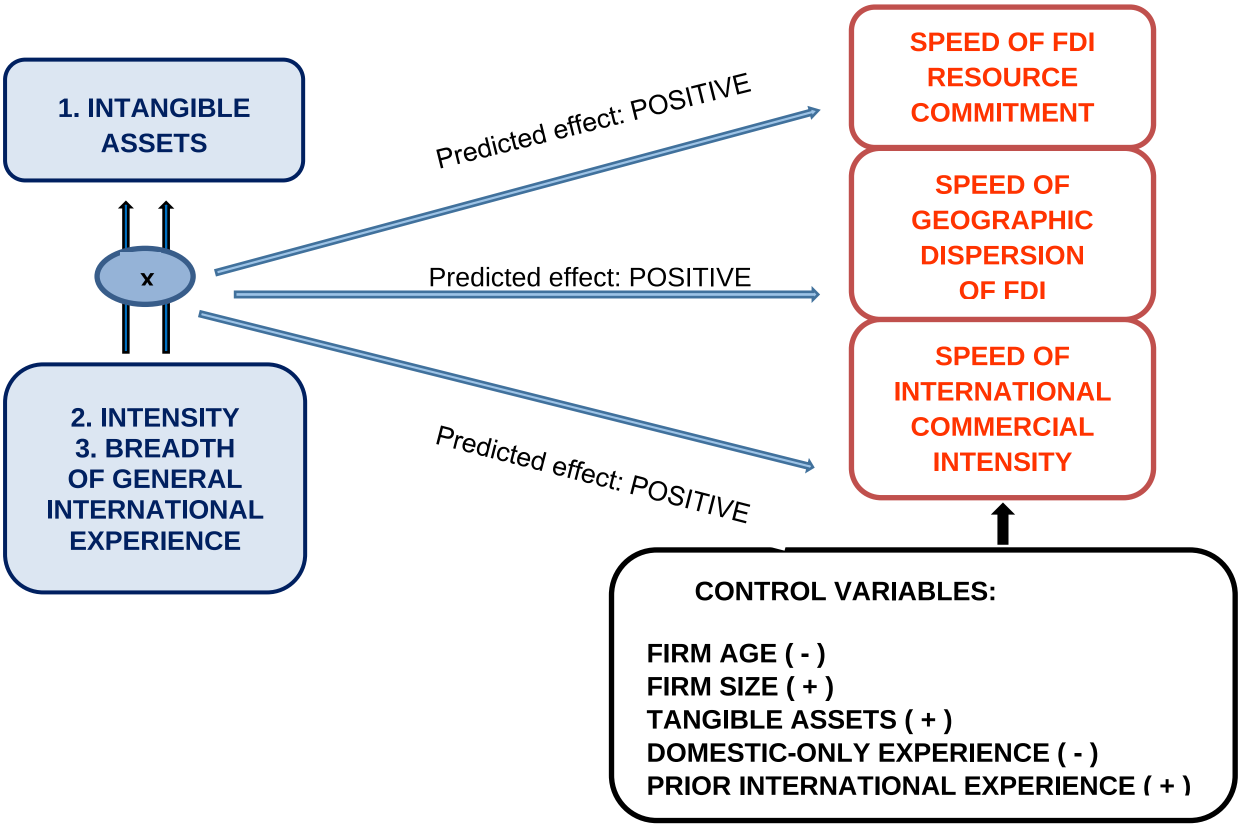
We maintain that both dimensions of experience, intensity and breadth, would positively influence the facilitation effect of intangible assets on the pace of multinational expansion. Consequently, we deem it instructive to examine whether there may be an interaction effect, where international experience moderates the relationship between intangible resources and multinational expansion speed in a positive manner. This is stated in the following (and the last) hypothesis intended to address the first research question of this thesis.

Hypothesis 4:

We propose that the favourable effect of *MNEs' intangible assets* on their speed of multinational expansion is positively moderated by the two aspects of *FDI experience*, i.e. its *intensity* and *breadth*. The expectation is that this contingency will apply to the relationship with all three speed dimensions, which are as follows:

a) speed of FDI resource commitment;
b) speed of geographic dispersion of FDI;
c) speed of international commercial intensity.

Figure 3.7 Empirical Model for Testing Hypothesis 4



In the next section we will detail our expectations about the direct and moderated causal relationships between different aspects of speed of multinational expansion and corporate performance of the MNEs. These are organised into two groups of hypotheses, which correspond to the second and the third research question in this thesis.

3.5.2 The Direct Effects of the SM-P Relationship

<u>3.5.2.1 Hypotheses Addressing Research Question 2</u>

We noted earlier (in section 2.5.1) that the majority of the reviewed empirical studies on SM-P have identified a quadratic performance function of speed of multinational expansion, and a few a linear form. There are findings in the literature of performance outcome from multinationality, which point to a possible cubic relationship between these constructs (Lu & Beamish, 2004). By extension, this may apply in the interdependence between performance and the rate of change in the degree of multinationality.

As we can see from the reviewed literature, there is sufficient evidence suggesting the consequences of rapid international expansion on firm's performance are varied and conditional upon myriad of factors. We adopt the same approach in our research, as we see no reason to have reservation about the non-linearity of the SM-P relationship through which both positive and negative effects of the process would manifest. Taking this possibility into consideration, we modelled the predictions from our hypotheses 5-7 by including a linear and two nonlinear terms of the independent variables.

Multinational configuration of a large and widely dispersed network enables better and more flexible access to resources (Hennart, 2007, p.431), and provides the MNE with opportunities to exploit local differences in tax levels, currencies, and various other economic and political arbitrages across host countries. If appropriately leveraged, the MNE would derive a range of benefits from its locally-embedded competitive advantages in diverse markets, and enhance the overall corporate performance. Viewed from a dynamic lens, the rapid rise in the geographic dispersion of foreign subsidiaries would ultimately be reflected in performance improvement.

The complexities and inefficiencies caused by having to manage and coordinate rapidly increasing subsidiary network will escalate and exceeding a certain threshold of multinationality would inhibit the MNEs from enjoying indefinite monotonic realization of multinationality benefits (Grant, 1987). Additionally, there is a risk of obsolescence of the existing knowledge and the amplified rate of expansion would hinder effective development of new knowledge requisite to cope with additional complexities of expanded and probably a diverse subsidiary network. This would influence a downward turn in the SM-P relationship curve.

When firms venture abroad it is assumed they would possess some threshold of the requisite resources and capabilities, such as R&D, product development and marketing skills and experience. Simultaneously with exploiting these firm-level profit-yielding assets, they ought to explore and acquire new types of knowledge and build and renew their knowledge base, in order to preclude competitive imitation and obsolescence. The latter process, however, entails costs of learning as the firms need to deal with complex knowledge and novel experiences, which create challenging dynamics of simoultanously managing competing goals of exploring and/or developing new knowledge and exploiting existing competencies (Levinthal & March, 1993). Firms which achieve a positive balance of these elements should fare better that their international counterparts and the local incumbents.

There is another reason that MNEs would reach the limits to their positive advantages and superior performance associated with rapid multinationality, after which they would experience a decline in performance, i.e. decreasing marginal returns to scale. The cost implications arise due to managerial challenges imposed by the elevated complexities that become incommensurate to their internal capabilities. In addition, there may be even performance ramifications manifested as stagnation and failure to make profits.

On the basis of the above arguments, we hypothesise about an inverted U-shaped curve representing the association between the speed of expansion by way of FDI resource commitment and the firm-level profitability (as a performance indicator). The stated relationship can be supported by both theoretical arguments and prior empirical evidence (Hilmersson & Johanson, 2016; Mohr & Batsakis, 2017; García-García et al., 2017). Results of another study (Wagner, 2004) indicated that international expansion speed (FSTS of subsidiaries) has an inverted U-shape effect on operational performance. Speed was here a moderator, considered as the change in the FSTS values between two cross-sectional time-points (5 years apart).

We expect that the curvilinear relationship would sustain over both the short and the long term of firms' international trajectory, but would change direction at increasing values of speed and display another wave of the curve. Therefore, for the ***hypothesis 5,*** we suggest that the direct effect of the *rapid FDI resource commitment* on MNEs' corporate performance is non-linear, and it exhibits at least a concave (inverse U-shaped) pattern, or even extends into a sigmoid curve.

We already discussed the concept of geographic scope as a dimension of breadth of FDI experience in its role as a predictor of rapid multinational expansion of the MNE. That is in relation to the positive aspects of this variable. However, there is also an inverse facet of this parameter, which would arise in the context of temporally modelled relationship between internationalisation and profitability (SM-P). Therefore, the positive impact of foreign market experience would not manifest at all levels of intensity and breadth. Rapidly expanding multinational firms which over-stretch their international operations above their capacities for absorbing and translating the experience into capabilities would suffer from the effect known as 'time compression diseconomies' (Dierickx & Cool, 1989; Pacheco-de-Almeida, 2010). In such cases, further expansion would have adverse implications and undermine firm's the performance outcomes.

Rapid increase in the geographic scope by entering new markets within a brief period causes greater change in the multinational landscape of MNE's subsidiary network. In the immediate term, there will be cost-related consequences for the firm to bear, due to the hightened needs for rapid learning about operating in disparate new host environments (Vermuelen & Barkema, 2002), and these would thwart the benefits of multi-market operations.

Additionally, such change would necessitate that existing firm-level resources and capabilities are adapted to a variety of market settings for their applicability and exploitation across geographic boundaries. That entails simultaneous learning and customization to different socio-political, cultural, economic and technological regimes, as well as local tastes and preferences. This process requires more attention and resources, including time. Assimilation and integration of new experiences and learning requires adjustment efforts which may take a while, and when there is information overload within a condensed time frame, diseconomies emerge and reduce firm's capacity to increase its profitability.

Furthermore, dissimilarities among the host countries grow with the rising geographic scope and the resultant incompatibilities depreciate the value of the technological knowledge (García-García et al., 2017, p. 100). This reasoning is supported by the organisational learning perspective, which assumes there are boundaries to firm-level learning when MNE's degree of multinationality rapidly rises within a short period (Pacheco-de-Almeida, 2010) and surpasses the existing level of firm's absorptive capacity, which in the immediate term creates diminishing returns of learning. The same effect has also been shown in other empirical studies (Vermuelen & Barkema, 2002; Hashai et al., 2016).

This expectation about negative association between rapid geographic dispersion of operations into new markets and firm's profitability can be further explained by the reasoning of the classical internationalisation model, which advocates gradual expansion into familiar markets, characterised by low psychic distance (Johanson et al., 1975). Commitment of resources internationally can be partly attributed to the reduction in the perceived risk and uncertainty as a result of learning and knowledge acquisition from foreign markets. There are costs attached to the process of setting up new business entities abroad, which are typically considered before each international strategic decision and action. A portion of these are learning costs (Contractor et al., 2003), especially when the firm-level international experience is low. In the subsequent steps of expansion, these cost should be reduced due to the incremental build-up of experiential knowledge.

But this negative effect should diminish over time, as the MNE manages to cope with the new operations and integrate knowledge-based experience into its routines and internal processes. With increasing rate of continued expansion, firms should be able to leverage the structural investments and recoup the overhead administrative burden by spreading their operations in additional markets (Casillas et al., 2015). Having FDI engagements in multiple host environments becomes an asset, which would not only benefit further expansion, as we discussed earlier, but also encourage a positive corporate performance. The described dynamic would be statistically represented by a convex nonlinear function.

On the basis of above discussion, for ***hypothesis 6*** we propose there is a non-linear relationship between the *speed of MNEs' geographic dispersion in host markets* and its corporate performance, and expect it to exhibit a convex (U-like) shape and would likely extend into a sigmoid curve. Our argument resonates with the findings of Vermuelen & Barkema (2002).

Therefore, hypothesis 6 conjectures a curvilinear (likely a sigmoid) direct effect from MNE's rapid increase in the geographic spread of host markets on its financial performance. Our expectation is that this relationship curve would exhibit an initial negative slope which would later change direction into a positive, thus manifesting as (at least a convex) U-like shape, before it switches again into a negative slope, with further rise of expansion speed.

To the best of our knowledge, there are only a couple of other studies have thus far tested the direct SM-P relationship with respect to the scope dimension of speed: Hilmersson & Johanson (2016) and García-García et al. (2017). Both of them have predicted and found a nonlinear, concave association among the key variables. However, they base their arguments for the expected direction on perspectives which apply to SME exporting context and for long-term performance implications, respectively. The first study is grounded in the IE stream of research on early and rapid internationalisation of SMEs, where the learning advantages of newness (Autio et al., 2000; Sapienza et al., 2006) enable quick re-configuration and adaptation of exisiting resources for international markets. The entry mode explicitly considered is exporting, so the scope dimension entails much lower complexity levels. Thus, the benefits of rapid geographic diversification are manifested immediately, as depicted by the ascending segment of the U-shaped curve.

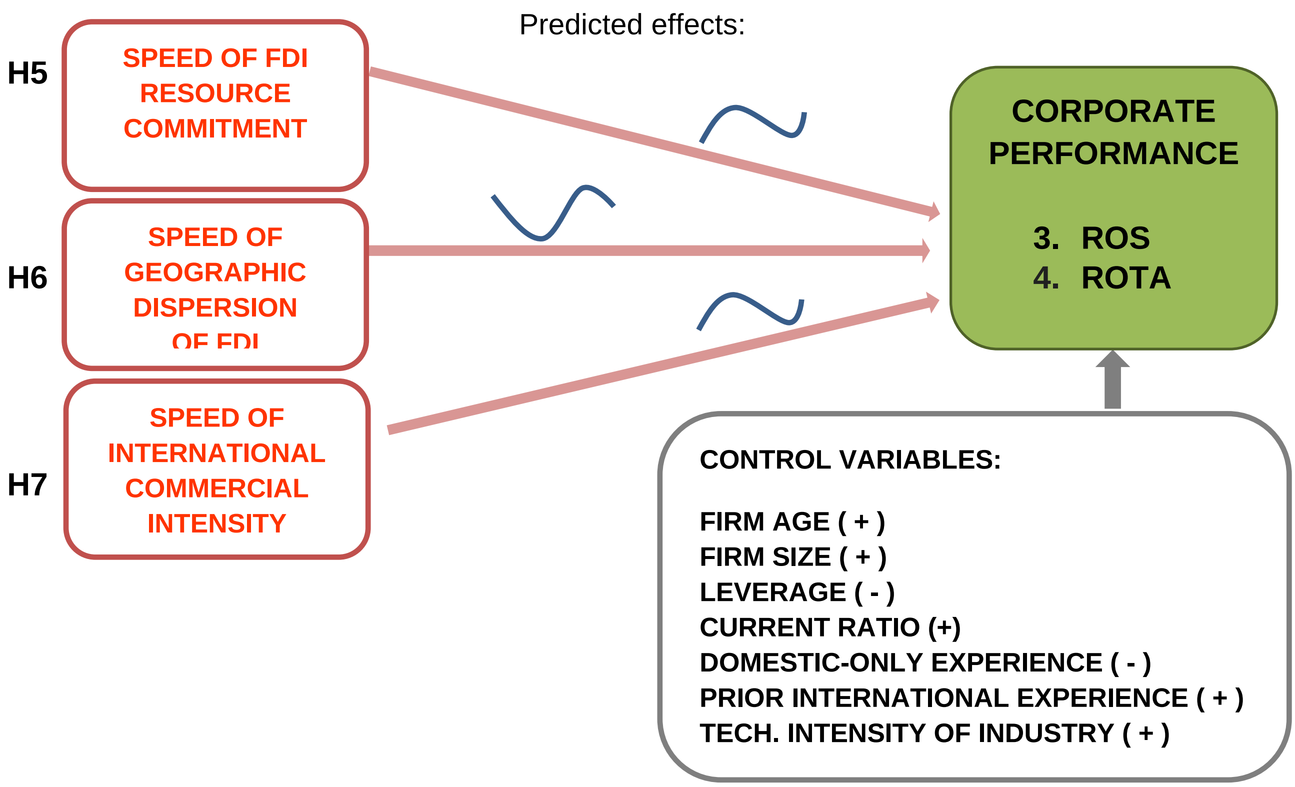
The other study (García-García et al, 2017) employed market based performance measure (Tobin's Q), which captures long-term effects. One possible explanation is that they capture the second and third stage of the sigmoid shaped SM-P curve, whereas our short-term performance measure also exposes the initial negative association with rapid speed of scope expansion, which later with the increasing speed levels takes a positive direction.

We expect that MNEs would receive more immediate positive performance effects from rapid increase in the foreign sales, since commercial adaptation is less demanding than equity-based engagement overseas (Wagner, 2004). However, the acceleration (rapid rate growth) would also inflict a liability, which would be reflected in the negative effects (incurred costs) on their profitability. The way we measure the key constructs of this relationship, dynamic change in the foreign to total sales ratio and return on sales or assets for the corporate performance, in fact indicates the association between MNEs' international and their overall performance.

<u>Hypothesis 7</u>: We suggest that the direct effect of the *speed of international commercial intensity* would affect MNEs' corporate performance in a non-linear pattern, which would likely resemble a reversed U (concave) curve, and possibly even extend into a sigmoid.

Graphical representation of the relationships predicted in all three hypotheses we have just discussed with regards our second research question is provided below.

Figure 3.8 Empirical Model for Hypotheses in Research Question 2: H5, H6, H7



3.5.4 Contingent Effects on the SM-P Relationship

3.5.4.1 Hypotheses Addressing Research Question 3

To address this question, we shall examine a set of contingent effects on the direct relationship between the three types of speed of multinational expansion and firm performance. We suggest that this approach, testing the boundary conditions of the association between the main constructs, might help in disentangling and illuminating some of the underlying reasons for the conflicting results in prior studies.

Both the RBV and the internalisation theory contend with the view that the levels of multinationality which correspond to the benefits segment of the performance curve are further strengthened, i.e. positively moderated by a strong presence of superior internal assets. Empirically, firm-specific resources have been tested and demonstrated to strengthen the M-P relationship (Contractor et al., 2016), as well as the SM-P one, too (Chang & Rhee, 2011; Mohr & Batsakis, 2017).

Following the RBV logic, the international business literature has especially heralded the prominent role of knowledge-based and knowledge-intensive inputs in cross-border operations. We mentioned the ample evidence for a number of firm-specific factors acting as drivers for multinational expansion: brand and reputation, marketing capabilities, research and development skills, patents, human and relational (social) capital, international experience, as well as economies of scope and scale. There is evidence that these can also significantly impact, i.e. moderate the effect of multinationality on firms' corporate performance. Certain types of intangible resources (human and relational capital, technological and innovative capabilities, as well as marketing intensity) were shown to interact both individually and jointly, and thus holistically influence the positive international diversification consequences of firms (Hitt et al., 2006b, Kotabe et al., 2002; Kirca et al., 2011).

Individual MNE strategies are a key source for moderating influence on the direction and magnitude of this linkage. According to the RBV, firms devise and execute their strategies contingent on the available resources and capabilities (Peteraf, 1993, p. 189).

The same category of intangible resources we proposed as multinational speed antecedents are also known to influence the corporate performance of international firms. Studies from both the RBV (Barney, 1991; 1996; Delios & Beamish, 2001) and the internalisation perspective (Kirca et al., 2011) have demonstrated the positive effect of firm-specific assets on the performance of the firm.

In the empirical analyses of M-P studies, firm-specific variables have mainly featured in the role of predictor or control variables, with few exceptions. Kotabe et al. (2002) have employed research and development intensity as a moderator of the multinationality impact on performance. The moderating effect of intangible assets has been tested in Lu & Beamish (2004) in SME context, and also by Contractor et al. (2003). Subsequently, Chang and Rhee (2011) have tested the same variable in SM-P context and found positive moderating influence. They measured the variable by other proxy components, brand equity and marketing know-how. There is also empirical support for the differential moderating effect of the R&D and marketing intensities on the M-P link, with gains in operational performance being reaped sooner than in the financial performance indicators (ROA and ROE) (Gomes & Ramaswamy, 1999, p. 182; Kotabe et al., 2002, p. 93).

To fend off and mitigate any adverse effects of rapid expansion across wider range of foreign markets, such as rising complexities and coordination and governance costs, the school advocating gradual internationalisation suggests that firms ought to equip themselves with sufficient level of applicable experience in foreign markets. In that sense, international experience represents a valuable firm-specific resource, and provides a source for organisational learning about managing foreign processes and operations. Having a top management team (TMT) proficient in international business basically locates this type of resource at individual level and if appropriately applied, transferred and disseminated, could potentially compensate at organisational level (Singh et al., 2010) and this positively affect the degree of international diversification (Batsakis et al, 2017; Peng-Yu, 2018). Alternatively, firms could graft (Huber, 1991; Fletcher & Harris, 2012) this type of resource by hiring competent local mangers and skilled staff at the subsidiary destinations.

Similarly, in empirical context of examining the M-P linkage, Tallman & Li (1996) have tested and shown a positive moderating influence of the geographic scope of MNEs' international operations on the effect of its scale of multinationality (measured as FSTS) on performance. These two constructs seem to be statistically highly correlated. In our study we have modelled such an interaction with the speed of increase in the multinationality scale in the regression testing hypothesis 9c. By the same token, we incorporated this assumed moderating effect of the breadth of international markets (i.e. geographic scope / dispersion) in the models for H8a and H8b for the scale dimension of speed, and in H9a and H9b for the speed of geographic scope as predictors.

A higher number of host countries where MNEs have established direct operations provides them with both challenges arising from the management and coordination complexities, but also with more opportunities for diverse experiential learning. For instance, it has been established that frequently, the main strategic motive of many MNEs from developing and emerging economies for entering more advanced nations is a quest for location-specific, knowledge-based assets (Narula, 2012). Wider geographic scope stimulates exploration and search for new knowledge required for upgrade of their existing FSAs, and development of new knowledge (March, 1991) and capabiltiies. Multinational companies with more dispersed multinational subsidiary networks typically gain greater exposure to a diverse set of consumer preferences, and socio-economic, political and cultural institutional settings.

When adding a new foreign subsidiary to its network, the firm need to assess and consider a multitude of factors, such as the potential benefits, risks, costs, etc., and that process requires substantial time and effort. With continued multinational operations and increasing degree of involvement, firms upgrade their experiential knowledge base and thus develop new capabilities and augment the existing ones. It has been recognised that learning about host country conditions in general, and particular with regards equity-based operations accumulates useful operating experience and helps MNEs overcome competitive disadvantages that entering new overseas markets entails (Barkema et al., 1996). Greater scope of foreign-based operations as sources for international experience and learning should result in a more diverse and richer knowledge base.

It has been already suggested that a low level of relatedness across geographical markets may represent a constraining factor for multinational diversification (Vachani (1991), and consequently for its performance.

On the basis of the arguments elaborated above, we expect that the variation in the nature of the direct effect of the multinationality on MNEs' corporate performance results would depend on several moderators.

For the first set of hypotheses for this research question, i.e. H8a, H8b and H8c, we predict that the firm-specific assets would positively moderate the nonlinear (concave, convex or sigmoid) relationship curves between each different type of speed and MNEs' performance. In other words, greater extent of intangible assets, as well as intensity and breadth of international experience, would enhance the impact of MNEs' rapid international diversification on their accounting-based performance, measured as either ROS or ROTA.

Accordingly, we have formulated the following group of hypotheses as listed below:

Hypothesis 8a:
We predict that higher levels of intangible assets, intensity and breadth of mode-specific general experience would improve the performance outcomes of MNE's *rapid resource commitment via foreign direct investment*. In such a manner that their moderating influence would flatten the inverted U-shape and sharpen the third segment of the S curve of the SM-P relationship.

Hypothesis 8b:
Greater levels of intangible assets, intensity and breadth of mode-specific general experience would positively moderate the direct impact of *speed of increasing geographic spread of FDI* and MNE's corporate performance. The moderating effect of each of these FSAs would be such that they would steepen the U-curve and flatten the last segment of the S-shaped curve of the SM-P (represented by the cubic term).

Hypothesis 8c:

Possession of firm-specific resources, such as intangible assets, intensity and breadth of FDI experience would positively interact with the direct effect of MNE's *speed of international commercial intensity* on its corporate performance, and as a result they would flatten the inverted U-shape of the SM-P relationship.

The relationships we proposed in the above hypotheses, as well as in hypothesis 3, may shed light on the interface among several DOI dimensions, due to the measures of the construct: both speed of commercial intensity abroad and the two aspects of experience contain the scale and scope dimensions.

In continuation we suggest that the direct relationship between the rate of multinational expansion and the firms' corporate performance is further explained by another type of contingent effect stemming from the MNEs' FDI location strategies. This proposition rests on the notion of variable profitability from the FDI in different country clusters, and more specifically in relation to their level of macro-economic development. The characteristics of the FDI destination (i.e. the host country market) have been shown to have an impact on the profitability of firm's investments there (Grant, 1987).

On the basis of these arguments, we considered testing another moderator which pertains to the economic & institutional context of the geographic destinations in which MNEs spread their foreign operations.

It has been observed that developed countries share more commonalities amongst themselves; compared to the members of the developing group, in terms of institutional arrangements, market transparency and efficiency, which increase the contextual applicability of experience across these markets (Li & Meyer, 2009, p. 371).

Therefore, the international experience generated from FDI operations in developed countries would have high level of transferability in any type of host environments – both similar and different to the source country. That means that the country-specific

FDI experience accrued in developed markets has a higher general value and applicability in both developed and developing countries, and therefore represents a useful resourse / FSA for multinational expansion.

The next set of hypotheses is intended to verify whether MNEs with foreign operations dispersed in economically developed countries should expect better performance outcomes from rapid expansion with regards each of the three multinational speed dimensions: resource commitment, geographic dispersion and commercial intensity.

For the purposes of research and economic analyses, a commonly accepted categorisation of national economies is used, based on the economic conditions in the country. Formulated by the United Nations, there are three broad categories: *developed*, *developing* and *economies in transition* (or emerging economies). In this study we have decided to use a dichotomous classification and include the emerging economies with the developed category, since this group has characteristics which are closer to the more developed economies, and show a much wider gap in relation to most of the constituent members of the developing countries.

At a broad level, each of these categories of host countries provides a correlated environmental context for the MNEs' foreign operations. Belonging to a developed country subset implies greater general level of economic development in terms of income levels and consumer purchasing power, but also industrial and technological advancement, and sophistication of the institutional environment. Typically, these economies are characterised by efficient and transparent administrative mechanisms (legal and regulatory, IPR protections) and distribution systems. On the other hand, there is notable heterogeneity among the developing countries in terms of their institutional arrangements compared to the developed group, since each individual country offers idiosyncratic institutional context (Li & Meyer, 2009).

It must be noted that this overlap of the level of market development and institutional arrangements is viewed form a broad perspective, and it is not to be ignored that each local context within the group of developed economies offers a variety of differences, for example cultural and linguistic, and that demands adjustment expenditures for the MNE and their focal foreign operations. Bearing in mind we use a UK sample, it is suitable to mention that in the case of the British MNEs, due to a historical background, the Commonwealth countries as FDI target destinations may represent a small distance with repect to linguistic and cultural traits (Grant, 1987). However, in terms of economic development the majority of these nations are in the developing and emerging category and therefore, greater operating adjustments should be expected following FDI entry there.

The degree of international diversification in developed countries implies the level of mode specific experience, and potentially other related FSAs, that MNEs derive from operations (foreign subsidiaries) established in this category of host environments. This means that multinational companies from developed countries which have either prior domestic or international experience gained in other developed nations, upon entering a new host country of the same category they would encounter greater market familiarity than idiosyncrasies. Regardless of the physical geographical distance, the sufficient degree of overlap in terms of institutional and regulatory market environment affords these MNEs a contextual proximity when they enter via FDI in another developed economy.

Under such circumstances of reasonable similarity of institutional and economic systems, the firm can leverage its relative absorptive capacity and specialised routines to gain access to novel resources in the host environment more smoothly and cost-effectively. For that reason, the contextual learning accrued from previous / existing foreign operations would be transferrable and applicable in another similar host environment to a reasonable extent. We maintain that this would be sufficient to provide a visible moderating effect to boost the performance outcomes of speedy diversification in developed foreign countries.

Following the lines of reasoning presented above, we formulate the next (and the last) three hypotheses, as follows.

Hypothesis 9a:
The MNEs' <u>degree of subsidiary network dispersion in the economically developed host countries</u> would positively moderate the direct relationship between the *speed*

of FDI resource commitment and their corporate performance. As a result it would vertically compress the sigmoid curve depicting this association by boosting the slopes upwards, thus flattening the inverted U-shape and steepening the last segment of the sigmoid.

Hypothesis 9b:

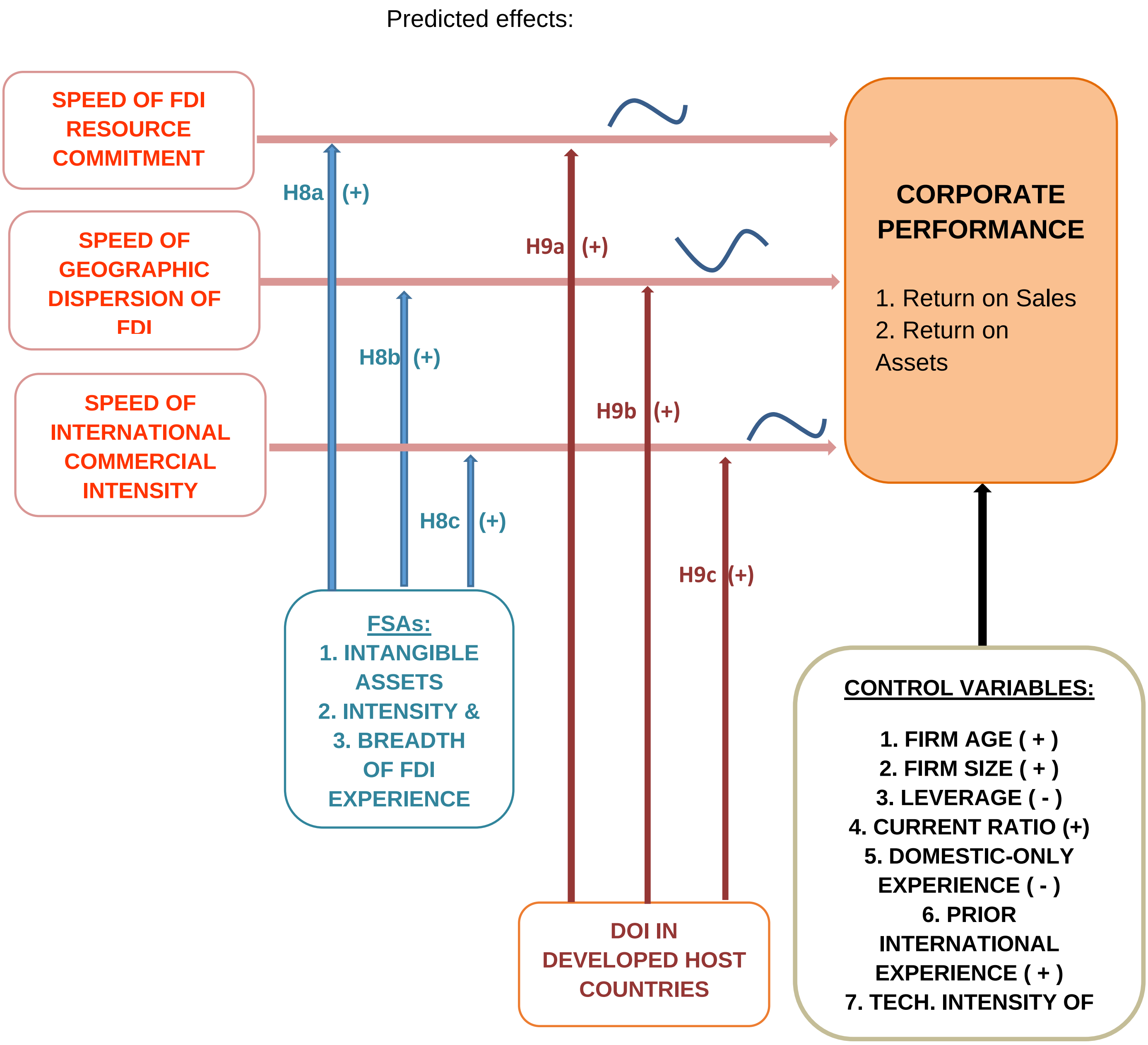
The extent of subsidiary network dispersion in the economically developed host countries would positively moderate the direct relationship between *speed of geographic dispersion of FDI* and MNEs' performance. As a result, by boosting the second and thirt order terms, this moderating factor would steepen the upward sloping part of the convex SM-P curve and flatten the negative slope of its sigmoid.

Hypothesis 9c:

In general, MNE's degree of subsidiary network dispersion in the economically developed host countries would positively moderate the effect of its *rapid increase in international commercial intensity* on the corporate performance. As a result, this moderator would flatten the concave shape (i.e. inverse U) of the curve representing the direct relationship.

For graphical representation of these predicted relationships, please refer to Figure 3.9 below.

Figure 3.9 Empirical Model for Hypotheses in Research Question 3: H8a, H8b, H8c, H9a, H9b, H9c



3.6 Chapter Summary

To guide the empirical research in this thesis, we have proposed a conceptual framework which amalgamates key findings about the topic of interest with the arguments of three theoretical perspectives.

In the first group of six hypotheses (H1a-H4) we predict positive relationships between each of the three variables representing firm-specific assets and MNEs' speed of multinational expansion. Empirically, this expectation would be realised if we obtain positive and statistically significant estimated coefficient of each independent variable, as that would signify increase in the speed of multinational expansion, represented by the outcome variable.

We have further contextualised our theoretical arguments for the first research question by empirically testing context-specific measures of FDI experience. Following Li & Meyer (2009, p. 371), we adopt the epistemological view about context-specificity of experiential knowledge and its differential effects conditional on the host environments. The arguments and assumptions postulated in our study are complementary for interpretation from both internationalisation paradigms.

Following a critical assessment of more recent research that concerns our focal topic, we have noted prior observations about the shortcomings in the empirical IB literature with regards its treatment of the temporal aspects of international expansion (Eden, 2009). With the aim to address the stated gaps in the literature, we have developed an analytical model which suggests a more nuanced, multidimensional operationalisation of the key construct of speed for testing the different hypothesised relationships we presented in section 3.5. Details about the research methodology in this study, including specification of the empirical models and operationalisation of the variables are provided in the next chapter.

4. RESEARCH METHODOLOGY

4.1 Introduction

In this chapter, we will present the chosen methodology to address our research questions, and discuss the rationale behind the selection. The content is structured as follows: to begin with, we provide some background about the general methodological considerations and the context of our study. Next, we proceed with details about the research setting and analytical design. Once we reveal the data and sample used in our analysis, the text proceeds with description of the chosen methods and why we consider them suitable to address our research questions.

4.2 Research Approach

It is important to bear in mind what research represents and entails. According to Collis (2003), it is a systematic and methodical process of investigation that aims to extend the existing body of knowledge. Our research can be placed towards the positivist end of the epistemological spectrum, since the relationships between the concepts, variables and measurements have been derived by a-priory theoretical reasoning and tested by statistical methods.

For the analysis we have used an econometric model, into which we have translated the assumptions and hypothesised relationships of our theoretical model. The statistical equations, which we used to test data from the real world, i.e. from actual firms, have largely reduced the complexity of the ‘real environment’. (Simon & Blume, Mathematics for Economics, 1994, pp. 3-4)

4.3 Research Setting

In this study we accept the definition of international business as ‘a firm-level phenomenon occurring across national borders’ (Hult et al., 2008, p. 1065). Multinational firms with a range of degrees of international diversification provide a suitable context to study our focal topic and address the research question. For our data we selected a heterogenous single country sample, comprised of ninety publically listed multinational enterprises originating from the UK, with observations for twelve-year period, between 2006 and 2017.

The variety in the sample was deliberate, in order to lower selection bias which could stem from unique resource endowments of certain type of MNEs, for instance those which are highly diversified or global, or have been established for a long time. There is evidence that the domestic setting (for example, the market size and culture) of multinational firms generates factors that can affect their internationalisation decisions and performance outcomes. This corresponds to the assumption expressed by the Dunning's Eclectic Framework (1988) about ownership advantages of MNE's country of origin. With use of a single country sample we obviate the need to control for such home-country effects, stemming from advantages or impediments for international expansion embedded within the home country environment.

Single country sample has been and remain a common occurrence in the IB studies, or to be precise, over a decade ago this figure was 61 percent (Yang et al., 2006). Although a single country focus is, more often than not, considered a limitation in the IB research, investigations embedded in a specific context are central for explaining most research questions about businesses operations. In addition to that, this approach circumvents the bias that is evident in IB studies which have used multi-country sample of MNEs. As Geringer et al. (1989, p. 114) have observed, results from these efforts reported different mean performances among the MNEs stemming from different home countries, and this bias was particularly evident between the US and European firms. In other words, the outcome was either continent-specific, or at least influenced by it. Such outcome may be chiefly attributed to the discrepancies in the national classification of firms' size, as well as the varying degrees of internationalisation among the MNEs, often contingent on their domestic market size and conditions. The reality is that empirical studies always contain an element of contextualisation, since it enables researchers to assess the general theoretical assumptions and make them specific to a particular setting.

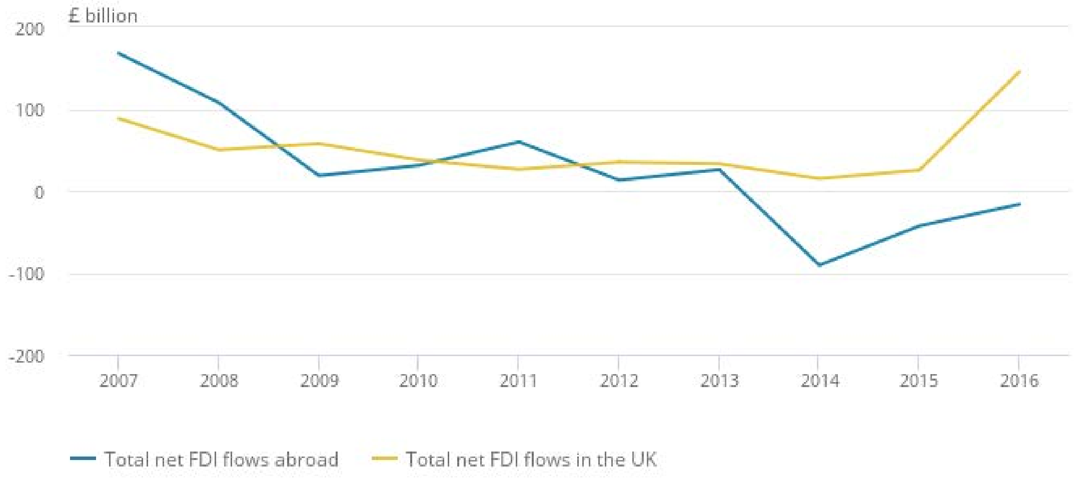
Because we have tested the hypotheses on a sample of British-born MNEs, we did not expect to encounter any issues with confounding results from the statistical analyses. We hve found some justification for our sample selection in the remark by Meyer (2014) who stated that 'for young scholars, a focus on a single country may be a good starting point for a scholarly career in the field.' Another benefit of using a single country sample is the possibility of cross-comparison of the findings. A good proportion of the IB studies exploring international speed both as an outcome, and its effect on performance revolve around MNEs from single country settings, and a large majority of those that have used samples from developed economies take account of contexts very similar and geographically close to the United Kingdom. Namely, these include other members of the EU, such as Netherlands (Vermuelen & Barkema, 2002; Nadolska & Barkema, 2007); Germany (Wagner, 2004), Spain (Casillas & Moreno-Menendez, 2014; Garcia-Garcia et al., 2017), Sweden (Hilmersson, 2014; Hilmersson & Johanson, 2016; Hilmersson et al., 2017).

The common European context offers an advantage for the cross-comparison, for example, the common market affords equal set of market opportunities for firms seeking intra-regional expansion of their foreign activities and operations. In addition, we have identified a couple of non-EU countries which have been used for MNE samples in studies testing the speed-performance relationship, and are characterised by both different economic size and outward FDI profiles: Japan (Yang, Lu & Jiang, 2017) and Israel (Hashai et al., 2016). Interestingly, all of the published research efforts on the SM-P relationship tested on developing country context are based on samples from Asian economies. See Appendix 2.1 for details of these studies.

We submit that our empirical context is appropriate to study the phenomenon of FDI expansion and particularly the speed of multinationality – performance linkage. British multinationals have been dominant players in the international business scene since the mid-19th century (Jones, 1993), and scholarly observations and analyses of their overseas activities and operations has shaped both theory and practice. United Kingdom still represents one of the major sources of outward foreign direct investment in the world (Driffield et al., 2012; ONS, 2018). Among the macroeconomic factors which impact the high levels of outward FDI are UK's flexible tax and labour market policies, which facilitates easier overseas relocation of operations from the efficiency-seeking MNEs. The outcomes have been evident in the high number of by British multinationals that diversified both across sectors and geographies in pursuit of greater productivity, growth and competitiveness.

Below is a graphic representation of the macroeconomic trends of FDI flows at national level for the period 2007-2016 (see figure 4.1 below).

Figure 4.1 UK Outward and Inward FDI Flows, 2007-2016



Source: Office for National Statistics

4.4 Research Design

The conceptual framework presented in the prior chapter has served as a foundation to generate fifteen hypotheses for this study and design a functional empirical model comprising two different components. Each centers on the multidimensional concept of speed of multinational expansion, and jointly they capture both the firm-level determinant aspects and its direct and contingent performance results. Speed of multinational expansion represents a focal element in our analytical framework, as it is being considered as both an outcome and effect variable. We have designed a comprehensive empirical model to test speed in both of these roles. In the hypotheses H1a to H4 we formulated predictions about some antecedent factors of speed of multinational expansion, whereas in the remaining nine hypotheses (H5 to H9c) we proposed relationships of the same construct as a predictor of financial performance.

Quantitative methodology was chosen for the data collection and analysis. Although qualitative methods, such as case studies, have high level of validity and provide valuable insights in the exploratory stages of an investigation on a topic, they fall short on generalisability (Collis, 2003). Throughout this chapter we are providing detailed operationalisation and description of all the variables in the empirical model, their data sources and measurements.

Consistent with the notion that internationalisation is a development process which occurs and unfolds over time (Welch & Paavilainen-Mäntymäki, 2014, p. 55), a research dealing with this phenomenon would respond well to a longitudinal approach. Dynamic formulation of the multinationality and firm performance association (Grant, 1987), as well as the relationship between speed of multinational expansion and performance (Wagner 2004; Hilmersson & Johanson, 2016), has been attempted in tests on cross-sectional data, by measuring the changes in the dependent variable between two or several time periods. Although this may provide finer tests than the ordinary static model, compared to the advantages offered by longitudinal datasets, this approach seems like a compromise.

Following related research efforts (Casillas & Acedo, 2013; Chetty et al., 2014; Hilmersson & Johanson, 2016), we define speed as the time it takes for firms to cross the 'distance' between their first international investment (considered as the starting point, i.e. time 0) and the level of multinationality at the last period of observation. Basically, we average the values of the degree of internationalisation, i.e. degree of multinationality during each of the observation periods over the length of time elapsed since the initial FDI step (t). We have considered a year as the lowest unit of time for our measures. Hence, the time periods have been uniformly calculated on annual intervals only. For instance, regardless of when during a particular year a firm was established, we have calculated the calendar years until the period of interest, i.e. the year of 1st FDI. If these two events (incorporation and foreign investment) concurred within the same year, the period lapsed was calculated as 0.5 years in any such instance.

We focus on the activities of the multinational firms over time, and the firm year is used as core unit of analysis, because we deal with dependent variables that are defined and measured at the firm level. This is consistent with the existing theories and research on the phenomena of internationalisation and its performance outcomes, which have consistently treated these phenomena at the organisational level (Caves, 1998; Yang et al., 2006; Miller et al., 2016). Considering the longitudinal nature of our data, the actual unit of analysis incorporates a time component, i.e. we are observing and analysing each firm-year entitiy.

The generic estimation formula for a panel data model is as follows:

$y_{it} = \alpha + X'_{it}\beta + u_{it}$, *where* $i = 1, \ldots, N$; $t = 1, \ldots, T$

4.5 Analytical Models

In this sub-section we will present the specific elements, methods and modelling procedures for the three main components of our analytical model. Two different methods were utilised, and the selection of each specific approach was dictated by the nature of our data, and the results from the diagnostic tests we performed, which guided us in the direction of most suitable empirical options.

The thematic focus of this doctoral thesis is on the mode-specific foreign expansion of multinational firms. Therefore, in the empirical models we have not delved in the mode decision pathways of the MNEs, and instead assume FDI has been a priori assessed and chosen as the optimal choice for the analysed international activities of these firms.

4.5.1 Firm-level Determinants of Speed

For the econometric analyses, the variables from the model for the first research question have been regressed via the fixed effects panel data method using Driscoll Kraay robust standard errors (Hoechle, 2007).

In search of an indication whether we should use fixed or random effects model for our panel data analysis we applied the Hausman test, which validated the fixed effects option for our dataset. With panel data, using ordinary least squares (OLS) was out of the question as they typically yield biased stimates. Generalised least squares (GLS) estimators are recommended as they correct for likely panel data issues such as autocorrelation and heterosedasticity (Greene, 2012). Therefore, we briefly considered using GLS as a suitable option, until ran the requisite diagnostic tests (White, Wooldridge and the modified Wald test), which confirmed existence of both autocorrelation and groupwise heteroscedasticity. In the event that only the two issues of autocorrelation and heteroskedasticity were present, we would have used a feasible generalised least square (FGLS) estimator as it is more efficient. Basically, it represents a GLS estimator with first differences in both the dependent and independent variables, and provides asymptotically valid test statistics in spite of data issues we already identified. However, we also tried the Pesaran test to detect existence of cross-sectional dependence, and its positive results have showed an additional issue with our data - cross-sectional independence. We had clear evidence that our panel data used in the empirical model which tests the antecedents of speed suffers from three problems simoultaneously: autocorrelation, heteroscedasticity and cross-sectional dependence. The presence of cross-sectional depence precluded us from using FGLS in this model, and we were left with the Driscoll Kraay robust standard errors (SE) as an option which would remove all three types of violations and compensate for the data issues.

Due to the temporal dimension of the phenomenon of our enquiry, and the longitudinal aspect of our data, we have considered using an alternative empirical method of analysis known as *survival analysis*. In particular, we considered the Cox-proportionate hazard rate model, a variant of the survival analysis, which has been successfully applied in other IB studies on speed (Zeng et al., 2013; Casillas &

Moreno-Menéndez, 2014). Not only does it measure the duration of the interval between events, but also the probability of their occurrence, for instance firm's propensity for foreign direct investment.

After assessing the suitability of this competing method of analysis, we decided against using it for our time-based phenomenon due to unavailability of appropriate level of data. The success of that empirical model rests on availability of data for the smallest intervals possible, such as daily or even hourly. We could not collect data on precise days or even months of investment activities, so we had to record only the calendar years when these took place. For that reason, we eventually disregarded the hazard rate model for not being a functional empirical option for our research.

4.5.2 The Direct Relationship between Speed and Performance

For the SM-P models corresponding the second and third questions, the feasible generalised least squares (FGLS) method has been applied. The relevant diagnostic tests (White, Wooldridge and modified Wald) provided evidence of simoultaneous existence of serial correlation and heteroskedasticity in our panel data used for the empirical model testing the SM-P relationships. When we ran the Pesaran test, we did not detect any cross-sectional dependence in this dataset, as for the previous model. These indications helped us to choose FGLS as a preferred estimator, because it is more efficient and provides asymptotically valid test statistics when these two violations occur in the data (Wooldridge, 2012, p. 428).

We noted earlier that the majority of the reviewed empirical studies on the SM-P relationship have identified a quadratic performance function of speed of multinational expansion, and a few display a linear form (see Table 3.1 for details). The literature on performance consequences from multinational expansion has presented some outcomes which point to a possible cubic relationship between these constructs (Lu & Beamish, 2004). By extension, this may apply in the interdependence between the rate of change in the degree of multinationality and performance. Bearing this possibility in mind, we modelled the predictions from our hypotheses 5-7 by including both linear and nonlinear (quadratic and cubic) terms of the independent, as follows:

Perfromance (ROS / ROTA) $_{it} = \alpha + \beta 1(speed)_{it} + \beta 2(speed)^2_{it} + \beta 3(speed)^3_{it} +$ *(control variables...* X_{it}*)*

4.5.3 The Moderated Relationship between Speed and Performance

To assess the stability of the results, the models were designed in a hierarchical way, so that each model gradually introduced more predictor variables and their transformed interaction terms.

The principle regression commands we used to test all of our hypotheses in STATA are provided in Appendix 1.1.

4.6 Data and Sampling

4.6.1 Panel Data

For the empirical analyses we intend to use historical firm-level data to investigate the longitudinal patterns of the hypothesised relationships in an ex-post manner. In the field of IB and other related disciplines, longitudinal methods are lauded as preferred and better suited to investigate dynamic phenomena, and calls have often been made to compensate for the static nature of cross-sectional research by applying longitudinal approaches (Caves, 1998). Panel data sets are regarded as one of the most valuable in research on business and economics issues (Batalgi, 2005).

As a process, internationalisation occurs over time and data derived from a cross-sectional study will only limit the depth and the breadth of our understanding. We collected data that had both cross-sectional (across firms) and a time series (over years) component, with intension to apply a panel data methodology. This provided us with an advantage of having both spatial and temporal dimensions, and capture both static and dynamic perspectives in the regression analyses. The leading type of panel data is the cross-sectional time-series, where multiple observations for each entity (cross-sections) are repeated over a time-frame spanning a number of years. (Murray, 2006). These observations are indexed with both *i* and *t*, denoting individual items, and time periods, respectively, and if required, these can be grouped by each panel (i.e. firms in our case). Certain variables vary only across time (time-variant), others across individual firms only (time-invariant), while a separate category can vary both across time and panels.

Using panel data in research afford us the ability to observe the behavior of entities across time, and enables examination of the dynamic SM-P relationship and its temporal stability. The nature of the panel data allows researchers to detect and measure effects and a range of changes that are obscured and not possible to identify with pure cross-section or pure time-series data. The repeated cross-section dimension provides much more variability and adds more informative data, thus producing more reliable parameter estimations.

In addition, the cross-sectional time-series permit us to control for *individual heterogeneity* and therefore minimise the risk of biased results. Panel data assumes that individual entities (firms, countries, etc.) are heterogeneous (Batalgi, 2005). Among the other (important) advantages of this type of data are greater efficiency, as well as less collinearity among the variables and greater degrees of freedom. Therefore, panel data is better suited to study the dynamics of adjustment. Evidently, these arguments lead to a conclusion that a temporally-based, dynamic phenomenon like the speed of multinational expansion necessitates use of cross-sectional time-series observations.

4.6.2 Sampling Strategy

To facilitate generalisation, one of the key characteristics of deductive research approach, it is vital to carefully select the sample for which the data for hypotheses testing will be collected and upon which the statistical infers will be based (Saunders et al., 2016, p. 146).

Consistent with our research topic and its focus on firm-level phenomena concerning multinational enterprises, we identified the MNEs as our target population for the sample. To set the criteria for our sample selection, we defined an MNE as a firm that holds at least a 10 per cent share of a foreign-based affiliate. According to the UK Office for National Statistics, an *affiliate* is a business entity in which an MNE has a minimum of 10% direct investment, an *associate* is one where the maximum investment is 50%, while any entity where the level of FDI is 50%-100% is called a *subsidiary.* So technically, 'an affiliate is an umbrella term that covers both subsidiaries and associates where the investor holds more than 10% of the equity share capital.' (UK Office for National Statistics, 2018, p. 20). Nevertheless, in our study and throughout this thesis, we have mainly used the more common term subsidiary when referring to an MNE affiliate. For instance, when the discussion is about number of subsidiaries, or an MNE's subsidiary network, it is important to note that we are referringto entities which have less than 50% equity investment but definitely more than 10%.

Taking into consideration the variation of size among our sampled firms, and with a view to avoid selection bias, we have borrowed a trait of Aggarwal et al. scheme by not imposing any threshold for investment. (2011, p. 565). As long as a firm has at least one foreign subsidiary, or an affiliate with more than 10% equity in a particular host country or region, we classify it as having a presence there.

To enhance data availability, we have decided on a sample of firms that are publicly listed. This helped us source a portion of the variables in our empirical model from the publicly available consolidated annual reports of the sampled MNEs. We collected this data manually. Using these documents provides us with certain advantages, as they reveal reasonably rich data about geographic dispersion of sales and assets, and usually offer lists of all MNEs' subsidiaries, both domestic and foreign. Since we are using archival data, i.e. the information is collected retrospectively rather than in real time, this approach gives our research a post-hoc perspective. Public companies, listed both on the main stock exchange (LSE) and the alternative market (AIM) are required to publish these audited documents on a minimum yearly interval. The financial data overlaps with that available on the FAME database, which is another main data source used for our empirical study. However, for the speed measures we mainly relied on the lists of subsidiaries provided in the annual reports, as well as the announcements of establishment and closure (i.e. acquisition and disposal) of foreign entities.

For practical reasons, we have leaned towards convenience rather than random sampling (Saunders et al., 2016). This enabled us to include multinational firms from a wide milieu and variety in terms of size, age, level of internationalisation and technological intensity, which are all the important variables we were interested to test or control for. The portion of multinational SMEs (or mini-multinationals) comprises a third of the overall number of ninety firms. This is the minimum desired number to represent this group, and as many as the data availability permitted us to collect information on.

4.6.3 Dataset

While prior studies have made valuable contributions, most empirical papers on SM-P that employed quantitative methods suffer from lacking longitudinal and representative secondary data drawn from authoritative cross-sectional database. We constructed our longitudinal dataset using information from secondary sources. As main data sources we used individual annual reports for each multinational, as well as information obtained from the Bureau van Dijk's FAME database, which is a multi-industry, unbalanced panel of UK and Irish firms. Most of the accounting data at consolidated, group level was downloaded from the FAME database. The firm-level data for speed of multinational expansion was manually-collected from the annual reports, which we obtained from the official homepages of the individual MNEs.

The resultant panel dataset which is purpose-made for our empirical analysis is based on firm-level data spanning over a 12-year period (2006-2017). All of the continuous variables are time-variant, flow variables. The panel shows their change during each period, either in cumulative values or ratios, measured at the end of the annual reporting period for each firm.

The final version of the data set we obtained for testing is short unbalanced panel with 957 firm-year observations for 90 cross-sections across an incomplete time-series of 12 annual periods. Out of the total number of MNEs in the sample, the majority (i.e. 57 firms or 63.33 %) have been observed for 11 years (covering either 2006-2016 or 2007-2017 period), while the remaining 33 companies (or 36.67%) for 10 time periods (2007-2016). This period of observation matches the data availability on FAME for the key firm-level measures.

Table 4.1 *STATA output derived via the command 'xtdescribe'*

```
 FirmNum:  1, 2, ..., 90                                      n =         90
    Year:  2006, 2007, ..., 2017                              T =         12
           Delta(Year) = 1 unit
           Span(Year)  = 12 periods
           (FirmNum*Year uniquely identifies each observation)

Distribution of T_i:   min      5%     25%       50%       75%     95%     max
                        10      10      10        11        11      11      11

     Freq.  Percent    Cum. |  Pattern
 ---------------------------+--------------
       55     61.11   61.11 |  11111111111.
       33     36.67   97.78 |  .1111111111.
        2      2.22  100.00 |  .11111111111
 ---------------------------+--------------
       90    100.00         |  XXXXXXXXXXXX
```

It has been noted that SME internationalisation has been under-researched in terms of high-commitment modes (Prashantham, 2011; Olejnik & Swoboda, 2012), or their state of *multinationality* as we use the term in the context of this study to distinguish FDI from exporting or licensing. Our investigation rests on the notion that equity foreign modes are not restricted by the age and size of the firms, as evident from our sample which comprises both mature MNEs and entrepreneurial firms which have attained multinational status (also knowns as micromultinationals) in the early stages of their overseas trajectory.

4.6.3.1 Composition and Representativeness of Our Sample

Our sampling criteria was purposefully broad in terms of firm demographics, since inclusion of MNEs at various ages and stages of international maturity and degrees of diversification would enable us to test our assumptions for nonlinearity, and capture a wider range of the SM-P dynamics.

After inspecting of the compositions of our sample, we determined that it contains both rather young and older British multinational firms with a wide range of maturity, some of them having commenced their operations as early as the 19th century. We have classified these MNEs into several sub-categories and the distribution is as follows: 9 MNEs were established in the 19th century, 18 in the 20th century before the second World War, further 32 were established during the 20th century post-WW2 (from 1945 onwards), and 31 MNEs belong to the so called 'millennials' which were set up from 1990 onwards, with 8 of these MNEs being formed in the 21st century. This classification corresponds to that of Jones (1993), who analysed the evolution of British FDI and activities of multinational firms from a historical perspective.

The wide range of age representation would enable us to track both early and late international expansion by means of FDI during our period of observation (2006-2017). We have purposefully represented the multinational SMEs with a non-trivial minority, since some of them are rather young and with lower levels of international experience. This serves as counter-evidence for the entrenched assumptions that exclusively predicates exporting and other low-commitment modes of foreign operations among the young and small internationals. We ought to acknowledge that the overall sample is biased towards mature, larger multinationals, some of them with substantial international experience.

Using a heterogenous sample contributes to the variability of firm-level parameters, and consequently to the meaningfulness and reliability of the hypothesised associations. This has allowed us to draw inferences from the empirical findings which would be applicable to different types of multinational enterprises.
However, the heterogeneity of our sample is not confined solely to the characteristics of age or size, since the constituent MNEs have also displayed an array of international patterns. A solid portion of firms (precisely 39 or 43% of the sample) have made an early international entry, which most frequently occurred within ten years since their inception. As discussed earlier, from the perspective of the

international entrepreneurship such international precocity is considered typical for small firms. From this group of our MNEs, less than half (i.e. eighteen) have retained the status of an SME within the observation period, while the remainder have grown into the large category. As for the assumed association between earliness of internationalisation and age of the multinationals, our sample have provided support with the patterns of the millennial firms. Every single one of these have entered into a foreign market within twenty years of its establishment, and 74% of them (or 23 out of 31) have done so within the first six years, which is an average for the length of thresholds used for identifying entrepreneurial internationalisation (Rialp et al., 2005).

These statistics go in favour of the claim from scholars that in the most recent decades, globalisation and the attendant forces have brought about inter-dependence and connectedness among macro and micro entities in the international business environment and the resultant homogenisation of markets have decreased foreign entry barriers for all types of firms. In the recent decades we have witnessed acceleration in the process of international entry (Zucchella et al., 2007; Tan & Matthews, 2015), as the domestically developed competitiveness and efficiencies seem to lose the relevance for overseas expansion (Hilmesson et al., 2017).

Our sample provided some evidence that although rather prevalent in the recent decades, the propensity for early international entry has not been an exclusive trait of the currently young firms. We observed that there are several of the older MNEs among our UK sample which have started their overseas activities within the first decade since their incorporation, and this had happened back in the 19th century for a couple of them and for a dozen others in the post-WW2 era of the last century. For those established in the period between, i.e. the early 1900s until the 1944, none of the represented MNEs internationalised during the first decade, but a handful (seven out of the 32) did so early in the second decade of their existence. Such timing can be considered relatively early in traditional notion of the gradual model of internationalization. The rest of this group, however, entered foreign markets as typical for that age of the IB history, after three to seven decades of domestic operations. This would have coincided with the post-war period, and it is probably reflective of the deteriorating domestic market prospects within the UK from the

1950s, which have propelled many domestic firms to establish FDI in overseas shores in order to sustain corporate profitability (Jones, 1993). If we consider the years when the 19th century cohort of MNEs in our sample had internationalised, with exception of the couple of early entries, the remainder are truly late internationals as it took them between 76 and 126 years to venture abroad. This is useful insight since it makes us aware that those which we regard as mature MNEs in the present sample, are in fact mature and heavily experienced in domestic context. As international players and even in terms of their organisational form as multinationals they are either moderately (few decades rather than a century) old or new. In fact, a few of the (three of the nine) firms that were incorporated during the 1800s have internationalised their operational footprint during the 21st century and after nearly (or over) 100 years of existence.

What that tells us that not many of the MNEs on which we have tested our hypotheses have been part of the FDI ecosystem Jones (1993) described for the era when the Britain held the position of the largest (since 1860s) or the second largest (during the 20th century) multinational investor in the world economy. The legacy of those old MNEs is not really carried forward and represented in the current sample, which is not suprising, given the statistics that most of those firms ruling IB environmentduring the last century are now extinct (Sloman et al., 2013).

The relevance of this for our study is that the diversity of patterns we have in our sample has provided the advantage for making inferences about rapid FDI expansion of firms which demonstrated early international orientation / propensity, as well as late internationals. In terms of the degrees of multinationality that the MNEs display during the observation period of this study (2006-2017), there was also an evident variety. Some of the younger firms (multinationals) showed relatively wider extent and scope of their FDI operations in comparison to some of their older counterparts. A selection of mature MNE did indeed show DOI profile commensurate with their FDI experience, while others did not conform to the expectations about the degree of FDI footprint a firm with extensive FDI experience would have. Having suitable information about each MNE’s strategic goals and the rate at which these were accomplished, as well as closer knowledge about how their entire international trajectories have manifested (for instance, were there events of de-internationalisation) would have been beneficial for explaining the drivers of the heterogeneity; however, in the present study we have not accounted for that set of factors.

Table 4.2 below presents the industrial breakdown of the MNEs in our sample, which features 35 different industries identified on the basis of on the 2-digit NACE codes. There is a strong presence of services type of industries among our MNEs, which is representative of the current profile of the UK economy, where the firms in the services sectors dominate and are increasingly involved in outward FDI (ONS, 2018). However, we have been mindful to equally balance the type of firms in our sample based on the main industry categories, so the overall number of 90 is evenly split between the manufacturing and services sectors.

Table 4.2. List of Primary Industries Represented in the Sample (2-digit NACE codes)

2-digit NACE code	Description of primary business	Type of sector S / M *	Number of MNEs	2-digit NACE code	Description of primary business	Type of sector S / M *	Number of MNEs
62	Translation software and services; Software development services; ICT consultancy	S	8	10	Processing and preserving poultry meat (food industry)	M	1
25	Manufacture of machines & metal products	M	7	11	Manufacture and distribution of soft drinks	M	1
20	Manufacture of chemicals and chemical products	M	6	12	Manufacture of tobacco products	M	1
23	Manufacture of ceramic and concrete product	M	4	24	Metal and aluminium components manufacture	M	1
26	Manufacturer of electronic instruments	M	4	27	Electric motors, generator and transformers manufacturer	M	1
47	Clothes etc retailer; Sports equipment retailer;	S	4	29	Manufacture of electric and electronic equipment for vehicles	M	1
70	PR communications agency; Management consultancy; Business support & financial services	S	4	37	Sewerage and waste removal	S	1
78	Employment agency	S	4	43	Plumbing, heat and air-conditioning installation	S	1
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	M	3	49	Transport operator services	S	1
30	Manufacture of air and spacecraft machinery	M	3	50	Sea and coastal freight transport	S	1
32	Manufacturer of medical and dental equipment & supplies; Manufacturer of games and toys	M	3	58	Software development consultancy	S	1
46	Wholesale of food, beverages, tobacco & clothes; Wholesale trade of spices and condiments; Electricity and gas utilities provider	S	3	63	Logistics support software	S	1
				64	Investment management firm	S	1
61	Global technology; mobile and telecommunications services; Satellite communication services	S	3	66	Property fund management & investment	S	1
84	Aerospace defence engineering	S	3	68	Real estate agents	S	1
22	Manufacturer of plastic products	M	2	72	Scientific R&D	S	1
28	Manufacture of special purpose machinery	M	2	74	Cyber security technical services	S	1
82	Business support & training consultancy; Pest control and hygiene services	S	2	79	Travel agency services	S	1

* S = services; M = manufacturing

4.7 Operationalisation of the Key Constructs

An accurate theorising and operationalisation of constructs is as important as the measurements of the empirical dimensions. Many scholars have acknowledged that different measures used across studies on a given topic frequently are the source of inconsistent results (Annavarjula et al., 2000; Li, 2007). Bearing this in mind, before moving to the empirical stage of our research, we have taken care to define and construct our variables in accordance with the apposite theoretical reasoning and proven / prior / already used empirical models.

To ensure reliability of our measurements and validity of the interpretations, we have consulted existing scholarship before developing the empirical concepts in our study. In this effort we were mindful that operational definitions and the assortment of measures used for the variables are conceptually meaningful whilst being properly aligned with the received theoretical perspectives.

Several types of validity have been defined: ‘construct, descriptive, interpretive, theoretical, and generalizable validity’ (Rouse & Dallenbach, 2002, p.966). For the variable measurements, the construct validity is considered the most important. Therefore, we deliberately try to use measures which have been previously validated in empirical studies, and are considered suitable for our research context and the empirical model.

For a neater presentation, the remaining content of this section is divided in several sub-sections. Beginning with operationalisation of our core variables for the multidimensional construct speed of multinational expansion, we proceed with the variables for the first empirical model where speed has a role of an outcome variable. Next we cover an additional list of variables that have been applied in the empirical model which tests the SM-P relationship, and this includes the key measures for accounting-based performance. In the remaining sub-sections we present the moderating variables for the SM-P model, as well as the controls incorporated in all statistical regressions.

4.7.1 Modelling Speed of Multinational Expansion as a Multidimensional Construct

For this important variable we have used several different measures in our analyses, applied in parallel empirical models. The key construct we are considering in this research is multidimensionally measured *speed of multinational expansion*. To discern the three disctinct facets of firms' multinational involvement (scale, geographic scope and commercial intensity) we use different instruments corresponding to each of them. As the internationalisation process itself, these traits can be depicted through an overarching temporal dimension. To reflect the firm's evolving international character over the observation time period, every single one of these aspects of multinational speed is measured at the firm-year level. We use the distinct speed measures in separate main models which match different hypotheses, and we also combine them as constituent items into a composite measure for the robustness tests.

We have conceptualised and dynamically measured the speed variables in line with the dynamic operationalisation of the construct by Johanson & Kalinic (2017) who have extended and refined (dynamically and multidimensionally) the model originally recommended by Casillas & Acedo's (2013). There are several related empirical papers which have also successfully followed this original conceptual guildelines for the measures of international speed: Mohr & Batsakis (2014; 2016), Hilmersson & Johanson (2016), Schu, Morschett, and Swoboda (2016); Yang et al. (2017), García-García et al. (2017). Accordingly, speed is considered as the rate of change in international posture between two states, or degrees of multinationality, over a specific time period. In studies using cross-sectional data, this variable has been measured as an average of the measured values at two time points (Wagner, 2002; Chetty et al., 2014). Since our research design offered the advantage of panel data and longitudinal observations of these variables over twelve consecutive annual periods, we followed the approach for dynamic conceptualisation and measurement of this key variable.

To acknowledge the complex, multi-dimensional nature of the construct, we include several distinct aspects of the international diversification in the formula numerator of the measure. The change represents the distance covered in relation to time, along each of the three dimensions.

1. The first measure of speed we adopt is ***speed of multinational resource commitment***, which covers the rate of establishment (or acquisition) of new foreign operations. It indicates MNE's volume of foreign investment by the number of subsidiaries established at a given time period, averaged over the length of its FDI history. The measure indicates 'the speed at which the firm invests significant resources internationally or the speed of entry mode commitment' (Chetty et al., 2014, p. 643).

Traditionally used indicator of scale of multinationality takes place of the numerator in the formula, calculated as the cumulative number of foreign subsidiaries. The denominator contains the temporal component, and it stands for the number of years elapsed since MNE's first foreign direct investment, i.e. the year when their first subsidiary abroad was opened or acquired. This part of the measure bears similarity to the temporal concept of international precocity (Zucchella et al., 2007), also termed as time to internationalisation (Autio et al., 2000; Khavul et al., 2010; Ramos et al., 2011; Hilmersson et al., 2017), which we have discussed above (in section 2.4.1). The important distinction is that ours is specific to FDI mode of entry only. This temporal component is also identical to the measure lenght of FDI experience used in other studies. Researchers which have employed this speed measure in previous empirical studies include: Jung & Bansal (2009), Mohr & Batsakis (2014; 2017), Hilmersson & Johanson (2016).

2. The second measure reflects MNE's ***speed of geographic asset dispersion***, also known as geographic scope or breadth of foreign footprint, as it addresses the rate of dispersion of its overseas subsidiaries in different host markets, and with that various cultural and institutional milieux (Johanson & Vahlne, 1990; 2009).

For the numerator, we counted the total number of foreign countries in which the firm has active subsidiaries. The denominator (i.e. the time period) is identical as for the first speed measure described above. By placing the geographic scope in the numerator and the length of FDI experience in the denominator, a dynamic construct is obtained for the scope dimension of multinational diversification. As hypothesed in the previous chapter, this variable termed speed of geographic dispersion in our study is likely to influence the firm-level performance in a non-linear fashion. The fast rate of placing new subsidiaries into multiple host countries constitutes a resource-intensive and complicated process, in contrast to a less rapidly dispersed FDI expansion (Vermulen & Barkema, 2002).

None of the scale measures for degree of foreign involvement, such as the multinationality ratios foreign to total sales, foreign to total assets, number of foreign to total employees, overseas to total number of subsidiaries, or the measure we used (count of total foreign subsidiaries), do not provide an indication of the scope or dispersion of host locations for the MNE’s foreign operations. Thus a different measure is needed to capture the breadth of multinational diversification, i.e. the geographic scope of MNE’s international footprint. This invariably includes a count of the number of host countries as a proxy for scope. We incorporated this measure in the numerator of our second speed variable, used in the models testing hypotheses H2a as an outcome, and also in H6, H9a, H11b and H12b as a predictor variable.

We reckon that use of the term ‘dispersion’ rather than ‘scope’ for the second speed measure is further justified by our sample composition. Following the geographic regional division of the world into six main (populated) continents, we observed that half of the MNEs our sample have their physical assets spread in more than four regions; almost a third (or 29) out of 90 are present in five of the six world regions, while nineteen are truly global with operations on all continents. In addition to this descriptive statistical observation, we also performed a correlation test between the measures for geographic country breadth and regional spread, and these were highly correlated at 0.68. For the purposes of this auxiliary test, we have created an impromptu unidimensional scale measure for *regional spread* of MNEs’ subsidiary networks by simply counting in how many of the 6 geographical regions in the world their operations are located. In order to compare, we also tested the correlation between scope and home region concentration, and the value was pretty low at 0.11. This indicated that the MNEs in our sample can be described as having rather geographically dispersed and not so much regionally concentrated FDI operations.

Therefore, we are confident that the term we chose for this variable representative for our study sample.

3. ***Speed of international commercial intensity*** denotes the rate at which an MNE increases its revenues from international exposure, and it reflects both the significance of international sales for the firm (Hilmersson & Johanson, 2016, p. 78) and its commitment to serving overseas markets (Miller et al., 2016, p. 908). It is partly composed of the performance-based DOI measure, a ratio of MNE's foreign sales to the overall group sales (FSTS). We have borrowed the term and conceptualisation for the third dimension, *speed of international commercial intensity* from related studies (Autio et al., 2000; Hilmersson & Johanson; 2016), and measured it by using the FSTS in particular year in the numerator, and FDI experience as the temporal denominator.

All the above formulae for different speed dimension contain frequently used DOI indices in their numerators, indicating both the extent and volume of international diversification. The first two implicitly correspond to MNE's strategic decisions about mode repetition and location choice. To obtain the speed variables, these are divided by each of the time denominator (t), denoting the length of its FDI experience and counted as number of years.

We maintain that the conceptualisation and operationalisation of speed detailed above represents the phenomenon under investigation in a more rigorous manner than unidimensional measures used in prior research. What is unique about our measure is that it provides more balanced metric of the rate of change in DOI, which captures the net effect of both the acceleration and deceleration. For each period of observation, we have counted now only the new additions of foreign subsidiaries and markets, but also the concurrent closures or sales of foreign entities, as well as exits from host countries. Therefore, for the mean values in the descriptive statistics tables in the next chapter, one can notice negative figures, indicating instances where exits of closures prevailed over new entries within a specific observation period.

Furthermore, because the separate DOI dimensions are measured concurrently, we can compare their average effect at the same time and over time. For instance, a growth or reduction in the cumulative number of host countries, i.e. multinational spread is simultaneously registered as a change in the scale dimension, measured as the cumulative number of foreign subsidiaries. Such change is transparent, since our measures are focused on a single mode of foreign operation, i.e. FDI. Ceteris paribus, this change in FDI scale would be by at least one unit (and sometimes more), since the MNEs often open or acquire several business entities with complementary function in the same host country.

The location portfolio and the count of subsidiaries have been previously used as separate measures in studies on FDI’s effect on growth and performance (Delios & Beamish, 1999; Lu & Beamish, 2006). A simple count measure of the number of host countries was used by Lu and Beamish (2004), and also by Singh et al. (2010) as an alternative operationalisation to test the robustness of geographic diversification measure on an SME sample. Other researchers have tested a composite additive (i.e. aggregate) measure out of the two dimensions: count of overseas businesses and host countries (Yuan, Pangakar & Wu, 2016), as well as a three-item index composed of foreign to total sales, foreign to total assets and number of host countries of the MNE, relative to the sample (Sanders & Carpenter, 1998).

Sullivan (1994) has constructed a multi-item measure of speed, derived via the method of principal component analysis (PCA), using several items matching the dimensions of the degree of internationalisation. We have decided not to use this type of measure, since it has proven to be problematic in the past with panel data. The criticisms levelled at his aggregate index for not properly specify the domain of firm degree of internationalisation, and for lacking criterion-related validity provided detailed evidence against use of such index (Ramaswamy et al., 1996). To have confidence in the loadings, coefficients, and eigenvalues obtained by applying principal component analysis (PCA) to the panel data one key assumption need to hold, and that is that the covariance among the items remains unchanged over time. However, researchers cannot rely on the standard errors of estimated component scores, nor guarantee that the covariance structure of the items does not vary over time. Considering that in panel data the assumption of independent observations is commonly violated, when PCA is applied on an entire panel data set, it returns unreliable results, which would also be difficult to interpret. On top of that, if the relationships between each of the proxy measures used for the composite index and the outcome variable vary differently over time, using PCA-derived index will completely obscure that (ibid).

There have been recommendations that use of separate indicator of speed is superior to an aggregate one (Bowen, 2007, p. 117). Hence, we have opted in favour of using single measures of different components, i.e. aspects of multinationality that are of particular interest, and have tested them separately in parallel models. There is another reason behind our decision to use single measures of speed in a parallel set of empirical models. The DOI measures on their own, and particularly the index, do not duly reflect the process of internationalisation, i.e. the sequence, simoultaneity, speed, rhythm, patterns, strategic motivations. Neither do they provide information about the relationships among the different elements of internationalisation. By simultaneously employing multiple measures of speed of expansion, our research is more likely to tap a broader range of the total meaning of this multidimensional construct. Although frequently used as alternative measures of DOI, it is important to acknowledge that the different numerators in our speed formulae depict distinct, yet statistically and conceptually highly related aspects of multinationality, and both are equally important for better understanding of the phenomenon.

Multinationality is an outcome of international activities and an indicator of the degree, i.e. scale, scope and intensity of involvement in multiple countries, and provides a platform for experiential learning and knowledge accumulation. There is an evident similarity between the elements of this formula and the concept of international experience as observed and defined by Clarke et al. (2013).

Above we have talked about speed as a temporal aspect of internationalisation in terms of duration of the entire course of international (or overall) activities of a firm. It can also be used for the time interval between two time points. The events or changes that occur over these time periods are reflected in the numerator of the speed formula we used, denoting the ‘distance travelled’. Another way to consider speed is to measure the length of time between any consecutive events, or in our case occurrence es of foreign direct investment (or divestment), as was done in the studies by Chen & Yeh (2012), Zeng et al. (2013) and Casillas & Moreno-Menéndez (2014).

4.7.2 Firm Specific Assets (FSAs) as Predictors of Multinational Speed

From the panoply of predictors used in prior studies on speed of international expansion, we have chosen to investigate the causal effect of three types of firm-specific resources: MNE's intangible assets, the intensity of its FDI experience, as well as the breadth of the same mode-specific experience.

These variables have a dual role in this study: in the empirical model testing speed as an outcome variable (for the first research question) we have employed them as determinants. In the analytical model that we designed to address our second and third research questions, we have tested each FSA's moderating impact on the direction and magnitude (strength) of the relationship between the three types of speed of MNEs' multinational expansion and corporate performance.

In the empirical IB literature, firm-specific resources have been used as predictors of both firm internationalisation and its performance. Since the firm specific characteristics which are contributing to the FDI decisions are 'inherently unobservable' (Blonigen, 2005, p. 384), proxies such as the R&D intensity or advertising intensity have been used in their place as explanatory variables for the multinationality (status) of firms. With regards the aspect of operationalisation and empirical (research) considerations, Rouse & Dallenback (2002) argue that identifying the source of the unique (VRIO) parameters of the internal resources is instrumental to researchers' ability to allocate these factors the power of performance contributors.

For the purposes of our research, these have been operationised and measured as follows.

4.7.2.1 Intangible Assets

For the variable ***intangible assets,*** we have calculated the ratio between MNEs' intangible assets and their total assets, which 'measures the relative importance of a firm's intangible assets' (Chang et al., 2013, p. 323). This formulation corresponds with some prior studies that have used this variable in research on speed, either as its predictor (Mohr et al., 2014, p. 610) or a moderator in its relationship with performance (Mohr & Batsakis, 2017, p. 162). For our empirical models, we have taken a readily available measure from the FAME database. It has only been a few years that Bureau van Dijk's databases have made such detailed accounting information available on their databases, and there are not many published empirical papers that use the actual data in this form for intangible assets (Contractor et al., 2016, p. 950).

4.7.2.2 International Experience (Intensity and Breadth)

For the remaining two variables from the category of firm-specific assets, our study considers the international experience derived from equity-based activities in international markets. Mode-specific experience, measured 'by reference to a single type of entry mode**'** (Clarke et al., 2013, p. 268) is often employed in empirical research. We operationalise the concept with an emphasis on three distinct, yet related, dimensions of international experience obtained via FDI operations. As used in previous IB studies (Dikova, 2009, p. 43; Jiang et al., 2014, p. 117), our model employed two measures which fully capture three of the four dimensions proposed by Clarke et al. (2013)[3]: 1.) intensity 2.) geographical breadth or scope; and 3.) length.

It is expected that higher values of all these dimensions of FDI experience would have a positive determining effect on all three types of speed. This operationalisation addresses the weaknesses detected in prior studies that have relied on unidimensional measures; for example, using only the length of international / FDI

[3] Clarke et al. (2013) suggested that 'intensity' should be added as a novel dimension to the list of international experience facets already captured in extant literature: length, scope and diversity. See on p. 266 of the article.

experience (Magnusson & Boggs, 2006; Yu, 1990). It is important to include the length dimension along with the other measures, in order to differentiate the general, context-free or non-location-bound international experience from the construct of international diversification, which is captured when using only intensity or scope (Clarke et al., 2013, p. 269).

We created two pairs of experience-related FSA variables: two each for the non-location-bound and for the context-specific experience category.

The first measure of FDI experience that we defined combines the intensity and length aspects the same variable, but we term it ***intensity of FDI experience***. To calculate it, we multiplied each MNE's volume (total number) of foreign subsidiaries by the length of their FDI experience. As such, it indicates MNE's overall level of engagement in host markets, i.e. the extent of those operations amplified by the length FDI mode exposure.

This measure only includes active subsidiaries and excludes those which have been previously owned but subsequently closed or disposed of by MNE's headquarters. To capture the linear length dimension of time-based exposure (Clarke et al., 2013, p. 268), we have measured the cumulative firm-level international experience as a year-count measure, i.e. the total number of years elapsed since their first (FDI) international operation, at each time period within our 12-year observation window.

Both of these (intensity and length) aspects of international exposure combined into a single measure offer opportunities for firms to accrue general international knowledge and develop requisite routines and capabilities (Grant, 1991) to aid further overseas expansion.

It is important to note that when a firm adds a new foreign subsidiary location to its existing network, it does not necessarily mean it is their first entry in that country. It could be a case of re-entry in that market via FDI mode, or they could have been servicing it, either continually or sporadically, via different mode such as exporting via agents or licensing, prior to the investment in question. We can only claim reliable data for the observation period, which spans as early as 2006, but not before then. Unless we have precise and consistent historical data on investments for all firms in our sample, we risk low validity of results, and particularly for the calculations of cumulative international experience. Quite often, other modes of operation precede the foreign direct investment in a host country. We have not been able to consistently track the years when such activities began for all locations, and thus, did not collect such data. In light of this, we would need to accept that our international experience measure is more of an approximation, rather than an absolute indicator.

Breadth of FDI experience accumulates from the number of foreign host countries. The operational and organisational learning that MNEs gain from these lessen the uncertainty and risk, while encouraging further expansion into a greater range of new host environments. In other words, the cumulative scope effect would assist an MNE to reduce its perceived barriers to fast foreign expansion, associated with a lack of relevant experience. Also, rather implicitly, it denotes the cultural and institutional variety in MNE's constellation of foreign markets. Apart from the potential locational benefits and costs for the organisation, this measure reflects a variety of sources for learning and development of experiential knowledge (Casillas et al., 2015).

This variable is measured as a total number of foreign countries in which an MNE has ownership stakes in operating subsidiaries. The same measure has frequently been employed as a proxy for geographic scope in studies on the general on M-P relationship (Tallman & Li, 1996; George et al., 2005), and by the same logic, scholars have incorporated it in the numerator of the measure for speed of the geographic scope of multinational expansion (Vermeulen and Barkema 2002; Jung & Bansal, 2009; Hilmersson & Johanson, 2016; García-García et al., 2017). We should add this current study to the latter list.

It is worth noting as a possible limitation that our measure does not capture the length component of scope, i.e. the cumulative years of experience derived from specific host, as used in related studies (for example, in Mohr & Batsakis, 2014, p. 607). This is mainly a result of a shortage of reliable data for firms' international footprint outside the observation period, and particularly about the duration of operations in each country.

It has been already conceptually acknowledged (Clarke et al., 2013) that the construct of international experience is closely related to that of multinationality (or degree of internationalisation), and due to this relatedness these two have sometimes been used in place of each other. There is a significant overlap in the terminology, which is also evident in the way our measures for speed have been operationalised. For instance, the formula for calculating *speed of FDI resource commitment* contains the intensity of FDI experience in the numerator and the length of such experience in the denominator. Similarly, the *speed of geographic dispersion* has *breadth* of experience as its denominator and the same numerator as before (i.e. length of FDI experience). These constituent components have been used independently to measure the two aspects of mode-specific experience: the scope measure as it is, while for *intensity* we have actually combined the volume of MNE's subsidiaries as per Clarke et al. (2013) with the length of its FDI tradition, by multiplying them into a single term.

The numerator of the speed formula, which captures the 'distance' the firms has covered along its international pathway, is composed of the dimensions of the intensity and diversity of international experience. These are identical to certain DOI dimensions. Length, as another aspect characteristic for international experience can be found in the time measured in the denominator. After all, the international experience is an outcome of the international activities and all its aspects, so this overlap in concepts is no coincidence. However, we also concur with the view that as a derivative of internationalisation, this construct does not define completely / reflect the degree of internationalisation of a firm at a point in time (Miller et al., 2016, p. 908). This is chiefly due to the multifaceted nature of the DOI.

In attempt to disentangle 'the conceptual complexity of the internationalization–performance relationship', the study by Miller et al. (2016, p. 908) has employed a multi-dimensional consideration of DOI to reflect the multiple aspects of the phenomenon, and empirically confirmed the differential effect of each aspect on MNE's return on assets. The results of what is likely the first study to test the relationship between the diversity of MNE's international footprint and its return on assets (Miller et al., 2016) revealed a U-shaped curve.

Our study also considered diversity the fourth dimension of international experience (Clarke et al., 2013) at a broadly aggregated level, through inclusion of dichotomous measures which indicate the international experience originating from either developed or developing countries. Although the concept of physical distance is not explicitly assumed in the broad dichotomy of developed versus developing countries, the world map displays naturally segmented landscape in terms of levels of economic development. For instance, for the MNEs in our UK-only sample, a strategy of asset concentration within the home region (Europe) would imply that majority of the host countries for their foreign subsidiaries would be developed countries; whereas if an MNE is targeting economies in the Latin America, we may conclude that all of the FDI would be in developing countries. These inferences rest on the configuration of these geographical regions in terms of dominant category: 86% of the countries located in Europe are developed, while none of those from the Latin America are.

4.7.2.3 Context-specific FDI Experience

For a subset of hypotheses addressing the first research question we designed a variable which captures the location-bound aspect of experience specific to a type of host environment. Both H1b and H2b, alongside the effects of intangible assets, hypothesise about the relative importance of **context-specific FDI experience**, which depends on the aspect being considered (either breadth or intensity), and the type of host environment it was derived from.

For purposes of the empirical analysis, this concept was operationalised by creatively adapting the traditionally used measures (Clarke et al., 2013), which capture both the intensity and the breadth aspects. Namely, we modified our variables which measure the intensity and breadth of general FDI experience. These two dimensions of mode-specific general experience were fragmented into two context-specific constructs, resulting in two-by-two separate measures: intensity and breadth of developed and developing country experience. For intensity of country-specific FDI experience we simply calculated the total number of foreign subsidiaries that each MNE had in either developed or developing host countries, and then multipliued these values by the length of its FDI experience, i.e. the number of years elapsed since its first foreign subsidiary. The two variables for breadth of context-specific FDI experience considered the cumulative number of either developed or developing host countries, respectively.

All of the four customised measures were applied in the regressions for H1b and H2b, where the two outcome variables of **context-specific speed of multinational expansion** were also adjusted to reflect speed of expansion in terms of **scale** and **scope**, specific to each of the dichotomous category, i.e. developed and developing countries.

The **size of a firm** has also been considered as one of the firm specific assets (FSAs) and is often included in empirical research on growth via internationalisation and its performance effects. It represents the organisational capabilities and the pool of tangible and intangible resources (Barney, 1991; Almor & Hashai, 2004), and this could directly affect international decisions. Larger firms are more abundant in financial and human resources, and are in a better position to achieve economies of scale and scope, which can support both product and geographic (international) diversification (Hitt et al., 1997). Size is often associated with 'access to knowledge assets and critical resources' (Azar & Drogendijk, 2014, p. 595). The internal characteristics such as abundant resource and capabilities base, including larger managerial pool are highly important for dealing with the complexities of foreign operations. Empirical research has shown that firm's resource portfolio is positively correlated with the capabilities for international expansion (Calof, 1994; Lu & Beamish, 2004).

From this follows an expectation that firm size would also affects the pace of international expansion, and ultimately influence firm's profitability. Previous inquiry has confirmed it as one of the contributing factors to financial firm performance (Gomes & Ramaswami, 1999; Ruigrok & Wagner, 2003), and it has been often used as a control variable in empirical settings similar to ours (Wagner, 2004; Chang & Rhee, 2011; Hilmersson & Johanson, 2016). To avoid confounding and biased parameters, we have used it as a control variable in the analyses of both models (speed as an outcome and as a predictor for performance). We have identified several proxies that are frequently used in the IB literature to control for possible scale effects: total sales (or total turnover), total number of employees and total assets. Both of our empirical models employed total assets as a proxy for this variable, after we have transformed it into its natural logarhithm.

Logarithmic transformation was applied to many of the measures for the predictors and control variables. This is frequently used pre-estimation method when the data of variables is rather skewed, to allow for an approximation to a normal distribution.

4.7.3 Modelling Performance as an Outcome Variable

4.7.3.1 Corporate (Financial) Performance

As means to improve our understanding of the variability in the results of speed at which MNEs make new foreign direct investments, our study employs accounting-based measures for corporate performance as an outcome variable. In the discussion of the performance consequences of international diversification, of key importance is to clearly define what we mean by this concept. Generally speaking, ‘performance (profit) relates to the difference between revenue and cost’ (Bowen, 2007, p. 118), although this is just one aspect of it. In their systematic review of the performance measures in the IB research, Hult et al. (2008) point out three categories of this variable: financial performance, operational performance and overall effectiveness as measures of firm-level performance. The last two types of measures mainly indicate non-financial conceptualisation of performance, such as product innovation and internal process outcomes, or reputation and firm survival.

For the purposes of this research, we have chosen to investigate the financial performance aspect, which accounts for the overall profitability, and reflects how well economic goals have been accomplished. In line with Bowen’s definition above, it refers both to the revenue and the cost considerations of firms’ international expansion. Usually, it is reported via outcome-based indicators, which consist of both accounting-based and market-based metrics, and include ratios such as return on sales, assets, investment or equity, as well as other measures such as stock price, growth of foreign sales, Tobin’s Q or Jensen’s Alpha (Hult et al., 2008, p. 1066). This type of performance measure is appropriate for research designs using quantitative data accessed from secondary sources, and has frequently been applied in studies which investigated both the M-P and the SM-P relationships.

Accounting-based ratios, such as return on total assets (ROTA), return on sales (ROS) and return on equity (ROE) have been the best received measures in the IB and the management literature, used at all levels of analysis (ibid., p. 1069). These are indicators for short-term financial performance as are likely to be related to MNEs' existing size. The economics and finance literature prefers the market-based measures, such as Tobin's Q, or Jensen's Alpha, if judged by the frequency these have been employed for measuring the overall firm performance (Rugman & Oh, 2010, IBR, p. 484). These indicators are derived from the market valuation of the firm and capture its long-term performance. We have identified only one study that has thus far tested the long-term performance outcome of international expansion speed using the Tobin's Q as a measure (García-García, et al., 2017).

The accounting-based measures of firm performance have been traditionally used in the literature that investigates the consequences of internationalisation, along with its many facets. For example, ROTA was employed in the following studies: Grant (1987), Grant, Jammine, & Thomas (1988), Daniels & Bracker (1989), Kim, Hwang, & Burgers (1989), Hitt et al. (1997), Gomes & Ramaswamy (1999), Ruigrok & Wagner (2003), Contractor et al. (2003, 2007), Lee and Jang (2007), Lu & Beamish (2001), Thomas & Eden (2004), Rugman and Oh (2010); whereas ROS was used in: Grant (1987), Geringer, Beamish, and DaCosta (1989), Tallman and Li (1996), Delios and Beamish (1999), Lu and Beamish (2001), Contractor et al. (2003), Rugman and Oh (2010). Our review of the papers treating speed of multinational expansion confirmed that this tradition has been continued in this domain. We observed that both ROTA and ROS have been used by scholars investigating the performance outcomes in the SM-P relationship; although ROTA features more frequently (see Appendix 2.1).

Adopting such empirical instruments would assist direct comparability of our research with prior work. Some of the prior papers test the M-P or SM-P relationships using two measures concurrently, and quite often, both ROTA and

ROS (Geringer et al., 1989; Lu & Beamish, 2001; Contractor et al., 2003 Rugman & Oh, 2010; Yang et al., 2017; Mohr & Batsakis, 2017). This further justifies our choice to employ the two alternative performance proxies: return on sales (ROS) and return on total assets (ROTA), as theoretically and empirically the most meaningful measures.

Discrepancies in accounting standards, i.e. unharmonized asset valuations and depreciation policies, as well as exchange rate fluctuations across-countries (Geringer et al., 1989, p. 113; Gomes & Ramawsamy, 1999, p. 182; Mohr et al., 2014, p. S107) have been cited by some authors as reasons to be cautious using ROTA in the IB investigations. Return on assets (ROS) is deemed more reliable in terms of reporting more current and accurate data than the less ‘pure’ indicator ROTA.

The accounting standards may not pose an issue for our sample composed of UK-headquartered MNEs, since their annual reports follow UK rules and all data from FAME are reported under the ‘unqualified IFRS’. Given that our study (primarily) investigates the international expansion via FDI, this measure seems equally appropriate to test the performance construct, along with ROS.

4.7.4 Moderating Variables

In response to our third research question, we have developed six hypotheses to inspect how the internalisation costs and benefits from rapid international diversification are moderated. Therefore, we have chosen to employ two different types of moderating firm-level variables: knowledge-based assets that represent the firm heterogeneity and the degree of internationalisation in developed host economies, which is reflective of MNE’s location-based strategy for foreign asset dispersion.

4.7.4.1 Firm-specific Assets (FSAs) as Moderating Variables

In one of the empirical models which tested hypotheses 8a-8c for the contingent effects of the SM-P relationship we included three different FSAs variables: 1.)

intangible assets, 2.) intensity of FDI experience, and 3.) breadth of FDI experience. All three were measured with regards to MNEs' general general, i.e. non-location bound mode-specific experience. We mention this since the analytical model for the hypotheses of our first research question has incorporated the same variables in role of predictors, along with their context-specific (i.e. location-bound) counterparts (see section 4.6.2.1) which we will not use here.

For more general details about them, please refer to section 4.6.2 above, where we have already discussed the measures more thoroughly.

4.7.4.2 Degree of Internationalisation (DOI) in Developed Countries

We applied this variable as a moderator to test the predictions of hypotheses H9a, H9b and H9c, which partially address our third research question. *DOI in developed countries* denotes the context-specificity of MNEs' asset dispersion in host countries, which belong to the category of developed economies. We have used the received classification by the United Nations, which is primarily based on the level of economic development of the countries in the world. Following Yuan et al. (2016), we have calculated this moderating variable as an average of two related ratios. The first ratio accounts for MNE's total number of subsidiaries in developed countries relative to the maximum number of foreign subsidiaries in the sample, while the other ratio is calculating MNE's total number of developed host countries relative to the maximum number of host countries in the sample. These two ratios represent the scale and scope of MNE's FDI presence in developed countries, respectively.

This measure is a relative instead of an absolute ratio, which is a suitable choice for single country study, considering the fact that certain factors and parameters of the multinationals' expansion can be attributed to their home country contexts. Although using this type of measure reduces the cross-comparability outside the features of our sample, for example to significantly different home environments to the UK, it adjusts the data by distributing it more evenly. That helps us avoid inaccurate estimation results due to skewness which an absolute measure would produce.

4.7.5 Control Variables

In the empirical analyses we also included several control variables, which could independently influence the speed of multinational expansion. Firm demographics, such as the age and size have been argued to impact firm's capacity and incentive for internationalisation, and thus have been applied as controls in almost every study on speed we have discussed previously.

Firm Age

This time-variant, continuous variable (denoted as 'AGE' in the STATA regression commands) is measured as the number of years which have elapsed between firm's incorporation and the period of observation. We have obtained the data from the company history sections on each of MNEs' corporate websites. Usually, older firms might have developed more extensive managerial networks, skills and accumulated experience that facilitate growth and support international expansion. This is under the assumption they are internationally orientated, rather than embedded in domestic market operations, which can impede adaptations required for international expansion. On the other hand, some scholars have assumed that younger firms with strong international orientation display higher levels of risk-taking behaviour and hence propensity for early and rapid overseas expansion (Autio et al., 2000; Lin et al., 2011). This variable has also been used as control in related studies (Mohr & Batsakis, 2017, p. 161).

However, we should note that these assumptions might be contestable, in view of the presented descriptive statistics with regards the composition of our sample. We noted in Chapter 4 that many of the mature firms in our heterogenous sample did not display an international footprint commensurate with the length of their existence. In other word, the positive association between firm age and multinationality may seem counterintuitive for late internationals. For performance this logic would not apply, since overall performance has many other contributing factors not dependent on international experience or degree of multinationality.

Firm size

Firm’s resource portfolio is thought to be a positive indicator of pace of international diversification due to economies of scope and scale. We achieved control of the potential confounding at corporate, group level, by measuring each MNE’s total assets expressed in British pound sterling, and denoted it with ‘ln_Tassets’ in the regression commands. To reduce any degree of skewness and kurtosis, we adjusted all values via natural logarithm (ln) transformation.

This technique has been frequently used in prior studies, as it helps in reducing or eliminating a potentially skewed distribution of residuals (heteroskedasticity) in the regression analysis, by compressing it into relatively normal distribution. For example, in studies about the SM-P relationship, Lin (2015, p. 51) and Yang et al. (2017, p. 80) have employed the exact same ratio as we have – ln of total assets. Other researchers studying international speed have used the natural logarhithmic form of alternative proxies for firm size, with total sales (Musteen et al., 2010, p. 200) and total number of employees (Wagner, 2004, p. 453; Chang & Rhee, 2011, p. 986; Hilmersson et al., 2016, p. 83) being the other two popular choices. From the point of view of model specification, this variable is more appropriately expressed in terms of ratios than differences, considering the heterogeneity of firm sizes in our sample.

Similarly, the following firm-level characteristics, i.e. variables were shown to have a significant influence on international expansion speed.

Tangible Assets

Firms possessing tangible slack resources would be in a better position to diversify internationally via FDI mode effectively, as this is a high risk and high commitment strategy with long-term returns on investment. Prior research has found positive correlation of this firm-level variable with rapid FDI expansion (Chang & Rhee, 2011, p. 980). Empirical results of a more recent study, investigating the determinants of international expansion speed of retailers, have also confirmed that tangible assets play important role in the process (Mohr & Batsakis, 2014, p. 613). Accordingly, we have included this variable as control in our empirical model on speed antecedents, using its transformed term into a natural logarithm (TangAs_ln).

Prior International Performance

Concurrently with the FDI, the majority of MNEs pursue international activities via other, non-equity modes of operation and thus it would be useful to capture and control this influence in the model for the overall performance. The turnover in overseas markets reflects the relative importance of foreign markets for generation of sales, and it has been found to affect both MNE's propensity and its ability for further international expansion (Ripolles et al., 2012; Chetty et al., 2014), including establishing new foreign ventures and generating profit (Hennart, 2007).

It has been noted that 'past profitability is a better predictor of current profitability than country or industry effects (Haar, 1989; Whittington, 1971)' in Hult et al. (2008, p. 1073). To this end, we used one-year lag of the ratio overseas turnover as proportion of total turnover as a proxy measure, which is almost identical to the popular proxy for the degree of internationalisation foreign sales to total sales, or FSTS (Sullivan, 1994). We have also used it as control variable in our performance model, and in the regression command in STATA have denoted it as 'l.FSTS'.

There are several other potentially confounding factors that need to be controlled in the statistical analyses and are specific to the speed-performance (SM-P) relationship.

Domestic-only Experience

This variable is identical to that the IE literature uses for *time lag, or international precocity (*Zucchella et al., 2007). It measures the number of years beween firm's incorporation and its first international entry. There is some evidence that earliness to internationalisation positively contributes to the subsequent pace of international diversification (Autio et al., 2000; Hilmersson et al., 2017), but also to better performance outcomes (Knight & Cavusgil, 2005; Sapienza et al., 2006).

In addition, Chetty et al. (2014, p. 648) found a favourable impact of this variable on the overall financial performance for their sample of Spanish SME, but the same was not the case for the international performance. The same study supported prior findings (Ripolles et al., 2012) that precocity is positively related to higher speed of subsequent international expansion of these firms (ibid). Interestingly though, a study based on a sample of Chinese new ventures (Zhou & Wu, 2014), revealed that the positive effects of early internationalisation on their sales growth did not endure beyond the initial stages of internationalisation, as the performance advantages disappeared over time, as these ventures matured.

Based on these prior insights, wedecided it is appropriate to include this control variable in all empirical models of our study. We have deliberately used the term ‘domestic-only experience’ rather than the IE-inspired ‘precocity’, in light of the size and maturity of the MNEs featured in our sample.

Financial Leverage

This variable is included in the SM-P model to account for possible variation in profitability, induced by differences in MNEs’ capital structure. In line with prior studies, we measure it as a ratio of (consolidated, group-level accounts) total long-term liabilities and total assets, i.e. debt-to-equity ratio (Morck and Yeung, 1991; Hitt et al. 1997; Vermuelen & Barkema, 2002; Chang & Rhee, 2011).

Firm’s level of financial leverage is an indicator of their propensity to use debt financing for significant capital investments, which can affect its corporate financial performance. Low ratio values of leverage indicate good financial management with low levels of debt. Controlling for this variable may be particularly pertinent for the portion of our sampled firms which belong to the small and medium category, given their high level of leverage (47% in 2014), which demonstrates their reliance on debt financing (Grant Thornton, 2014, p. 13).

Current Ratio

This is another variable which was incorporated only in the SM-P empirical model. Measured as a ratio of firm’s current assets to current liabilities, it is future-oriented instrument, which indicates how well the company will manage debt in the next annual cycle. Along with financial leverage, this measure is frequently used in practice by both managers and investors who want to ensure vigilance on part of the company’s leadership. We include it because of the evidence that this proxy, which indicates the ‘high-discretion slack’ resources, have a positively moderating effect on the relationship between internationalisation and performance (Lin, Liu & Cheng, 2011, p. 87). Other studies have found that firms with greater financial slack have a greater ability to launch new initiatives in response to new market opportunities, as well as to expand globally (Lin et al., 2011).

Host country market size

The local conditions in the host country may affect firm’s international strategies and their performance implications (Meyer et al., 2009; Zeng et al., 2013). Therefore, to control for the level of economic development of the host countries where MNEs have subsidiaries, we used an aggregate value of the *GDP per capita* (transformed in natural logarithm) across all host markets in which an MNE has foreign subsidiaries at a given time period. For this country-level measure we used data from the World Development Indicators, which were obtained from the World Bank’s website.

Technological intensity of the industry

Another variable we have controlled for in the speed model is the technological intensity of industry in which the MNEs operate. It is deeply linked with the nature and complexity of their products and / or services, and indicates ‘the extent to which a firm depends on the knowledge inherent in its activities and outputs as a source of competitive advantage’ (Autio et al., 2000, p. 913). Technologically intensive industries are typically characterised by higher competitive dynamics, shorter product life cycles, and more sophisticated customer demands. As a result, the firms which operate in the technology-based industries face external pressure for accelerating their learning efforts.

Multinationalisation, i.e. transnational strategies of MNEs have been also explained by products and services that need local adaptation, and these rely on local knowledge resources. Therefore, empirical evidence suggests that the level of technology intensity of the industry influences firm’s FDI propensity, which in turn affects its performance (Nachum & Zaheer, 2005). Similarly, Contractor et al. (2003) found evidence that the MNEs from knowledge-based sectors access the advantages of multinationality at lower degrees (DOI), and this is reflected on performance.

To control for these effects in both models (i.e. speed as an outcome and a predictor), we constructed a dummy variable to denote the technological intensity of industry. It equals 1 if an MNE mainly operates in a medium-high to high technology industry, and 0 if otherwise. In order to determine this dummy, we considered the main 2-digit NACE (Rev 2) industry code(s) for the parent firm and allocated a category for knowledge-intensity following the classification tables provided by Eurostat (2002). This is a commonly accepted classification method (Stoian et al., 2011; Yuan et al., 2016), although some have criticised it for being subjective (Nachum & Zaheer, 2005, p. 753). For validation, we also collected these codes for all subsidiaries (domestic and foreign) listed for each MNE and identified a dominant category at group level. This was necessary, since typically there are firms within the group that fall within different categories of technological intensity to that of the parent firm, or the overall group. In addition, there are MNEs which are widely diversified and operate in multiple industries, whose technological intensity can vary. Therefore, we cross-checked whether the dominant category for the majority of the codes ascribed to all firms within the group tally with with the main category assigned to each MNE profile on the FAME database. Since we decided that the group level classification is more representative, we made a handful of adjustments as instructed by the manual validation approach.

Consistent with prior studies (Stoian et al, 2011), for interpretation of the codes we adopted the European statistical classification of economic activities NACE (Nomenclature of Economic Activities), since its categories are comparable at European level and are aligned with the United Nations' International Standard Industrial Classification (ISIC) (Eurostat, 2002). These industry classification codes are available on the FAME database, which was used as our data source. We have assumed stability of the categorisation throughout the observation period, which means that during the 12-year period (2006-2017) each MNE was considered to be operating within the same main industry.

The table 4.1 presented below provides short descriptions for all variables in our models, along with the sources from which data were drawn from.

Table 4.1 Variables – descriptions and sources

VARIABLE	DEFINITION	SOURCE	ROLE(S)	REFERENCES FOR THE MEASURE	PREDICTED OUTCOME
Speed of FDI resource commitment	Cumulative number of foreign subsidiaries divided by the number of years since the MNE's first foreign subsidiary	MNEs' annual reports	Outcome variable in the speed model (H1a, H4)	Vermuelen & Barkema (2002); Chang & Rhee (2011); Yang et al. (2017)	Positive
			Predictor variable in the SM-P model (H5)		Concave or sigmoid
Speed of geographic dispersion of FDI	Cumulative number of host countries divided by the number of years since the MNE's first foreign subsidiary	MNEs' annual reports	Outcome variable in the speed model (H2a, H4)	García-García el al. (2017)	Positive
			Predictor variable in the SM-P model (H6)		Convex or sigmoid
Speed of FDI resource commitment in developed / developing host countries	Cumulative number of foreign subsidiaries in either developed OR developing host countries, divided by the number of years since the MNE's first foreign subsidiary	MNEs' annual reports	Outcome variable in the speed model (H1b)	Author's modification based on Chang & Rhee (2011) & Yuan et al. (2016)	Positive
Speed of geographic dispersion of FDI in developed / developing markets	Cumulative number of either developed OR developing host countries divided by the number of years since the MNE's first foreign subsidiary	MNEs' annual reports	Outcome variable in the speed model (H2b)	Author's modification, based on García-García el al. (2017) & Yuan et al. (2016)	Positive
Speed of international commercial intensity	Ratio of foreign turnover to total turnover divided by the number of years since the MNE's first foreign subsidiary	MNEs' annual reports	Outcome variable in the speed model (H3, H4)	Wagner (2004); Hilmersson & Johanson (2016); MorganThomas & Jones (2009)	Positive
			Predictor variable in the SM-P model (H7)		Concave or sigmoid

Table 4.1 Variables – descriptions and sources (continued)

VARIABLE	DEFINITION	SOURCE	ROLE(S)	REFERENCES FOR THE MEASURE	PREDICTED OUTCOME
Return on sales (ROS) %	The percentage (%) ratio of net income and net sales	FAME database	Outcome variable in the SM-P model (H5, H6, H7, H8a, H8b, H8c, H9a, H9b, H9c)	Contractor et al. (2001); Rugman & Oh (2010)	Concave, convex or sigmoid)
Return on total assets (ROTA) %	The percentage (%) ratio of net income to total assets	FAME database	Outcome variable in the SM-P model (H5, H6, H7, H8a, H8b, H8c, H9a, H9b, H9c)	Hilmersson (2014); Miller et al. (2016); Mohr & Batsakis (2017)	Concave, convex or sigmoid)
Intangible Assets	Ratio of intangible assets to total assets	FAME database	Predictor variable in the speed model (H1a & H2a)	Mohr et al. (2014); Mohr & Batsakis (2017)	Positive
			Moderator in the SM-P model (H8a, H8b, H8c)		Positive
Intensity of FDI Experience (ln)	Natural logarithm of the total number of foreign subsidiaries multiplied by the number of years since the MNE's first foreign subsidiary.	MNEs' annual reports	Predictor for speed model (H1a & H2a)	Dikova et al. (2009,); Jiang et al. (2014)	Positive
			Moderator in the SM-P model (H8a, H8b, H8c)		Positive
Breadth of FDI Experience (ln)	Cumulative number of host countries in which the MNE has active foreign subsidiaries. The value was transformed into natural logarithm.	MNEs' annual reports	Predictor variable in the speed model (H1a & H2a)	Vermeulen and Barkema (2002); García-García et al. (2017)	Positive
			Moderator in the SM-P model (H8a, H8b, H8c)		Positive
Intangible Assets X Intensity of FDI Experience	Multiplication of mean-centered variables Intangible Assets and Intensity of FDI Experience	MNEs' annual reports	Moderating interaction term in the model for H4		Positive
Intangible Assets X Breadth of FDI Experience	Multiplication of mean-centered variables Intangible Assets and Breadth of FDI Experience	MNEs' annual reports	Moderating interaction term in the model for H4	Mohr et al. (2014)	Positive

Table 4.1 Variables – descriptions and sources (continued)

VARIABLE	DEFINITION	SOURCE	ROLE(S)	REFERENCES FOR THE MEASURE	PREDICTED OUTCOME
Intensity of FDI Experience in Developed Countries (ln)	Total number of foreign subsidiaries in developed countries, multiplied by the number of years since the MNE's first foreign subsidiary. The value was transformed into natural logarithm.	MNEs' annual reports	Predictor variable in the speed model (H1b & H2b)	Author's modification, based on Dikova et al. (2009,); Jiang et al. (2014)	Positive
Breadth of FDI Experience in Developed Countries (ln)	Cumulative number of developed host countries in which the MNE has active foreign subsidiaries. The value was transformed into natural logarithm.	MNEs' annual reports	Predictor variable in the speed model (H1b & H2b)	Author's modification, based on Vermeulen and Barkema (2002); García-García et al. (2017)	Positive
Intensity of FDI Experience in Developing Countries (ln)	Total number of foreign subsidiaries in developing countries, multiplied by the number of years since the MNE's first foreign subsidiary. The value was transformed into natural logarithm.	MNEs' annual reports	Predictor variable in the speed model (H1b & H2b)	Author's modification, based on Dikova et al. (2009,); Jiang et al. (2014)	Positive
Breadth of FDI Experience in Developing Countries (ln)	Cumulative number of developing host countries in which the MNE has active foreign subsidiaries. The value was transformed into natural logarithm.	MNEs' annual reports	Predictor variable in the speed model (H1b & H2b)	Author's modification, based on Vermeulen and Barkema (2002); García-García et al. (2017)	Positive
Degree of internationalization (asset dispersion) in developed countries	Average of the ratio of MNE's total number of subsidiaries in developed countries relative to the maximum number of foreign subsidiaries in the sample, and the ratio of MNE's total number of developed host countries relative to the maximum number of host countries in the sample	MNEs' websites	Moderating variable in the SM-P model (H9a, H9b, H9c)	Yuan et al. (2016)	Positive

Table 4.1 Variables – descriptions and sources (continued)

VARIABLE	DEFINITION	SOURCE	ROLE(S)	REFERENCES FOR THE MEASURE	PREDICTED OUTCOME
Firm Age	Number of years since establishment	MNEs' websites	Control variable in both main models (H1a-H9c)	Autio et al. (2000); Mohr & Batsakis (2017)	Negative
Firm Size (ln)	Natural logarithm of MNEs' total assets	FAME database	Control variable in both main models (H1a-H9c)	Lin (2012); Yang et al. (2017)	Positive
Tangible Assets (ln)	Natural logarithm of the difference between MNE's total assets and its intangible assets	FAME database	Control variable in the speed model (H1a, H1b, H2a, H2b, H3, H4)	Chang & Rhee (2011); Mohr & Batsakis (2014)	Positive
Domestic-only Experience	Number of years between MNE's inception and its first international entry (by any mode). *N.B. it is identical to international precocity*	MNEs' websites	Control variable in both main models (H1a-H9c)	Zhou & Wu (2014);Hilmersson et al., (2017); Wu & Zhou (2018)	Negative
Prior International Performance	One-year lag of the log transformation of MNEs' overseas turnover	FAME database	Control variable in both main models (H1a-H9c)	Ripolles et al. (2012); Chetty et al. (2014)	Positive
Financial Leverage %	Ratio of MNEs' total long-term liabilities to total assets	FAME database	Control variable in the SM-P model (H5 - H9c)	Vermuelen & Barkema (2002)	Negative
Current Ratio %	Ratio of MNEs' current assets to total liabilities	FAME database	Control variable in the SM-P model (H5-H9c)	Lin et al. (2011)	Positive
Technological Intensity of the Industry (dummy)	1 = high and medium-high technology; 2 = low and medium-low technology	FAME database (NACE Rev 2)	Control variable in the SM-P model (H5 - H9c)	Pla-Barber et al. (2006); Yuan et al. (2016)	Positive
Host markets size (ln)	Natural log transformation of the average of cumulative GDP per capita for all of the host countries in which each MNE has FDI within a given year	World Bank's website	Control variable in the SM-P model (H5 - H9c)	Zeng et al. (2013)	Positive

4.8 Chapter Conclusion

In this chaper we talked about our research methodolgy, the selected analytical approach and provided detailed description of the data, the sample of our study, as well as research design. We also described in detail the theoretically derived variables and measures.

On a priori theoretical grounds and previous empirical evidence, we have constructed two main analytical model for testing the hypotheses corresponding to each of our three research questions. Correspondingly, all the variables we have used in these models have have been suggested by theory and supported empirically. A detailed list is presented in Table 4.1. in section 4.6.

To address the first research question, the explanatory power of FSAs as determinants of multi-dimensionally conceptualised speed of FDI expansion were tested via fixed effects method for panel data, using the Driscoll Kraay robust standard errors estimator. Consistent with the second and third question, respectively, the direct and contingent effects of speed as a predictor for corporate performance were also assessed via fixed effects method, but with feasible generalised least squares (FGLS) estimator.

The next two chapters (5 and 6) present the testing procedures of the two empirical models along with their results.

5. TESTING THE EFFECTS OF FSAs ON MULTINATIONAL EXPANSION SPEED

In the previous chapter we discussed how our integrated analytical framework comprises three empirical components, which revolve around multinational speed as a core concept of investigation and correspond to each of our three research questions. The first part contains a model with firm-specific determinants of multi-dimensional speed of MNE expansion, designed to test the six hypotheses derived from our first research question: H1a, H1b, H2a, H2b, H3 and H4.

5.1 Introduction

As just mentioned above, the first part of our empirical analyses was modelled to address the first research question of the thesis, which we stated as follows.

RQ1. How do firm-specific assets influence various dimensions of ***speed of multinational expansion*** *among the MNEs, i.e. the rate of change in the degree of their:*
1) multinational resource commitment,
2) geographic dispersion of foreign subsidiaries, as well as
3) commercial intensity abroad?

The aim was to assess both the direct and moderating influence of several firm-level determinants on the rate of evolution of international operations in the context of multinational firms headquartered in the United Kingdom. For that purpose, the statistical model was tailored to examine six testable hypotheses, which correspond to the above research question.

There are a few prior studies that have treated some antecedent factors of speed of internationalisation more generally, investigating samples of cross-country MNEs from the retail sector (Mohr and Batsakis, 2014), multisectoral Spanish MNEs (Casillas & Moreno-Menéndez, 2014), SMEs from the ICT sector and other high-technology sectors (Luo et al., 2005; Morgan-Thomas & Jones, 2009). As noted before, preceding research has frequently stipulated that internal firm resources have antecedent effect on multinational expansion of firms, and they are also found to influence its rate of change, i.e. the multinational speed.

In response to the RQ1, we have examined the individual effects of intangible assets and two aspects of FDI experience as firm-specific resources on the three speed dimensions of multinational expansion in five hypotheses (H1a-H3). In addition, we have tested the joint effects of these predictors on each speed dimension, as laid out in H4.

Here is a list of the applicable hypotheses:

H1a: The MNE's firm-specific resources (intangible assets, intensity and breadth of FDI experience) positively influence its *speed of multinational resource commitment*.

H1b: The MNE's location-bound firm-specific resources (intensity and breadth of FDI experience obtained in host markets with similar level of economic development) stimulate greater increase in its *speed of multinational resource commitment*.

H2a: The MNE's firm-specific resources (intangible assets, intensity and breadth of FDI experience) encourage *rapid* increase in its *geographic dispersion of FDI* across host markets.

H2b: The location-bound firm-specific resources i.e. intensity and breadth of FDI experience obtained in host markets with similar level of economic development, would stimulate even greater increase in MNE's *rate of change in the geographic asset dispersion in foreign markets*.

H3: The MNE's firm-specific resources (intangible assets, intensity and breadth of FDI experience) will have a positive impact of on its *speed of international commercial intensity*.

H4: The favourable effect of MNE's intangible assets on its speed of multinational expansion is positively moderated by both the *intensity* and *breadth* of *FDI experience*.

The expectation is that this contingency will apply to the relationship with all three speed dimensions: a.) speed of FDI resource commitment, b.) speed of the MNE's geographic dispersion, and c.) speed of international commercial intensity.

5.2 Statistical Model

5.2.1 Diagnostic Tests

To begin, we tested whether the variables in these regression models suffer from multicolienarity issues. As it is often the case, when the regression model includes interaction (multiplicative) terms and polynomials (in our case, quadratic and cubic terms), there may be a risk of excessive multicollinearity among the variables. This basically indicates the extent to which a variable can be explained by the other variables in the analysis. High values can cause problems, since these can complicate the interpretation of the variation, because it is more difficult to ascertain the effect of any single variable, owing to their interrelationships (Hair et al., 2013, p.2). The recommended and the highest permitted value for VIF in a variable is 10, and exceeding this benchmark would signal a high collinearity problem (ibid., p. 197).

We did an initial check for multicolinearity by looking at the correlation tables (5.4 and 5.5) of the both sets of variables, and did not detect any alarming values. Indeed, some of the correlation coefficients show high values (over 0.6), which may indicate potential multicolinearity. However, at closer inspection, it is determined that these are alternative measures for the speed variable or interaction terms which are used in separate regressions, and would not affect the results. Generally speaking, on the basis of the correlation coefficients there is no reason for concern and the values among the important variables do not warrant any suspicion of multicollinearity.

Next we peformed a variance inflation test (VIF) via ordinary least squares regression (OLS), since the econometric approach we chose (fixed effects with Driscoll-Kraay robust stsandard errors) does not permit such calculations.

Comparatively, this is a more conservative approach, because it does not control for the firm and year effects. As indicated by Hair et al. (2013), VIF values less than ten do not indicate concern for multicollinearity among the data. While the mean VIFs for each model (i.e. regression equation for each of our hypotheses) do not exceed the value of 3.32, there are relatively higher values for the individual factors. Still, the highest is 6.63 and still safely below the threshold of 10.

Just in case, to avoid misleading regression outputs and maintain the functional relationship, we resorted to a common remedy and **mean-centred** the variables used in the interaction terms. This procedure gives their coefficients a meaningful interpretation at zero, and has been recommended as it ‘yields desirable statistical properties…’ (Aiken & West, 1991, p. 9). We performed this statistical method and then run the regression models with the mean-centered interaction terms.

Table 5.1 Variance Inflaction Factors (VIFs) for hypotheses in RQ1

	H1a	**H2a**	**H1b & H2b**	**Developing**		**Developed**		**H3**
Variables				General exp	Contextual exp	General exp	Contextual exp	
Intangible Assets	1.05	1.05		1.04	1.04	1.04	1.04	1.09
Intensity of FDI experience (ln)	3.85	4.43		3.75		3.75		4.05
hostC	4.40	7.81		4.32		4.32		5.21
Intensity of FDI experience in developing countries (ln)					5.61			
Breadth of FDI experience in developing countries (ln)					6.63			
Intensity of FDI experience in developed countries (ln)					4.15			
Breadth of FDI experience in developed countries (ln)					3.93			
Firm Age	2.29	2.47		2.26	1.92	2.26	1.88	2.31
Firm Size (ln)	4.33	4.63		4.01	3.49	4.01	4.45	4.44
Tangible Assets (ln)	3.34	3.35		3.04	3.03	3.04	3.06	3.36
Domestic-only Experience	1.71	2.08		1.67	1.56	1.67	1.47	1.78
Prior International Performance	1.16	1.16						1.61
Mean VIF	**2.55**	**3.13**		**2.87**	**3.32**	**2.87**	**2.85**	**2.59**

Then we performed the appropriate statistical test to decide which model to choose. As expected, the ordinary least squares method is not useful in the context of panel data, which we have employed for this study. The Hausman test (Hausman, 1978) suggested we should adopt fixed effects model. However, additional tests showed that the data for the variables included in this empirical model were shown to be unquestionably heteroskedastic, as uniformly indicated by both tests (hettest: Breusch-Pagan and imtest, white: White). P-values in both came out at 0.000 (very close to 0). The results from the Wooldridge test, which checks whether autocorrelation exist among the panels revealed that our data suffers from such issue. In light of these issues, we also applied the Mundlak test (1978), which further confirmed the findings from the Hausman test, that the fixed-effects model is suitable for all panel data regressions testing the six hypotheses for our first research question.

To test whether our data suffers from cross-sectional dependence, we performed the Pesaran test, using the 'xtcdf' command in STATA. Based on a transformation of the sum of all pairwise correlations, this test checks whether the variables or residuals in our models are correlated between the groups (or in our case - the MNEs) in the panel dataset. This turned out to be another issue for our data. Therefore, we have chosen the Driscoll Kraay robust standard errors model for fixed effect to apply in the test for the hypotheses matching the RQ1. Key advantage of using this method is that its statistical estimator yields results which are not only robust to auto-correlation and heteroskedasticity, but cross-sectional dependence across panel data is also permitted (Hoechle, 2007). The command for this model in Stata is 'xtscc'. However, the statistical software did not permit in-line use of factor variable notations with the command 'xtscc', so we had to generate them separately for the non-linear and interaction terms in our model as independent variables prior to their inclusion in the regression sequence.

Below we have provided the STATA output for 'xtcdf 'test for all the variables we use in the estimations.

Figure 5.2 Output from the ‘xtcdf ‘test for cross-sectional dependence (estimations for speed as an outcome variable)

```
xtcd test on variables TangAs_ln DomesticEXP FDInum FDIs_t hostC hostC_t FSTS
> FSTS_t AGE ln_Tassets INTEXP InAs_ratio InAs_INTEXP InAs_hostC OSTS DING_FDI
> _t DEV_FDI_t DING_C_t DEV_C_t Ding_INTEXP DEV_INTEXP DEVingCountries DEVed_C
Panelvar: FirmNum
Timevar: Year
```

Variable	CD-test	p-value	average joint T	mean Ï	mean abs(Ï)
TangAs_ln	20.868	0.000	9.92	0.11	0.50
DomesticEXP	0	1.000	10.37	0.00	0.00
FDInum	113.618	0.000	9.88	0.57	0.63
FDIs_t	.596	0.551	9.88	0.00	0.53
hostC	88.403	0.000	9.88	0.45	0.59
hostC_t	8.94	0.000	9.88	0.05	0.51
FSTS	26.341	0.000	9.59	0.13	0.50
> 94 combinations of panel units ignored (insufficient joint observations).					
FSTS_t	52.87	0.000	9.13	0.28	0.66
> 95 combinations of panel units ignored (insufficient joint observations).					
AGE	203.357	0.000	10.37	1.00	1.00
ln_Tassets	99.984	0.000	10.32	0.49	0.63
INTEXP	173.566	0.000	9.92	0.87	0.87
InAs_ratio	2.465	0.014	10.22	0.01	0.41
InAs_INTEXP	-.254	0.800	9.88	0.00	0.46
InAs_hostC	-.642	0.521	9.85	0.00	0.47
OSTS	23.589	0.000	9.88	0.12	0.47
DING_FDI_t	6.767	0.000	9.91	0.03	0.37
DEV_FDI_t	2.784	0.005	9.86	0.02	0.51
DING_C_t	1.077	0.281	9.91	0.01	0.39
DEV_C_t	21.87	0.000	9.86	0.11	0.52
Ding_INTEXP	85.999	0.000	9.75	0.44	0.48
DEV_INTEXP	138.95	0.000	9.71	0.71	0.76
DEVingCountr~s	51.462	0.000	9.91	0.26	0.35
DEVed_C	59.977	0.000	9.86	0.30	0.48

Notes: Under the null hypothesis of cross-section independence, CD ~ N(0,1)
P-values close to zero indicate data are correlated across panel groups.

5.2.2 Model Elements

To an extent, the model used for testing of the first six hypotheses (H1a-H4) is a partial replication of an existing analytical framework applied by Mohr & Batsakis (2014) in a study of determinants of multinational speed. Following their approach, at the core of our model we placed intangible resources, i.e. intangible assets and two dimensions of international experience, as predictors of the rate of multinational expansion. Beyond this, our framework differs in several important aspects. Our model is extended by employing three different measures for the outcome variable 'speed of multinational diversification', to represent some of the key dimensions of this multidimensional construct. These were applied in parallel regressions to test the first set of different yet related hypotheses. To address the first question more comprehensively, we also tested the joint effect of intangible assets and FDI experience on speed, and included their interaction terms in our empirical model.

Although using two measures for international experience, we captured its intensity (scale multiplied by length) and breadth, so the measure for the first one differs from the scope by length combination which the above-mentioned authors use in their study. Additionally, we have extended their model by including another analytical level with inclusion of location-specific variables for the two aspects of international experience.

Proceeding from the theoretically derived constructs for this empirical model we have identified the relevant variables and measured their observable counterparts, as discussed presented in the previous chapter.

5.2.2.1 Speed as an Outcome Variable

The Main Speed Measures

1. *Speed of FDI resource commitment (FDIs_t)*
   Dynamically measured as a count (or ratio) of the total number of MNE's foreign subsidiaries during each year, it indicates the scale, extent or degree of expansion. When these values are averaged over the length of the firm-level multinational experience, they indicate the rate of change in the degree of the FDI resource commitment. Such formula has been previously applied in empirical models studying multinational speed (Vermuelen & Barkema, 2002; Lin, 2012). We used this variable in the model testing hypothesis H1a.

2. *Speed of geographic scope expansion (hostC_t)*

   We chose to measure the numerator as a count variable indicating the level of dispersion of foreign assets or subsidiaries. It is calculated as the cumulative number of host countries in which each MNE has equity presence, i.e. it operates foreign associates or subsidiaries during a given year. Based on the DOI dimension for geographic spread of the international resources, this measure indicates the rate of change in the number of host countries served via FDI or, i.e. how quickly the firm is expanding (or in some cases reducing) its multinational scope. Other researchers have operationalised speed by using this dimension (García-García et al., 2017). To obtain the full measure for this type of speed, we averaged the described numerator over the length of an MNE's FDI experience. This measure is used for the estimations in H2a.

3. *Speed of international commercial intensity (FSTS_t)*

   This facet of international speed relates more to a general expansion in overseas markets, which is not strictly mode-specific. It indicates the rate of increasing the volume of foreign turnover in proportion to the total MNE turnover, which can be derived from foreign subsidiaries' sales, intra-firm trade, and even from exports and licensing revenues. In the same manner as with the other two speed measures, the DOI values in the numerator were averaged over the time elapsed since MNE's first FDI step. We used this mesure for the outcome variable in the regressions for H3.

Location-Specific Speed Variables

In addition to the main three speed measures listed above, we developed four location-specific variants to use in the tests for hypotheses 1b and 2b. These were derived by disaggregating the dependent variables used for hypotheses 1a and 2a into dichotomous speed measures, based on the level of economic development of the host environments. Thus we obtained speed for FDI commitment in developed (DEV_FDI_t), and speed for FDI commitment in developing countries (DING_FDI_t) to use in H1b, as well as speed of geographic dispersion in developed (DEV_C_t) and developing countries (DING_C_t) for testing the hypothesis 2b.

Alternative Speed Variables

For the robustness examinations we used several additional speed measures. For the first alternative model we replaced the count measures applied in H1a and H2b with their ratio counterparts. So, instead of the overall number of foreign subsidiaries that MNE has registered at a specific time period, for the numerator of the variable 'speed of FDI resource commitment' we calculated the proportion of these relative to the number of total subsidiaries (including domestic ones). Known as *overseas subsidiaries to total subsidiaries (OSTS)*, this ratio has been used as proxy for degree of internationalisation 'to estimate material international character of a firm', and following Aharoni's typology Sullivan has listed it under the structural category of DOI measures in his review (1994, p. 331). He even considered it a better alternative to the pure 'count' type of estimator we have used, since it provides a standardised measure of the total volume of foreign subsidiaries, which can vary in both scale and scope. Although we had initially considered using aother alternative multinationality measures used in prior studies, based on the proportions of foreign to total assets (Tihanyi et al., 2005) or foreign to total employees (Contractor et al., 2003), we could not use them since we encountered considerable missing observations in our data.

For the variable *speed of geographic asset dispersion*, as an alternative to the pure count measure, the total number of host countries in which the MNE has subsidiaries was calculated and normalised relative to the sample, using a ratio of this number to the highest number of host countries for any MNE in the sample.

We performed several robustness checks for the speed as outcome model, and in addition to the above described ratio measures for the dependent variables, we have tested an aggregated index, as well as different time period in the denominator. Details about these measures and the results from the robustness tests are presented in section 5.5 of the next chapter. All of the alternative measures have been validated in prior empirical studies (Sanders & Carpenter, 1998; Lu & Beamish, 2004; Chetty et al., 2014). The data for all the speed variables are derived from MNEs' annual reports for the duration of the observation period.

5.2.2.2 Explanatory Variables

As we have stated in hypotheses H1-H3, we argue that intangible resources can reduce an MNE's costs of foreign investment, and in turn incentivise and facilitate subsequent overseas expansion via equity mode of operation. For the regression tests we have obtained this variable by calculating the ratio between MNEs' intangible assets and its total assets, and symbolically indicated it as *InAs_ratio*.

Our empirical analysis distinguishes between two types of ***FDI experience***: general and context-specific with regards to the economic development category of the host countries where MNEs have foreign subsidiaries. It also employs a couple of dimensions of FDI experience: intensity and breadth, both as predictors and moderators. Similar to Mohr et al. (2014), we disaggregated FDI experience it into a couple of components: the first one combines the total volume of FDI (i.e. the number of foreign subsidiaries) with MNEs' years (or length) of FDI experience. We multiplied these two components to calculate the variable ***intensity of FDI experience***, which we denoted 'INTEXP' in the statistical commands in the STATA software. The second measure captures the dimension ***breadth of FDI experience,*** which expresses MNE's geographic scope and is calculated by the total number of host countries for FDI, and is marked as 'hostC' in the STATA commands. Both of these variables have been operationalised as two separate measures and included in all models testing the hypotheses where the general (non-context-specific) FSAs feature, either as predictors or moderators: H1a, H2a, H3, H7a, H7b & H7c.

Before their application in the statistical tests, all the measures for the FSAs as predictor variables were transformed into natural logarithms to reduce skewness of the data.

For the hypotheses 1b and 2b, we set our intention to test whether context-specific experiential knowledge is indeed a better predictor of speed, as per findings of Dow & Larimo, (2009). To this end, we have adopted four additional refined measures for interpretation of intensity and breadth of international experience, which acknowledge the distinction between the general experience and learning and that derived from a specific type of environmental context. The variables we have designed for this purpose are the following: *intensity of experience in developed countries* ('DEV_INTEXP_ln' in STATA), *intensity of experience in developing countries* ('Ding_INTEXP_ln'), *breadth of international experience in developed countries* ('DEVed_C_ln'), as well as *breadth of international experience derived from developing countries* ('DEVingCounties_ln'). For details about their operationalisation, please see section 4.6.2.3.

5.2.2.3 Control Variables

The list of control variables remained unchanged throughout the regressions for the hypotheses of the first research question.

5.2.2.4 Moderating Effects among the Firm-Specific Assets on Speed

Interaction among the FSAs

We further investigated the contingent effect of the MNEs' FDI experience on the variation caused by the level of intangible resources on multinational expansion speed as an outcome variable. Therefore, we added two interaction terms to the main model for each type of speed, allowing for potential moderating effects between intangible assets and each of the two dimensions of international experience (intensity and breadth), as stated in hypothesis 4. In the regression commands in STATA these variables are denoted by the following sequences: 'InAs_INTEXP' for the interaction between the mean-centerd terms of intangible assets and the intensity of international experience; and 'InAs_hostC' for the interaction between the mean-centered terms of intangible assets and the breadth of international experience.

5.2.2.5 Estimation Equations

This is the full estimation equation we applied to test the six hypotheses corresponding to RQ1, i.e. H1a-H4:

(Speed of multinational expansion) $_{it}$ = α + $\beta 1$ *(Intangible Assets)* $_{it}$ + $\beta 2$ *(Intensity of FDI Experience)* $_{it}$ + $\beta 3$ *(Breadth of FDI Experience)* $_{it}$ + $\beta 4$ *(Firm Age)* $_{it}$ + $\beta 5$ *(Firm Size)* $_{it}$ + $\beta 6$ *(Tangible Assets)* $_{it}$ + $\beta 7$ *(Domestic-only Experience)* $_{it}$ + $\beta 8$ *(Prior International Performance)* $_{it}$ + *(fixed time-effects)* $_{it}$ + ε_{it}

For the outcome variable we substituted the relevant speed measure corresponding to each hypothesis. When testing H1b and H2b, the predictors denoting general FDI experience were replaced with their context-specific counterparts.

The model for hypothesis 4modifies the above equation by including the corresponding interaction terms, as follows:

(Speed of multinational expansion) $_{it}$ = α + $\beta 1$ *(Intangible Assets X Intensity of FDI Experience)* $_{it}$ + $\beta 2$ *(Intangible Assets X Breadth of FDI Experience)* $_{it}$ + $\beta 3$ *(Firm Age)* $_{it}$ + $\beta 4$ *(Firm Size)* $_{it}$ + $\beta 5$ *(Tangible Assets)* $_{it}$ + $\beta 6$ *(Domestic-only Experience)* $_{it}$ + $\beta 7$ *(Prior International Performance)* $_{it}$ + *(fixed time-effects)* $_{it}$ + ε_{it}

Table 5.3 Descriptive Statistics for the Variables in the Speed Model

	Mean	S.D.	Min	Max
Speed of FDI resource commitment	2.140	3.224	0.040	32.000
Speed of geographic dispersion of FDI	0.798	0.968	0.040	13.000
Speed of international commercial intensity	6.347	13.122	0.033	175.753
Intangible Assets	35.645	42.838	0.000	57.344
Intensity of FDI Experience(ln)	5.452	2.205	0.000	10.731
Breadth of FDI Experience (ln)	1.999	1.100	0.000	4.754
Firm Age	62.133	53.181	2.000	230.000
Firm Size(ln)	19.218	2.326	14.598	25.779
Tangible Assets(ln)	16.727	3.305	2.866	24.493
Domestic-only Experience	23.126	28.156	0.500	126.000
Prior International Performance	58.589	28.321	0.000	100.000
Intangible Assets x Intensity of FDI Experience	9.950	1.245	3.712	12.884
Intangible Assets x Breadth of FDI Experience	4.677	1.435	-2.458	7.208
Speed of FDI resource commitment in developing countries	0.526	1.251	0.000	9.889
Speed of FDI resource commitment in developed countries	1.612	2.302	0.000	27.000
Speed of geographic dispersion in developing countries	0.251	0.405	0.000	3.000
Speed of geographic dispersion in developed countries	0.543	0.673	0.000	10.000
Intensity of FDI experience in developing countries (ln)	2.768	1.698	-2.354	6.984
Intensity of FDI experience in developed countries (ln)	3.464	1.709	-2.354	6.710
Breadth of FDI experience in developing countries (ln)	1.333	1.085	0.000	4.431
Breadth of FDI experience in developed countries (ln)	1.669	0.969	0.000	3.466

Table 5.4 Correlation Matrix for the General Speed Model

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	Speed of FDI resource commitment	1.0000												
(2)	Speed of geographic dispersion of FDI	0.8268	1.0000											
(3)	Speed of international commercial intensity	0.1073	0.3209	1.0000										
(4)	Intangible Assets	0.0229	0.0269	0.0281	1.0000									
(5)	Intensity of FDI Experience (ln)	0.270	0.0000	-0.4600	0.0800	1.0000								
(6)	Breadth of FDI Experience (ln)	0.4400	0.3400	-0.2900	-0.0400	0.8700	1.0000							
(7)	Firm Age	0.0279	-.1239	-0.2254	-0.0988	0.5400	0.4429	1.0000						
(8)	Firm Size (ln)	0.5104	0.2724	-0.2134	-0.0920	0.7600	0.7500	0.3854	1.0000					
(9)	Tangible Assets (ln)	0.4477	0.2250	-0.1429	-0.0323	0.6000	0.5052	0.3988	0.8066	1.0000				
(10)	Domestic-only Experience	0.1359	0.0117	-0.1251	-0.1077	0.0800	0.0078	0.5130	0.0561	0.1527	1.0000			
(11)	Prior International Performance	0.0310	-.0282	0.1270	0.1239	0.2598	0.2421	0.0567	0.1759	0.0378	-0.1549	1.0000		
(12)	Intangible Assets x Intensity of FDI Experience	-0.0270	-0.017	0.000	-0.181	0.0200	0.0300	0.0300	0.000	0.0475	-0.010	0.1028	1.0000	
(13)	Intangible Assets x Breadth of FDI Experience	-0.0700	-0.010	0.0300	-0.230	0.0500	0.0400	0.0300	0.000	0.0500	-0.0131	0.0628	0.8804	1.0000

Table 5.5 Correlation Matrix for the Context-Specific Speed Model

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Speed of FDI resource commitment in dev.-ing C.	1.0000																			
2	Speed of FDI commitment in developed countries	0.6161	1.0000																		
3	Speed of geographic dispersion in developing countries	0.8614	0.6610	1.0000																	
4	Speed of geographic dispersion in developed countries	0.4381	0.7597	0.5718	1.0000																
5	Intensity of FDI exper. in developing countries	0.4702	0.1656	0.3544	0.0336	1.0000															
6	Intensity of FDI exper. in developed countries	0.4044	0.3375	0.3499	0.0650	0.7878	1.0000														
7	Breadth of FDI exper. in developing countries	0.4817	0.2388	0.4760	0.0871	0.9003	0.8058	10000													
8	Breadth of FDI exper. in developed countries	0.4904	0.4246	0.4775	0.2616	0.6334	0.8437	0.7675	1.0000												
9	Speed of geographic dispersion	0.6641	0.8041	0.8153	0.9385	0.1692	0.1875	0.2578	0.3787	1.0000											
10	Speed of international commercial intensity	0.0380	0.1379	0.1600	0.3541	-0.1408	-0.2341	-0.1272	-0.2028	0.3209	1.0000										
11	Intangible Assets	-0.0129	-0.0230	0.0108	0.0369	-0.0130	-0.0040	0.0001	-0.0154	0.0269	0.0281	1.0000									
12	Intensity of FDI Exper.	0.2054	0.0425	0.1663	-0.0674	0.8767	0.8040	0.8791	0.6149	0.0214	-0.1228	0.0231	1.0000								
13	Geographic scope (DOI)	0.5151	0.3358	0.5058	0.1697	0.8380	0.8723	0.9589	0.9178	0.3275	-0.1686	-0.0074	0.8165	1.0000							
14	Firm Age	0.0826	-0.0060	0.0070	-0.1772	0.4417	0.4768	0.4365	0.3888	-0.1239	-0.2254	-0.0988	0.4932	0.4429	1.0000						
15	(ln)Firm Size	0.4165	0.4853	0.3748	0.1666	0.4431	0.7020	0.5516	0.7152	0.2724	-0.2134	-0.0920	0.4621	0.6577	0.3854	1.0000					
16	(ln)Tangible Assets	0.3450	0.4367	0.3199	0.1285	0.3402	0.5677	0.4301	0.5396	0.2250	-0.1429	-0.0323	0.3578	0.5052	0.3988	0.8066	1.0000				
17	Domestic-only Experience	0.1804	0.0922	0.0696	-0.0211	0.0745	0.0485	-0.0198	0.0447	0.0117	-0.1251	-0.1077	-0.0614	0.0078	0.5130	0.0561	0.1527	1.0000			
18	Prior Int.'l Performance	0.0770	-0.0005	0.0641	-0.0809	0.2102	0.2846	0.2516	0.2432	-0.0282	0.1270	0.1239	0.2598	0.2621	0.0567	0.1759	0.0378	-0.1549	1.0000		
19	Intang. Assets x Intensity of FDI Exper.	-0.0145	-0.0265	-0.0102	-0.0807	0.2616	0.3097	0.2752	0.2133	-0.0578	-0.0719	-0.7815	0.3719	0.2653	0.2276	0.2549	0.1475	-0.0253	0.1028	1.0000	
20	Intang. Assets x Breadth of FDI Exper.	-0.0224	-0.0258	-0.0125	-0.0401	0.0994	0.1143	0.1115	0.0662	-0.0306	0.0009	-0.7756	0.1677	0.0986	0.1470	0.1710	0.0689	-0.0131	0.0628	0.8804	1.0000

5.3 Descriptive Statistics

In Tables 5.3 - 5.5 are shown the descriptive statistics, which include the means, standard deviations, and pairwise correlations for all the interval and ratio predictors of the empirical model for deteminants of multinational speed.

Results from the descriptive statistics reveal that during the period between 2006 and 2017, the listed UK MNEs included in our sample initiated up to 95 new foreign entries via equity mode across 11 new host countries. The cumulative figures for their multinational footprint achieved up to the end of our observation period (year 2017), show an aggregate volume of 3338 episodes composed of the remaining active subsidiaires. The most diversified MNE within our sample has 398 foreign associates and / or subsidiaries, whereas the most dispersed overseas footprint is shown for an MNE present in a total of 116 host countries. The least diversified multinational companies were at the other end of the scale / scope spectrum with only 1 foreign subsidiary in a single foreign country. Since we also accounted for the overseas divestments, these figures show that within a single observation period some MNEs closed or sold up to fourteen foreign subsidiaries and exited four host countries via equity mode.

5.4 Regression Analyses Outputs

Below we present and discuss the estimation results for the tests of the six hypotheses relating to the first research question, H1a-H4. The inferential statistics from the fixed-effects panel regression are organised and presented in six tables (5.6 - 5.11), which provide several different statistical models. In these output tables we report the within R^2, since it indicates the goodness of fit measure for the fixed effects, by indicating the individual mean de-trended data and disregards all the between panel information in the data (Wooldridge, 2002). In all regressions we apply the Driscoll Kraay robust SE method (Hoechle, 2007). This approach automatically adjusts all the intercepts to the point of origin and therefore the slope coefficients are not reported in the tables, since their values have all been reduced to zero.

We perform the regressions in several steps, beginning with the baseline model 1, containing solely the control variables, and then sequentially adding the predictor variables in each subsequent model. Details of the results from the regression models, as well as their interpretations are provided in the text below, and are organised around each of the stated hypotheses.

In **hypothesis 1a** we predict that firm-specific resources, i.e. intangible assets, as well as intensity and breadth of FDI experience would positively influence the *speed of multinational resource commitment* among MNEs. We tested it by running several regressions models in a gradual manner, initially with the barebones equation of model 1, which solely includes the control variables. Then we proceeded sequentially with the two models which included the predictor variables: the measure for *intangible assets* was added in model 2, whereas both *intensity* and *breadth of FDI experience* were inserted in model 3, to complete the main testing of hypothesis 1a. The outputs are available in Table 5.6.

With the prediction of hypothesis 1a we expected that the beta coefficients for all three independent variables would indicate positive effects on speed. Based on the regression results of the complete model (M3), we found full support for these hypothesised effects. The estimated coefficients for the variables intangible assets, intensity and breadth of FDI experience all show positive and statistically significant impact on MNEs' speed of FDI resource commitment.

More specifically, the coefficient values indicated the following: for a single unit of increase in MNE's intangible assets, the speed of FDI resource commitment (measured as the total number of foreign subsidiaries over the length of MNE's history with FDI) rises by 0.016 units ($p<0.01$); whereas the intensity of general FDI experience causes only a negligible increase in speed of 0.0001 ($p<0.05$). The widening of the MNEs' breath of host markets for FDI operations points to greater positive influence on the speed of FDI resource commitment, by 0.114 units ($p<0.01$).

This means that these three types of knowledge-based proprietary assets contribute to a rapid pace of expansion in MNE's overseas subsidiary network, although with different magnitude of effect. The indicator for geographic scope of MNE's exposure and experience, which we mentioned is often applied as a proxy for the degree of international diversification, seems to have the most visible influence. Statistically, this variable is only moderately correlated with the outcome measure (at 0.4397), but theoretically we may suggest there exist complementarities and inter-dependence between the scope aspect of DOI (which is identical to the breadth of international experience) and the dynamic change in the extent aspect of DOI (i.e. the scale of expansion), as represented by our speed variable (Clarke et al., 2013).

Hypothesis 2a stated that MNE's firm-specific resources, i.e. intangible assets, intensity and breadth of FDI experience encourage *rapid increase in MNE's geographic dispersion in host markets*.

We tested this prediction by consecutively running the regression models from the basic one that contained only the control variables, to the complete model by adding the predictor intangible assets and then the second and the third predictors of FDI experience (intensity and breadth) to the equation. The results from these three models are displayed in Table 5.8.

Similar to the results for hypothesis 1a, these revealed that FSAs create significant relationship with speed of geographic scope expansion in the expected (positive) direction, thus offering full support for the predictions in Hypothesis 2a. The estimated beta coefficients for all three measures used as explanatory variables in these models are positive and significant at either 1% or 5%. As evident from the Table 5.8, the respective coefficients from the full model (M3) are as follows: 0.007 for intangible assets, 0.00001 for intensity of FDI experience, and 0.067 for breadth of FDI experience.

Again, as we have seen in the results predicting MNEs' speed of FDI commitment, the influence of the intensity aspect of mode-specific experience on the speed of geographic scope is weaker than that of breadth with the same value of 0.0001

($p<0.05$), which is practically imperceptible. Thus, similar conclusions apply as for H1a. However, the coefficient values for intangible assets and breadth of experience in this model show lesser strength than those supporting Hypothesis 1a. This may indicate that these two FSA indicators have higher predictive power for MNE's rate of change in the scale than they do for the scope dimension of multinational expansion.

Testing predictions about the effects of context-specific FDI experience (H1b and H2b)

The predictions and results from H1a and H2a (as well as H3) are agnostic to the source of the experiential knowledge as a firm-specific resource. We discussed in the previous chapter how the characteristics of the host location where the international operations take place would make a difference for the nature and the quality of organisational learning and capability development, as well as for the degree to which their existing FSAs can be deployed in the subsequent FDI expansion. The hypotheses we formulated to compare the speed outcomes from the location-bound FDI experience with those of the general experience tested above, state the following:

Hypothesis 1b: location-bound firm-specific assets represented by the intensity and breadth of FDI experience, obtained in host markets with similar level of economic development, will stimulate greater increase in the *speed of multinational resource commitment* among MNEs, than the same level of general experience.

Hypothesis 2b: intensity and breadth of location-bound firm-specific experience obtained via FDI operations in host markets with similar level of economic development would encourage greater increase in MNE's *rate of change in geographic dispersion in the same economic category of host markets* than their general counterparts.

The estimation equations for H1b and H2b were modelled as follows:

MODEL 1A / 2A:

***(Speed of multinational expansion in developed / developing countries)**$_{it}$= α + β1 (Intangible Assets)$_{it}$ + β2 (Intensity of General FDI Experience)$_{it}$ + β3 (Breadth of General FDI Experience)$_{it}$ + β4 (Firm Age)$_{it}$ + β5 (Firm Size)$_{it}$ + β6 (Tangible Assets)$_{it}$ + β7 (Domestic-only Experience)$_{it}$ + β8 (Prior International Performance)$_{it}$ + ε_{it}*

MODEL B:

***(Speed of multinational expansion in developed / developing countries)**$_{it}$= α + β1 (Intangible Assets)$_{it}$ + β2 (Intensity of Location-bound FDI Experience)$_{it}$ + β3 (Breadth of Location-bound FDI Experience)$_{it}$ + β4 (Firm Age)$_{it}$ + β5 (Firm Size)$_{it}$ + β6 (Tangible Assets)$_{it}$ + β7 (Domestic-only Experience)$_{it}$ + β8 (Prior International Performance)$_{it}$ + ε_{it}*

Although the regression models for H1a and H2a included year dummies, the tests for the models matching these two hypotheses (H1b and H2b) rejected the condition to control for fixed time-effects, so we have removed them from the equations. The remainder of the estimation model for these two hypotheses is almost identical to the general model, with exception for the outcome variable(s) and the two predictors of FDI experience. These were switched with their location-specific alternatives, which were obtained by disaggregating the main variables into measures related to developing and developed country speed and experience. More details about these measures were provided earlier in Chapter 4.

For the next step we ran the relevant regression tests in a gradual fashion. For neatness of presentation, we only report the complete models for comparison, which include all control variables and the intangible assets, plus the two predictors for FDI experience: intensity and breadth.

Regression outputs for H1b are presented in Table 5.7. In order to check if our predictions find any support, it is appropriate to examine models 1A and 1B, as well as 2A and 2B for comparison of the effects in developed and developing countries, respectively. Model 1A features the general (non-location specific) measures for rapid FDI commitment in developed countries, whereas for the model 1B we substituted them with their context-specific variants. For inclusion in the latter model we have derived two pairs of measures, one for intensity and breadth of FDI experience obtained in the developed countries, and another pair referring to experience from the developing countries. Their coefficients are presented in models 1B and 2B of the Table 5.7.

In case of expansion into developed countries, the rate of expansion is positively influenced by both intensity and breadth of FDI experience, which is consistent with the general model in H1a. Our predictions for H1b are supported for this category, since the magnitude of the effect of these predictors is greater when they were measured as intensity (0.004) and breadth (0.119) of experience derived from prior FDI activities in developed countries, than their general counterparts (0.0001 and 0.08, respectively). The beta coefficients for both predictors in models 2A and 2B (for developing countries) are significant, but interestingly, intensity of FDI experience switched the sign in both models to negative. The coefficient values, however, were stronger for country-specific experience than for general: -.0.004 versus -0.00034 for intensity and 0.091 versus 0.042 for breadth. These show as expected, that the intensity and breadth of experience derived from developing countries have greater impact on the speed of increase of the FDI scale in countries from this category than the general aspects of this experience (model 3a). Thus, we obtained further support for hypothesis 1b.

By looking at Table 5.9, which displays the results for hypothesis 2b, we observe similar pattern to what we just described for H1b. Intensity coefficients show negative direction for the developing countries, which is counter to the main prediction for the overall effect of this dimension. Almost all the other coefficients, both for the developed and developing country groups, are positive and significant, with the exception of intensity of FDI experience in developed countries, which has a negative sign. The comparison of the coefficients between the general and location-specific predictors reveals that the latter variants have generally bigger effect, with the exception of the intensity of FDI experience in both developed and developing countries, which has a negative and hence smaller value (-0.0008) than the general variant (0.00004).

For illustration, for the developing category the coefficients compare as follows: -0.0042 (location specific) versus -0.00002 (general) for intensity; and 0.067 versus 0.024 for breadth, respectively. This is in line with what we hypothesised in H2b. The estimation of the predictors for the developed country experience provides support only for the breadth of FDI experience: 0.07 (location-specific) versus 0.02 (general).

Overall, the above results provide evidence for the predicted larger effects of the context-specific measures, although the evidence for intensity of location-specific FDI experience is not entirely convincing for both country categories, so the hypothesis 2b is only partially supported.

Our next **hypothesis (H3)** stated the following:

As with the preceeding hypotheses, this one also predicts a positive impact of intangible assets and FDI experience on MNEs' *speed of international commercial intensity*. The regression results (see Table 5.10) provided only a partial support for this hypothesis, since the coefficient for intangible assets were not statistically significant, albeit positive (0.014), as predicted. This result corrected our assumption, by showing that these knowledge-based resources were not a predictor for speed of international commercial intensity for the MNEs in our sample. Post-hoc, this outcome makes sense since this multinationality dimension is not purely explaining internalisation activities, but a mode-neutral commercial intensity, which shows the extent to which MNE's rely on foreign sales. This could be achieved through means other than FDI expansion, which is internalisation of overseas markets, for example market penetration via other modes or adjustment in marketing and sales strategies. Therefore, in such scenarios intangible assets would not serve as an incentive for overseas internalisation and would not play any instrumental role to facilitate that process.

For the two predictors of FDI experience we obtained positive and significant coefficients, with values of 0.002 ($p<0.01$) for intensity of this experience and 0.295 ($p<0.05$) for its breadth (geographic scope). In terms of magnitude of the influence of these two explanatory variables on the speed of international commercial intensity, we observed the same pattern as in the other two dimensions of speed, i.e. scale and scope. Namely, breadth of FDI experience turned out to have stronger impact than intensity of such experience. This suggests that the experience the MNE derives from geographically dispersed (and likely diverse) operations contributes more towards the rapid growth of its commercial intensity, compared to mode repetition that increase in the subsidiary numbers implies. Enlarged subsidiary network that grows the geographic scope opens up new markets for the MNE and greater range of market possibilities, typically reflected in speedier increase in the foreign to total sales ratio. Arguably, the rising values of this indicator could also be attributed to an increase in intra-firm trade, which is recorded in the accounting-based metric of FSTS ratio.

For the last hypothesis addressing the first research question in this thesis, our conjecture was rooted in expectations that the FSAs would reinforce each other's effect on the rate of multinational expansion, as stated below.

The FDI experience is the main source of mode-specific experiential knowledge, as an important firm-specific asset for international diversification. It also contributes to development of other knowledge-based resources, such as intangible assets. International experience should also facilitate quicker transferability and deployment of existing FSAs across new foreign contexts. We explore this theoretically predicted inter-dependency in **hypothesis 4**, which expects their moderating influence to encourage the speed of multinational expansion. Namely, we stated that the positive effect of MNE's intangible assets on its rapid overseas expansion is positively moderated by the two aspects of FDI experience, i.e. both its intensity and breadth. The expectation is that this contingency will apply to the relationships with all three speed dimensions, which are as follows:

a) speed of FDI resource commitment;
b) speed of MNEs' geographic dispersion;
c) rapid increase in international commercial intensity.

The estimation equation for this hypothesis is as follows:

***(Speed of multinational expansion)**$_{it}$= α + β1 (Intangible Assets x Intensity of FDI Experience)$_{it}$ + β2 (Intangible Assets x Breadth of FDI Experience)$_{it}$ + β3 (Intangible Assets - centered)$_{it}$ + β4 (Intensity of FDI Experience - centered)$_{it}$ + β5 (Breadth of FDI Experience - centered)$_{it}$ + β6 (Firm Age)$_{it}$ + β7 (Firm Size)$_{it}$ + β8 (Tangible Assets)$_{it}$ + β9 (Domestic-only Experience)$_{it}$ + β10 (Prior International Performance)$_{it}$ + ε_{it}*

For the dependent variable we used our three main speed measures in parallel models. The interaction terms were considered as predictors, while their individual components were also included as control variables. To avoid multicolinearity problems, we mean centered them all.

In a series of regression analyses we tested the interaction effects between 1.) intangible assets and intensity of FDI experience and 2.) intangible assets and breadth of FDI experience, on each type of speed. The intention was to examine whether their combined effect is significant and stronger than the individual ones in terms of providing an impetus for a faster multinational expansion. All the results from these tests are presented together in Table 5.11.

Analyses of these findings indicated that there was indeed a positive moderating impact of both aspects of FDI experience on the relationship between MNE's intangible assets and its rate of expansion in most of the predicted cases. The beta coefficients of the interaction terms had different significance levels, and only 'intangible assets x intensity of FDI experience' in the regression for speed of international commercial intensity was statistically insignificant (see model C1 in Table 5.11).

For the other speed measures, the moderating effect of intensity of experience on intangible assets was considerably low 0.000001 ($p<1\%$) for speed of FDI resource commitment, and almost imperceptible (close to zero) for speed of geographic dispersion. Although still very low, the moderating effect of breadth of experience on intangible assets was a little bit stronger for all types of multinational speed: 0.005 ($p<1\%$) for the scale dimension, 0.002 ($p<1\%$) for scope, and 0.036 ($p<10\%$) for the commercial intensity. These values indicated to what extent the breadth of experience derived from MNEs' dispersion of FDI operations would contribute towards greater positive effect of intangible assets for each type of speed. On the basis of the above, we only found a partial support for the predictions from hypothesis 4.

Once an interaction term is included in a statistical model, the coefficient of the predictor no longer indicates the same effect as in a no-interaction model; even so, it is useful to include these effects in the model to preserve the interpretation of the interaction term(s) introduced in the new equation (Mitchell, 2012). With this in mind, it is nevertheless important to mention that the main effects of the three predictor variables variables (i.e. intangible assets, intensity of FDI experience, and breadth of FDI experience) keep positive and statistically significant coefficients, and show robustness after the inclusion of the interaction effects (see Table 5.11), which reinforces our support for the predictions made in H1a, H2a and H3.

5.4.1 Interpretation of Control Variables

Next, we will attempt to interpret the statistical significance of some of the control variables used in the regressions. Several of these have supported our expectations that they affect speed of expansion, and thus justified their inclusion in the statistical model.

Firm size, measured by the natural log of the total assets, reflects resource munificence and potential economies of scale. The beta coefficient of this control variable reveals positive and highly significant impact on the speed of FDI resource commitment ($\beta = 0.426$; $p<0.01$) – see Table 5.6. It also remained significant in the model with the dichotomised measures of location-specific measure for speed of FDI resource commitment (Table 5.7), as well as in the model testing the interaction terms for hypothesis 4 (Table 5.11). This suggests that larger MNEs in our sample are in a better position to take up speedier overseas expansion by setting up new subsidiaries, given the importance of having sufficient resources to commit to new foreign operations. While its positive value for speed of expansion in terms of geographic scope of FDI (i.e. geographic dispersion) is not significant throughout the models (see Tables 5.7, 5.9 and 5.11), the same variable shows negative effect on the pace at which MNEs increase their international commercial intensity: β= -3.485; $p<0.05$ (see Table 5.10).

Conversely, *firm age* shows significant positive relationship with the speed of international commercial intensity (β= 0.035; $p<0.01$). This should not be surprising, since more mature MNEs would be more reliant on overseas markets as source of their turnover. It is interesting that the length of pre-international experience, operationalised in the variable *domestic-only experience* also shows positive and significant impact on this type of speed (β= 2.087; $p<0.05$), as well as on the speed of geographic dispersion (β= 0.056; $p<0.05$). These outcomes lend support to the assumptions of the Uppsala model of internationalisation, which maintain that the higher the level of firm experience, both general and international, the higher the propensity for foreign expansion. The longer the firm has been in operation, the greater the level of general experience; whereas longer domestic period prior to internationalisation might allow the firm to prepare resources to weather the risks of venturing abroad. This is counter to the evidence about the link between early internationalisation and speed of expansion (Autio et al., 2000; Chetty et al., 2014). On the other hand, although not significant, the beta coefficient of *domestic-only experience* is negative in the regression on the speed of FDI resource commitment, which if it was statistically significant it would be consistent with the early internationalisation hypothesis.

The control variable *prior international performance*, which we measured as the proportion of overseas sales relative to the total turnover in the year prior, came out significant but negative for the first two speed dimensions (extent and scope), and particularly for the developed countries. This is counter to our expectations, but the redeeming point came from the opposite effect shown for the speed of international commercial intensity. Given the sales-based nature of this measure, we may conjecture that high reliance on overseas profits could indicate that MNEs already have an extensive overseas subsidiary network. Under such circumstances, these enterprises would likely display abated strategic orientation towards further equity-mode expansion in overseas markets.

Table 5.6 Regression output for Hypothesis 1a

DV: Speed of FDI Resource Commitment IVs: FSAs	**Model 1** (Controls only)	**Model 2** (+ Intangible Assets)	**Model 3 (Full Model)** (+ FDI Experience: Intensity & Breadth)
Independent Variables			
Intangible Assets		0.016 (0.004)***	**0.016 (0.004)*** **
Intensity of FDI Experience			**0.0001 (0.000)** **
Breadth of FDI Experience			**0.114 (0.008)*** **
Control Variables			
Firm Age	-0.016 (0.029)	-0.01004 (0.03024)	-0.009 (0.030)
(ln) Firm Size	0.685 (0.116)***	0.559 (0.120)***	0.426 (0.114)***
(ln) Tangible Assets	-0.051 (0.037)	-0.113 (0.065)	-0.241 (0.088)**
Prior International Performance	-0.010 (0.003)***	-0.011 (0.003)***	-0.011 (0.003)***
Domestic-only Experience	-0.348 (0.148)**	-0.238 (0.145)	-0.100 (0.115)
Year Dummies	Included	Included	Included
Diagnostics			
Observations (N)	811	811	811
Number of firms	90	90	90
Within R^2	0.1308	0.1508	0.2320

Robust standard errors in parentheses.
The fixed effects model with Driscoll Kraay robust standard errors adjusts all the intercepts to zero, so these values are not reported in the table.
*** p<0.01, ** p<0.05, * p<0.1

Table 5.7 Regression output for Hypothesis 1b				
	DEVELOPED COUNTRIES		**DEVELOPING COUNTRIES**	
DVs: Speed of FDI Resource Commitment in Developed / Developing Countries IVs: FSAs	**Model 1A** (General FDI Experience)	**Model 1B** (FDI Experience in Developed Countries)	**Model 2A** (General FDI Experience)	**Model 2B** (FDI Experience in Developing Countries)
Independent Variables				
Intangible Assets	0.013019 (0.002893)***	0.012 (0.003)***	0.004 (0.001)***	0.004 (0.001)***
Intensity of General FDI Experience	**0.000147 (0.000036)*** **		**-0.000034 (0.000007)*** **	
Breadth of General FDI Experience	**0.079782 (0.012036)*** **		**0.042 (0.006)** **	
Intensity of FDI Experience in Developed C.		**0.004 (0.002)** **		
Breadth of FDI Experience in Developed C.		**0.119 (0.022)*** **		
Intensity of FDI Experience in Developing Countries				**-0.004 (0.002)* **
Breadth of FDI Experience in Developing Countries				**0.091 (0.008)*** **
Control Variables				
Firm Age	-0.01196 (0.02913)	0.020 (0.020)	0.004 (0.004)	0.0002 (0.002)
(ln)Firm Size	0.33138 (0.07873)***	0.336 (0.056)***	0.051 (0.021)**	0.065 (0.020)***
(ln)Tangible Assets	-0.20785 (0.06537)***	-0.183 (0.080)**	-0.033 (0.027)	-0.006 (0.015)
Domestic-only Experience	-0.09592 (0.11084)	-0.215 (0.059)***	-0.044 (0.016)**	-0.040 (0.0222)
Prior International Performance	-0.00975 (0.00208)***	-0.010 (0.002)***	0.0007 (0.0003)*	0.0005 (0.0004)
Diagnostics				
Observations (N)	810	805	810	806
Number of Firms	90	90	90	90
Within R^2	0.1371	0.1428	0.1331	0.1597

Standard errors in parentheses. The fixed effects model with Driscoll Kraay robust standard errors adjusts all the intercepts to zero. Thus, these values are not reported in the table. *** p<0.01, ** p<0.05, * p<0.1

Table 5.8 Regression output for Hypothesis 2a

DV: Speed of Geographic Dispersion ***IVs: FSAs***	**Model 1** (Controls only)	**Model 2** (+ Intangible Assets)	**Model 3 (Full Model)** (+ FDI Experience: Intensity & Breadth)
Independent Variables			
Intangible Assets		0.007 (0.003)**	**0.007 (0.003)****
Intensity of FDI Experience			**0.0001 (0.000)****
Breadth of FDI Experience			**0.067 (0.012)*****
Control Variables			
Firm Age	0.006 (0.011)	0.009 (0.012)	0.002 (0.012)
(ln)Firm Size	0.096 (0.038)**	0.041 (0.047)	0.005 (0.050)
(ln)Tangible Assets	0.0005 (0.0301)	-0.026 (0.022)	-0.060 (0.023)**
Prior International Performance	-0.002 (0.001)*	-0.003 (0.001)**	-0.003 (0.001)**
Domestic-only Experience	-0.045 (0.030)	0.003 (0.022)	0.056 (0.024)**
Year Dummies	Included	Included	Included
Diagnostics			
Observations (N)	811	811	811
Number of firms	90	90	90
Within R^2	0.1405	0.1568	0.2088

Robust standard errors in parentheses. The fixed effects model with Driscoll Kraay robust standard errors forces all the intercepts to the origin, so these values are not reported in the table.

*** p<0.01, ** p<0.05, * p<0.1

Table 5.9 Regression output for Hypothesis 2b				
	DEVELOPED COUNTRIES		**DEVELOPING COUNTRIES**	
DV: Speed of Geographic Dispersion in Dev-ed / Dev-ing Countries IVs: FSAs	**Model 1A** (General FDI Experience)	**Model 1B** (FDI Experience in Developed Countries)	**Model 2A** (General FDI Experience)	**Model 2B** (FDI Experience in Developing Countries)
Independent Variables				
Intangible Assets	0.005 (0.003)*	0.005 (0.002)**	0.0014 (0.0004)**	0.0019 (0.0007)**
Intensity of General FDI Experience	**0.00004 (0.00001)*** **		**-0.000021 (0.000005)*** **	
Breadth of General FDI Experience	**0.020 (0.008)** **		**0.024 (0.002)*** **	
Intensity of FDI Experience in Developed C.		**-0.0008 (0.0003)** **		
Breadth of FDI Experience in Developed C.		**0.073 (0.016)*** **		
Intensity of FDI Experience in Developing Countries				**-0.0042 (0.0004)*** **
Breadth of FDI Experience in Developing Countries				**0.067 (0.0018)*** **
Control Variables				
Firm Age	-0.0004 (0.0111)	0.005 (0.008)	0.007 (0.003)**	0.003 (0.001)**
(ln)Firm Size	-0.010 (0.050)	-0.038 (0.060)	0.016 (0.009)	0.011 (0.008)
(ln)Tangible Assets	-0.051 (0.013)***	-0.043 (0.016)**	-0.002 (0.011)	0.017 (0.007)**
Domestic-only Experience	0.043 (0.026)	0.035 (0.039)	-0.042 (0.013)**	-0.025 (0.011)**
Prior International Performance	-0.003 (0.001)**	-0.004 (0.001)***	0.0007 (0.0004)*	0.0003 (0.0003)
Observations (N)	810	805	810	806
Number of Firms	90	90	90	90
Within R^2	0.1352	0.1536	0.1128	0.1850

Robust standard errors in parentheses.
The fixed effects model with Driscoll Kraay robust standard errors forces all the intercepts to the origin, so these values are not reported in the table.
*** p<0.01, ** p<0.05, * p<0.1

Table 5.10 Output from regressions testing Hypothesis 3

DV: Speed of international commercial intensity	**Model 1** (Controls only)	**Model 2** (+ Intangible Assets)	**Model 3 (Full Model)** (+ FDI Experience: Intensity & Breadth)
Independent Variables			
Intangible Assets		0.042 (0.074)	**0.036 (0.075)**
Intensity of FDI Experience			**0.0020 (0.0005)*** **
Breadth of FDI Experience			**0.295 (0.129)** **
Control Variables			
Firm Age	0.336 (0.138)**	0.350 (0.151)**	0.354 (0.144)**
(ln)Firm Size	-3.112 (0.928)***	-3.429 (1.421)**	-3.485 (1.430)**
(ln)Tangible Assets	-0.988 (0.997)	-1.143 (0.825)	-1.690 (0.978)
Prior International Performance	0.120 (0.029)***	0.117 (0.031)***	0.129 (0.033)***
Domestic-only Experience	1.676 (0.512)***	1.975 (0.578)***	2.087 (0.698)**
Year Dummies	Included	Included	Included
Diagnostics			
Observations (N)	802	802	802
Number of firms	89	89	89
Within R^2	0.1045	0.1055	0.1260

Robust standard errors in parentheses.
The fixed effects model with Driscoll Kraay robust standard errors forces all the intercepts to zero, so these values are not reported in the table.
*** p<0.01, ** p<0.05, * p<0.1

Table 5.11 Output from regressions testing Hypothesis 4

	DV: ***Speed of FDI resource commitment*** *(FDIs/t)*		DV: ***Speed of geographic dispersion*** *(hostC/t)*		DV: ***Speed of int'l commercial intensity*** *(FSTS/t)*	
IVs: FSA interactions	MODEL A1 Intangible Assets X Intensity of Int. Experience	MODEL A2 Intangible Assets X Breadth of Int. Experience	MODEL B1 Intangible Assets X Intensity of Int. Experience	MODEL B2 Intangible Assets X Breadth of Int. Experience	MODEL C1 Intangible Assets X Intensity of Int. Experience	MODEL C2 Intangible Assets x Breadth of Int. Experience
Independent Variables						
Intangible Assets (centered)	0.017 (0.003)***	0.018 (0.004)***	0.0074 (0.003)**	0.008 (0.003)**	0.055 (0.016)***	0.056 (0.018)**
Intensity of Int. Experience (centered)	0.0003 (0.00007)***		0.00001 (0.00000)		0.0008 (0.0001)***	
Breadth of Int. Experience (centered)		0.113 (0.009)***		0.046 (0.007)***		0.114 (0.044)**
Intangible Assets X Intensity of FDI Experience	**0.000002 (0.000000)*** **		**0.000 (0.000)***		**0.000001 (0.000001)**	
Intangible Assets X Breadth of FDI Experience		**0.0005 (0.0001)*** **		**0.0002 (0.00005)*** **		**0.005 (0.002)***
Control Variables						
Firm Age	-0.007 (0.030)	-0.009 (0.030)	0.008 (0.012)	0.007 (0.012)	0.199 (0.064)**	0.193 (0.062)**
(ln)Firm Size	0.618 (0.118)***	0.378 (0.112)***	0.066 (0.046)	-0.015 (0.050)	-1.409 (0.627)**	-1.684 (0.684)**
(ln)Tangible Assets	-0.157 (0.072)*	-0.235 (0.086)**	-0.027 (0.022)	-0.058 (0.022)**	-0.348 (0.413)	-0.352 (0.399)
Domestic-only Experience	-0.236 (0.132)	0.035 (0.112)	0.003 (0.021)	0.097 (0.026)***	0.821 (0.410)*	1.092 (0.474)**
Prior International Performance	-0.009 (0.003)**	-0.011 (0.003)***	-0.002 (0.001)*	-0.003 (0.001)**	0.052 (0.012)***	0.045 (0.011)***
Year Dummies	Included	Included	Included	Included	Included	Included
Diagnostics						
Observations (N)	811	811	811	811	802	802
Number of Firms	90	90	90	90	89	89
Within R^2	0.235	0.237	0.194	0.196	0.127	0.129

Robust standard errors in parentheses. The fixed effects model with Driscoll Kraay robust standard errors forces all the intercepts to zero, so these values are not reported in the table. *** p<0.01, ** p<0.05, * p<0.1.

5.5 Robustness Checks

To check the validity of the above findings, we performed an auxiliary analysis with several tests. First, we estimated models with ratio measures for speed, as alternative to the count criterion variables in H1a and H2a. Then we tested an index and a couple of additively composite measures for speed, in lieu of the individual speed measures for H1a, H2a and H3. And lastly, an alternative metric for the temporal component of the speed measure was used as a denominator in the formulae. For each of these checks we offer further details below.

5.5.1 Checks with Ratios as Alternative Speed Measures

For this group of tests, we applied relative ratio measures for speed of FDI resource commitment and speed of geographic dispersion. The first ratio indicates the proportion of a focal MNE’s foreign subsidiaries to the overall network, and the second one compares the range of its host countries to the rest of the sample.

The results from the alternative test for H1a largely correspond to the estimation in our main model. All the coefficients show positive relationship with this speed measure (OSTS/t), although in terms of significance, only intangible assets and intensity of FDI experience found support, with p-values within the 10% and 1% range, respectively. The coefficient for the breadth of FDI experience came out statistically insignificant. It is worth noting, however, that the significant beta coefficients indicate that FSAs have larger effect on the ratio speed measure than on its count counterpart.

The regression testing hypothesis 2a provided positive coefficients for all predictors, significant within the 5% level for intangible assets, and within the 1% range for both estimators of FDI experience. These results are consistent with the main model for hypothesis 2a. Compared to the model using count measure for this type of speed, show slightly lower values.

All the outputs discussed in this sub-section are presented in Table 5.12.

5.5.2. Checks with Composite Speed Measures

Following prior studies that have substituted the single DOI measure for a composite one instead (Sanders and Carpenter, 1998; Lu and Beamish, 2004; Lin et al., 2011), and have also tested for an alternative multi-item DOI for the numerator in the speed formula. For that purpose, we have calculated a mean of the ratios that represent the commonly used dimension for MNE's portfolio of foreign subsidiaries and host countries.

We tested the original regression models by replacing the speed variables used in H1a, H2a and H3 with a couple of composite measures. The first one (SUM2count_t), is a sum of the count measures used in H1a and H2a, i.e. speed of FDI resource commitment, measured as total number of foreign subsidiaries over the length of FDI experience as denominator (t), and speed of geographic dispersion, measured as the total number of host countries over **t**.

The regression outputs provided in Table 5.12, reveal positive coefficients for all three predictors, which are also highly statistically significant ($p<0.01$), as follows: 0.012259 for intangible assets, 0.000063 for intensity of FDI experience, and 0.082508 for breadth of FID experience. This test indicated robustness of the results we obtained from the regressions for our first research question.

The second composite measure we tested is SUM3ratio_t, calculated as the average sum of three different ratios that correspond to the numerators in each speed dimension: 1) ratio of the overseas subsidiaries to MNE's total number of subsidiaries (OSTS); 2) ratio of the number of host countries in which an MNE has FDI over the highest number of host countries in the sample; and 3) the foreign turnover to total turnover ratio over t, which we used as a single measure for the outcome variable in H3.

All beta coefficients for the predictors were positive, but only that for intensity of FDI experience showed statistical significance ($p<0.01$). Otherwise, the values were somewhat higher than for the other composite measure (SUM2count_t): 0.058555 for intangible assets, 0.001229 ($p<0.01$) for FDI experience and 0.188576 for geographic scope. It is probable that due having the ratio-based proxies for speed of geographic scope expansion and speed of international commercial intensity as part of the composition of this measure, these results had similarities with those received from the main model for H3 (see Table 5.10) and the robustness check with ratio measure for the pace of geographic dispersion (see Table 5.12).

5.5.3 Checks with Speed Measures Using Different Time Denominator

We ran additional tests to examine the robustness of our findings, by substituting the time period in the denominator of the speed formulae. In lieu of measuring the years of experience an MNE has with foreign direct investment, we used the number of years since inception (i.e. firm age) to divide the DOI component from the numerator. Thus, we obtained a slightly different measure for speed which calculates the elapsed time from the firm's first international entry, regardless of whether this occurred via equity or another type of entry mode. It was marked with 'tIN' in the statistical model. In certain cases, i.e. for certain companies in our sample these two time measures coincided, since the first foreign entry for some firms happened to be via equity modes. Therefore, the tIN = t in 56 panels, or for 62% of the total number of MNEs.

For most part, our original estimates were consistent to these models with alternative speed measures, providing further support for the robustness of our results. The regression outputs are elaborated in more detail below.

The results for the dependent variables vary in a similar pattern as the original model. When regressed on speed of FDI resource commitment, all the estimates for the firm-specific predictors are positive and significant, as in the original model. However, the p value for intensity of FDI experience falls within a higher range of 10%, instead of 5%. The coefficients for intangible assets and breadth of FDI experience have $p<0.01$. We observed positive and statistically significant beta coefficients for all three predictors in the regression on speed of geographic scope, consistent with the outcomes from the original equation. When regressed on speed of international commercial intensity, these predictors matched our estimates in the signs of the coefficients, although this time the breadth of FDI experience was insignificant.

Proceeding from the statistically significant results related to the above hypotheses (H1a, H2a, H3), we can be reasonably confident that firm-specific assets (intangible assets and general mode-specific international experience) are valid predictors of MNE’s expansion speed. These findings are consistent with the assumptions of the internalisation theory and the RBV, suggesting that there are benefits to MNE’s rate of expansion via equity mode due to possession of firm-specific intangible resources.

Table 5.12 Output from robustness tests for RQ1

	Speed of FDI commitment ***(OSTS ratio)***	**Speed of geog. scope** ***(Host C. ratio)***	**Composite Speed** ***(2 count items)***	**Composite Speed** ***(3 ratio items)***
Independent Variables				
Intangible Assets	0.012 (0.003)***	0.004 (0.001)***	0.012 (0.003)***	0.058 (0.047)
Intensity of FDI Experience	0.00008 (0.00004)*	0.00004 (0.00001)**	0.00006 (0.00002)***	0.0012 (0.0003)***
Breadth of FDI Experience	0.118 (0.009)***	0.042 (0.004)***	0.082 (0.007)***	0.189 (0.114)
Control Variables				
Firm Age	0.012 (0.010)	0.008 (0.004)**	-0.0007 (0.021)	0.164 (0.089)*
Firm Size (ln total assets)	0.409 (0.076)***	0.073 (0.023)**	0.192 (0.053)***	-2.630 (1.065)**
Tangible Assets (ln)	-0.108 (0.066)	0.013 (0.020)	-0.150 (0.055)**	-0.931 (0.526)
Domestic-only Experience	-0.278 (0.055)***	-0.079 (0.033)**	-0.011 (0.051)	2.362 (0.530)***
Prior International Performance	-0.002 (0.001)*	-0.0014 (0.0006)**	-0.006 (0.002)***	0.045 (0.014)***
Year Dummies	Included	Included	Included	Included
Diagnostics				
Observations (N)	811	811	811	804
Number of Firms	90	90	90	89
Within R^2				

Robust standard errors in parentheses. The fixed effects model with Driscoll Kraay robust standard errors forces all the intercepts to zero, so these values are not reported in the table.

*** p<0.01, ** p<0.05, * p<0.1

5.6 Summary of Results

The previous sections of this chapter has presented the results from the empirical analyses of the models pertaining to the two last research questions, and discussed the interpretations of the findings. In this closing section our aim was to provide more detailed and meaningful interpretation of the relevant statistical outputs and discuss the implication of the supported predictions.

In attempt to answer the first research question, we formulated six hypotheses. In three of them (H1a, H2a and H3a) we predicted positive determining effects of internal firm-level resources (intangible assets and equity-mode international experience) on different speed dimensions of MNE's foreign expansion. Another two suggested a differential outcome of the scale and scope aspects of multinational speed from context-specific international experience. The last hypothesis on this group examined whether the joint effect of these two types of FSAs would also influence speed.

For the estimation we ran a range of regressions, for which we used fixed-effects panel data method with Driscoll-Kraay standard errors, to test if these hypothesised effects hold for our sample. We found a full support for three of the six hypotheses (H1a, H2a and H1b), whereas for the remaining half (H2b, H3 and H4) our results offered only a partial support.

Entering new countries via FDI requires bigger adaptation efforts (even reconfiguration of internal structures and processes) to the local environment than adding (establishing or acquiring) a new foreign subsidiary to its network in existing host market. In the latter scenario, the MNEs already possess certain level of experiential knowledge about the characteristics of the local institutions, demand conditions, supplier and distributor networks, etc. and these provide significant advantages since the costs of operating its foreign business entity can be managed better, without much suffering from the liabilities of newness and foreignness.

Our speed measure only accounts for the 'international asset dispersion' aspect (Goerzen & Beamish, 2003) of geographic expansion of multinational operations, so we cannot make inferences about the diversity of the host countries from our sample. However, these two concepts have been shown to be statistically inter-dependent in a positive manner (ibid.), which allows us to assume that when an MNE's assets are geographically highly dispersed across a range of countries, they will also encounter high diversity across the host environments. In reality this also makes sense, as even in the case of MNEs with operations concentrated within the home region, as they proceed with overseas expansion by adding subsidiaries in new countries, eventually they would need to go beyond the regional borders to more remote foreign hosts, both geographically and psychically. This would inevitably elevate the degree of diversity and environmental complexity.

By widening their geographic scope, MNEs would likely gains more diverse host environments in the subsidiary network, and with that a greater range of potential sources for organisational learning and development of firm-specific knowledge-based assets. Overall, the econometric estimations from this part of our study have confirmed that the specific FSAs we have tested play predominantly enabling role for acceleration of MNEs' subsequent international expansion.

The different influence of intangible assets on the third speed measure suggest that the same set of FSA determinants may not apply to each dimension equally, which further justifies their separate use, since an aggregate measure would not provide such nuanced insight.

Several of the control variables in our models show significant coefficients. Although not intended to test any of our predictions, their levels of significance indicate that it is important to control for such inputs, in order to avoid possible spurious results. We ran the regressions tests for each hypothesis in a stepwise manner, starting from the controls-only version, and gradually introducing new predictors in each subsequent model.

It is important that on the main, the results remain directionally consistent and significant at the same level throughout all models, with minor changes in the coefficients' strength after introducing additional variables in each subsequent regression. With the aim to check whether our results are robust, we employed several strategies to design alternative measures for the dependent variable, speed of multinationality. The outcomes from these tests confirmed that the initial results from our analysis are reasonably robust to different operational measures.

Summing up, the empirical findings presented here underline the positive role of firm-specific resources for increased rate of international expansion, which means that the resource-based view, internalisation theory and organisational learning provide suitable theoretical perspectives for understanding of the rapid international growth processes of multinational firms.

6 TESTING THE PERFORMANCE OUTCOMES OF RAPID MULTINATIONAL EXPANSION

6.1 Introduction

In this chapter, the focus of the problem under investigation changes from the determinants to the performance outcomes of the multinational expansion speed. With the objective to provide further evidence for the extended model of the dynamic multinationality-performance relationship, this part is a quest for answers to the last two research questions in our thesis.

RQ2. *What are the direct performance outcomes of the different dimensions of multinational expansion speed, i.e. what is the nature of the speed of multinationalisation-performance (SM-P) relationship?*

RQ3. *How does the shape of the direct SM-P relationship change due to the contingent effects of:*

a. MNEs' heterogeneity in resources (FSAs), and
b. their location strategies of asset dispersion?

Guided by the above two questions we have designed functional empirical models to examine the direct implications of different degrees of speed on corporate performance (SM-P), as well as several types of moderating influences on this association. Below we have presented the specification of the models, the corresponding empirical procedures undertaken to test to the predictions in the matching hypotheses, as well as the statistical results.

The combined theoretical perspectives utilised in our conceptual and empirical framework guide us to predict that performance levels among multinationals will vary with the different dimensions of multinational expansion speed according to a curvilinear function. This expectation is consistent with previous empirical findings on SM-P, as well as with a large portion of the preceding works on multinationality-performance (M-P) link. As prior evidence testifies, each of the different aspects of multinationality drives a separate performance outcome for the MNE (Miller et al., 2016), and we anticipate that the corresponding mechanisms would also elucidate discrete performance effects from the variations in multinational speed (Hilmersson & Johanson, 2016).

To empirically examine the exact curvilinear form of the direct SM-P relationship, we employ three different types of speed as predictors and two of the most popular measures for financial performance. Three hypotheses (H5-H7) were designed to address this research question, one for each distinct type of speed.

6.2 Direct SM-P Relationships

Using the same temporally-based framework for analysis, which employs several speed dimensions, we present the empirical model which is designed to plausibly represent the dynamic nature of the association between the rate of multinational expansion and MNE's financial performance. For the last construct, a couple of alternative performance measures are used: return on sales (ROS) and return on total assets (ROTA).

6.2.1 Performance as an Outcome Variable

Consistent with the research about the general relationship between the degree of internationalisation and firm performance, as well as majority of the speed studies, we have opted for a couple of accounting-based financial measures of the dependent variable, firm performance. For our study, we replicate the corporate performance constructs commonly used in IB studies, including those on speed, and we employ both ROS and ROTA. We have decided to employ these couple of measures to facilitate cross-comparison with prior research, and we have used readily available data from FAME to generate them.

1. Return on Sales (ROS)

This is a ratio measure, which is calculated by firm's net income to its total sales or turnover. From an accounting perspective, ROS and profit margin are almost always the same. Therefore, the source of data for this variable was FAME, where profit margin (%) is directly reported longitudinally for up to ten retrospective years.

2. Return on Total Assets (ROTA)

The return on total assets (ROTA) as the second performance measure we used to test the hypotheses related to the speed as a predictor, i.e. H5 to H9c. Calculated as a ratio of after-tax profits to total assets (Riahi-Belkanoui, 1996, p. 370), this counts among the preferred accounting-based measures in the international business literature for research on financial performance (e.g. Gomes & Ramaswamy, 1999; Lu & Beamish, 2001, 2004; Contractor et al., 2003). Studies which investigated the performance consequences of international speed have also employed this measure, either as an annual snapshot (Mohr & Batsakis, 2017), or averaged over three or more years (Vermuelen & Barkema, 2002; Chang & Rhee, 2011; Hilmersson, 2014; Hilmersson & Johanson, 2016).

We have used it as alternative outcome measure in the performance models primarily because it is considered an appropriate indicator of MNE's effectiveness and efficiency for attainment of benefits of the multinational diversification (Kim et al., 1989). Considering the fact that several other empirical studies which have tested the SM-P relationship quantitatively have also employed it (see Appendix 2.1 for details) has facilitated comparability of our results with prior research. The same as with ROS, this measure was obtained directly from the database FAME, where it is readily available as a pre-calculated ratio.

6.2.2 Speed as an Explanatory Variable

To avoid repetition, we refer readers to section 5.2.1, where the several types of speed variables used in parallel models are described in more detail. Exactly the same measures are included as independent variables in the SM-P regression models.

The main difference in terms of application of these variables in this model, besides their role of a predictor is that we have also included polynomial (quadratic and cubic) terms, to check whether our stated assumption about non-linear relationship between pace of multinationality and performance is valid.

6.2.3 Control Variables

As control variables in this portion of the empirical analyses we included several key predictors that previous research has identified as being important factors for explaining firm performance. In essence, the hypothesised effects that we controlled in the speed as an outcome models, also apply here. With the exception of *tangible assets,* we have transferred almost all of the control variables from the regressions testing RQ1 hypotheses, and used them in the performance models designed to answer RQ2 and RQ3. These include the variables for firm demographics, such as *firm age* (measured as the number of years since inception) and *firm size* (measured as natural log of total assets). Since our study focuses on international expansion by FDI, we control for the proportion of foreign sales as a common indicator of the degree of multinationality through the variable *prior international performance*, which we measured as one-year lag of the ratio foreign to total assets.

We expect that the SM-P relationship would be further affected by few additional internal or external explanatory conditions, both in terms of the direct and the contingent effects. For the performance models we have added four specific controls which were absent from the prior models in this study.
Since foreign direct investment are essentially long-term and risky type of business operations, we are taking into consideration a couple of variables which indicate MNEs' capital structure and slack resources (Chang & Rhee, 2011): *financial leverage* and *current ratio*. To avoid any potential confounding effects, we also incorporated a couple of additional covariates, which prior research indicated might explain some degree of variance in firm performance: *host market size* – measured as log transformed average GDP per capita across all MNE's host countries, and *industry-level technological intensity* as a dummy variable.

For full details, please refer to section 4.6.5, which provides operationalisation of the control variables in this study.

6.3 Contingent SM-P Relationships

In the discussion in Chapter 3 (section 3.4.3) we proposed that there are specific moderating circumstances under which the speed of multinational expansion would positively affect performance. In addition to the direct effects we investigated for our second research question, we have tested two types of contingent effects of the SM-P relationship as posed in by our third research question. We predicted these in hypotheses H8a to H9c. Then we designed adequate estimation models to test whether and how the non-linear shape of SM-P relationship changes across the firms in our sample over time, with differing levels of the moderators that represent firm-specific assets and degree of multinationality, i.e. the dispersion of foreign subsidiaries in developed countries.

6.3.1 Moderating Variables

6.3.1.1 Firm-Specific Assets

We have previously discussed the theoretical arguments for the FSAs and their role as predictors of multinational speed. Here we will focus on their contingent function with regards the key relationship of speed to corporate performance of the MNEs.
In response to our third research question we formulated six hypotheses, three of which (H8a-H8c) predicted that the statistical relationship between performance and different types of speed of multinational expansion would be moderated by MNE's internal resources (heterogeneity) and their location strategies for international asset dispersion. In the empirical models testing these hypotheses, three types of firm-specific advantages are expected to interact with and moderate the effects of each type of expansion speed on performance.

Intangible Resources
These are typically information-based proprietary assets, which cannot be easily imitated, but can be internally transferred to subsidiaries located abroad. Such resources represent, for example, superior R&D and marketing capabilities, specialised production and managerial skills, as well as consumer goodwill. The internalisation theory recognises that for firms which engage in foreign direct

investment, the presence of firm-specific intangible assets would boost their market value, i.e. would generally report higher market value relative to its accounting value (Villalonga, 2004).

International Experience

This variable international experience has been previously used as a moderator on SM-P in a study by Mohr et al. (2017). Their operationalisation of this construct, however, captures the scope and length dimensions of international experience in a single measure, calculated by ‘the sum of the number of years that a firm has operated in each of its host countries’ (ibid., p. 161).

We consider three aspects of mode-specific international experience, captured in two of the predictor measures we use for the estimation: intensity, length and geographic scope. The intensity of FDI experience represents the aspect of accumulated experience derived from volume of operations that MNEs is actively engaged with at a given point or unit of time (Clarke et al., 2013, p. 268). The variable ***FDI experience*** combines the first two, since it is measured as the total number of an MNE’s foreign subsidiaries multiplied by the number of years since its first overseas subsidiary (length). This operationalisation of international experience was used previously in a similar context (i.e. study on multinational speed) by Jiang et al. (2014), and denotes the *intensity of FDI experience*. The geographic scope variable, proxied by the total number of host countries in which the MNE has established subsidiaries, indicates the breadth of multinational experience.

6.3.1.2 Degree of Multinationality (DOI) in Developed Countries

We calculated this moderating variable as an average of two related ratios. The first ratio accounts for MNE’s total number of subsidiaries in developed countries relative to the maximum number of foreign subsidiaries in the sample, while the other ratio is calculating MNE’s total number of developed host countries relative to the maximum number of host countries in the sample

These two ratios represent the scale and scope of MNE’s FDI presence in developed countries

More complete information about all the moderating variables incorporated in these models is available in Chapter 4 under section 4.4.3.

6.4 Specification of Statistical Models

6.4.1 Model for the Direct SM-P Relationship (RQ2)

In line with the second research question formulated in this thesis, we test the curvilinearity hypotheses of the SM-P relationship. For that purpose, we have used panel data for 90 UK-based multinational firms on which we conducted feasible generalised least squares (FGLS) cross-section time-series regression analysis. The empirical model tests how the costs and gains of the rate of change of FDI expansion vary over time. The effect of the pace of change in three distinct dimensions of MNEs' multinational footprint is reflected on their return on sales and assets.

In the STATA commands in the xtgls specification we used 'force' because the automated function of the software advised: 'Year is not regularly spaced or does not have intervals of delta -- use the force option to treat the intervals as though they were regular'.

Below is the estimation equation used for testing the hypotheses 5, 6 and 7 in response to research question 2. For the criterion variable two measures have been used: return of sales (ROS) and return on total assets (ROTA). Both linear and non-linear (quadratic and cubic) terms of the indendent variable were included in the models, to test the linearity assumptions about the SM-P relationship.

$\text{Performance}_{it} = \beta 0 + \boldsymbol{\beta 1}(\text{Speed of Multinational Expansion})_{it} + \boldsymbol{\beta 2}(\text{Speed of Multinational Expansion})_{it}^{2} + \boldsymbol{\beta 3}(\text{Speed of Multinational Expansion})_{it}^{3} + \beta 4\,(\textit{Financial Leverage})_{it} + \beta 5\,(\textit{Current Ratio})_{it} + \beta 6\,(\textit{Firm Age})_{it} + \beta 7\,(\textit{Firm Size})_{it} + \beta 8\,(\textit{Prior International Performance})_{it} + \beta 9\,(\textit{Domestic-only Experience})_{it} + \beta 10(\textit{Technological Intensity})_{it} + \beta 11\,(\textit{Host Market Size})_{it} + \varepsilon_{it}$

6.4.2 Model for the Contingent SM-P Relationship

The same statistical method was used for the empirical model which we designed to address the third research question, and therefore test the moderating effects on the direct SM-P relationship. For all regression models which contain the hypothesised moderators, we created interaction terms after centering each component variable (Aiken and West 1991).

The models for this research question were designed to validate the assumptions about two types of moderators of the association between the key constructs in the SM-P relationship, which we expressed in six hypotheses (H8a-H9c). The moderating effects were statistically tested on the relationship between each of the three different types of international speed and MNEs' accounting-based performance, measured with the same two ratios as before - ROS and ROTA. We obtained the estimation models by adapting the main effects equation presented above, by centering the individual predictors and then adding an interaction term of each with the relevant speed measure. In hypotheses 5-7 we predicted at least quadratic curvelinear SM-P relationships, and allowed for possibilities of sigmoid curves. To test our conjecture about the moderating effects on these curves, we modelled them adequately for the hypotheses H8a-H9c. Therefore, the estimations included both quadratic and cubic polynomial terms for speed as a predictor variable.

For every single model, we ran three types of regressions corresponding to each interaction term (specific speed dimension with each of the three FSA variables), using the squared and cubic terms for the predictor variable separately in each group for ROS and ROTA. There were twelve different equations in total, for which the general representations are given below, in 6.4.2.1 and 6.4.2.2. Appendix 1.1 contains full disclosure of the corresponding commands we used in the statistical software STATA, in line with each equation.

6.4.2.1 The Moderating Effects of the Three FSA Variables

For the regressions testing the hypothesised contingent effects of three types of FSAs on the SM-P relationship, we used the following generic equation, which features an interaction term with a squared speed variable:

Performance $_{it}$ = $\beta 0$ + $\boldsymbol{\beta 1}$ *[*(Speed of Multinational Expansion) ^{2} x *FSAs]* $_{it}$ + $\beta 2$ (*Financial Leverage)* $_{it}$ + $\beta 3$ (*Current Ratio*) $_{it}$ + $\beta 4$ (*Firm Age*) $_{it}$ + $\beta 5$ (*Firm Size*) $_{it}$ + $\beta 6$

(*Prior International Turnover*) $_{it}$ + *β7* (*Domestic-only Experience*) $_{it}$ + *β8* (*Technological Intensity*) $_{it}$ + *β9* (*Host Market Size*) $_{it}$ + ε_{it}

To test the FSAs' contingent effects on the sigmoid SM-P relationships, we have substituted the speed measure in the interaction term with its cubic expression, as presented in the following equation:

Performance $_{it}$ = *β0* + ***β1*** *[*(Speed of Multinational Expansion) ^{3} x *FSAs]* $_{it}$ + *β2* (*Financial Leverage*) $_{it}$ + *β3* (*Current Ratio*) $_{it}$ + *β4* (*Firm Age*) $_{it}$ + *β5* (*Firm Size*) $_{it}$ + *β6* (*Prior International Turnover*) $_{it}$ + *β7* (*Domestic-only Experience*) $_{it}$ + *β8* (*Technological Intensity*) $_{it}$ + *β9* (*Host Market Size*) $_{it}$ + ε_{it}

In both of the above equations, ***β1*** denotes the regression coefficient for the interaction terms between the predictor variable (speed) and the respective moderating variables (1. intangible assets, 2. intensity and 3. breadth of FDI experience). This is the key element for the interpretation of the predicted moderating impact in hypotheses 8a-8c. Interactions may influence an outcome variable independently form the direct effects of the constituent variables, and therefore the magnitude and the direction (sign) of their coefficients should provide a more nuanced insight about the relationship between the core constructs. To obtain support for all the hypothesised effects in this analytical model, the regression results should return ststistically significant and positive values for ***β1*** from each equation above.

6.4.2.2 The Moderating Effect of DOI in Developed Countries

The equations we applied for testing of the last three hypotheses (H9a, H9b and H9c) for the third question of our study were almost identical to those for H8a-H8c we descibed in 6.4.2.1. Congruent with the hypothesised effect, the only difference in these estimations came from the interaction term, which was substituted with a product of the variables for speed and the moderating variable *degree of multinationality in developed countries*. This is the estimation equation using a squared speed term:

$$Performance_{it} = \beta 0 + \boldsymbol{\beta 1} \, [(\text{Speed of Multinational Expansion})^{2} \times DOI\_developedC]_{it} + \beta 2 - \beta 9 \, (control\ variables)_{it} + \varepsilon_{it}$$

For the following equation we substituted the speed measure with its cubic term:

$$Performance_{it} = \beta 0 + \boldsymbol{\beta 1} \, [(\text{Speed of Multinational Expansion})^{3} \times DOI\_developedC]_{it} + \beta 3 - \beta 9 \, (control\ variables)_{it} + \varepsilon_{it}$$

As previously stated, ***β1*** in these equations is the regression coefficient for the interaction term between the predictor variable (speed) and the moderating variable, which is this case is DOI in developed countries. To confirm the hypotheses 9a-9c, the value of this coefficient should be both statistically significant and positive in all the respective estimations.

6.5 Descriptive Statistics

In Tables 6.1 and 6.2 are presented the means, standard deviations, and bivariate correlations for all variables that were included in the empirical models for the second and third research questions. Prior empirical evidence suggests that ROS and ROTA are highly correlated variables (Hitt et al., 1997; Lu & Beamish, 2001), and our results also confirmed this.

Table 6.1 Descriptive Statistics for the Variables in the SM-P Model

Variables	**Mean**	**S.D.**	**Min**	**Max**
Return on Sales	6.700	14.455	-86.030	44.680
Return on Assets	6.027	12.098	-96.295	54.138
Speed of FDI resource commitment	2.140	3.224	0.040	32.000
Speed of geographic dispersion of FDI	0.798	0.968	0.040	13.000
Speed of international commercial intensity	6.347	13.122	0.033	175.753
Financial Leverage	53.040	25.578	0.000	348.484
Current Ratio	1.787	1.229	0.330	12.330
Intangible Assets	35.645	42.838	0.000	573.344
Intensity of FDI Experience (ln)	5.452	2.205	0.000	10.731
Breadth of FDI Experience (ln)	1.999	1.100	0.000	10.731
Firm Age	62.133	53.181	2.000	230.000
Firm Size (ln)	19.218	2.326	14.598	25.779
Domestic-only Experience	23.126	28.156	0.500	126.000
Prior International Performance	58.589	28.321	0.000	100.000
Host Market Size (average)	14.246	2.427	9.388	20.031
Knowledge Intensity Dummy (1=high)	0.445	0.497	0.000	1000
DOI in Developed Countries	76.268	20.605	0.000	100.000

Table 6.2 Correlation Matrix for the SM-P Model

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Return on Sales	1.00																
2	Return on Assets	0.79	1.00															
3	Speed of FDI resource commitment	0.02	0.00	1.00														
4	Speed of increase in the geographic dispersion of FDI	-0.03	0.01	0.83	1.00													
5	Speed of int.'l commercial intensity	0.01	0.03	0.11	0.32	1.00												
6	Financial Leverage	-0.13	-0.22	0.09	-0.02	-0.14	1.00											
7	Current Ratio	0.22	0.18	-0.23	-0.18	0.09	-0.53	1.00										
8	Intangible Assets	0.02	-0.01	-0.02	0.03	0.03	-0.03	-0.18	1.00									
9	Intensity of FDI Experience (ln)	0.22	0.12	0.11	0.02	-0.12	0.16	-0.15	0.02	1.00								
10	Breadth of FDI Experience (ln)	0.20	0.14	0.44	0.33	-0.17	0.18	-0.26	-0.01	0.82	1.00							
11	Firm Age	0.08	0.05	0.03	-0.12	-0.23	0.27	-0.16	-0.10	0.49	0.44	1.00						
12	Firm Size (ln)	0.20	0.13	0.51	0.27	-0.21	0.36	-0.34	-0.09	0.46	0.66	0.39	1.00					
13	Prior International Performance	0.15	0.11	0.02	-0.03	0.15	-0.10	0.15	0.14	0.25	0.26	0.05	0.18	1.00				
14	Host Market Size (ln)	0.15	0.14	0.31	0.21	-0.26	0.14	-0.21	-0.08	0.47	0.72	0.33	0.61	0.24	1.00			
15	Knowledge Intensity Dummy (1=high)	-0.00	-0.03	-0.11	-0.02	-0.03	-0.12	0.03	0.22	-0.13	-0.05	-0.27	-0.13	0.15	-0.09	1.00		
16	DOI in Developed C.	-0.12	-0.10	-0.18	-0.16	0.04	0.01	-0.01	0.03	-0.30	-0.41	-0.27	-0.25	-0.08	-0.40	0.13	1.00	
17	Domestic-only Experience	-0.07	-0.02	0.14	0.01	-0.13	0.05	-0.08	-0.11	0.09	0.08	0.51	0.06	-0.15	0.03	-0.15	-0.15	1.00

6.6 Outputs for the SM-P Relationship

6.6.1 Results for the Direct Effects of Speed on Performance

In this section we have reported the results from the regression estimations.

For the next set of hypotheses, we estimated the direct affects of the multinational speed predictors only. At the same time, we regressed two measures of performance (ROS / ROTA) across all models on the following control variables: firm size, firm age, financial leverage, current ratio, tangible assets, prior international performance, domestic-only experience, industry knowledge intensity and host market size.

As with the tests for the previous set of hypotheses, we ran the regressions for this research question in a gradual manner, beginning with the controls only model and adding a new predictor term (linear, quadratic and cubic) in each next regression. We used centered terms for the squared and cubic variables of speed, since these represent interactions with themselves. Only the full model of the assumed direct relationship is provided in the tables, along with the models that include contingent effects pertaining to RQ3. Only the significant outputs for either or both performance measures (ROS and ROTA) are shown. The coefficient estimates from the inferential testing of the effects of MNEs' speed of multinational expansion on their performance are presented in several tables as detailed below.

In **hypothesis 5** we suggest that the direct effect of the *rapid FDI resource commitment* on MNEs' corporate performance is non-linear, and it exhibits at least a concave (inverse U-shaped) pattern, or even extends into a sigmoid curve.

Tables 6.3 and 6.4 display the results for the cubic function for ROS (Model 1A) and ROTA (Model 1B) as measures of performance, respectively. The beta coefficients of the predictor indicate the strength between SM and P components of this unmoderated relationship. What is important to report is that all terms regadless of the degree of order show strong significance, and as expected, alternate their direction suggesting there is indeed a non-monotonic function between this type of speed and performance. Their values are as follows: the centered linear term (β = 0.315 for ROS and 0.527 for ROTA), the squared (β = -0.087 and -0.01) and the cubic terms (β = 0.002 and 0.003). The quadratic coefficient indicates change in the algebraic curve of the SM-P relationship from positive to downward sloping direction. For the cubic term we obtained rather low but positive coefficient value, indicating barely a discernible ascent in the curvature.

In support of our hypothesis 5, these results reveal a clear non-linear relationship between *return on sales* (as well as the alternative measure *return on assets*) and the measure of *speed of FDI resource commitment*. The estimates from both regressions match in direction and significance, but have distinct magnitude of the effect, as evident from the different values of the coefficients for the centered linear and squared terms.

In line with the hypothesis, the regression analysis revealed a nonlinear relationship between the key constructs in SM-P. The coefficient signs of each higher order term changed consecutively from positive to negative and positive again, as one would expect in a polynomial function. This means that the slopes of the entire curve are running from positive for lower to intermediate values of *speed of FDI resource commitment*, through negative for moderate to high levels, to a small upward sloping portion at very rapid multinational expansion.

So, in terms of the shape of the SM-P link for this particular type of speed, our results indicated a multi-wave, i.e. sigmoid curve alike an inverted horizontal letter S, which begins with a concave-shaped part. It is similar (although inverse) to the horizontal S-shape detected by Contractor et al. (2003) for the M-P relationship in MNEs, and Lu & Beamish (2004) for their SME sample. More precisely, it can be depicted as a composite shape comprising a concave pattern represented by the quadratic function, with an adjacent upwards-sloping extension that resembles a “mirror-image J”.

On that basis, we could draw the following conclusion: with increasing speed of the multinationality scale the effects on financial performance, measured as both ROS and ROTA, vary according to a non-monotonic pattern which indicates that low speed of scale contributes to improvement of ROS and ROTA up to a certain level, after which any acceleration induces decline in profitability. After the inflection point and in the cadent slope on the concave curve, the values suggest that performance is undermined by further increase in the pace international diversification. An explanation for this could be found in the effect of time compression diseconomies, which triggered by an excessive rate of expansion would lead to value destruction. This exemplifies the negative balance of costs over benefits resulting from ill-adjusted internationalisation patterns.

The relationship of the speed of FDI commitment and the financial performance among the MNEs in our sample (to an extent) conforms to our prediction from the hypothesis 5 about a concave, i.e. an inverted U-shaped curve. Conceptually, this parallels the findings about an inverse U-shaped pattern of the association between diversification and profitability, which accounts for the initial benefits of expansion and the offsetting costs after a certain threshold is surpassed (Hitt et al., 1997; Gomes & Ramaswamy, 1999; Brida et al., 2016). These findings are also in harmony with several SM-P studies which identified the same type of nonlinear curve when using a scale mesure of speed (Mohr & Batsakis, 2017; Yang et al., 2017).

In contrast, the convex shape of the association between *the speed of international resource commitment* and short-term performance found in Hilmersson & Johanson (2016) may be attributed to their claim that ‘Foreign investments do not in themselves generate revenue, but constitute a tool with which to access new markets.’ (p. 79). Their sample consists of Swedish SMEs and they mention in the study that export markets are target of their activities. The measure they used for this type of speed is the *foreign to total assets* ratio, and it does not explicitly indicate operating subsidiaries. It is likely that the investments that their SMEs make abroad are sales and marketing offices and other supporting facilities which do not yield any profits.

Given that FDI is a long-term commitment and a high-risk strategy with large sunk costs, in the immediate term negative profitability is to be expected (Buckley & Casson, 1981); and particularly in the case of fresh multinational firms which internationalise at rapid rate. Therefore, their expectation and the finding about a convex SM-P curve would be fitting for this category.

Because we are dealing with diverse firm demographics in our sample of multinationals, we have aligned our predictions with the dominant pattern found among the diverse empirical output on M-P linkage for MNEs, the concave curve. This has also been confirmed in recent SM-P studies (Mohr & Batsakis, 2017; Yang et al. 2017). The majority of our sample (two thirds) consists of large and seasoned MNEs with plenty of prior mode-specific experience. The reasoning is that they are equipped with sufficient reserves of this key resource as an instrument to manage mounting costs of rapid foreign expansion. Therefore, we proposed that initially, the incremental advantages that MNEs obtain from fast FDI resource commitment would exceed the incremental costs, and the SM-P would be represented by an inverse U-shaped statistical curve.

With rising speed and size of the overseas subsidiary network, the managerial and operational complexities will escalate the coordination costs. Inevitably, over a certain limit, the trend of favorable rate of rapid expansion will switch into decelerated profit returns and then negative net effects will occur.

The assumption about the benefits of fast multinational expansion via FDI is confirmed through these results, at least by the positive slope of the curve. It indicates that as soon as the MNE begins to accelerate multinational expansion, it would reap the advantages of operating through multiple subsidiaries simultaneously, located in at least in one foreign country.

This pattern applies for a range of rapidity of such expansion. However, beyond a certain threshold, further acceleration is associated with decelerated profit levels and negative marginal returns. After this turning point, MNE’s expansion process enters into a territory of unfavourable rate of expansion, and the operational and managerial costs surpass the benefits of international diversification. Besides, over time the associated advantages of internalised FSAs in foreign markets may erode due to competitive imitation in the local environment, and this can reflect on the decreased profitability. So the state of the SM-P association at this stage can be reflective of a combination of costs and benefits. As for the section of the curve represented by the cubic term, we suppose the learning and experience (from multinational operations) would prevail, as shown in the second inflection point of continued acceleration, where new type of advantages become available again.

In the **hypothesis 6** we proposed that when the MNEs rapidly extend the scope of their multinationality, i.e. the geographic dispersion of their FDI in host markets, this would lead to a greater diversity of contexts and environments. Concequently, these firms would be faced with greater organisational and operational complexity, which demand different types of knowledge and skills. The cost implications of this process would not reflect favourably on their short-term financial performance.

The outcomes of our testing revealed that only the FGLS estimations with return on sales (ROS) as a performance measure yielded statistically significant results for the predictors. These are presented in the Model 1A on Table 6.5, and we will report them below. The coefficients of the speed of geographic dispersion were not statistically significant for performance measured as return of total assets (ROTA). We decided it is irrelevant to report these non-significant results here. Nonetheless, it may be of interest to mention that they bear the same signs (*positive, negative and positive* again), as wells as similar strength as the ROS coefficients.

The statistical testing for this hypothesis proceeded as follows. To begin with, we ran the linear model, followed by the squared and cubic. The coefficients of the independent variables gradually increased in each model, along with their significance, yet retained their signs. The full polynomial model (1A) reported in Table 6.5 displays the following: *negative linear term* (β= -1.34; $p > 0.01$), *positive squared* (β= 0.465 at $p > 0.05$), and *negative cubic* term (β= -0.027) at 10% significance level.

The regression results comply with the theoretical expectations stated in hypothesis 6. While we reiterate our rationale behind these, we will also further explicate this outcome here. Rapidly expanding (either simultaneously or consecutively) the range of overseas markets within a short timeframe sets off the effect described as time compression diseconomies (Dierickx & Cool, 1989), which is an indication of insufficient absorptive capacity within the organisation to assimilate and integrate the new experiential learning from additional foreign market operations. So, when the firm is growing internationally by rapidly internalising assets in diverse market settings, they would experience some detrimental aspects of geographic diversification, such as liabilities of foreignness (Zaheer, 1995). Inevitably, the MNEs that face such scenarios would need to bear the costs of learning new ways to do business and adapt their existing FSAs to different local contexts.

As time proceeds, however, the experiential learning from the new environment is internalised and leveraged for subsequent international growth, which becomes evident in the diminishing negative returns (the upward turning slope) of the statistical curve. The diversity that stems from the greater multitude of host contexts enriches the experiential knowledge base, and makes it applicable more generally to other markets which are not so similar to the source (Eriksson et al., 1997). In addition, if there is a strategic orientation for international expansion, certain organisation-wide adjustments in terms of systems and procedures for managing across foreign locations have probably taken place, and these should facilitate success of future FDI steps.

The outcome of the regression testing this assumption clearly signals an existence of the hypothesised non-linear relationship, with alternating coefficient signs from negative in the linear term, positive for the squared and negative for the cubed. This dynamic points to the convex (U-shaped) curve we envisaged in H6, and even though the cubed term is weakly significant, it indicates that MNEs in our sample reach the stage of rapid expansion when they display a sigmoid pattern which resembles a horizontal S in the SM-P relationship - like in the findings of Contractor et al. (2003) and Miller et al. (2016). The sigmoid shape, with a convex component and a downward-sloping extension has two inflection points; after the first one the negative slope switches to a positive direction, and then there is a second turning point which brings back the curve to the negative quadrant again.

Our results from H6 correspond to the findings by Casillas & Moreno-Menéndez (2014). The indication is that small rate of dispersion of FDI seems to lack the anticipated benefits of multinational diversification, but to overcome this phase firms need to sustain and accelerate the pace of their multinationality by expanding to optimal or at least sufficient levels, since the integration of the knowledge and the long-term learning from being exposed to richer range of circumstances only comes into effect over time (ibid, p. 85). Few studies in the M-P literature have also found a U-shaped realionship (Lu and Beamish, 2001; Ruigrok and Wagner, 2003), and interpeted the curve as an underscore of the learning and experience effects on performance, which in the medium-to-long run prevail over the initial liability of foreignness that firms encounter in their overseas exapnsion.

The rate at which MNEs increase the level of geographic (and by implication, cultural and institutional) diversity, would adversely influence its corporate performance at the outset of its accelerated expansion. This is represented by the first segment of the curve, and the linear negative estimate, showing that the expansion steps taken at moderate levels of geographic dispersion, the firm is facing more costs than it can reap the benefits and this is reflected in its profitability levels. It is possible that the MNE encounters disadvantages at the low to intermediate expansion rate of geographic dispersion due to the liability of foreignness and the accompanying effect of time compression diseconomies discussed above.

For the subset of firms in our sample which are small and not so mature multinationals, insufficient general and international firm-level experience or lack of expertise among the top management team may contribute to higher costs for the geographic diversification, and hence in the short to medium term negatively influence profitability. Also, when the optimal range of intermediate to high levels of expansion speed is exceeded, a second negative slope of the relationship is manifested another wave of unfavourable performance consequences from fairly rapid expansion of MNE’s geographic scope within a limited time frame.

Our results suggested a sigmoid curve, with another downward slope after a second threshold. The negative coefficient for the cubic term in our estimation model highlights the risks for MNEs associated with entering multiple foreign markets too rapidly, and the efforts necessary to adapt their routines and capabilities to diverse foreign contexts. It seems that after an optimal range of speed levels, the positive returns are outweighed by another set of costs associated with a second wave of time compressed learning. By adding new markets too rapidly, this effect would cause an overwhelm within the organisation and it would reach a plateau where not much new learning can occur or be usefully combined with the existing knowledge pool and leveraged for strategic competencies.

The negative effects in this stage of rapid expansion may also be stemming from environmental characteristics. After a certain threshold of excessive international spread, the options for further investments would be constricted in peripheral markets (Contractor et al., 2003), which offer below par revenue sources or do not have much to offer in terms of efficiencies. Consequently, the graphical representation of the SM-P dynamic shows a precipice in the statistical curve. Alternatively, it could be that these new locations may not have much to offer in terms of organisational learning and upgrade of existing knowledge. Expansion in such locations may be due to strategic motivations other than a quest for knowledge-related benefits; for instance, these may be related to proximity to other markets, so the local subsidiaries would perform auxiliary functions.

Despite the escalating costs, some multinationals overextend the geographic scope of their international diversification as a long-term competitive strategy. The rationale behind this is that larger multinational footprint would pre-empt competitiors from gaining stronghold in certain markets, even though they have no immediate strategic relevance. In the long run, this would reduce not only their level of competiton but also the direct and indirect internalisation costs (Patel et al., 2016, p. 9).

In addition, multinational companies with extensive and diverse networks of foreign operations, typically face complex information processing (Rugman, 1985). When such scale and scope levels are accomplished at a rapid rate, additional managerial and operational challenges appear. The internal capabilities are overburdened and the time-compression effects occur. When the MNE is broadening its geographic scope at a low to moderately high rate, the gains from international diversification will be delayed until the speed does not reach a certain threshold. At such low speed levels, geographic diversification by expanding MNE’s breadth of foreign markets imposes governance costs limits and reflects poorly on its profitability. However, over time, and with continued average rate of expansion, the firm accumulates international experience which builds the managerial capabilities and performance benefits of international diversification replace the prior adverse effects.

Firms that move slowly with their strategies of multinational investment are suffering from low return on sales and on assets. The purported benefits of multinational diversification are not yet being accomplished at low rate of scope increase. Our results from the hypotheses 5 and 6 suggested that while the benefits of rapidly opening a number of new subsidiaries would be immediately evident, if these are spread into equally high number of new markets the MNE would experience diminishing, and even negative return on sales (ROS) is relative to the level of each individual investment, but generally speaking and based only on what our data can tell us, we can infer that this strategy seems rather demanding. Learning and adaptation efforts and costs will be proportionately higher when they are in a larger set of new countries than in a scenario when the new subsidiaries are concentrated in one of just a few new markets.

In other words, simultaneously increasing the rate of MNE's multinational expansion in both scale and scope dimensions would result in diminished corporate performance in the immediate term. The effects for organisational learning of simultaneously rising rate and levels of depth and diversity of acquired experience would not be optimal, due to insufficient absorptive capacity to incorporate compressed learning within a short time period. The costs implications of this would outweigh the benefits of increased multinationality (Hashai et al., 2016).

Although they are used independently in parallel regression models, the measures we used to proxy the scale and scope dimensions of rapid expansion are statistically highly correlated and their values change concurrently. For illustration, when a new subsidiary is opened or acquired in an existing host country, ceteris paribus, the scope dimension would remain unchanged; the same would apply if a local firm is closed, unless that was the only subsidiary in that country, which would reduce the scope measure accordingly. However, any changes in the scope dimension, whether via entering or exiting a country, would reflect at least by equal number of units in the numerator value in the speed of scale dimension. Sometimes, the number of subsidiaries would be higher upon a new host country entry, if it is an acquisition of a local multi-firm company.

As the speed of geographic (scope of) expansion accelerates, it reaches a threshold after which the MNE starts reaping the benefits associated with multinational diversification, as reflected in the upswing to the positive section of the curve. This dynamic persists for a certain range of intermediate to high levels of speed. However, the overall sigmoid-shaped curve suggests there is second turning point, after which the association between the constructs becomes negative again, as MNEs' further increase in the rate of their geographic dispersion would eventually eliminate any further gains observed in the previous level. Hence, we see a decline in the financial performance for the very high speed of multinational scope expansion.

Widely dispersed multi-national locations of the organisation's activities are inevitably linked to greater structural and managerial complexity of the MNE (Goerzen & Beamish, 2003, p. 1303). With the rising number of host environments in which the MNE is investing and operating, their management costs grow due to escalating complexity in managing dispersed and often diverse operations. Greater control and coordination requirements on the firm management negatively impact performance. But with the rising degree of international diversification, the international experience and learning also accumulate and after a certain point, the expected benefits of multinationality should begin to materialise.

When the rate of geographic diversification becomes sufficiently high, the marginal benefits will start emerging, offsetting the net cost effects. This change is reflected in the ascending section of the curve, after the non-monotonic relationship with performance obtains a U-shaped curve. With continued speedy expansion of the geographic scope, the firm's subsidiary network becomes highly dispersed and in some cases even reaches or maintains a global extent. However, operations which quickly become excessively spread across countries and regions impose rapidly rising governance costs and managerial information processing demands (Hitt et al., 1997).

Such net effect of costs and benefits suggest that there is a performance zone with intermediate to high speed limits where the gains of geographic diversification persist. When the rate of international asset dispersion multinational exceeds the upper limit, additional number of countries would diminish firm's performance. This is evident in the sigmoid curve, more specifically in the downward sloping portion which follows the U shape, and it takes effect after the expansion speed exceeds an optimal value range. Translated for the dynamic context of the SM-P relationship, when very rapid geographic diversification occurs, the level of diversity among the host environment would surge by proximity. This may offer an explanation for the cadent segment of the sigmoid curve of SM-P for this type of speed. It reflects the dampening (or even detrimental) effect on performance, when the MNE exceeds the optimal speed limit in terms of its geographic scope.

When the international expansion is effectuated in new host countries, particularly where the institutional environments are different from those in which the MNE already operates, these would impose new sources of complexity, as well as additional demands and compliance requirements. This added institutional complexity encountered along the course of a multi-country expansion requires more information processing when compared to expansion in already established overseas markets. Therefore, a certain degree of organisational adaptation and modification of routines would be required (Sapienza et al., 2006), as well as reconfiguration of resources and business strategies. Any such step brings changes in the operations of the network of existing group of subsidiaries, which would solicit different behaviours and outcomes (Tihanyi, Griffith, & Russell, 2005) and attendant costs. The initial negative slope for hypothesis 6 can be explained by the growing adaptation costs, which at lower speed surmount the accruing benefits of geographic diversification. The latter will become tangible at a higher expansion rate.

While a wide range of international investments may be associated to a broader set of international opportunities, the rising volume of information emanating from a geographically dispersed network of subsidiaries can create an information processing overload and coordination issues for the group. Ultimately, this would reflect inauspiciously on the overall performance (Vermuelen & Barkema, 2002; Garcia-Garcia et al., 2017). More internationally experienced firms possess capabilities to manage extensive networks of overseas subsidiaries, and thus keep the transaction costs in check. Thus, continued international expansion seems an attractive option. However, rapidly increasing the spectrum of host nations in which the MNE opens or acquires operating subsidiaries may adversely impact its profitability, at least within a short period immediately after. Excessive geographic dispersion, which also imposes complexities stemming from overwhelming diversity of operating environments, would raise the governance costs for the dispersed and diverse subsidiary network and put strain on the managerial resources and capabilities, as a consequence of which any benefits of further expansion would erode (Hashai et al., 2016).

The results for **hypothesis 6** provided support for the assumed nature of the relationship and established that at low and very high rate of accelerated expansion into new foreign countries, the consequences on performance are negative, i.e. the costs outweigh the benefits. Moderately high speed, however, boosts the return on sales (ROS). The coefficients for ROTA as performance measure are statistically non-significant. As per the arguments we presented in the Chapter 3 these empirical outputs suggest that MNEs indeed face costs of learning and adaptation as they accelerate their expansion into new operational environments. Lower degree of diversification delays realisation of the benefits associated with multi-country presence due to the liabilities of foreignness that firms encounter as they move rapidly into new markets.

With the rising rate of continued expansion, the FDI-related experience also grows and MNEs have the opportunity to adapt their internal routines, processes and structures in response to the organisation-wide learning. Therefore, the costs are reduced and performance disadvantages associated with slower pace of scope diversification are overcome at higher speed levels. However, this trend has a limit to the benefits, as with steep increase in the rate of geographic spread of foreign subsidiaries the SM-P function would start experiencing diminishing returns and then reach another threshold and a turning point. After this level of acceleration, the MNEs enters into a zone of negative returns to further geographic expansion.

Context-specific Considerations for the SM-P

We discussed that the relatedness across MNE's host markets would influence the outcomes of its multinationality due to the higher transferability and utility of the experiential knowledge developed in similar environments (Vachani, 1991).
Below we present the results from the regressions testing the nature of the relationship between speed of expansion in developing and developed countries on performance. This is in continuation to the portion of the research which addresses the 2nd main question of the thesis. We have not generated separate hypothesis for these tests, but as an extension to hypotheses 5 and 6, we have statistically examined some complementarity effects.

To this end, we substituted the general scope and scale measures for multinational speed with disaggregated dichotomous counterparts, indicating the expansion into developed and developing countries. Since part of our empirical investigation and discussion consider context specificity in the effects of determinants and moderators, we were also interested to observe whether and what differences exist in the nature of the SM-P linkage when the expansion is directed towards specific host environments. We have modified the the first two types of speed (1. speed of increasing FDI resource commitment and 2. speed of increasing geographic scope of FDI), by creating four disaggregated speed measures.

Speed of increasing FDI commitment into developing countries

Curve shape: ROS (+) linear; ROTA (+, -) concave.

For the regression models using ROS as a performance measure, only the linear term for the predictor (speed) was significant and negative: -0.626754 ($p<0.05$).
When we tested on **ROTA** as measure for performance, the **quadratic (concave-shaped) relationship** with speed received support. The linear (centered) term was positive and significant at 5% level (0.941547), while the quadratic term coefficient for speed changed the sign to negative and grew in significance: -0.240916 ($p<0.01$), as is expected in a linearity test.

Speed of increasing FDI commitment into <u>developed countries</u>

Curve shape: ROS & ROTA (+, -, +) concave to sigmoid.

The regressions with this measure for speed yielded results more in line with the outcome from Hypothesis 5, which modelled the general direct effect from rapid expansion of FDI scale on performance. For both measures (ROS and ROTA) the estimation of the model provided significant cubic term coefficients and the direction of the coefficients moved from positive in the linear, negative in the quadratic to positive in the cubic. The values obtained are as follows: for ROS the linear is non-significant although positive, the quadratic is -0.101121 ($p<0.5$) and the cubic is 0.003469 ($p<0.5$); for ROTA the linear is 0.558953 ($p<0.5$), the quadratic is -0.129502 ($p<0.01$) and the cubic has a value of 0.004102 ($p<0.01$). A possible explanation for these results would be that rapid expansion is a good strategy for performance benefits if it is focused on developed countries, but not exclusively, since in the long-run and at excessive rate of diversification, the return on sales and assets would stem from developed countries.

Speed of increasing geographic scope of FDI into <u>developing countries</u>

Curve shape: ROS (- linear); ROTA (- quadratic).

Similar to the above model for developing countries, the regression with ROS as a criterion variable provided significant coefficient only for the linear term, which had negative sign: -1.684417 ($p<0.5$). This pattern (negative and significant) was repeated for the centered linear terms from the non-linear models. The ROTA regression only returned significant coefficient for the squared term, which curiously also has a negative sign: -3.354858 ($p<0.5$). On the basis of such results we observe that the ROS model somewhat complies in terms of the direction of the SM-P relationship suggested by the curve revealed in Hypothesis 6. If we view this curve as a piecewise representation, then these results would fit only to the negative section before the inflection point switches its slope upwards.

Speed of increasing geographic scope of FDI into <u>developed countries</u>

Curve shape: ROS (-, +) concave; ROTA (not significant).

In this instance, only the ROS model showed coefficients worth reporting, with a negative and significant linear term (-1.747309; $p<0.01$) and weakly significant and positive quadratic (0.679791; $p<0.1$). The slopes of the curve in this model follow the same direction as in the previous models, i.e. for general expansion and targeting developing countries. This indicates that the predicted effrcts from our hypothesis 6, about the performance outcomes of rapid scope expansion, are amplified when the rapid increase of the geographic scope of the host countries occurs in developed markets. This pattern between the key constructs is represented by a concave (U-shaped) curve.

Let us also mention few sentences about the coefficients of some of the control variables we used in the regression models testing the hypothese derived from the second research question. As expected and consistent with other studies, in all the models **leverage** invariably shows a negative coefficient when regressed on performance. The variable for host market size (GDP per capita) is highly significant in both H5 and H6, but only for ROS as a performance measure. The significant beta coefficients for the squared terms consistently point towards quadratic relationship of all types of speed and performance, although with different shape.

In the last hypothesis addressing our second research question (H7) we proposed that the *speed of international commercial intensity* would affect MNEs' corporate performance in a non-linear pattern, which would likely resemble a reversed U, i.e. a concave curve. The coefficients derived from the FGLS estimations are almost identical in both performance models (for ROS and ROTA), as evidenced in Tables 6.6 and 6.7. The linear term for ROS is a little bit higher than that for ROTA, although at lower significance level: $\beta = 0.085$; $p<0.05$ and $\beta = 0.082$; $p<0.01$, respectively. The positive coefficient sign from the linear term changes to negative for the quadratic, at the same value and significance level in both models: $\beta = -0.004$, $p<0.05$.

Both estimation models for yielded results consistent with the predicted concave (inverted U) shape of the relationship between speed of international commercial intensity and performance (ROS and ROTA), thus offering a **full support for hypothesis 7**. This demonstrates that there are direct and immediate benefits of international diversification of markets, without necessarily meaning equity expansion. When an MNE reaches new international customers, this is positively reflected on its profitability, until the threshold of diminishing returns of accelerated expansion is reached.

The results and analyses reported for Hypotheses 5 to 7 are related to our second research question, which seeks answers about the direct effects of different types of speed of international diversification on MNEs' corporate performance. Thus far, we have not considered any contingent effects on the SM-P relationship, and this aspect is covered by our third research question. The next section (6.5.2), which follows after the regression outputs tables, reports the relevant tests and analyses of findings.

Table 6.3: FGLS regression outputs on MNE performance (**ROS**); the **cubic** relationship for Hypotheses 5, 8a, 9a

	Model 1A (direct ^3)	**Model 2A** (*InAs)	**Model 3A** (*IntEx)	**Model 4A** (*hostC)	**Model 5A** (*DOI_Dev)
Intercept	-18.982 (3.222)***	-19.072 (3.190)***	-17.557 (3.433)***	-22.625 (4.18)***	-20.131 (3.371)***
Independent Variable					
Speed of FDI res. commitment	**0.315 (0.151)****				
Speed of FDI res. commitment²	**-0.087 (0.021)*****				
Speed of FDI res. bcommitment³	**0.002 (0.0007)*****	-0.0014 (0.0004)***	-0.0014 (0.0003)***	0.0001 (0.00024)	-0.0002 (0.0002)
Interaction Terms					
Intangible Assets (centered)		-0.010 (0.010)			
(Speed of FDI r. commitment)³ X Intangible Assets		**0.00005 (0.00001)*****			
Intensity of Int'l Exp. (centered)			0.0003 (0.0002)*		
(Speed of FDI r. commitment)³ X Intensity of Int'l Exp.			**-0.000001 (0.00000)****		
Breadth of Int'l Exp.(centered)				-0.092 (0.008)***	
(Speed of FDI r. commitment)³ X Breadth of Int'l Exp.				**-0.025 (0.042)*****	
DOI in Developed Countries (centered)					0.009 (0.014)
(Speed of FDI r. commitment)³ X Degree of Multinationality in Developed C.					**0.00006 (0.00003)****
Control Variables					
Leverage	-0.085 (0.010)***	-0.084 (0.011)***	-0.092 (0.009)***	1.319 (0.251)***	-0.095 (0.012)***
Current Ratio	1.522 (0.255)***	1.322 (0.254)***	1.335 (0.253)***	0.005 (0.007)	1.271 (0.261)***
Age	0.010 (0.006)*	0.017 (0.006)**	-0.002 (0.007)	1.875 (0.167)***	0.0115 (0.006)*
Size	1.739 (0.157)**	1.705 (0.162)***	1.765 (0.155)***	0.020 (0.008)**	1.778 (0.170)***
Prior International Performance	0.025 (0.007)*	0.017 (0.008)**	0.020 (0.007)***	-0.012 (0.010)	0.024 (0.008)***
Domestic-only Experience	-0.019 (0.010)*	-0.018 (0.010)*	-0.008 (0.010)	-2.03 (0.568)	-0.022 (0.011)**
(ln) Host Market Size	-0.488 (0.104)***	-0.420 (0.109)**	-0.523 (0.107)***		-0.407 (0.123)***
High Knowledge Intensity	0.285 (0.570)	0.254 (0.596)	-0.124 (0.539)	-0.349 (0.142)**	0.097 (0.575)
Year Dummies	Included	Included	Included	Included	Included
Diagnostics					
Observations (N)	811	811	811	811	811
Number of Firms	90	90	90	90	90

FGLS estimator that is robust to first-order panel-specific autocorrelation (AR1) and heteroskedasticity. Standard errors are shown in parentheses. Coefficients of year dummies are not reported here due to space limitations. *** p<0.01, ** p<0.05, * p<0.1

Table 6.4: FGLS regression outputs on MNE performance (**ROTA); the cubic** relationship for Hypotheses 5, 8a, 9a

	Model 1B (direct ^3)	**Model 2B** (*InAs)	**Model 3B** (*IntEx)	**Model 4B** (*hostC)	**Model 5B** (*DOI_Dev)
Intercept	-1.250 (2.723)	-0.376 (2.852)	-2.159 (2.870)	-0.852 (3.214)	-3.280 (2.937)
Independent Variable					
Speed of FDI r. commitment	**0.527 (0.179)*****				
Speed of FDI r. commitment²	**-0.010 (0.023)*****				
Speed of FDI r. commitment³	**0.003 (0.0006)*****	-0.0007 (0.0003)**	-0.00103 (0.0002)***	0.00005 (0.0002)	-0.0002 (0.0001)
Interaction Terms					
Intangible Assets (centered)		-0.046 (0.012)***			
(Speed of FDI r. commitment)³ X Intangible Assets		**0.000025 (0.000012)****			
Intensity of Int'l Exp. (centered)			0.0002 (0.00007)**		
(Speed of FDI r. commitment)³ X Intensity of Int'l Exp.			**-0.000001 (0.0000)*****		
Breadth of Int'l Exp.(centered)				**0.066 (0.023)*****	
(Speed of FDI r. commitment)³ X Breadth of Int'l Exp.				**-0.000008 (0.00001)*****	
DOI in Developed Countries (centered)					-0.0003 (0.014)
(Speed of FDI r. commitment)³ X DOI in Developed C.					**0.00006 (0.00001)*****
Control Variables					
Leverage	-0.113 (0.012)***	-0.101 (0.013)***	-0.117 (0.011)***	-0.128 (0.010)***	-0.107 (0.013)***
Current Ratio	0.342 (0.210)	0.221 (0.208)	0.345 (0.206)*	0.319 (0.207)	0.380 (0.216)*
Age	0.014 (0.006)**	0.015 (0.007)**	0.005 (0.008)	0.003 (0.007)	0.011 (0.007)
Size	0.644 (0.144)***	0.453 (0.172)***	0.672 (0.157)***	0.784 (0.154)***	0.667 (0.167)***
Prior International Performance	0.011 (0.008)	0.009 (0.009)	0.008 (0.009)	0.012 (0.009)	0.010 (0.009)
Domestic-only Experience	-0.010 (0.012)	-0.020 (0.011)*	-0.003 (0.011)	-0.007 (0.010)	-0.009 (0.011)
(ln) Host Market Size	0.016 (0.107)	0.131 (0.114)	0.062 (0.115)	-0.117 (0.120)	0.075 (0.127)
High Knowledge Intensity	-0.2280 (0.571)	0.232 (0.581)	-0.217 (0.552)	-0.682 (0.538)	-0.043 (0.576)
Year Dummies	Included	Included	Included	Included	Included
Diagnostics					
Observations (N)	816	816	816	816	815
Number of Firms	90	90	90	90	90

FGLS estimator that is robust to first-order panel-specific autocorrelation (AR1) and heteroskedasticity.
Standard errors are shown in parentheses. Coefficients of year dummies are not reported here due to space limitations. *** p<0.01, ** p<0.05, * p<0.1

Table 6.5: FGLS regression outputs on MNE performance (**ROS); the cubic** relationship for Hypotheses 6, 8b, 9b

	Model 1A (direct ^3)	**Model 2A** (*lnAs)	**Model 3A** (*IntEx)	**Model 4A** (*hostC)	**Model 6A** (*DOI_Dev)
Intercept	-18.008 (3.609)***	-18.199 (3.372)***	-16.873 (3.412)***	-20.957 (4.118)***	-17.949 (3.470)***
Independent Variable					
Speed of geog. dispersion	**-1.340 (0.496)*** **				
(Speed of geog. dispersion)^2	**0.465 (0.231)** **				
(Speed of geog. dispersion)^3	**-0.027 (0.016)***	-0.015 (0.008)*	-0.010 (0.033)	-0.110 (0.060)*	-0.004 (0.007)
Interaction Terms					
Intangible Assets (centered)		-0.003 (0.009)			
(Speed of geog. dispersion)^3 X Intangible Assets		**0.0004 (0.001)**			
Intensity of Int'l Exp. (centered)			0.0003 (0.0002)		
(Speed of geog. dispersion)^3 X Intensity of Int'l Exp.			**-0.00007 (0.00004)***		
Breadth of Int'l Exp.(centered)				-0.018 (0.041)	
(Speed of geog. dispersion)^3 X Breadth of Int'l Exp.				**-0.003 (0.002)**	
DOI in Developed Countries (centered)					0.010 (0.014)
(Speed of geog. dispersion)^3 X DOI Dev. C.					**0.001 (0.001)**
Control Variables					
Leverage	-0.088 (0.010)***	-0.084 (0.012)***	-0.091 (0.009)***	-0.088 (0.008)***	-0.092 (0.012)***
Current Ratio	1.253 (0.256)***	1.395 (0.257)***	1.340 (0.253)***	1.352 (0.251)***	1.294 (0.263)***
Age	0.005 (0.006)	0.013 (0.006)**	-0.0007 (0.007)	0.006 (0.006)	0.014 (0.006)**
Size	1.612 (0.175)***	1.628 (0.176)***	1.706 (0.158)***	1.776 (0.168)***	1.615 (0.177)***
Prior International Performance	0.018 (0.007)**	0.020 (0.008)**	0.020 (0.007)***	0.019 (0.007)**	0.022 (0.008)***
Domestic-only Experience	-0.018 (0.010)*	-0.021 (0.010)**	-0.010 (0.010)	-0.012 (0.010)	-0.022 (0.011)**
(ln) Host Market Size	-0.355 (0.115)***	-0.409 (0.111)***	-0.503 (0.107)***	-0.354 (0.141)	-0.368 (0.125)***
High Knowledge Intensity	0.084 (0.568)	0.390 (0.601)	-0.202 (0.545)	-0.282 (0.561)	0.108 (0.579)
Year Dummies	Included	Included	Included	Included	Included
Diagnostics					
Observations (N)	811	811	811	811	810
Number of Firms	90	90	90	90	90

FGLS estimator that is robust to first-order panel-specific autocorrelation (AR1) and heteroskedasticity. Standard errors are shown in parentheses. Coefficients of year dummies are not reported here due to space limitations. *** p<0.01, ** p<0.05, * p<0.1

Table 6.6: FGLS regression outputs on MNE performance (**ROS); <u>the square</u>** relationship for Hypotheses 7, 8c, 9c

	Model 1A (direct ^2)	**Model 2A** (*InAs)	**Model 3A** (*IntEx)	**Model 4A** (*hostC)	**Model 6A** (*DOI_Dev)
Intercept	-16.121 (3.330)***	-17.057 (3.310)***	-13.516 (4.094)***	-17.263 (4.910)***	-16.983 (3.459)***
Independent Variable					
(Speed of int'l commercial intensity)	**0.085 (0.036)****				
(Speed of int'l commercial intensity)²	**-0.0004 (0.0001)****				
Interaction Terms					
Intangible Assets (centered)		0.009 (0.003)***			
(Speed of geog. scope)³ X Intangible Assets		**-000001 (0.000003)*****			
Intensity of Int'l Exp. (centered)			-0.0003 (0.0005)		
(Speed of int'l commercial intensity)² X Intensity of Int'l Exp.			**0.00003 (0.00002)***		
Breadth of Int'l Exp.(centered)				-0.014 (0.042)	
(Speed of int'l commercial intensity)² X Breadth of Int'l Exp.				**0.0002 (0.0002)**	
DOI in Developed Countries (centered)					0.013 (0.015)
(Speed of int'l commercial intensity)² X DOI Dev. C.					**-0.000007 (0.000006)**
Control Variables					
Leverage	-0.081 (0.011)***	-0.073 (0.011)***	-0.080 (0.011)***	-0.081 (0.011)***	-0.087 (0.012)***
Current Ratio	1.360 (0.257)***	1.425 (0.255)***	1.393 (0.262)***	1.403 (0.257)***	1.284 (0.262)***
Age	0.020 (0.006)***	0.017 (0.007)**	-0.002 (0.007)	0.013 (0.007)**	0.018 (0.007)***
Size	1.531 (0.169)***	1.586 (0.172)***	1.507 (0.180)***	1.540 (0.210)***	1.541 (0.177)***
Prior International Performance	-0.016 (0.011)	-0.021 (0.011)*	-0.011 (0.011)	-0.017 (0.010)	0.016 (0.009)*
Domestic-only Experience	-0.031 (0.013)**	-0.023 (0.012)*	-0.012 (0.012)	-0.018 (0.012)	-0.023 (0.012)*
(ln) Host Market Size	-0.291 (0.122)**	-0.402 (0.114)***	-0.525 (0.113)***	-0.291 (0.151)*	-0.346 (0.129)***
High Knowledge Intensity	0.4518 (0.6033)	0.404 (0.594)	0.191 (0.568)	-0.042 (0.586)	0.239 (0.582)
Year Dummies	Included	Included	Included	Included	Included
Diagnostics					
Observations (N)	808	808	808	808	807
Number of Firms	90	90	90	90	90

FGLS estimator that is robust to first-order panel-specific autocorrelation (AR1) and heteroskedasticity.
Standard errors are shown in parentheses. Coefficients of year dummies are not reported here due to space limitations. *** p<0.01, ** p<0.05, * p<0.1

Table 6.7: FGLS regression outputs on MNE performance (**ROTA); the square** relationship for Hypotheses 7, 8c, 9c

	Model 1B (direct ^2)	**Model 2B** (*InAs)	**Model 3B** (*IntEx)	**Model 4B** (*hostC)	**Model 6B** (*DOI_Dev)
Intercept	-3.521 (2.634)	1.058 (2.979)	-3.890 (3.626)	-3.366 (3.550)	-1.422 (2.946)
Independent Variable					
(Speed of int'l commercial intensity)	**0.082 (0.030)***				
(Speed of int'l commercial intensity)²	**-0.0004 (0.0001)**				
Interaction Terms					
Intangible Assets (centered)		-0.038 (0.011)***			
(Speed of geog. scope)³ X Intangible Assets		**-0.00001 (0.000003)***			
Intensity of Int'l Exp. (centered)			-0.001 (0.0004)		
(Speed of int'l commercial intensity)² X Intensity of Int'l Exp.			**0.00003 (0.00002)***		
Breadth of Int'l Exp.(centered)				-0.006 (0.030)	
(Speed of int'l commercial intensity)² X Breadth of Int'l Exp.				**0.0001 (0.0001)**	
DOI in Developed Countries (centered)					0.008 (0.015)
(Speed of int'l commercial intensity)² X DOI Dev. C.					**-0.000004 (0.000004)**
Control Variables					
Leverage	-0.116 (0.011)***	-0.010 (0.014)***	-0.107 (0.013)***	-0.111 (0.011)***	-0.101 (0.013)***
Current Ratio	0.351 (0.215)	0.187 (0.214)	0.296 (0.221)	0.304 (0.223)	0.350 (0.222)
Age	0.024 (0.007)***	0.017 (0.007)**	0.009 (0.008)	0.017 (0.007)**	0.016 (0.007)**
Size	0.652 (0.138)***	0.417 (0.172)**	0.637 (0.172)***	0.656 (0.162)***	0.526 (0.160)***
Prior International Performance	-0.019 (0.013)	-0.025 (0.014)	-0.004 (0.013)	-0.016 (0.010)	0.006 (0.009)
Domestic-only Experience	-0.019 (0.011)*	-0.024 (0.012)	-0.005 (0.013)	-0.015 (0.011)	-0.013 (0.011)
(ln) Host Market Size	0.196 (0.123)	0.096 (0.119)	0.097 (0.122)	(0.114 (0.138)	0.086 (0.130)
High Knowledge Intensity	0.4739 (0.5708)	0.375 (0.584)	0.336 (0.575)	0.141 (0.575)	0.317(0.594)
Year Dummies	Included	Included	Included	Included	Included
Diagnostics					
Observations (N)	813	813	813	813	812
Number of Firms	90	90	90	90	90

FGLS estimator that is robust to first-order panel-specific autocorrelation (AR1) and heteroskedasticity.
Standard errors are shown in parentheses. Coefficients of year dummies are not reported here due to space limitations. *** p<0.01, ** p<0.05, * p<0.1

6.6.2 Contingent Effects for the Speed – Performance Relationship

To address our third research question, we introduce contingencies for the relationship between rapid multinationality and performance (the SM-P), in the form of firm-specific resources and location strategies for the FDI. We incorporate these in the last six testable hypotheses for this study, H8a-H9c, which are organised in two sets of three. In the following section we provide a detailed narrative presentation and interpretation of the results. To test these hypotheses, we assembled three key concepts in the core of our model: firm-specific resources, speed of international diversification and financial performance. The same combination has been used in prior studies (Delios & Beamish, 2001; Kotabe et al., 2002; Villalonga, 2004; Chang & Rhee, 2011; Mohr & Bastakis, 2017).

6.6.2.1 Results from Hypotheses 8a, 8b and 8c

The level of firm-specific resources a multinational firm possesses and deploys during their international expansion is likely to affect the link between the two key constructs in the SM-P relationship. Based on this argument, which we elaborated in more detail in chapter 3, we predict that the firm-specific assets would positively moderate the nonlinear relationship curves between each different type of speed and performance. In other words, greater extent of intangible assets, as well as intensity and breadth of international experience would enhance the positive or soften the negative impact from MNEs' rapid international diversification on their profitability.

The same assumption is recurring in all three hypotheses of the set; the only distinction being expressed by the different type of speed in the predictor role, and different SM-P curves identified for the hypotheses in RQ2. Accordingly, H8a hypothesises about the moderating impact of FSAs on the association between speed of FDI resource commitment and performance; H8b for the link between speed of geographic dispersion and performance, while H8c for the relationship between speed of international commercial intensity and profitability.

We report and display the estimations for the above hypotheses only for the statistically significant results from the direct relationship between multinational speed and performance (SM-P), as tested for our second research question. Therefore, the results are presented in the same tables as for the RQ2 output, as follows: the H8a estimations can be found in Table 6.3 for ROS and Table 6.4 for ROTA. For the H8b, the coefficients can be found in Table 6.5 (for ROS only); whereas for the H8c they are provided in Tables 6.6 (for ROS) and 6.7 (for ROTA). In line with the predicted effects and the outcomes of the direct SM-P relationship tested for H7, we have provided only the results for the square relationship hypothesised in H8c.

As baseline models for the regressions that include the interaction effects are regarded models A1 (for ROS) and B1 (for ROTA), which represent the main estimations for the above-discussed hypotheses, pertaining to the second research question. The outputs for the six hypotheses addressing the third research question in this thesis are added next to the direct effects models in the same tables. For H8a-H8c these models are labelled 2A, 3A and 4A for ROS, and 2B, 3B and 4B for ROTA regressions. Models A2 and B2 include the interaction term between the intangible assets and speed of multinational performance, both of which are mean-centered; A3 and B3 feature the interaction between intensity of FDI experience and speed, while A4 and B4 the interaction with the breadth of experience aspect. Please consult the previous section (6.5.1) for details.

We obtained statistically significant and positive coefficients of the interaction term between intangible assets and the quadratic form of speed of FDI resource commitment: $\beta = 0.0007$, $p<0.01$ for ROS and $\beta = 0.0004$, $p<0.1$ for ROTA, and also for the cubic though with tenfold weaker magnitude: $\beta = 0.00005$, $p<0.01$ for ROS and $\beta = 0.00002$, $p<0.05$ for ROTA. These signal that increasing the level of intangible assets by one unit would impact on the performance effects of speed of FDI resource commitment by the values of the beta estimators. This is in line with what **H8a** suggested with respect to this type of FSA; however, we <u>did not receive a full support for this hypothesis</u>, since the coefficients for both aspects of FDI experience returned negative values. For the interaction with intensity and quadratic speed these are: $\beta = -0.00001$, $p<0.01$ for both ROS and ROTA, and with the cubic term: $\beta = -0.000001$, $p<0.01$ for both performance measures. In the case of the interaction term between

breadth of experience and squared speed, the coefficients for both ROS and ROTA are -0.001; while for the cubic regression only for ROTA is significant, but almost imperceptible in strength: β= -0.000001; p<0.01.
For hypothesis **8b** we did not receive support, since the regression results did not return the predicted positive values for any of the interaction terms. With intangible assets and speed of geographic dispersion these are not statistically significant, while for both aspects of experience the values are either negative or not significant. The significant coefficients for ROS and ROTA, respectively, are as follows: for interaction with intensity β= -0.0004 and -0.0003, p<0.01 for the quadratic speed term, and -0.00007 and -0.00008 for the cubic; for the interaction with breadth the values were slightly higher: β= -0.015 and -0.0206 for the quadratic, and -0.003, p<0.05 for ROTA only.

For the next hypothesis with regards this group of moderators (H8c) we received only a partial support, due to the following results (see Tables 6.6 and 6.7): counter to our predictions, the coefficients for the interaction term between the squared term of speed of international commercial intensity and intangible assets were negative for both ROS and ROTA (β=-0.00001, p<0.01). Opposite sign of what we expected was also shown for the interaction with the variable intensity of FDI experience (β= 0.00003, p<0.1), while the coefficients for the breadth dimension showed absence of statistical significance. For this hypothesis, we have neither tested nor are going to report here any regressions with third order terms, since the coefficients for the direct SM-P effect in hypothesis 7 were not significant.

According to the above reported results, only a portion of our conjectures in the trio of hypotheses 8a-8c were statistically supported. These findings suggest that intangible assets only have a positive influence on the SM-P linkage when the firm is rapidly increasing its commitment to FDI expansion by adding new subsidiaries overseas. There is no explicit indication for a moderating effect when these business entities are established or acquired in new markets (H8b). With regards the performance effect from rapid upsurge in MNEs' international sales, possession of intangible assets showed a tiny, but discouraging moderating influence. This is in fact not so counter-intuitive, since this specific measure of speed does not exactly presume internalisation of assets (via FDI) as the other measures do, but rather an increase in international sales. We can interpret our results that for our sample of MNEs, possession of intangible assets did not particularly contribute to improved performance due to their rapid overseas expansion. However, greater levels of intensity of prior foreign market experience, which result from high degree (scale) of prior involvement via FDI, seem to be translatable in that context. This attribute should open new avenues for revenue generation from foreign markets, and thus positively affect the rapid rise in international commercial intensity locally. Hence, the coefficient showed slight but positive interactive effect.

In terms of the two moderating variables of FDI experience, our overall predictions based on prior findings were not fully validated, since most of these showed the opposite of the expected direction (or significance) of contingent impact, with the exception of the coefficient for intensity in the interaction with the squared term of rapid commercial intensity. As a possible explanation is that we have over-emphasised the role of FDI experience for a profitable rapid resource commitment and geographic dispersion. The contextual factors limit the utility of the prior experiential knowledge and render it less relevant for operation of newly-added (i.e. newly-opened) subsidiaries, due to the dissimilarities between previous and the new locations (Li & Meyer, 2009).

Generally, the knowledge stock of the multinational firm is assumed to be augmented by an increase in the geographic scope of its FDI. On this assumption we have placed our expectations for the positive outcomes from breadth of multinational experience, which is measured by the proxy for geographic scope. It has also found support in prior empirical studies (Delios & Beamish, 2001; Mohr & Batsakis, 2017). However, our results point to the other possible outcome, which entails negative performance consequences. It is also known that when MNE's assets are spatially distributed across a diverse range of markets, it could hinder its potential for exploitation of its intangible resources, and thus reduce profitability, particularly when the local capabilities are below par and costly and time-consuming adaptations are required (Hennart, 2007). This could potentially offer some explanation for the above results.

Or perhaps there are other pertinent factors at play (as confounding or mediating variables), such as the motivation behind each investment step and the strategic role of the subsidiary, which minimise or obscure the actual effect of prior FDI experience. This suggests that a more nuanced approach with inclusion of other possible contingencies is required, to obtain a more accurate and complete understanding of the process and what is necessary for favourable effect of multinationality speed of MNE's performance.

6.6.2.2 Results from Hypotheses 9a, 9b and 9c

Prior studies have emphasised the relevance of context-specificity for the effects of international experience on various outcomes: location decisions of FDI (Yu, 1990), ownership strategy (Li & Meyer, 2009), entry modes (Dow & Larimo, 2009). The next trio of hypotheses is based on the assumption that FDI experience derived from operating in developed country settings would be more useful for rapid expansion in other countries falling into this category, due to the shared environmental context and smaller technological and institutional gaps. Previously, in section 3.4.1.2, we discussed some of the main arguments put forward in the literature on context-specificity of international experience, as well as their potential for cross-contextual transferability and applicability.

For the last set of hypotheses for this thesis, we have correlated MNEs' location strategies and the influence of their host market characteristics with the SM-P phenomenon by employing the level of economic development as a contextual moderating factor. In **hypotheses 9a, 9b and 9c** we postulated uniformly positive moderating influence of the *degree of multinationality in developed countries* on the SM-P linkage for all three types of speed. We postulated that the outcome of this contingent effect would be such that it would flatten the concave (second order) segments of the curves for both speed of FDI resource commitment and international commercial intensity, and steepen the convex shape of the performance curve for geographic dispersion speed. As for its effect on the third order term, i.e. the slopes which form the sigmoid curves of the speed of FDI commitment and speed of geographic dispersion of FDI, we predicted that this moderator would steepen and flatten these segments, respectively.

As a reminder, in these three hypotheses we conjectured precisely the following.

Hypothesis 9a: The MNEs' degree of asset dispersion in the economically developed host countries would positively moderate the direct relationship between the *speed of FDI resource commitment* and their corporate performance; and as a result it would vertically compress the sigmoid curve depicting this association, i.e. it would boost its slopes upwards.

Hypothesis 9b: The extent of asset dispersion in the economically developed host countries would positively moderate the direct relationship between *speed of geographic dispersion of FDI* and MNEs' performance; and as a result it would steepen the convex (U-like) part of its curve and flatten the downward slope forming the sigmoid shape of the SM-P relationship.

Hypothesis 9c: In general, MNEs' degree of asset dispersion in the economically developed host countries would positively moderate the effect of its *rapid increase in international commercial intensity* on the corporate performance; as a result it would flatten the concave shape (i.e. inverse U) of the curve representing the direct SM-P relationship.

The estimation results testing the above predictions about the moderating effect of the MNE portfolio of operations in developed countries on the SM-P relationship do not comply with our predictions for all speed dimensions. Only the results for H9a are statistically significant and conform to the hypothesised effects, for both the quadratic and cubic interaction terms, and also for both of the performance measures (ROS and ROTA). The coefficients of the cubic term regression outputs for H9a are displayed in the appendix in Tables 6.3 for ROS and 6.4 for ROTA, under the models 5A and 5B, respectively. For easier reference, we provide all the significant predictor estimations below for H9a.

The beta coefficient for the interaction term between the squared speed and DOI in developing countries variables is β=0.001 ($p<0.01$) for both ROS and ROTA, whereas for the interaction with the cubic term: β=0.00006 ($p<0.05$) for ROS and the same value with higher significance level ($p<0.01$) for ROTA.

The results from H9a confirm our expectation that during periods of rapid multinational expansion by way of adding new foreign subsidiaries to the existing network, MNEs with larger FDI portfolios in developed countries would experience better performance outcomes. This indication is for general growth in the number of subsidiaries, and we cannot ascertain whether these are investments in existing host countries or in new markets for the MNE, since the estimation for hypothesis 9b returned non-significant results. For robustness, we have run a regression with alternative moderator using developing countries DOI index and the results show the opposite direction of the effect although by three decimal places smaller in magnitude. Consistent with the main regressions, only the alternative tests for H9a returned significant results.

The above findings for H9a lend support to the prior-discussed arguments and the hypothesised moderating effect of prior international diversification in developed countries on SM-P. In addition to the results for H1b, this is further evidence about the relevance of prior context-based experiential learning. In this case, it is the level of universality and transferability of experiential learning about FDI operations that provides the advantage for successful further expansion at rapid pace, regardless of the context. The experience accrued in countries from the developing category does not seem to be of any benefit to cross-contextual FDI resource commitment.

6.7 Robustness Tests

To probe the validity of our results, we conducted several robustness checks by performing the following tests.

In addition to the no-lag estimation, we have also analysed the models for the second research question (and hypotheses H5, H6 & H7) by adding lag structure to the original model of one-year lagged effects. This method has frequently been used with the justification that MNEs sometimes deliberately misreport the year in which they publically report profits or losses. It has also been applied in similar research settings on UK samples since ‘lagged relationship between changes over time helps to indicate causation’ (Grant, 1987, p. 85; Grant et al., 1988) and this has been common empirical approach in SM-P studies (Hashai et al., 2016; Yang et al., 2017; García-García et al., 2017).

To derive the lags, we measured the predictor and control variables at t – 1, for the dependent variable at time *t.* That way we accounted for the fact it usually takes at least several months between the establishment or an acquisition of a new foreign subsidiary and the actual beginning of its operations. The effect on performance takes even longer than this, and hence the twelve-month lag.

Because the benefits of international diversification may take longer to materialise among the SMEs, a three-year lag between the predicted and the predictor variables has been preferred in studies on SME internationalization (e.g., Zahra, Ireland, & Hitt, 2000; George, Wiklund, & Zahra, 2005). Also, longer time-lags reduce the risk in the results for potential reversed causal loop between performance and internationalisation. Even a two-year lag might have been worth testing, but we were cautious about the loss of degrees of freedom, which occurs with further lagging of the predictor variables by more than a single time-period. For these reasons, we have not applied them in our analyses.

The results are moderately robust to the original estimations, for the following reasons. From the alternative regressions for hypothesis 5 only the output for ROTA is significant and the coefficients are consistent in direction with the original model: β= 0.446 ($p<0.05$) for the linear, β= -0.077 ($p<0.01$) for the quadratic and β= 0.002 ($p<0.01$) for the cubic. These show the sigmoid relationship between speed of FDI resource commitment and financial performance. From the regression with lagged structure for hypothesis 6 we only obtained statistically significant coefficients for ROS: β= -1.935 ($p<0.01$) and β= 0.131 ($p<0.05$). The indication here is for convex curve between speed of geographic dispersion and return on sales, which partly complies with our prediction and with the original results. The sigmoid shape is not statistically supported, however. The last alternative model with lagged structure was for hypothesis 7 predicting concave relationship between speed of international commercial intensity and profitability. We did not get support for this from the results, since only the linear estimator for ROS returned significant coefficient, which was unexpectedly negative (β= -0.1645; $p<0.05$).

To improve confidence in our results for the two sets of hypotheses which address the third research question and test the contingent effect on the SM-P linkage, we performed robustness checks by replacing the respective speed measures with a single composite count metric. We have already used this version in the robustness checks for the results from the models concerning the first research question, and it constitutes an average of two components: speed of FDI resource commitment, measured as total number of foreign subsidiaries over the length of FDI experience as denominator (t), and speed of geographic dispersion, measured as the total number of host countries over **t** (see section 5.7). Basically, it combines the measures for the independent variables used in H8a and H8b into an additive index.

All regressions provide significant coefficients for the three types of interaction between the speed index and each of the FSAs (intangible assets, intensity and breadth of FDI experience), except for the term for breadth of experience in the quadratic model. They are as follows. For the interactions with squared terms of speed, intangible assets have the following coefficients: for ROS (β=0.002; $p<0.01$) and ROTA (β=0.001, $p<0.05$), for intensity of experience β= -0.0004 ($p<0.01$) for ROS and β= -0.00003 ($p<0.01$), while for breadth of experience β= -0.002 ($p<0.1$) for ROS and β=-0.003 ($p<0.01$) for ROTA. The coefficients from the cubic terms regression follow the same direction and closely similar patterns of signs: intangible assets have β=0.0002 ($p<0.01$) for ROS and β= 0.0001 ($p<0.05$) for ROTA; intensity of experience has β= -0.00004 ($p<0.01$) for ROS and β= -0.000003 ($p<0.01$), while breadth of experience has significant coefficient only for ROTA, β= -0.0003 ($p<0.01$).

It can be observed that in terms of significance and direction, these results are congruent with those from the test for H8a, and less so with H8b, although generally greater in magnitude. Compared with the results form H8c, these are contrasted, but it should be no surprise since the index measure does not incorporate the ratio of its metric (foreign to total turnover). Overall, we found the original results to be reasonable robust to these alternative tests, and the same interpretations apply.

For the second type of contingency we have checked in hypotheses H9a-c, we follow the same strategy for alternative testing. In lieu of the three speed measures applied separately in each of the three hypotheses, we are using the same additive index measure for the predictor variable speed of multinationalisation.

The results for the interaction terms with a squared predictor are significant ($p<0.01$) for both ROS and ROTA as performance metrics, and consistent with the hypotheses show positive coefficients: $\beta= 0.0029$ and $\beta= 0.0022$. For the cubic term regression, however, only the coefficient for ROTA shows statistical significance: $\beta= 0.0002$ ($p<0.01$). These values show stronger moderating effect of the degree of multinationality in developed countries on the SM-P when a composite measure was used instead of a single one for FDI commitment. This is peculiar, since the results for H9b where we employed the other constituent component of the index as main predictor measure returned non-significant outcome. Furthermore, we used an alternative (i.e. counterpart) moderating variables in the models for testing hypotheses 9a-9c, DOI in developing countries.

As a general conclusion, the above results confirm that our original models are reasonably robust to alternative operational measure of the predictor variable.

6.8 Interpretation of the Findings for RQ2 and RQ3

The previous sections of this chapter has presented the results from the empirical analyses of the models pertaining to the two last research questions, and discussed the interpretations of the findings. In this closing section our aim was to provide more detailed and meaningful interpretation of the relevant statistical outputs and discuss the implication of the supported predictions.

6.8.1 Empirically Addressing the Second Research Question

The aim of the second research question in this study was to investigate the nature of the direct association between MNEs' speed of international expansion and its performance consequences (i.e. the SM-P). Having formulated three testable hypotheses (H5, H6 and H7) to empirically address this question, we proceeded with developing and implementing a suitable analytical model. To model the predicted relationship of the core construct, we employed an unmoderated and multi-dimensionally measured multinational speed in the role of a predictor, and the MNE's overall corporate performance as an outcome.

We have seen that the speed of different dimensions of multinational expansion display divergent shape of their relationship curve with corporate performance, mainly in terms of direction and inflection points of the sigmoid wave. This confirmed our conjectures that employing a single measure of this construct would be a limiting empirical approach. The measures for speed of FDI resource commitment and speed of multinational dispersion (i.e. geographic scope) are strongly and positively correlated (0.827), as indicated in Tables 5.2 and 5.3. This was expected and acceptable, but it did not affect the analyses since these closely related aspects were tested in parallel regression models.

The results from the sensitivity analisis and the re-estimations outlined above were fairly robust and consistent with the original models. We used a number of tests, based on alternative operationalisations of the criterion variable, as well as lagged transformation of all the independent variables.

For the previous set of hypotheses (H5, H6 and H7) we have estimated the overall effect by testing only the direct SM-P relationship. Additionally, we performed some auxiliary assessments to validate our results for the the SM-P relationships by testing the context-specific outcomes from FDI expansion in terms of scale (H5) and geographic scope (H6). For that purpose, in the estimations we replaced the main measures for the predictor with the disaggregated versions which we calculated for hypotheses 1b and 2b, i.e. speed of scale and speed of scope for developed and developing markets, respectively. Comparison of the estimation coefficients between these two predictors of performance indicated that the conjectures for both hypotheses (H5 and H6) were more valid when the equations tested the expansion in developed host countries. This insight increased the relevance of our hypotheses in the context of rapid pace of FDI in developed markets, which means that the performance outcomes we modelled for each dimension of multinational speed were shown to be more likely when the UK MNEs in our sample choose expansion in other developed countries.

The explanation for that can be provided by the argument and evidence presented in prior literature about context-relatedness across geographic markets as a facilitating factor of multinational expansion with higher net benefits. Considering the higher homogeneity in the macro-economic environments among the developed countries, establishing new foreign operations there would be less taxing for the MNE in terms of adapatation and learning costs. Prior country-specific experience and capabilities derived from other developed host countries would be relatively transferrable and applicable the new setting expansion. As a result, firms experience higher net benefits, i.e. better performance (Vachani, 1991; Meyer et al., 2009) with low pace of multinational increase in scale, and moderate to high for geographic scope expansion. We ought to acknowledge that the composition of the FDI footprint in our sample would affect these specific results.

6.8.2 Empirically Addressing the Third Research Question

As per the third research question, the last empirical part was intended for investigation of the contingent relationship between multinational speed and corporate performance.

To examine if the expectations from the remaining six hypotheses addressing RQ3 hold true, we included several moderating variables. We hypothesised about two broad types of moderating effects: 1.) FSAs in form of intangible assets, as well as intensity and breadth of FDI experience, and 2.) context specificity of MNEs' asset dispersion.

For this purpose, we used an extended version of the previous empirical model (for the direct SM-P) and added several moderating variables. Through its statistical equations we tested the last six hypotheses, which are as follows: H8a, H8b, H8c, H9a, H9b and H9c.

The outputs for the direct SM-P relationship tested in the previous model have confirmed sigmoid shape for the performance effect of rapid FDI expansion in terms of scale (H5) and geographic scope (H6). The consequences for performance arising from rapid increase in MNEs' commercial intensity (H7) turned out to have a U-shaped effect for our sample. Taking this into consideration, the model which tested the contingent effects for this SM-P and corresponding to hypotheses 8c and 9c, only included quadratic terms for the moderators.

The regressions for the predictions from H9a-H9c have tested the interactions between three different types of FSAs and three different types of multinational expansion speed. Out of the three hypotheses testing the context-specific moderation of MNEs' location strategies of the SM-P relationship (9a-9c), only the hypothesis 9a was supported. This provided us with evidence for the contention that FDI portfolio which has greater proportion of subsidiaries located in developed host countries offers positive contingency for MNE's profitability levels resulting from rapid multinational internalisation of assets. The probable reason for that would be the nature of the experience derived from developed host environments, which has greater utility across other types of contexts, such as less developed countries.

What follows is the the next, also being the last, chapter of this thesis, which provides a general summary (an overview) of the research findings in this thesis, and presents their manifold contributions and implications. While acknowledging several limitations of this work that might trigger further empirical efforts, we offered some suggestions for future research agenda.

7. CONCLUSIONS

7.1 Summary of Research Findings

In this final chapter we present a summary of the overall findings in this thesis and elaborate upon the theoretical and practical implications.

The purpose for the research in this thesis was to address the specified set of three research questions (please see on pages 2 and 3), which requires that we investigate the firm-level determinants and performance consequences of the speed of multinational expansion among a sample of British multinational firms. Our study has investigated the phenomenon through post-hoc observation and testing.

Besed on a theoretically-embedded conceptual framework we designed a corresponding empirical model to test both the drivers and consequences of three types of speed of mode-specific international expansion, and consider the contingent effects of firm-specific and context-specific strategic factors. For the hypotheses matching RQ1 and RQ3, we tested the significance of intangible firm resources in determining MNEs' speed for further international diversification, as well as their moderating influence on corporate performance.

For the empirical analyses, we have used two types of quantitative statistical methods on a representative sample of 90 UK multinational firms and 816 firm-year observations over the period 2006-2017. The first empirical model tested six hypotheses related to the first research question in this thesis. Through interpretation of the results we established presence of a positive link between the MNEs' FSAs and the three types of rapid multinational expansion conceptualised in this thesis.
We demonstrated the role which the knowledge-based firm resources play in stimulating the pace of foreign expansion. Namely, there seems to be a direct positive association between the process of acquiring and managing experiential learning from overseas operations and the rate at which different dimensions of foreign commitment evolve. Further emphasis was placed on their moderating impact to the return on sales and assets as outcomes of rapid extension of MNEs' subsidiary networks in terms of sheer size and geographic footprint.

Although the three speed dimensions share the FSAs as a common set of determinants, these show slightly different impact on each in terms of significance and magnitude.

The incremental process model suggests that accumulation of knowledge through prior international experience allows firms to develop competencies for more independent expansion via more advanced operating modes (Johanson & Vahlne, 1977). Therefore, it is generally considered that more experienced multinational firms have more strategic options for international diversification, and at the same time they are more inclined to choose and repeat the FDI mode, due to this 'competence-building effect' (Li & Meyer, 2009, p. 370) and the potential to mitigate some of the unfavourable effects of behavioral and environmental uncertainty in foreign markets. The results from the hypotheses H1b and H2b confirm that more differentiated analysis of the effects of international experience provide better explanations.

We argued that the different dimensions of speed would be associated with differential performance consequences, and this was confirmed by our empirical results. After we established how firm heterogeneity influences various types of multinationality speeds in the hypotheses 1a to 4, we proceeded to examine and discuss the effect of SM (considering both its virtues and limitations) on corporate performance.

As previously discussed, the variability of prior results keeps the debate about the nature of the SM-P linkage unsettled. With the intention to redress this empirically, we posed the second research question, as follows: *what are the direct performance outcomes of the different dimensions of multinational expansion speed, i.e. what is the nature of the speed of multinationalisation-performance (SM-P) relationship?*

To address this question we formulated and tested three hypotheses (H5-H7), which predict the direct consequences for MNEs' corporate performance from the speed with which they implement their multinational expansion activities. With regards to the direct SM-P relationship, we submitted in these hypotheses that the rate of change in each dimension of multinationality would induce a different effect on

MNEs' short-term financial performance. For the scale dimension of speed, which refers to the mode-specific resource commitment and implies depth of learning due to mode repetition, we expected a concave nonlinear function. Similarly, for the rate of change in the third multidimensionality dimension, which represents MNE's commercial intensity in overseas markets and its reliance on overseas revenue streams, we proposed a positive performance effects with subsequent diminishing returns. Graphically, this would be expressed by a concave curve. By contrast, for the scope dimension of expansion speed, which implies geographic resource dispersion and diversity of learning in a range of country-specific contexts, we proposed a convex shape would be more tenable.

After providing a number of relevant (key) controls, for each hypothesis we obtained significant results for nonlinear direct relationships between each dimension of speed and MNE's corporate performance. However, the nature of this relationship among the MNEs in our sample varies for each speed type, as suggested in prior studies (Casillas et al., 2013; Hilmersson & Johanson, 2016).

By testing the three hypotheses (H5-H7) pertaining to the second question, we have determined that the SM-P relationship is not linear, as when the rate of expansion exceeds beyond certain level the costs outweigh the benefits of international diversification and performance declines. The overall results suggest that speed of expansion is an important determinant for MNEs to realise the performance gains of multinational operations, but these are manifested only at certain degree and speed levels.

The MNEs vary from one another in their strategic motives for expansion, which also change during the course of their lifespan. It is highly likely that not all FDI-mode expansion activities are performed due to the same incentives, and some subsidiaries may not have a direct effect on the profit. Certain foreign establishments have supporting function and are not profit-generating. Nonetheless, since we are considering corporate performance at the level of the group, the contribution of each subsidiary to the overall performance would be balanced out with the rest of network.

As observed earlier by Chang & Rhee (2011, p. 990), ‘there is no simple answer to the question of whether FDI expansion should take place quickly or slowly’. On the basis of the divergent results testing the direct SM-P relationship we can concur with this statement, and conclude a more nuanced approach is needed to assess the nature of this phenomenon, by taking into account contingency factors. New insights become available when we included moderating variables to the empirical model which tested the direct SM-P relationship.

The knowledge intensive sectors are characterised by high levels of dynamism, and firms that operate in these industries tend to enter and expand into the international arena more rapidly (Erramill & Rao, 1998), as was observed among the entrepreneurial international firms such as INVs and BGs. Due to their propensity for accelerated international involvement they are likely to overextend their multinational footprint into the ‘stage 3’, as Contractor et al. (2003) described the third order segment of the sigmoid function.

Based on our results about the shape of the sigmoid, entering into this suboptimal stage 3 zone of the curve is detrimental only in the case of excessive speed of market dispersion. The third order segment of the performance curve which is function of the speed of FDI resource commitment is in fact rising upwards, and this indicates there is a multinational speed level beyond which diminishing returns of over-expansion are erased. In our attempt to offer a possible interpretation for this manifestation we could assume that this portion of the curve represents the ‘mega-multinational’ firms with a huge subsidiary network which have managed to consolidate their experiential learning and configure international operations efficiently. These MNEs are potentially also global firms which add new foreign subsidiaries in existing markets (mode repetition), or generally highly dispersed across all regions, with transnational linkages (Ghoshal & Bartlett, 1990).

The observation from the results indicate that overly high pace of multinational expansion in scale, scope and commercial intensity in certain ranges (or levels of speed) gets manifested in reduced firm performance. Profitability and other benefits of internationalisation are likely hindered by insufficient levels of absorptive capacity, which the firm could leverage to successfully adopt and integrate new experiential knowledge that is accrued by such expansion. It can be expected that the effect of time-compression diseconomies would occur when the geographic scope is widened too rapidly, since prior experience cannot be leveraged in the short term until it is recombined and integrated with new experiential learning.

The results of the regression tests for hypothesis 5 revealed that speed of increasing multinational resource commitment contributes to positive financial performance of the MNEs up to a certain extent, after which the value equation changes inducing diminishing returns. What it means in practice for MNEs, is that the gains from fast multinational expansion demonstrated by adding new subsidiaries to their FDI network are available even at the low levels of speed increase. Further acceleration continues to improve their financial performance until they reach a threshold of inverse effects. Interestingly however, the results for our sample show that for the very rapid rate of resource commitment internationally, MNEs benefit from improved performance, as demonstrated by the upward sloping segment of the sigmoid function.

The significant coefficients of the cubic terms in both H5 and H6, although fairly low in magnitude, indicate that the multi-wave hypothesis which has been suspected and shown for the M-P relationship (Contractor et al., 2003; Lu & Beamish, 2004), may also hold true for our dynamic model of the SM-P relationship. We maintain that this should have higher explanatory power for samples that include mature and globally diversified MNEs, which typically operate subsidiary networks spread over all six continents. Out of the 90 firms in our study sample, there are 19 representatives of the later sub-category, and the ‘mirror-image J’ significant 3rd order segment of the function would more obviously be attributed to this portion of MNEs.

This thesis has provided evidence that high speed of multinational expansion and solid levels of corporate performance are not mutually exclusive. Although, for certain firms and under certain conditions this relationship can change direction so the constructs display an opposing effect to each other. When this occurs, performance suffers from further rise of the international expansion speed.

Prior findings (Mohr & Batsakis, 2014) have suggesed that the FSAs provide a supporting mechanism for rapid increase in the degree of foreign involvement, i.e. for the multinational expansion speed of MNEs. The empirical model designed to address our third research question tested how the FSAs of multinational firms influence the benefits and costs related to a higher pace of FDI expansion in terms of extent and geographical scope, as well as commercial intensity in overses markets. In addition to the determining role of FSAs for our multi-faceted speed construct, the results in this thesis articulated support for their moderating effect on speed's performance consequences.

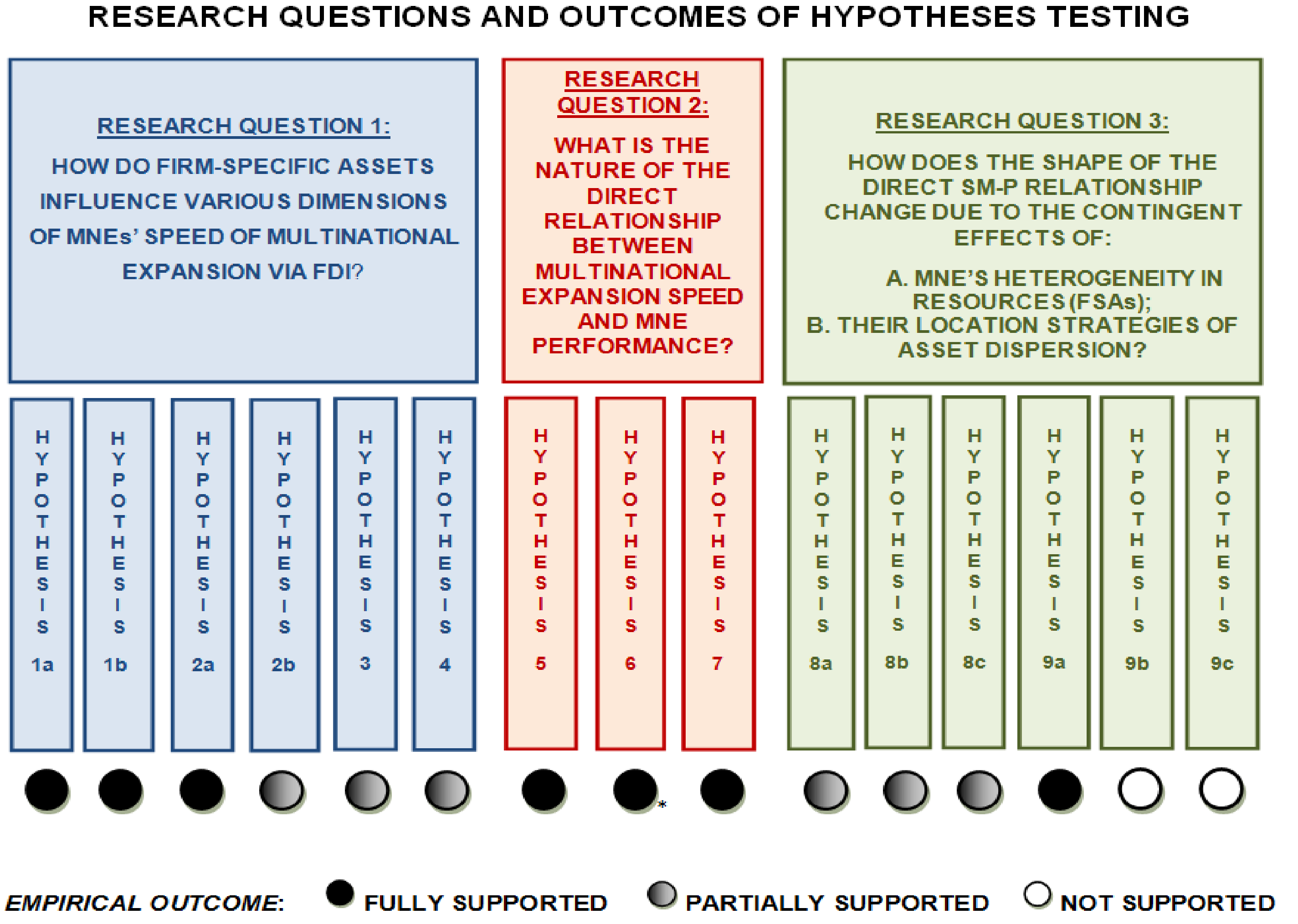
With the last three hypotheses of our empirical model (H9a-H9c) we tested the relative importance of the strategy of asset concentration within a certain type of economies on the performance effects of rapid diversification. Based on the statistical significance of the results, it transpires that only profitability levels resulting from MNEs' patterns of rapid resource commitment via FDI are conditioned by the environmental characteristics of the host locations where they place their strategic engagements. Higher levels of investments in developed host countries induce positive influence on their rapid multinational expansion. To ensure our results were not sensitive to alternative ways of operationalising the key variables, we conducted several robustness checks, both for the models with speed as an outcome and predictor variable. We used alternative operationalisations of the speed variables – with different time period in the denominator. Additionally assessing the hypotheses with alternative measures revealed symmetry of results between the models and validated our main findings.

Discrepancies in the results from prior studies stem not only from divergence in speed definitions, but also from sample variations. Our study integrates two empirical roles of the speed construct (as both dependent and a predictor variable) in a single analytical framework, while our heterogeneous sample provides empirical representation for both MNEs and multinational SMEs.

Our findings show that contextual factors, both internal and attributed to firm's heterogeneity, as well as stemming from the characteristics of the environment matter for the speed of continued international diversification. We have shed some light on how their interaction reflects on MNE’s short term profitability, but have left the reasons why – for instance, institutional factors, outsode the scope of our research project.

This study has confirmed that unidimensional considerations of the speed of multinational expansion will likely lead to erroneously uniform conclusion about the association between pace of multinationality and corporate performance, when in fact each aspect produces distinct implications. The outcomes of our research have shown the merit of adapting the existing framework for investigation / analysis of internationalisation to match the dynamic conditions of new environmental business realities and challenged MNEs face in the “era of globalisation” (Oviatt and McDougall, 1997). To this end, applying a multidimensional temporal lens during empirical investigations has become more important than ever, both for researchers and practitioners. Overall, these findings show that even though the conditions in the current international business environment have changed, most concepts advocated by the classical theories of internationalization are still valid. The pace of key events may have accelerated beyond recognition in some cases, but the core competences and resources remain as determining factors.

Figure 7.1 Summary of Hypotheses Testing per Research Question



** Hypothesis is fully supported only for ROS or ROTA. For the non-asterisked hypotheses, the status applies to both performance measures.*

Figure 7.1 Full List of Hypotheses' Outcomes

		HYPOTHESES' PREDICTIONS:	EMPIRICAL OUTCOMES
RESEARCH QUESTION 1	**H1a**	The MNE's firm-specific resources (1. intangible assets, 2. intensity and 3. breadth of FDI experience) positively influence its *speed of FDI resource commitment*.	**Supported** (positive)
	H1b	The MNE's location-bound firm-specific resources (1. intensity and 2. breadth of FDI experience obtained in host markets with similar level of economic development) stimulate greater increase in its *speed of FDI resource commitment*.	**Supported** (positive)
	H2a	The MNE's firm-specific resources (1. intangible assets, 2. intensity and 3. breadth of FDI experience) encourage *rapid* increase in its *geographic dispersion of FDI* across host markets.	**Supported** (positive)
	H2b	The location-bound firm-specific resources i.e. 1. intensity and 2. breadth of FDI experience obtained in host markets with similar level of economic development, would stimulate greater increase in MNE's *rate of change in the geographic asset dispersion in foreign markets*.	**Partially Sup.** (> & + for 2.)
	H3	The MNE's firm-specific resources (1. intangible assets, 2. intensity and 3. breadth of FDI experience) will have a positive impact of on its *speed of international commercial intensity*.	**Partially Sup.** (1=N/S; 2 & 3 +)
	H4	The favourable effect of MNE's (1.) *intangible assets* on its speed of multinational expansion is positively moderated by both (2.) *intensity* and (3.) *breadth* of *FDI experience*. The expectation is that this contingency will apply to the relationship with all three speed dimensions: a.) speed of FDI resource commitment, b.) speed of the MNE's geographic dispersion, and c.) speed of international commercial intensity.	**Partially Sup.** (+ only 2. for a. b. & c.)
RESEARCH QUESTION 2	**H5**	The direct effect of MNE's *rapid FDI resource commitment* on its corporate performance is non-linear, and it exhibits at least a concave (inverse U-shaped) pattern, or even extend into a sigmoid curve.	**Supported**
	H6	The relationship between the *speed of MNEs' geographic spread (i.e. dispersion) in host markets* and its corporate performance would exhibit a convex (U-like) shape, and would likely extend into a sigmoid curve.	**Supported** (ROS only)
	H7	The direct effect of the *speed of international commercial intensity* would affect the MNE's corporate performance in a non-linear pattern, which would likely resemble a reversed U (a concave curve), and possibly even extend into a sigmoid.	**Supported** (∩-curve)
RESEARCH QUESTION 3	**H8a**	Higher levels of firm-specific assets (1. intangible assets, 2. intensity and 3. breadth of mode-specific general experience) would improve the performance outcomes of MNE's *rapid resource commitment via FDI,* so that it would flatten the quadratic and steepen the cubic slope of thisSM-P curve.	**Partially Sup.** (only 1. is +)
	H8b	Greater levels of firm-specific assets (intangible assets, intensity and breadth of mode-specific general experience) would positively moderate the direct impact of the *speed of increasing geographic spread (i.e. dispersion) of FDI in host markets* and MNE's performance.	Not Supported
	H8c	Possession of firm-specific resources (such as 1. intangible assets, 2. intensity and 3. breadth of FDI experience) would positively interact with the direct effect of MNE's *speed of international commercial intensity* on its corporate performance.	**Partially Sup.** (only 2. is +)
	H9a	The MNEs' *degree of asset dispersion in the economically developed host countries* would positively moderate the direct relationship between the *speed of FDI resource commitment* and their corporate *performance*, and as a result it would vertically compress the sigmoid curve depicting this association, i.e. it would boost its slopes upwards.	**Supported** (positive)
	H9b	The *extent of asset dispersion in the economically developed host countries* would positively moderate the direct relationship between *speed of increase in the geographic breadth of FDI* and MNE's *performance*, and as a result it would steepen the convex (U-like) part of its curve and flatten the negative slope of its cubic term.	Not Supported
	H9c	The MNE's *degree of asset dispersion in the economically developed host countries* would positively moderate the effect of its *rapid increase of international commercial intensity* on the corporate *performance*, and as a result it would flatten the concave (∩-shaped) curve representing the direct relationship.	Not Supported

<u>Clarification of notes in empirical outcomes:</u> N/S = not supported; ROS = return on sales (as a performance measure); + denotes positive outcome / relationship; > denotes bigger effect.

7.2 Contributions and Implications of the Research

The primary goal of this thesis was to advance our understanding of multinational expansion speed as a key antecedent of MNEs' performance. Since this line of research is embedded in the literature on the multinationality-performance (M-P) relationship, our central contribution is directed towards extension and refinement of this important framework. By addressing this classic IB research enquiry from a contemporary and temporally dynamic perspective of speed of multinational expansion, we have identified and explained how it is modelled by knowledge-related and contextual moderating factors. We contend that our thesis delivers a number of contributions to the IB literature, as discussed below. With the empirical analyses in this thesis we also provided strong corroborating evidence that MNEs' performance is affected by the level of pacing of different facets of their geografical diversification.

Our findings largely supported a set of assumptions which we packaged in an integrated theoretical framework, which combines arguments and interpretations from three theoretical perspectives (the organisational learning theory, the resource-based view, and the internalisation theory) about both the determinants and the outcomes of speed. Drawing from the theoretical and empirical analyses, our thesis contributes with fresh insights into the multidimensional phenomenon of speed of multinational expansion, and thus advances the fragmented research about this significant topic.

There are several notable strengths to our study, i.e. doctoral thesis, which are simultaneously the source of the contributions it offers. We present these in the next section.

7.2.1 Theoretical and Academic Contributions

This thesis has made valuable theoretical contributions for the phenomenon of speed of multinational expansion by underpinning several critical assumptions, formulated in sixteen testable hypotheses.

Our study has offered some valuable scientific contribution(s) to advance the existing knowledge in the fields of international business, as well as international strategy and management, with particular offerings made towards the research domain investigating the performance consequences of internationalisation. Building upon significant findings from extant body of work on antecedents and consequences of *rapid multinational expansion*, our research extends this research sub-stream of the IB literature and contributes in several ways.

Our study responded to scholarly solicitations for adjustment of the established frameworks of static and unidimensional analysis of the dynamic phenomenon of internationalisation, and provided more refined multidimensional perspectives which also account for the temporal elements of the process (Ancona, Okhuysen & Perlow, 2001; Eden, 2009). Accordingly, the main theoretical contributions of our research project were aimed at repositioning the concept of international speed to a more explicit and central role in the investigation of the internationalisation process of firms. We managed that by introducing a dynamic temporal dimension to the multinationalisation-performance framework, and thus extending its thematic scope of arguments and enriching its functionality. By focusing on several aspects of speed of multinational expansion we have helped to clarify the perceived notion arising from the empirical studies that indeed, the pace of equity expansion of MNEs has impact on the consolidated accounting performance of the overall group in a differential manner. In other words, the performance expectations, i.e. consequence would vary depending on which international dimension is being actively expressed during the rapid equity-based expansion of the MNE. On the other hand, these outcomes are conditioned by the level of knowledge-based resources and level of general and context-based international experience the firm possesses.

From a theoretical standpoint, this thesis offers three main insights.

1. Shows how the firm-specific assets (FSAs) can have both a determining power for the expansion speed and a moderating influence on its performance implications.

2. Nonlinearity of the SM-P relationship goes beyond the quadratic functional form, as demonstrated by the sigmoid shape found for the association between two of the speed dimensions.
3. The results demonstrate how context-specific FDI experience positively stimulates the speed of MNEs' multinational expansion.

We have also made a modest contribution towards confirming some moderating impact of internal intangible resources and asset location strategies. Particularly – the importance of various facets of international experience as determinants for the speed of multinational expansion, and as boundary conditions in its relationship with corporate performance.

This study has shown that the models investigating the multinationality-performance relationship from a static perpective are incomplete. Our findings contribute with some clarity in the literature on the performance effects from rapid multinational expansion, by providing mre fine-grained explanations for this relationship and sheding light on prior inconclusive results with regards the SM-P relationship. To the best of our knowledge, our study is among the first to provide detailed arguments and strong empirical support for a multiwave relationship between the the speed at which MNEs expand their FDI portfolios along different dimensions and their accounting performance. Moreover, we have ascertained the significance of the the firm-level intangible resources and the contingent effect of context-specific strategies in relation to the multidimensional speed of expansion and its performance outcomes. Simultaneously, by addressing the post-entry speed, this research topic complements the existing scholarship of international entrepreneurship, which mainly focuses on firms' start to internationalisation.

7.2.2 Methodological Contributions

Additionally, there are several important **methodological contributions**, in a sense that we have employed the following empirical tools in a novel way:

1. complex, multi-dimensional conceptualisation of speed as an overarching construct in relation to the other aspects of multinational diversification;

2. three relevant measures for speed in the empirical model, to reflect the aforementioned multi-dimensional configuration of the concept;
3. balanced metric of speed as an average rate of change in the international footprint, which accounts for both the acceleration and deceleration trends;
4. disaggregated measures of mode-specific experience;
5. disaggregated, context-specific measures for the multidimensional variables of speed and international experience;
6. two different categories of contingent factors: firm-specific assets, as well as asset concentration / location strategies;
7. comprehensive analytical framework, which integrates both determinants and outcomes of the core concept of multinational expansion speed;
8. statistical model which includes a polynomial regression form to test the existence of a sigmoid nonlinear pattern.

We have also enriched our analyses by performing additional assessments using alternative empirical models. An additional contribution is made by the longitudinal approach in our study. Although the antecedents of performance have been extensively investigated in the IB literature, the majority of studies have measured this variable in a cross-sectional manner (Hult et al., 2008, p.1073). Our empirical results provide the benefit of measuring performance over time, and thus strengthening the inferences of causality in our results.

7.2.3 Practical Contributions

While we regard the research findings of this thesis to be mainly of analytical rather than normative or prescriptive value, there is not doubt that their interpretations can extend some actionable, research-based guidelines for successful strategy implementation and business practice improvement.

7.2.3.1 Implications for Managers and Practitioners

In addition to the theoretical and methodological contributions of this study, we argue that this research work is of practical interest to business practitioners and managers of multinational firms.

The outputs of this study confirmed the significance of international speed for managers. As prior research has also shown, this important parameter of internationalisation influences the performance of firms, regardless of their age and size (Vermuelen & Barkema, 2002; Wagner, 2004; Chang & Rhee, 2011; Hashai et al., 2016; Mohr & Batsakis, 2017; Yang et al., 2017). It is of great importance for management practitioners to understand which factors affect the international speed, and how these changes affect the performance of their firms. Our empirical insights may at least provoke reflection among managers upon the relevant parameters, and hopefully guide appropriate managerial actions. This study highlights the merit of MNEs adjusting the pace of their overseas expansion in order to achieve the strategic goals and expected performance benefits. For instance, managers and decision-makers can estimate the position of their firms on the SM-P curve to determine the likely outcomes for the corporate performance.

Our empirical insights would assist practitioners to make better-informed decisions when they formulate and implement their MNEs' cross-border investment strategies, practically considering the importance of the temporal dimension of pace of FDI investments for successful international expansion. Bearing in mind the differences in direction and magnitude of the impact which distinct aspects of their rapid international strategy have on the profit returns, the MNE managerial team should be in a position to seek tools and mechanisms to respond accordingly.

Understanding the determining factors and mechanisms behind dynamic configurations of international activities, would place their firms in a better position to deal with changes and capture opportunities in the international marketplace. Part of the practical implications lie in the insights this study has provided for managers responsible for foreign investment decisions, about the importance and relevance which MNEs' intangible resources and their mode specific international experience have for rapid FDI expansion. Our findings generally confirm the facilitating role of the knowledge-based firm-specific resources in the process of geographic diversification. That suggests that along with the strategies for rapid multinational expansion, the MNE managers should endeavour to accelerate their learning and creation of new assets and capabilities for sustained and successful international operations.

We can also draw more specific implications for the British MNEs, considering they provided the context for our sample. The UK's business ecosystem is characterised by high levels of outward FDI, represented by the activities of their multinational enterprises, which are diversified both across industries and globally. Although there has been an implicit government support for firms through a stance of openness for international economic activities and flexible tax and labour market legislation, over the past several decades the UK has not provided an explicitly stated policy on outward FDI. Equally, there has been no dedicated institutional support like the organisations established to encourage related international activities such as exporting and inward FDI. Prior evidence shows there are productivity gains at home and increased competitiveness, high skilled jobs and firm growth as a result of outward FDI of the British MNEs (Driffield et al., 2012). Therefore, it is of interest for the UK economy and advisable for its policy makers to proactively and explicitly support the activities of companies engaged in overseas markets.

7.3 Limitations and Directions for Future Research

7.3.1 Limitations

Despite our contributions and the robustness of our findings, we acknowledge that this thesis is not void of limitations, and there is a merit in considering them in detail with a view to improve future research. One of the key shortcomings of this research project lies in the nature of data and information we have collected. We had no access to more detailed and reliable information on other types of variables, and that has restricted us in terms of going beyond the already suggested hypotheses and assumptions. However, it is not uncommon for a research project to face methodological empirical challenges imposed by limitations of the dataset. When it comes to a sample selection, researchers are often faced with data availability constraints and have to resort to decisions out of convenience, and thus compromise the research rigour.

We have previously discussed that as much as a single country examination has its advantage of controlling for parent nationality effects, the focus of our study on UK MNEs only simultaneously represents a research limitation in terms of generalisability of the results. Bearing in mind the population in our sample is confined to UK multinationals only, any generalisation to other national context much different to this should be made with caution, and our results are best interpreted within a similar context. The same applies to the time period (2006-2017) as a contextual constraint. However, we have observed that the majority of prior studies researching speed, both as an outcome and a predictor in the SM-P linkage have also opted for single country samples: Vermuelen & Barkema (2002), Wagner (2004), Nadolska & Barkema (2007), Lin (2012), Hashai et al. (2016), Yang et al. (2017).

The phenomena investigated in this thesis are rather complex and dependent on a multitude of factors. We have endeavoured to capture some of them in our analytical framework, but our analyses are unavoidably incomplete. Typically, the breadth of relevant factors considered in a single empirical study is rarely exhaustive, as there will be additional effects that remain outside the scope of examination. Therefore, we highly recommend that other potential predictors should be tested in the models of future empirical efforts.

There are methodological constraints stemming from the measures we used. Due to data and other types of constraints, there is a low possibility for any single study to operationalise and test all the key theoretical and empirical constructs relevant for thorough examination of a phenomenon. It has been suggested that the measure of multinationality should ideally provide an indication of the strategic importance and the relative size of the foreign investment in relation to the domestic operations (Grant, 1987; Rugman & Oh, 2010). Our sample has not distinguished between the function of the foreign subsidiaries, nor have we considered the MNEs’ strategic motivations for the FDI expansion moves. The source of this issue lies in the reports we collected our data from, as they mostly lack clear distinction about the activity status of each of the listed subsidiaries. As a result, some dormant foreign subsidiaries were also included in our total count, which may have inflated the active operational and profit-making investments abroad. Related with the limitation of indiscriminate data on foreign subsidiaries' roles is the fact that our variable *speed of geographic dispersion* does not explicitly account for the diversity aspect of expansion, and offers no distinction between the host markets in terms of their strategic importance or levels of penetration (Pangarkar, 2008, p. 476).

To precisely verify the assumptions related to the speed measure for international commercial intensity, we should ideally use a ratio of foreign to total sales (FSTS %) at subsidiary level for the predictor variable. Due to data constraints, we chose foreign to total turnover at group level. However, this measure was not ideal and pure since it prevented us to isolate the source of the foreign sales and we cannot be confident to what extent it reflects the mode-specific (i.e. FDI related) commercial intensity, i.e. the outward FDI flows and earnings. If the latter represents a smaller proportion of the reported FSTS (%), than the negative effect on performance could be attributed to the fact that the intensity aspect of FDI experience may not be much transferable and valuable for other modes (for example, export intensity), since each one faces different challenges and requires distinct type of knowledge and skills.

Another potential constraint must be noted in relation to the structural measure of the scale of multinationality, which we have employed in the robustness tests: overseas subsidiaries to total subsidiaries (OSTS). The fact that it indiscriminately provides general information of the overseas investment without specifying the importance of the subsidiaries may cause a concern. A high value of the ratio could over-state the international focus of a multinational whose principal subsidiaries are located in the home country. Quite often, the MNEs register entities in foreign tax havens, so ownership stakes in numerous foreign entities do not always suggest that foreign markets are strategically more important than the domestic ones. In our context, however, most of these are British overseas territories: Caymans, Isle of Man and Gibraltar, which have been counted as domestic subsidiaries of our MNEs.

For the most part, the limitations we have listed above could not be considered debilitating, although it would be useful to re-evaluate them under conditions which address the constraints of this research. Despite these limitations, we think that the research and the findings of this doctoral thesis still offer a very valuable contribution for international business and related fields.

7.4 Directions for Further Research

One of the objectives of this thesis is to motivate more international business scholars to engage in research on speed of multinational expansion, and advance this distinct research agenda. However, in interpreting our findings, readers should also be aware of the limitations of this study, which we have listed and dicussed in the previous section. These simoultaneously offer interesting paths for further research, and we will include them in this section.

Please note that there are certain potentially relevant aspects and informative concepts which would have aided a better understanding of the phenomenon under investigation. However, we intentionally left out of the scope of this study, as we had to control the boundaries of our research project.

As a first and most obvious avenue to extend and enrich the research undertaken in this thesis, we would suggest that future efforts are directed towards cross-national investigation of the phenomenon. The findings from our UK-centric sample are country-specific, and may not be applicable to other socio-economic institutional set-ups. Although there is a reasonable ground to believe that the results may apply to MNEs headquartered in countries with similar macro-environment, such as other Western-European economies, since these face similar socio-political and economic conditions, and hence share similar traits. Despite proffering some rationale for our single-country sample, we are also cognizant that such approach frequently limits robust validation and generalisability of findings to different contextual settings (for instance, to MNEs from developing nations), and such findings may be misleading in a direction of ‘a *general theory illusion*’ (Meyer, 2014).

Therefore, future research should seek to validate or refute our findings by studying alternative samples. We acknowledge the fact that multiple country investigation would provide cross-comparison of different national contexts and thus enrich the conceptual and practical relevance of the study, as well as improve the validity of the empirical findings. Thus, our recommendation for future studies is to widen the sample frame for inclusion of MNEs originating from home countries other than the UK. Further empirical efforts would also benefit from extended samples in terms of size and time periods (firm-year observations), as this would improve the reliability of results.

We would encourage further empirical efforts to apply more in-depth methods, and rely on primary data collected from within multinational firms, to complement the secondary data analyses, because intra-organisational research has a distinct advantage of access to a broader set of data (Rouse & Dalenbach, 2002, p. 964). Complementary mixed methods may offer better methodological and empirical solutions for better grasp of the world of the IB and MNE activities.

More comprehensive list of measures derived to address multi-level factors (including environmental and individual-level internal ones), combined in a testable empirical model would further contribute to investigations on this topic. The decision-making process to enter the international arena and continue internationalising is a complex one, for MNEs dependent on a variety of factors, both internal and external to the company. One way to gain additional insights on this matter might be to consider experience, perception and attitude of the top management team, which certainly matter for the decision-making about pursuing foreign operations via equity mode (Batsakis et al, 2017; Peng-Yu, 2018).

Looking beyond the firm level, it is important to account for forces from the MNE's external environment. In addition, some other aspects could be examined. The mediating effect of the sequence of geographical locations for FDI might be another interesting aspect for future research agenda, in addition to the several dimensions of added distance between the home and target countries.

To identify a more complete and accurate theoretical model of the relationship between firm performance and speed of multinational expansion, further empirical validation is vital. This involves both replication of existing research, and simultaneous extension and refinement of empirical models. If would be beneficial to employ different and more comprehensive models, which include additional variables that may influence the hypothesised relationships. For instance, the performance variable could also include market-based measures in addition to the accounting ones we used, as that would have enabled us to assess the long-term differential impact of multinationality speed.

Researchers should continue with this line of inquiry, but also devote attention to additional aspect about the phenomenon and incorporate other variables which would explain higher proportion of the MNE performance and provide more comprehensive perspective and understanding of the SM-P association. For instance, there are likely to be some other factors which potentially affect the multinational firms' performance, such as the mode of diversification and type of diversification (see Gomes & Ramaswamy, 1999), but we have not included them as controls in our empirical model.

Another alternative agenda to extend our research would account for strategic decisions related to the FDI mode of multinational firms, such as the form of investment (for example, joint venture or a wholly-owned subsidiary), as well as the sequence of entires into target markets. Future studies should test or at least control for different functional forms of FDI based on ownership structure (joint ventures or wholly-owned subsidiaries), or the type of investment (greenfield vs acquisition).

Permitting data availability, use of a better designed speed measure with more nuanced content that captures other important aspects of the process are recommended for future research. For instance, measures that reflect subsidiary level multinationality dimensions (foreign to total sales, etc.) would be useful to begin with. Furthermore, it would be beneficial to test if the sigmoid SM-P relationship that our results revealed for the scale and scope dimensions of speed would hold for the long-term performance, represented by market-based measures.

Our findings revealed that intangible assets do not carry the same predictive power for all dimensions of speed we considered in this study. Future studies may extend the research along these lines and investigate another set of determinants to identify any distinct antecedents for each speed dimension, which do not overlap with the common ones.

Others have cautioned about the risk of potential spurious causal association between the key constructs in the relationship between multinational speed and performance, arising from unobserved firm heterogeneity (Chang & Rhee, 2011, p. 987). Future studies examining this temporal aspect of international expansion may benefit from a research design which addresses the potential endogeneity problem of firm features that might be affecting multinationality, as well as the potential reverse causality with performance, by employing a two-stage least squares (2SLS) method with relevant statistical tests.

7.5 Concluding Remarks

The research endeavours in this doctoral thesis have focused on explaining the phenomenon of multinational expansion speed, by identifying MNEs' FSAs as determinants, as well as demonstrating the consequences of this concept as reflected in firms' corporate performance. It has also responded to long-standing calls for temporally-based treatment of internationalisation (Jones & Coviello, 2005; Sharma & Blomstermo, 2003; Andersson & Mattsson, 2015), by investigating the speed of continued international expansion of firms, conceptualised as a multidimensional construct. An integrated theoretical framework, representing three popular perspectives in the IB research, the internalisation theory, the resource based view and the organisational learning theory, was used as a basis to derive the hypotheses for empirical testing.

Our comprehensive analytical model considered both the antecedents and outcomes of rapid international expansion, while undertaking a comparative assessment of the direct and moderated performance outcomes from three distinct types of multinational speed. We maintain that such an integrated research design offers a more holistic and fine-grained approach to understanding the dynamic phenomenon of MNE internationalisation from a temporal perspective.

As discussed in the previous chapters, there is ample evidence supporting the assumption that multinationality generally brings performance benefits for the multinational firms of different ages and sizes (see Schwens et al., 2018 for a recent meta-analytical review). Following this postulation, we have extended the M-P analytical framework by adding a temporally dynamic element of speed in order to examine the effect of rate of change in the multinational footprints among the sampled MNEs. Guided by three research questions, the investigation in this study has addressed three significant aspects of the phenomenon of firm-level international diversification. Related to the first question, we identified a couple of specific internal resources as important determinants for three types of multinational expansion speed: intangible assets and mode-specific international experience. In response to the second question, we examined the functional form of the direct relationship between the three aspects of speed and corporate performance. While seeking an answer for the third research question we tested the impact of factors moderating this relationship, such as the knowledge-based internal firm resources mentioned above, and the context-bound dispersion strategies of MNEs' FDI.

We found empirical support for the predicted associations between different speed dimensions and corporate profitability. The reported findings confirm that speed, i.e. the rate at which MNEs proceed with their FDI expansion, represents an important and robust concept for understanding MNEs' international diversification. The initial results remained reasonably robust even after several alternative measures, conceptualisations and explanations have been considered; thereby demonstrating further support for the aforementioned conclusions.

As we have hypothesised, the results indicate significant direct effect of speed of multinational expansion on the financial performance of MNEs, and the shape of the relationship curve between these two concepts is non-linear, but with different shapes for different types or speed, which correspond to separate dimensions of multinationality.

Our results for these dimensions are supported by some prior empirical findings that mostly measured each of them individually in a single study, and contradict with others. Admittedly and ironically, with the findings pertaining to the SM-P relationship, we have also contributed towards the equivocal findings in the received body of research, which served as an impetus to conduct this study. Nevertheless, that only underscores the necessity and importance for simultaneously investigating the boundary conditions of this key relationship by focusing more systematically on moderating effects.

The overall findings suggest that the applicability of the multinationality-performance (M-P) models may be extended to explanations of the dynamic SM-P relationship. With this thesis we have shown empirically that there is a decent rationale for investigating the potential multi-wave function of certain dimensions in the SM-P relationship. It brought to attention that to fully grasp this complex phenomenon, it is important to include moderating effects in the analysis. However, it is useful to bear in mind the recommendation that no more that twenty percent of the performance variance should be directly ascribed to, and explicated by firm-level factors, since 'business effects, followed by industry effects, with only a small portion of variance explained by firm effects' (Schmalensee, 1985, in Tallman & Li, 1996, p.188). This could potentially explain the rather weak, although significant and as predicted - positive effects, which we obtained for the estimated coefficients of all FSA-type variables in our models for the first and the thirsd research question.

Taken together, our theoretical arguments and the results from the empirical analysis assist in advancing the literature on speed of multinational expansion, and add dynamic longitudinal and contingent perspectives to the general multinationality-performance framework. Overall, the findings show that even though the conditions in the current international business environment have changed, most concepts advocated by the classical theories of internationalisation are still valid. The pace of key events may have accelerated beyond recognition in some cases, but the core competences and resources remain as determining factors.

Notwithstanding the limitations stated in the prior section, this thesis makes several notable contributions, which extend the body of academic knowledge in the ways we have detailed above. We believe that with the research detailed in this doctoral thesis we have taken a useful step in advancing the analysis of the relationship between the rate of MNEs’ expansion and their performance. It is apparent, however, that further research efforts are necessary to verify these findings in other contexts and for other, preferably longer time periods.

In terms of meeting the objectives of this thesis we have set out in the introduction, we maintain these have been fulfilled throughout the various components of this study as follows: objectives 1 and 2 were addressed in the second chapter, objective 3 in the third, objective 4 was spread across chapters 4, 5 and 6, while the last objective (and fifth on our list) has been covered in this last chapter (number 7) of the thesis.

APPENDIX 1

Appendix 1.1 STATA Do. File

REGRESSIONS FOR RQ1

(Speed as an outcome variable)

<u>**HYPOTHESIS 1a**</u>

xtscc FDIs_t AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc FDIs_t InAs_ratio AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc FDIs_t InAs_ratio INTEXP_ln hostC_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

<u>**HYPOTHESIS 1b**</u>

Developed Country Speed #FDIs/t with general FSAs

xtscc DEV_FDI_t AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

xtscc DEV_FDI_t InAs_ratio AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

xtscc DEV_FDI_t InAs_ratio INTEXP_ln hostC_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

Developed Country Speed #FDIs/t with location-bound experience

xtscc DEV_FDI_t InAs_ratio DEV_INTEXP_ln DEVed_C_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

Developing Country Speed #FDIs/t with general FSAs

xtscc DING_FDI_t AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

xtscc DING_FDI_t InAs_ratio AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95) xtscc DING_FDI_t InAs_ratio INTEXP_ln hostC_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

Developing Country Speed #FDIs/t with location-bound experience

xtscc DING_FDI_t InAs_ratio Ding_INTEXP_ln DEVingCountries_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

HYPOTHESIS 2a

xtscc hostC_t AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc hostC_t InAs_ratio AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc hostC_t InAs_ratio INTEXP_ln hostC_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

HYPOTHESIS 2b

Developed Country Speed # hostC/t with general FSAs

xtscc DEV_C_t AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

xtscc DEV_C_t InAs_ratio AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

xtscc DEV_C_t InAs_ratio INTEXP_ln hostC_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

Developed Country Speed # hostC/t with location-bound experience

xtscc DEV_C_t InAs_ratio DEV_INTEXP_ln DEVed_C_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

Developing Country Speed # hostC/t with general FSAs

xtscc DING_C_t AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

xtscc DING_C_t InAs_ratio AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

xtscc DING_C_t InAs_ratio INTEXP_ln hostC_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

Developing Country Speed # hostC/t with location-bound experience

xtscc DING_C_t InAs_ratio Ding_INTEXP_ln DEVingCountries_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS, fe pooled level(95)

HYPOTHESIS 3

xtscc FSTS_t AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc FSTS_t InAs_ratio AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc FSTS_t InAs_ratio INTEXP hostC_ln AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

HYPOTHESIS 4

Interacting FSAs on FDIs/t

xtscc FDIs_t cent_InAs_ratio cent_INTEXP InAs_INTEXP hostC AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc FDIs_t cent_InAs_ratio cent_hostC InAs_hostC INTEXP AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

Interacting FSAs on hostC/t

xtscc hostC_t cent_InAs_ratio cent_INTEXP InAs_INTEXP hostC AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc hostC_t cent_InAs_ratio cent_hostC InAs_hostC INTEXP AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

Interacting FSAs on FSTS/t

xtscc FSTS_t cent_InAs_ratio cent_INTEXP InAs_INTEXP hostC AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

xtscc FSTS_t cent_InAs_ratio cent_hostC InAs_hostC INTEXP AGE ln_Tassets TangAs_ln DomesticEXP l.FSTS i.Year, fe pooled level(95)

REGRESSIONS FOR RQ2

(Testing the direct SM-P relationship)

HYPOTHESIS 5

Linear, square and cubic SM-P model (ROS & ROTA)

xtgls ROS FDIs_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_FDIs_t##c.cent_FDIs_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_FDIs_t##c.cent_FDIs_t##c.cent_FDIs_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln, panels(hetero) corr(psar1) force

xtgls ROTA FDIs_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_FDIs_t##c.cent_FDIs_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_FDIs_t##c.cent_FDIs_t##c.cent_FDIs_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

HYPOTHESIS 6

Linear, square and cubic SM-P model (ROS & ROTA)

xtgls ROS hostC_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_hostC_t##c.cent_hostC_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_hostC_t##c.cent_hostC_t##c.cent_hostC_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA hostC_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force xtgls ROTA c.cent_hostC_t##c.cent_hostC_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_hostC_t##c.cent_hostC_t##c.cent_hostC_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

HYPOTHESIS 7

Linear, square and cubic SM-P model (ROS & ROTA)

xtgls ROS FSTS_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar) force

xtgls ROS c.cent_FSTS_t##c.cent_FSTS_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar) force

xtgls ROS c.cent_FSTS_t##c.cent_FSTS_t##c.cent_FSTS_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar) force

xtgls ROTA FSTS_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar) force

xtgls ROTA c.cent_FSTS_t##c.cent_FSTS_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar) force

xtgls ROTA c.cent_FSTS_t##c.cent_FSTS_t##c.cent_FSTS_t LEVERAGE CurrentRatio AGE ln_Tassets DomesticEXP l.FSTS High_KnINT GDP_ln i.Year, panels(hetero) corr(psar) force

ROBUSTNESS TESTS FOR RQ2

Test for H5 with OSTS ratio speed measure; testing linear, square and cubic SM-P effect

xtgls ROS OSTS_t LEVERAGE CurrentRatio OWN_CONC AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force xtgls ROS c.cent_OSTS_t##c.cent_OSTS_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_OSTS_t##c.cent_OSTS_t##c.cent_OSTS_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA OSTS_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_OSTS_t##c.cent_OSTS_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_OSTS_t##c.cent_OSTS_t##c.cent_OSTS_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

Test for H6 with HostC ratio speed measure; testing linear, square and cubic SM-P effect

xtgls ROS HostCratio_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS

DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_HostCratio_t##c.cent_HostCratio_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_HostCratio_t##c.cent_HostCratio_t##c.cent_HostCratio_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA HostCratio_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_HostCratio_t##c.cent_HostCratio_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_HostCratio_t##c.cent_HostCratio_t##c.cent_HostCratio_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

Using composite speed measure (additive index of 2 count items); testing linear, square and cubic SM-P effect

xtgls ROS SUM2count_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_SUM2count_t##c.cent_SUM2count_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_SUM2count_t##c.cent_SUM2count_t##c.cent_SUM2count_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA SUM2count_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_SUM2count_t##c.cent_SUM2count_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_SUM2count_t##c.cent_SUM2count_t##c.cent_SUM2count_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

Using composite speed measure (index of 3 ratio items); testing linear, square and cubic SM-P effect

xtgls ROS SP_Index3_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_SP_Index3_t##c.cent_SP_Index3_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS c.cent_SP_Index3_t##c.cent_SP_Index3_t##c.cent_SP_Index3_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA SP_Index3_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA c.cent_SP_Index3_t##c.cent_SP_Index3_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force xtgls ROTA c.cent_SP_Index3_t##c.cent_SP_Index3_t##c.cent_SP_Index3_t LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

REGRESSIONS FOR RQ3

(Testing contingent effects on SM-P relationship)

HYPOTHESIS 8a

DV: ROS and ROTA; IV: FDIs/t; Interactions with FSAs (squared & cubic)

xtgls ROS (c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_FDIs_t#c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_FDIs_t#c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_FDIs_t#c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force xtgls ROTA (c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_FDIs_t#c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_FDIs_t#c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_FDIs_t#c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

<u>HYPOTHESIS 8b</u>

DV: ROS and ROTA; IV: hostC/t; Interactions with FSAs (squared & cubic)

xtgls ROS (c.cent_hostC_t#c.cent_hostC_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_hostC_t#c.cent_hostC_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_hostC_t#c.cent_hostC_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_hostC_t#c.cent_hostC_t#c.cent_hostC_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_hostC_t#c.cent_hostC_t#c.cent_hostC_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_hostC_t#c.cent_hostC_t#c.cent_hostC_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force xtgls ROTA (c.cent_hostC_t#c.cent_hostC_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_hostC_t#c.cent_hostC_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_hostC_t#c.cent_hostC_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_hostC_t#c.cent_hostC_t#c.cent_hostC_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_hostC_t#c.cent_hostC_t#c.cent_hostC_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_hostC_t#c.cent_hostC_t#c.cent_hostC_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

HYPOTHESIS 8c

DV: ROS and ROTA; IV: FSTS/t; Interactions with FSAs (squared)

xtgls ROS (c.cent_FSTS_t#c.cent_FSTS_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_FSTS_t#c.cent_FSTS_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROS (c.cent_FSTS_t#c.cent_FSTS_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_FSTS_t#c.cent_FSTS_t)##c.cent_InAs_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force xtgls ROTA (c.cent_FSTS_t#c.cent_FSTS_t)##c.cent_INTEXP_ln LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_FSTS_t#c.cent_FSTS_t)##c.cent_hostC LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

<u>HYPOTHESIS 9a</u>

DV: ROS and ROTA; IV: FDIs/t; Interactions with DOI in developed host countries (squared & cubic)

xtgls ROTA (c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_DOI_DEV_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.YEar, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_FDIs_t#c.cent_FDIs_t#c.cent_FDIs_t)##c.cent_DOI_DEV_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

<u>HYPOTHESIS 9b</u>

DV: ROS and ROTA; IV: hostC/t; Interactions with DOI in developed host countries (squared & cubic)

xtgls ROTA (c.cent_hostC_t#c.cent_hostC_t)##c.cent_DOI_DEV_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

xtgls ROTA (c.cent_hostC_t#c.cent_hostC_t#c.cent_hostC_t)##c.cent_DOI_DEV_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

<u>HYPOTHESIS 9c</u>

DV: ROS and ROTA; IV: FSTS/t; Interactions with DOI in developed host countries (squared & cubic)

xtgls ROS (c.cent_FSTS_t#c.cent_FSTS_t)##c.cent_DOI_DEV_ratio LEVERAGE CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year, panels(hetero) corr(psar1) force

```
xtgls ROTA (c.cent_FSTS_t#c.cent_FSTS_t)##c.cent_DOI_DEV_ratio LEVERAGE
CurrentRatio AGE ln_Tassets l.FSTS DomesticEXP High_KnINT GDP_ln i.Year,
panels(hetero) corr(psar1) force
```

APPENDIX 2

Appendix 2.1 Empirical Studies Testing Antecedents for the Post-Entry International Speed

AUTHOR(S) & YEAR	**SAMPLE TRAITS:** country, time-period, number of firms	**SPEED MEASURE (as a DV) and its dimensions**	**t - time**	**SPEED ANTECEDENT(S)**	**EMPIRICAL METHOD**	**THEORIES APPLIED**
Nadolska & Barkema (2007)	1038 episodes of foreign acquisition of 25 Dutch listed MNEs (1966-1998)	1. Number of international acquisitions per year 2. Acquisition survival dummy (1=divested, 0=retained)	Year to year	3 types of experience: with international acquisitions, domestic acquisitions and international joint ventures	Negative binomial regression and hazard rate models	Organisational learning perspective
Morgan-Thomas & Jones (2009)	705 British MNEs	COMMERCIAL INTENSITY (a categorical variable based on the FSTS ratio / t)	Since the 1st foreign expansion	1. Knowledge intensity; 2. Reliance on information and communication technology; 3. International diversification strategy; 4. International channel strategy	ANOVA	Not specified
Lin (2012)	656 Taiwanese, publically listed family firms; 2000-2008	SCALE (average number of foreign subsidiaries per year / t)	Since the 1st foreign expansion	Family ownership	Panel data, fixed-effects GSL	Not specified
Casillas & Moreno-Menéndez (2014)	889 Spanish MNEs; 1986-2008	SCALE (the time between two consecutive FDI operations (in number of days)	N/A	1. Diversity of host countries; 2. Diversity of mode operations; 3. Depth of country experience; 4. Depth of mode operation experience	Cox proportional hazards model	Organisational learning perspective and the process theory
Mohr & Batsakis (2014)	144 international retailers from 29 countries	SCALE (number of foreign outlets / t)	Since the 1st foreign expansion	1. Intangible assets; 2. International experience; 3. Home region concentration		
Schu, Morschett & Swoboda (2016)	150 online retailers	Time elapsed (in number of days) between foreign entry (the launch of new country specific websites)		1. Foreign market distance; 2. Geographic scope; 3. Imitability; 4. Venture capital; 5. Diversity		
Hilmersson et al. (2017)	203 Swedish SMEs	GEOG. SCOPE Breadth (# export markets) / t	Since inception	1. Time to internationalisation (from firm's inception); 2. Point in time when internationalisation started	Ordinary Least Squares (OLS) regression	Resource-based view (RBV)

Appendix 2.2 Summary of key quantitative studies that examine the SM-P relationship (2002-2017)

AUTHOR(S) & YEAR	**SAMPLE TRAITS:** country, time-period, number of firms	**SPEED MEASURE**	**t - time**	**PERFORMANCE MEASURE (as DV)**	**IDENTIFIED NATURE OF SM-P RELATIONSHIP**	**ROLE OF SPEED**	**SM-P MODERATOR(S)**	**METHOD**	**THEORIES APPLIED**
Vermuelen & Barkema (2002)	22 Dutch listed non-financial MNEs; 1967-1999	SCALE (average number of foreign subsidiaries per year / t)	Since the 1st foreign expansion	3-year moving average of return on assets (ROA)	This study did not explore the direct link – only the contingent effects.	Moderator for M-P (negative effect)	N/A	Ordinary least squares, fixed-effects models	Organisational learning perspective, international process theory
Wagner (2004)	83 large German lised MNEs (1993-1997)	COMMERCIAL INTENSITY (Change in the DOI subsidiary level foreign to total sales over 5 years)	Year to year (5-year timespan)	Cost efficiency change (operational performance)	Inverted-U curve	Moderator for M-P (inverted U-shape)	N/A	Two-stage regression analysis	Localisation theory based on the TCT and Internalisation reasoning
Chang & Rhee (2011)	276 Korean public MNEs (manufacturing); 1980-2003	SCALE (number of foreign subsidiaries / t)	Since 1st FDI	Return on invested capital (ROIC) and ROTA (alternative)	This study did not explore the direct link – only the contingent effects.	IV	Internal Resources: (1. Financial leverage; 2. R&D intensity; 3. Advertising Intensity; 4.Industry globalisation (LIT)	Fixed effects for panel data	Resource based view (RBV)
Zeng et al. (2013)	264 South Korean MNEs; (1990-2006)	Dummy for mortality rate of an FDI operation	Time elapsed until FDI exit	N/A	N/A	Moderator (negative effect)	N/A	Cox proportional hazards model	Experiential learning perspective
Chetty et al. (2014)	178 Spanish SMEs	1. Speed of learning (repetition and diversity) / t 2. Speed of commitment (people, language, and investment) / t	Since firm's inception	International (Export) Performance	Positive linear relationship	IV	N/A	Bootstrapping technique	The process theory of internationalisation

Continued from previous page

AUTHOR(S) & YEAR	**SAMPLE TRAITS:** country, time-period, number of firms	**SPEED MEASURE**	**t - time**	**PERFORMANCE MEASURE (as DV)**	**IDENTIFIED NATURE OF SM-P RELATIONSHIP**	**ROLE OF SPEED**	**SM-P MODERATOR(S)**	**METHOD**	**THEORIES APPLIED**
Hilmersson & Johanson (2016)	183 Swedish SMEs (mainly exporters with some foreign assets, though not necessarily subsidiaries)	MULTIDIMENSIONAL: 1. Breadth (# export markets / t), 2. Scale (foreign assets / t), 3. Int'l commercial intensity (exports to total sales / t)	Since inception	ROTA	1.inverted U-shape 2.U-shaped 3. non-significant	IV	N/A	Multi-variate regression on a panel data	Organisational learning and capabilities development
Mohr and Batsakis (2017)	Cross-country sample, 189 retail MNEs, 2003-2012	SCALE (number of new foreign outlets per year / t)	Since 1st int'l expansion	ROA (return on assets) and ROE (return on equity)	Inverted U-shape, which flips into U shape at high geog scope	IV	Geog. scope and international experience	FGLS model for panel data	Penrose's theory of the growth of the firm
Hashai, Kafouros & Buckley (2016)	147 high-tech publicly listed Israeli MNEs (2000-2007)	1. RHYTHM: Normalised ratio measure for the numerator: number of new alliances over the number of alliance partners in a specific year; 2 Alliance duration	Years of alliance portfolio	1.Managerial costs 2. Firm profitability (EBIDTA)	Non-linear, U-shaped	IV	N/A	Generalized-method-of-moments (GMM) using random effects for panel data	TCT and TCD perspectives
García-García et al. (2017)	Spanish, publicly listed firms; (1986–2010); 120 firms	GEOG. SCOPE (# new host c. / t)	Since 1st FDI	Tobin's Q	Non-linear, Inverse U-shaped	IV	Level of firm's technological knowledge (1. # of patents; 2. diversity of prior international experience	Two-stage Heckman estimation for panel data (1. Probit; 2. GLS)	Knowledge-based view (KBV) and organisational learning T.
Yang, Lu & Jiang (2017)	1263 Japanese MNEs; 1986 – 1997.	SCALE (average number of foreign subsidiaries per year / t)	Since the 1st foreign expansion	1. three-year moving average of return on assets (ROA); 2. the percentage of surviving subsidiaries	Inverted U-shape	IV	Industry globalisation levels	Panel-corrected standard errors (PCSEs)	Organisational learning perspective

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