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ABSTRACT

It has often been argued that smaller firms face particularly strong resource constraints in developing an international market profile. Here we consider the determinants of SMEs exporting using a survey of internationally engaged UK SMEs. We first develop a theoretical model incorporating organisational and prior managerial learning effects. Our empirical analysis then allows us to separately identify the positive effects on exporting from the international experience of the firm and the negative effects of firm age. Positive exporting effects also result from grafted knowledge – acquired by the recruitment of management with prior international experience. Innovation also has positive exporting effects with more radical new-to-the-industry innovation most strongly linked to inter-regional exports; new-to-the-firm innovation is more strongly linked to intra-regional trade. Early internationalisation is also linked positively to the number of countries to which firms export and the intensity of their export activity. We find no evidence, however, relating early internationalisation to extra-regional exporting providing further evidence that firms tend be 'born regional' rather than 'born global'. Implications for policy and practice are discussed.

Keywords: Exporting, SME, international experience, firm age, innovation

JEL Codes: F14, O31, D22

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1. INTRODUCTION

The ability of small firms to internationalise has received significant research attention (Gashi, Hashi, and Pugh 2014; Esteve-Perez and Rodriguez 2013; D'Angelo et al. 2013; Freeman, Styles, and Lawley 2012). Alternative models of internationalisation have been explored as have the links between internationalisation and resource availability (Aliouche and Schlentrich 2011; Hsu, Chen, and Cheng 2013; Sui and Yu 2012). For small firms, in particular, attention has often focussed on how resource and informational constraints shape firms' internationalisation strategy and actions and how these constraints can best be overcome. Much of the literature on the internationalization of SMEs involves a contrast between the process or stages approach, originated by Johanson and Vahlne (1977) and the international new ventures or 'born global' approach (Oviatt and McDougall 1994; Knight and Cavusgil 2004). However, despite the critiques levelled at it (e.g. Forsgren 2002), the process model of internationalization remains a potent force in international business research. With its emphasis on incremental, experience-based learning, it has an intuitive appeal, especially when considering the process of internationalisation among SMEs with an established domestic market position. Exporting – the focus of our analysis here - is often the initial stage of international activity for SMEs (Wolff and Pett 2000; Leonidou et al 2010), and is important because it allows firms to accumulate valuable market, institutional and product knowledge which can be of use in other foreign markets (Sharma and Blostermo 2003; Majocchi et al 2005).

If the process model has validity – and as envisaged SME internationalisation is driven by incremental, organisational learning – we would expect both the geographical spread and intensity of exporting to be linked to the international experience of the firm. The empirical literature, however, suggests rather ambiguous results due perhaps to data limitations which restrict some studies and conflate experience with firm age and learned and grafted experience (Fletcher and Harris, 2012). Some studies, for example, use firm age as a proxy for the duration of firms'

internationalisation experience (e.g. Majocchi et al 2005; D'Angelo et al 2013) implicitly assuming that age and internationalisation experience will both be positively related to the extent or intensity of firms' international engagement. However, *a priori* we might expect international experience and firm age to work in opposite directions with respect to exporting performance: international experience is likely to be positively related to the potential for learning (Johanson and Vahlne, 1977); firm age on the other hand may be linked to sclerotic thinking, inflexibility and an inability to change strategy and/or behaviour. A second limitation in much of the existing literature is the implicit assumption that firms can only gain the knowledge necessary for exporting through experience and organisational learning. However, the prior international experience of management may provide a valuable addition to the firms' learned knowledge (Ganotakis and Love 2012).

A third limitation of many studies of SME internationalisation is the use of a single indicator of the extent of firms' international engagement while some recent studies have suggested that the costs of foreignness may differ across countries and across global regions (Rugman and Verbeke 2004, 2005; Driffield et al 2014). To date this issue has been principally studied in the context of multi-national firms but the issue is also relevant to the internationalisation of SMEs. If there is a greater cost of foreignness for firms operating in inter-regional markets, this may be a particular issue for SMEs which are generally regarded as lacking the internal resources of larger firms, and hence find it more difficult to operate in geographically, institutionally and culturally distant markets. Despite the potential importance of this topic, there is relatively little research in the area. There is some evidence, however, that there are differences in the internal attributes of SMEs which operate across regional or global markets (Kuivalainen et al 2007; Nkongolo-Bakenda et al 2010), and that the determinants of exporting performance among SMEs may differ depending on whether the firm is operating within its home region or across different global regions (D'Angelo et al 2013). We still know little about how much experience matters in terms of helping the internationalisation of SMEs into

new regional markets and how this differs from the role of experience in shaping other aspects of SMEs' international profile.

In this paper we use data from a sample of internationally engaged UK SMEs to address these issues making four contributions to the literature. First, we re-examine the validity of the process model of internationalization by considering the contribution of experience to exporting performance after allowing explicitly for the effects of firm age. Second, we specify and test a model which considers the effects on internationalisation of both of the experience of the firm overall and also that of the senior management team. Third, we consider age and experience effects both on geographic scope of exports overall, and on extra-regional geographic scope following recent analysis in the area (D'Angelo et al 2013; Gallego and Casillas 2014). Finally, we allow separately for the influence of early exporters on the geographic scope and intensity of exporting This matters because recent research suggests that early exporters tend to show a different pattern of geographical spread of export markets to those which export later (Gallego and Casillas 2014), an issue which could confound the apparent effect of age and experience if not specifically accounted for.

2. KNOWLEDGE, LEARNING AND EXPORTING

Firms' ability and willingness to internationalise depends strongly on their knowledge of international markets (Schmidt and Sofka 2009), with evidence that different types of managerial skills are needed for entering and succeeding in international markets. Commercial and managerial experience, for example, may help firms to become exporters, but once over the exporting hurdle it is the level of managerial education, rather than experience, that has a substantially positive effect (Ganotakis and Love 2012). Conversely, a lack of knowledge about international markets is often cited by firms as one of the main barriers to exporting and internationalisation (Roper and Malshe 2013). Information or knowledge about international markets can, however, be acquired through both direct experience and indirectly through recruitment, social networks or external

advisory services (Fletcher and Harris 2012). First, firms may acquire knowledge through experiential learning as envisaged in the process approach to internationalisation (Johanson and Vahlne 2009). Here, it is envisaged that incremental movements into increasingly distant markets, both geographically and culturally, are facilitated by experiential learning, minimising the commitment and risks involved in the internationalisation process while helping the firm build up the knowledge necessary to become more international in scope (Johanson and Vahlne 2009). Experiential learning may also reduce negative attitudes and perceptions towards foreign markets, and leads to more realistic expectations of the effects of exporting on the growth and development of the firm (Gray, 1997; Shrader et al 2000).

In the context of organizational learning theory, internationalisation can therefore be seen as a process of knowledge and learning accumulation that takes place within the firm (Barkema and Vermeulen, 1998; Yeoh, 2004)[1]. Exposure to international markets enhances a firm's technological (but also marketing) knowledge, which in turn forms the basis for the development of further learning (Yeoh, 2004). Thus experience helps firms overcome the difficulties and uncertainties of going international (Westhead et al 2001).

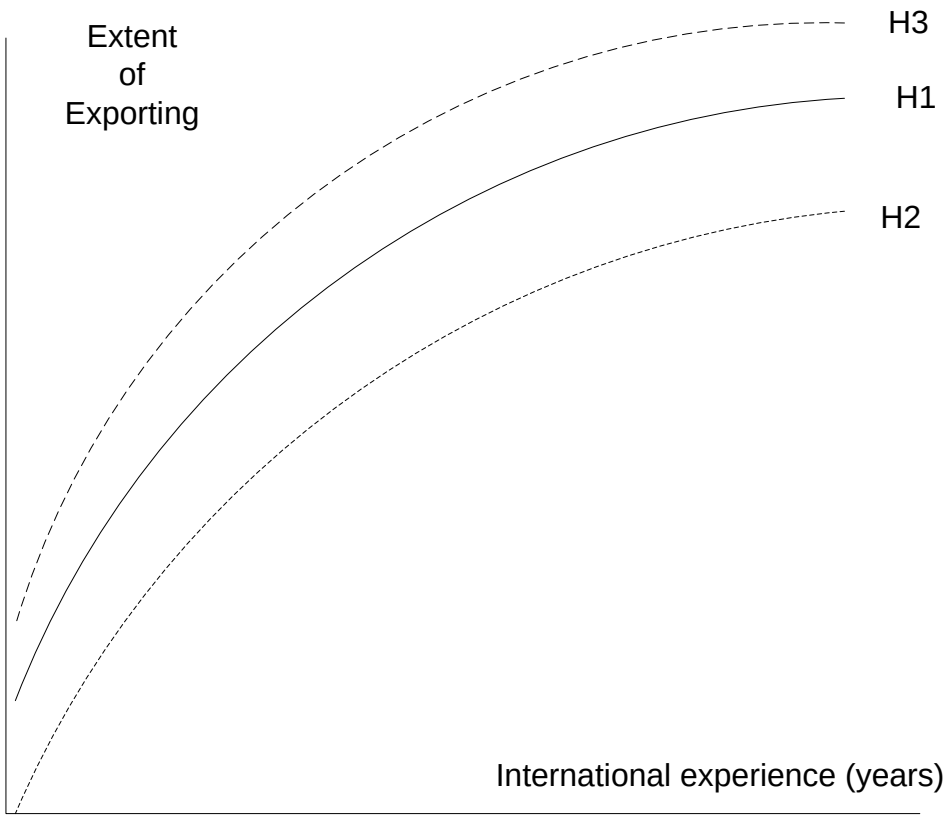
It is generally anticipated however, that the impact of experiential learning from international experience may be non-linear, for two reasons linked to timing and order effects. First, since experiential learning is often most significant during early experiences it is anticipated that firms may learn less from each additional time period during which they engage with international markets. Secondly, there may be an 'order' effect as firms enter relatively 'easy' markets during their first years in international markets but then find it becomes progressively harder to enter more

[1] This type of experiential learning from exposure to foreign markets may have benefits beyond exporting, however, with the potential for higher level or double-looped learning that allows firms to carry out both within-paradigm (improvements to existing products) but also across paradigm (radically new product development) improvements (Love and Ganotakis 2013).

distant/different markets. In these markets previous experience is likely to have less value leading to a declining experiential learning effect on export success. Thus although international experience is always valuable, its marginal benefit for trading performance is likely to decrease as the duration of firms' engagement with international markets increases. This leads to our first hypothesis depicted in experience curve H1 in Figure 1:

H1: Export performance will have a positive but non-linear (decreasing) relationship with the duration of firms' international experience.

Figure 1: International experience and the extent of export activity



Firms' organisational learning capability is not uniform, however, and may be linked both to the rigidity or flexibility of organisational routines (Leonard-Barton 1992) and to the quality of firms' human capital (Cohen and Levinthal 1990). Flexibility or openness to new knowledge – particularly that originating outside the firm – may be negatively related to

firm age as managerial routines are established and organisational rigidities develop (Henderson 1999; Sorensen and Stuart 2000; D'Angelo et al 2013). In the context of internationalisation this suggests that ceteris paribus organisational learning from international experience may have more limited benefits for export performance the older the firm. This suggests:

H2: For any given level of international experience exporting performance will be negatively associated with firm age.

Or, in terms of Figure 1, that for older firms we may see an experience curve more akin to H2 than H1.[2]

While organisational learning provides one route through which firms may acquire the knowledge on which to base internationalisation decisions or strategy, it is not the only way (Bruneel et al 2010). Suitable knowledge may also be acquired through the prior experience of management, what Fletcher and Harris (2012) following Huber (1991) call 'grafted' knowledge. Recruitment of managers with international or export experience represents a direct injection of international understanding into the firm and is likely ceteris paribus to increase the extent of internationalisation. Reuber and Fischer (1997), for example, demonstrate that Canadian software companies led by managerial teams with international experience internationalise more quickly and more intensively than other similar firms. More recently, in their analysis of exporting performance among relatively new hi-tech enterprises, Ganotakis and Love (2012) also show that the relevant experience of the founding team is significant in shaping firms' internationalisation decisions. International experience acquired through

[2] In much of the empirical literature on export performance there is a tendency to conflate age and experience, or at least to use age as a proxy for experience where data on the latter are unavailable (e.g. Majocchi et al 2005; D'Angelo et al 2013; Di Maria and Ganau 2014). Perhaps not surprisingly, therefore, the empirical literature yields mixed results, with some studies finding age is positively related to export performance (Majocchi et al 2005), others that it has a negative effect (Kirpalani and McIntosh 1980), while yet others find the relationship between firm age and export performance to be insignificant (Ganotakis and Love 2011; D'Angelo et al 2013).

recruitment may augment a firm's stock of international knowledge however much international knowledge it has previously acquired through experiential learning. We therefore hypothesise

H3: For any given level of international experience, export performance will be positively linked to management's prior international experience.

Our first three hypotheses treat international experience, prior managerial experience and age as having uniform effects on exporting success across the population of firms. Recent studies have suggested, however, that for some young firms, characterised by high levels of entrepreneurial orientation, early exporting experiences may lead to rather different export outcomes and geographical spread of export markets compared to firms which export later in their lifecycle (Jones et al 2011; Gallego and Casillas 2014).[3] The reason for this is that the high international entrepreneurial orientation shown by early exporters, coupled with the 'learning advantages of newness' (Autio et al 2000, Sapienza et al 2006), propels them to rapid geographical spread of markets. However, this entrepreneurial advantage does not extend to markets with substantial institutional distance: here early exporters are at a disadvantage compared to later exporters, because they have not yet established the institutional legitimacy which allows them to transfer their products easily to institutionally distant markets (Singh et al 1986).Using data from Spanish firms, Gallego and Casillas (2014) find evidence to support this: specifically, while early exporters have a greater geographical spread of export markets than other types of exporters, their choice of export markets (at least initially) tends to be more limited than late exporters in terms of institutional distance. A similar result is found by D'Angelo et al (2013) in their analysis of the geographical pathways of Italian SME: younger firms are found to export more extensively within European markets, but this effect does not extend to markets outside the home (EU) region. This leads to the fourth set of hypotheses:

[3] These firms have been variously labelled as born globals (Knight and Cavusgil 2004), international new ventures (Oviatt and McDougall 1994; Zahra 2005) or early internationalizing firms (Rialp et al 2005).

H4a: Early exporting is positively associated with geographical scope and intensity of exports.

H4b: Early exporters are negatively associated with extra-regional scope of exports.

One of the key methods which allow firms to enter new markets is by having new, competitive products which can help overcome domestic competition in foreign markets. Innovation can do so by upgrading product quality or by providing customised products which are developed specifically for foreign markets (Rodriguez and Rodriguez 2005.) A large number of firm-level studies have found that there are indeed differences between exporters and non-exporters, and generally find a positive link between innovation and exporting in a variety of contexts (Lefebvre and Lefebvre, 2001; Sterlacchini, 1999; Bleaney and Wakelin, 2002; Roper and Love, 2002; Lachenmaier and Wößmann, 2006; Harris and Li 2009; Cassiman and Golovko 2011; D'Angelo et al 2013).

However, while the empirical literature generally supports the view that innovation helps export market entry, there is much less support for the evidence of innovation helping export intensity. For example, using UK data Harris and Li (2009) perform estimations for both manufacturing and services. The key findings are that (endogenous) R&D plays a substantial role in helping establishments become exporters, but conditional on entering export markets, R&D expenditure does not increase export intensity. A number of other studies have found an insignificant relationship between R&D investment and export intensity (e.g. Lefebvre *et al*, 1998; Sterlacchini, 2001). This suggests that what really matters for exporting is product innovation rather than R&D, because the ability to compete in international markets is ultimately influenced by the firm's capacity to compete internationally, rather than its investment in research activity (Ganotakis and Love 2011). This may be especially true for SMEs, where formal R&D measures markedly under-report their research activity and degree of innovativeness (Kleinknecht, 1987). Using a direct measure

of innovation outputs (rather than R&D inputs), Ganotakis and Love (2011) come to similar conclusions to Harris and Li based on a sample of UK new technology based firms: product innovation aids export entry, but not export intensity. And in their study of exporting in US business services, Love and Mansury (2009) find that innovation has a strong positive effect on the probability of exporting but a negative effect on export intensity, conditional on being an exporter.

Since product innovation is generally positively associated with export market entry but not with export intensity, this suggests a positive link with geographical spread of exporting, which involves moving into successive foreign markets. This leads to our final hypothesis:

H5: Innovation is positively associated with geographical scope of exports, but not with export intensity.

3. DATA AND ESTIMATION

Our analysis is based on data from a regular survey commissioned by UK Trade & Investment (UKTI), a non-ministerial government department which assists UK firms with export activity and supports and assists inward foreign direct investment. The annual *International Business Strategies, Barriers and Awareness Survey* (UKTI-IBS) is an official survey collecting information on the internationalisation performance of businesses in the UK, and is designed to be representative of firms that are already involved in overseas activity or which are planning to get involved with international activities within the next year. Recent (2012) evidence suggests that around 22.4 per cent of UK SMEs are current exporters, of which around 17.3 per cent export persistently and the remaining 5.1 per cent are intermittent or occasional exporters[4]. This group – around a quarter of UK SMEs – form the main focus of the UKTI-BIS together with a smaller group of prospective exporters.

[4] Source: Small Business Survey, 2012, Department of Business Innovation and Skills, London.

Each wave of the UKTI-IBS comprises a telephone survey of 900 internationally active UK firms sampled through a stratified random sample to ensure coverage of both young and older firms in both manufacturing and services[5] . The survey is unusual in providing information on firms' internationalisation experiences along with substantial detail on previous internationalisation experience, innovation activity, size, and other useful firm-specific characteristics. It is therefore particularly appropriate for dealing with the internationalisation activities of SMEs. In the analysis which follows we use data derived only from those respondents with fewer than 250 employees, and taken from the 2011, 2012 and 2013 waves of the survey. This provides approximately 1900 usable observations.

The key dependent variables for the analysis are the number of countries in which the firm does business, the number of world regions in which it does business, and export intensity. UKTI-IBS asks how many overseas countries and world regions a firm has done business in over the last 5 years (if the business was established more than 5 years ago) or since it was established if the business was established less than 5 years ago. In both cases questions seek a categorical response. In the case of number of countries, the survey separates firms in the sample into seven bands: firms that do not conduct business overseas, firms conducting business in 1 overseas country, in 2 to 5 countries, in 6 to 10 countries, in 11 to 20 countries, in 21 to 50 countries, and over 50 countries. We assign a value of 0 to those firms that do not conduct business abroad, and assign a value of 1 to 6 to the remaining categories, where a higher number indicates a firm that conduct business in a category with a larger number of countries. After removing the large firms with employment larger than 250 and firms with incomplete information we are left with a sample of firms where all of

[5] Refer to OME (2012), "UK Trade & Investment International Business Strategies, Barriers & Awareness Monitoring Survey 2012, Research Report" JN:4317 and OME (2011), "UK Trade & Investment International Business Strategies, Barriers & Awareness Monitoring Survey 2011, Research Report" JN:4271, for detailed explanations of the sampling process.

them conducted business in at least one country and one region in the past five years, and none which conducted business in more than 50 countries.

The survey also asks about the geographic region(s) in which a firm has been conducting business. Five world regions are identified: Europe (other than the UK); North America; South America and Latin America; The Middle East and Africa; and Asia Pacific (including Australia, New Zealand, etc). This provides rather different information about the internationalisation strategy of a business than the question on the number of countries since some firms might choose to concentrate on a specific geographic region while at the same time diversify across the countries within the region. Analysis of these two indicators permits a fuller picture of the impact of internationalisation experiences on firm performance. Again, we focus here on the number of regions to which firms are exporting, rather than examining firms' export presence in any specific regional market. Our last dependent variable is the share of overseas sales as a percentage of a business's overall sales. The UKTI-BIS again seeks responses in bands: < 5% of export sales; 6-10 per cent; 11-15 per cent; 16-25 per cent; 26-50 per cent; 51-75 per cent; more than 75 per cent. In the estimation we assign a value of 1 to the first band and increasing integer values to successive export bands. A value of 7 is therefore assigned where overseas sales counts for more than 75% of total turnover.

For modelling the experience curve the key explanatory variable is the duration of firms' international experience, i.e. the length of time it has been doing business in overseas markets. As with the dependent variables this is a banded variable in the firm survey measuring whether firms had: less than two years international experience, 2-3 years, 3-4 years, 4-5 years, 5-10 years, 10-20 years or more than 20 years international experience. The modal category here is 5-10 years of international experience (27 per cent of all respondents), although relatively high proportions of firms also had 10-20 years international experience (19 per cent of respondents) or more than 20 years international experience (15 per cent) (Table 1).

Table 1: Summary statistics

Variable |	Obs.	Mean	Std. Dev.
No. internationalisation - countries	1848	2.79	1.18
No. internationalisation - regions	1844	2.61	1.37
Internationalisation intensity (% sales)	1757	3.17	2.25
2-3 years internationalisation experience	1848	0.08	0.27
3-4 years internationalisation experience	1848	0.06	0.24
4-5 years internationalisation experience	1848	0.11	0.31
5-10 years internationalisation experience	1848	0.27	0.44
10-20 years internationalisation experience	1848	0.19	0.39
Over 20 years internationalisation experience	1848	0.15	0.35
Firm age 2-3	1848	0.05	0.23
Firm age 3-4	1848	0.04	0.20
Firm age 4-5	1848	0.06	0.24
Firm age 5-10	1848	0.28	0.45
Firm age 10-20	1848	0.24	0.43
Firm age over 20	1848	0.27	0.45
Innovative	1504	0.80	0.40
Radical innovative	1504	0.40	0.49
Employees (number)	1504	13.56	27.17
Early internationalising firm	1504	0.56	0.50
Turnover between 10-25 million	1504	0.14	0.35
Turnover above 25 million	1504	0.08	0.28
Experienced senior management	1504	0.37	0.48
Business with formal plan	1504	0.52	0.50
Sell overseas directly via website	1504	0.31	0.46

Note: Summary statistics based on the sample used in our regression.
Source: UKTI-BIS Surveys 2011-2013.

Firm age – reflecting how long ago the business was established in the UK – is measured using similar banded data, with the majority of respondents between five and twenty years old (Table 1). We measure the international experience of the senior management abroad by including in the experience curve a shift variable which takes value 1 if at least one senior manager had experience of conducting international business before joining the company. And, to capture the possible impact of early internationalisation, we define a variable which takes value 1 if the duration of a firms' international experience and its age are in the same timeband

category[6]. Other explanatory variables are defined as follows. A firm is defined as innovative if it produced new products, services or processes or engaged in R&D in the previous three years, and radically innovative if the products, services or processes introduced were thought to be new to the industry[7]. Sales turnover is classified into bands. The vast majority of respondents have turnover less than £10m pa, with 14 per cent in the £10-25m band and only 8 per cent with turnover greater than £25m (Table 1). As turnover is in bands which prevents us from generating a detailed measure for productivity, we include both employees and turnover in the equation to capture the impact of both the effect of company size and productivity. We include two other controls in the experience curve models. The capacity of the company for strategic planning is proxied by a dummy variable of whether or not the business has a written business plan. We also include a dummy for those companies that report they sells overseas directly through website.

Summary statistics and correlations are shown in Tables 1 and 2. The data suggest that while respondents are relatively widespread in terms of the geographical spread of their overseas activity, their international intensity (in terms of overseas sales) is relatively limited. For example, more than half of responding SMEs had overseas sales in between two and ten countries and half operated in at least three global regions, but one third of firms had overseas sales of less than 5% of total sales.

[6] For instance a firm would be classified as early internationalising if its internationalisation experience is between 2 and 3 years and also it has been established for between 2 and 3 years.

[7] This is of course a subjective assessment by the survey respondent. We would here anticipate a positive bias both because firms over-estimate the quality of their own innovation and due to a lack of knowledge of other firms' innovation. The latter effect may be more significant among smaller firms.

Table 2: Correlation table

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	No. internationalisation countries	1.00																							
2	No. internationalisation regions	0.49	1.00																						
3	Internationalisation intensity	0.27	0.37	1.00																					
4	2-3 year internationalisation	-0.05	-0.06	-0.08	1.00																				
5	3-4 year internationalisation	-0.06	-0.05	-0.07	-0.07	1.00																			
6	4-5 year internationalisation	-0.02	-0.03	-0.06	-0.11	-0.09	1.00																		
7	5-10 year internationalisation	0.06	0.00	0.05	-0.19	-0.15	-0.22	1.00																	
8	10-20 year internationalisation	0.04	0.10	0.08	-0.15	-0.12	-0.17	-0.31	1.00																
9	Over 20 year internationalisation	0.12	0.17	0.12	-0.13	-0.10	-0.15	-0.26	-0.21	1.00															
10	Firm age 2-3	0.02	-0.01	-0.02	0.46	-0.06	-0.08	-0.15	-0.12	-0.10	1.00														
11	Firm age 3-4	-0.06	-0.09	-0.05	0.12	0.35	-0.08	-0.13	-0.11	-0.09	-0.05	1.00													
12	Firm age 4-5	-0.02	0.01	-0.01	0.07	0.07	0.39	-0.15	-0.12	-0.10	-0.06	-0.05	1.00												
13	Firm age 5-10	0.01	-0.03	0.01	-0.05	0.04	0.07	0.51	-0.30	-0.25	-0.15	-0.13	-0.15	1.00											
14	Firm age 10-20	-0.05	-0.01	0.02	-0.10	-0.07	-0.03	-0.03	0.49	-0.24	-0.14	-0.12	-0.14	-0.35	1.00										
15	Firm age over 20	0.10	0.12	0.01	-0.14	-0.11	-0.13	-0.20	0.06	0.68	-0.15	-0.13	-0.15	-0.37	-0.35	1.00									
16	Innovative	0.08	0.08	0.01	0.02	0.02	0.01	0.05	-0.01	-0.03	0.03	0.03	-0.02	0.04	0.01	-0.02	1.00								
17	Radical innovative	0.07	0.10	0.08	-0.04	0.03	-0.02	0.01	0.03	-0.01	-0.04	0.04	0.02	0.00	0.00	0.00	0.41	1.00							
18	Employee	0.07	0.11	0.02	-0.06	-0.04	-0.06	-0.05	0.08	0.20	-0.07	-0.05	-0.05	-0.09	-0.03	0.24	0.06	0.06	1.00						
19	Early exporter	0.19	0.23	0.28	-0.11	-0.12	-0.18	0.08	0.10	0.36	0.02	-0.06	0.01	0.09	-0.04	-0.04	-0.04	0.00	0.05	1.00					
20	Turnover between 10-25 m	0.13	0.09	0.10	-0.06	-0.02	0.01	0.02	0.05	0.07	-0.05	-0.05	-0.03	-0.01	-0.03	0.14	-0.02	-0.01	0.17	0.00	1.00				
21	Turnover above 25 million	0.04	0.10	0.07	-0.05	-0.05	-0.05	0.00	0.03	0.14	-0.02	-0.04	-0.03	-0.03	-0.03	0.13	-0.01	0.00	0.46	0.08	-0.13	1.00			
22	Experienced senior mgmt.	0.08	0.11	0.26	0.01	0.00	-0.02	0.03	0.03	-0.01	0.04	0.02	0.02	0.04	-0.01	-0.09	0.06	0.09	0.10	0.15	0.10	0.03	1.00		
23	Business with formal plan	0.07	0.02	0.08	0.04	-0.03	-0.01	-0.01	-0.05	0.00	0.03	0.01	-0.01	0.01	-0.06	-0.02	0.11	0.14	0.15	-0.03	0.13	0.11	0.15	1.00	
24	Sell overseas via website	0.15	0.22	-0.04	0.05	-0.01	-0.02	0.01	-0.02	0.00	0.08	0.03	0.00	-0.02	-0.02	-0.01	0.10	0.01	-0.05	0.05	-0.04	-0.02	-0.07	0.01	1.00

Note: The correlation matrix is based on the sample used in our regression.
Source: UKTI-BIS Surveys 2011-2013.

3.1 Empirical model

Ordered probit is designed for situations where data on a dependent variable are ranked in ordinal form, but there is no significance to the distance between the ranks, such as in surveys where respondents answer 'high', 'medium' or 'low' to some question. This is appropriate in the present case where responses to the internationalisation questions are banded: it is the relative rank among the different categories of the number of countries in which a firm conducts business that matters rather than the absolute value of the number attributed to the band (e.g. 1 or 5).

In the case of our second dependent variable – the number of world regions in which a firm conducts overseas business – the integer counts clearly have some actual meaning: two regions is twice as many as one region. In this case Poisson regression could be employed to study the impact of internationalisation experiences and age of firm on the number of regions it conducts business in. However, as the prime interest of current study is to understand the relative probability of a firm conducting business in a larger number of regions than the probability of a particular number of regions being selected (i.e. it is the order that matters rather than the count number), and in order to compare directly the results with those of the other dependent variables, we again use ordered probit for this variable[8].

We first pool all three waves of UKTI-IBS together and threat them as a large cross section dataset. Given that there are five usable categories for both the number of countries and regions in which a firm operates in our sample and that they are monotonically ordinal, the regression model for the first two dependent variables can be written as:

$$y_i^* = \beta_0 + \beta_{IE} IE_i + \beta_A Age_i + \beta_{PE} PE_i + \beta_{EE} EE_i + \beta_{IN} IN_i + \alpha X_i + \varepsilon_i \qquad (1)$$

And

$$y_i = 1 \; if \;\; y_i^* \leq u_1$$

[8] The results from Poisson regressions are very similar to those of ordered probit and are available upon request.

$y_i = 2\ if\ \ u_1 < y_i^* \leq u_2$

$y_i = 3\ if\ \ u_2 < y_i^* \leq u_3$

$y_i = 4\ if\ \ u_3 < y_i^* \leq u_4$

$y_i = 5\ if\ \ u_4 < y_i^*$

Where y_i denotes the category a firm falls into (i.e. number of countries or world regions in which it operates) given the unobserved latent variable y_i^*. When the latent variable y_i^* is above a certain cut-off point u_j, where $j = 1,2,3,4$, the firm would fall into the appropriate monotonically ordered category as indicated above. For instance, when the latent variable y_i^* is between u_1 and u_2 the firm would choose $y_i = 2$. Other variables in the model are: IE_i denotes internationalisation experience; Age_i the age of the firm; PE_i prior international experience of the management team; EE_i the early exporting experience of the enterprise; and, IN_i whether or not the firm had introduced new products, services or processes during the previous three years. X_i denotes a vector of other control variables including industry and year dummies.

For internationalisation intensity – the proportion of firms' sales derived from exporting – we assume that the latent variable (y_i^*) that determines the actual internationalisation intensity category of the firm is again determined by equation (1) above. Here we have seven ordered categories.

4. EMPIRICAL RESULTS

Estimation results are reported in Tables 3 to 5. In each case the estimation uses ordered probit because of the nature of the dependent variables, and industry and year dummies are included in all models. In each results Table columns 1 and 2 show the results including alternative indicators for innovation and radical innovation and including both turnover and employment indicators. Columns 3 and 4 show results including employment information but excluding turnover variables.

Table 3: Ordered probit models of the number of countries to which firms export

VARIABLES	(1)	(2)	(3)	(4)
2-3 year internationalisation experience	0.146	0.160	0.145	0.158
	(0.160)	(0.160)	(0.157)	(0.158)
3-4 year internationalisation experience	0.483***	0.492***	0.498***	0.506***
	(0.175)	(0.175)	(0.173)	(0.173)
4-5 year internationalisation experience	0.638***	0.661***	0.665***	0.685***
	(0.166)	(0.166)	(0.165)	(0.165)
5-10 year internationalisation experience	0.728***	0.744***	0.755***	0.769***
	(0.170)	(0.171)	(0.168)	(0.168)
10-20 year internationalisation experience	0.897***	0.905***	0.928***	0.935***
	(0.205)	(0.206)	(0.203)	(0.204)
over 20 year internationalisation experience	0.926***	0.956***	0.938***	0.964***
	(0.267)	(0.267)	(0.264)	(0.265)
Firm age 2-3	0.361*	0.398**	0.409**	0.441**
	(0.196)	(0.197)	(0.192)	(0.193)
Firm age 3-4	-0.310	-0.293	-0.289	-0.275
	(0.223)	(0.225)	(0.217)	(0.219)
Firm age 4-5	-0.0467	-0.0392	-0.0176	-0.0114
	(0.204)	(0.206)	(0.201)	(0.202)
Firm age 5-10	-0.244	-0.229	-0.203	-0.190
	(0.192)	(0.195)	(0.188)	(0.190)
Firm age 10-20	-0.368*	-0.355*	-0.342*	-0.331
	(0.211)	(0.213)	(0.206)	(0.208)
Firm age over 20	-0.120	-0.125	-0.0538	-0.0583
	(0.252)	(0.254)	(0.247)	(0.249)
Employee	0.00250	0.00262*	0.00384***	0.00392***
	(0.00158)	(0.00157)	(0.00144)	(0.00143)
Early exporter	0.323***	0.307***	0.315***	0.301***
	(0.0975)	(0.0975)	(0.0975)	(0.0976)
Turnover between 10-25 million	0.437***	0.432***		
	(0.0880)	(0.0881)		
Turnover above 25 million	0.177	0.172		
	(0.132)	(0.133)		
Experienced senior management	0.266***	0.267***	0.286***	0.287***
	(0.0626)	(0.0622)	(0.0628)	(0.0624)
Business with formal plan	0.104*	0.102*	0.149**	0.147**
	(0.0601)	(0.0603)	(0.0592)	(0.0594)
Sell overseas directly via website	0.526***	0.536***	0.504***	0.513***
	(0.0627)	(0.0625)	(0.0618)	(0.0616)
Innovative	0.224***		0.197***	
	(0.0758)		(0.0752)	
Radical innovative		0.159***		0.141**
		(0.0596)		(0.0595)
Constant 1	-0.162	-0.266	-0.230	-0.320
	(0.262)	(0.261)	(0.264)	(0.263)
Constant 2	1.253***	1.147***	1.172***	1.081***
	(0.262)	(0.261)	(0.265)	(0.264)
Constant 3	1.985***	1.880***	1.895***	1.804***
	(0.265)	(0.263)	(0.267)	(0.266)
Constant 4	2.810***	2.703***	2.710***	2.618***
	(0.270)	(0.268)	(0.273)	(0.271)
Observations	1,519	1,519	1,519	1,519

Robust standard errors in parentheses. *** p<0.01, ** P<0.05 and * P<0.1.

Table 4: Ordered probit models of number of regions to which firms export

VARIABLES	(1)	(2)	(3)	(4)
2-3 year internationalisation experience	0.256*	0.264*	0.254*	0.261*
	(0.145)	(0.147)	(0.144)	(0.146)
3-4 year internationalisation experience	0.403**	0.398**	0.412**	0.407**
	(0.173)	(0.172)	(0.173)	(0.173)
4-5 year internationalisation experience	0.493***	0.505***	0.509***	0.520***
	(0.149)	(0.149)	(0.148)	(0.149)
5-10 year internationalisation experience	0.587***	0.591***	0.607***	0.609***
	(0.147)	(0.149)	(0.146)	(0.148)
10-20 year internationalisation experience	0.955***	0.953***	0.975***	0.972***
	(0.181)	(0.183)	(0.181)	(0.183)
over 20 year internationalisation experience	0.945***	0.960***	0.951***	0.964***
	(0.240)	(0.241)	(0.240)	(0.242)
Firm age 2-3	0.00199	0.0293	0.0346	0.0592
	(0.200)	(0.201)	(0.197)	(0.198)
Firm age 3-4	-0.558**	-0.545**	-0.548**	-0.536**
	(0.217)	(0.220)	(0.214)	(0.216)
Firm age 4-5	-0.184	-0.175	-0.159	-0.152
	(0.199)	(0.201)	(0.197)	(0.199)
Firm age 5-10	-0.329*	-0.313*	-0.300*	-0.285
	(0.175)	(0.178)	(0.173)	(0.176)
Firm age 10-20	-0.500**	-0.486**	-0.477**	-0.464**
	(0.199)	(0.202)	(0.198)	(0.200)
Firm age over 20	-0.375	-0.374	-0.323	-0.322
	(0.234)	(0.237)	(0.233)	(0.235)
Employee	0.00168	0.00176	0.00292**	0.00298**
	(0.00145)	(0.00145)	(0.00127)	(0.00126)
Early exporter	0.151	0.142	0.151	0.143
	(0.0942)	(0.0943)	(0.0944)	(0.0946)
Turnover between 10-25 million	0.277***	0.276***		
	(0.0864)	(0.0866)		
Turnover above 25 million	0.222*	0.221*		
	(0.135)	(0.134)		
Experienced senior management	0.204***	0.203***	0.220***	0.219***
	(0.0614)	(0.0613)	(0.0615)	(0.0614)
Business with formal plan	-0.0315	-0.0406	-0.000330	-0.00969
	(0.0615)	(0.0613)	(0.0611)	(0.0609)
Sell overseas directly via website	0.601***	0.611***	0.590***	0.599***
	(0.0638)	(0.0636)	(0.0633)	(0.0631)
Innovative	0.171**		0.156**	
	(0.0767)		(0.0764)	
Radical innovative		0.183***		0.175***
		(0.0583)		(0.0583)
Constant 1	0.266	0.207	0.218	0.167
	(0.261)	(0.258)	(0.263)	(0.259)
Constant 2	0.971***	0.915***	0.921***	0.873***
	(0.262)	(0.258)	(0.263)	(0.259)
Constant 3	1.563***	1.509***	1.510***	1.463***
	(0.263)	(0.259)	(0.264)	(0.261)
Constant 4	2.181***	2.127***	2.123***	2.076***
	(0.266)	(0.262)	(0.267)	(0.264)
Observations	1,587	1,587	1,587	1,587

Robust standard errors in parentheses. *** p<0.01, ** P<0.05 and * P<0.1.

Table 5: Ordered probit models of export intensity

VARIABLES	(1)	(2)	(3)	(4)
2-3 year internationalisation experience	0.144	0.146	0.139	0.139
	(0.134)	(0.134)	(0.132)	(0.132)
3-4 year internationalisation experience	0.249	0.239	0.258*	0.248
	(0.154)	(0.153)	(0.155)	(0.155)
4-5 year internationalisation experience	0.350***	0.349***	0.367***	0.363***
	(0.129)	(0.128)	(0.127)	(0.126)
5-10 year internationalisation experience	0.631***	0.622***	0.655***	0.644***
	(0.129)	(0.129)	(0.127)	(0.127)
10-20 year internationalisation experience	0.743***	0.731***	0.770***	0.757***
	(0.152)	(0.152)	(0.149)	(0.149)
over 20 year internationalisation experience	0.979***	0.970***	0.994***	0.982***
	(0.199)	(0.198)	(0.196)	(0.195)
Firm age 2-3	-0.0698	-0.0708	-0.0247	-0.0283
	(0.192)	(0.191)	(0.190)	(0.188)
Firm age 3-4	-0.333	-0.347*	-0.319	-0.334*
	(0.203)	(0.203)	(0.202)	(0.201)
Firm age 4-5	-0.260	-0.268	-0.228	-0.235
	(0.187)	(0.186)	(0.184)	(0.184)
Firm age 5-10	-0.488***	-0.489***	-0.452***	-0.453***
	(0.172)	(0.172)	(0.169)	(0.169)
Firm age 10-20	-0.516***	-0.514***	-0.488***	-0.486***
	(0.181)	(0.181)	(0.178)	(0.178)
Firm age over 20	-0.689***	-0.689***	-0.628***	-0.626***
	(0.202)	(0.201)	(0.198)	(0.197)
Employee	-0.0029***	-0.0030***	-0.00099	-0.0011
	(0.00107)	(0.00108)	(0.000901)	(0.000910)
Early exporter	0.294***	0.297***	0.292***	0.297***
	(0.0923)	(0.0921)	(0.0919)	(0.0917)
Turnover between 10-25 million	0.309***	0.316***		
	(0.0836)	(0.0836)		
Turnover above 25 million	0.366***	0.372***		
	(0.117)	(0.118)		
Experienced senior management	0.413***	0.407***	0.432***	0.427***
	(0.0666)	(0.0668)	(0.0664)	(0.0666)
Business with formal plan	0.100*	0.0860	0.138**	0.124**
	(0.0605)	(0.0607)	(0.0599)	(0.0601)
Sell overseas directly via website	0.0114	0.00863	0.00319	-0.00126
	(0.0603)	(0.0601)	(0.0601)	(0.0599)
Innovative	-0.00152		-0.0238	
	(0.0743)		(0.0741)	
Radical innovative		0.105*		0.0918
		(0.0605)		(0.0602)
Constant 1	-1.416***	-1.392***	-1.458***	-1.423***
	(0.275)	(0.272)	(0.272)	(0.270)
Constant 2	0.387	0.415	0.338	0.376
	(0.269)	(0.265)	(0.266)	(0.262)
Constant 3	0.714***	0.743***	0.663**	0.702***
	(0.269)	(0.265)	(0.267)	(0.263)
Constant 4	0.883***	0.911***	0.830***	0.869***
	(0.270)	(0.266)	(0.267)	(0.263)
Constant 5	1.169***	1.198***	1.114***	1.153***
	(0.270)	(0.266)	(0.267)	(0.263)
Constant 6	1.591***	1.620***	1.532***	1.570***
	(0.270)	(0.266)	(0.267)	(0.263)
Constant 7	2.016***	2.045***	1.953***	1.991***
	(0.271)	(0.267)	(0.269)	(0.265)
Observations	1,515	1,515	1,515	1,515

Robust standard errors in parentheses. *** p<0.01, ** P<0.05 and * P<0.1.

Table 3 shows the results for the geographical scope of exports, as measured by the number of countries to which each firm exports. As anticipated in the process model of exporting, increasing internationalisation experience is strongly positively associated with geographic scope (Johanson and Vahlne 2009). This is consistent with the type of organisational learning from international experience envisaged in Hypothesis 1. The pattern of coefficients on the dummy variables for the different periods of internationalisation experience also generally suggest a positive but declining marginal value for each year of experience (Table 3). Displayed graphically in Figure 2, this is consistent with the anticipated timing or order effects which reduce the value of each successive year of international experience. Essentially similar effects are evident for the regional scope of firms' exporting activity (Table 4 and Figure 3) and export intensity (Table 5 and Figure 4), regardless of the set of conditioning variables included in each model. Our data therefore provides robust support for Hypothesis 1, and a positive but diminishing link between the duration of firms' international experience and export performance.

Figure 2: Effect of internationalisation experiences on the number of countries internationalised in

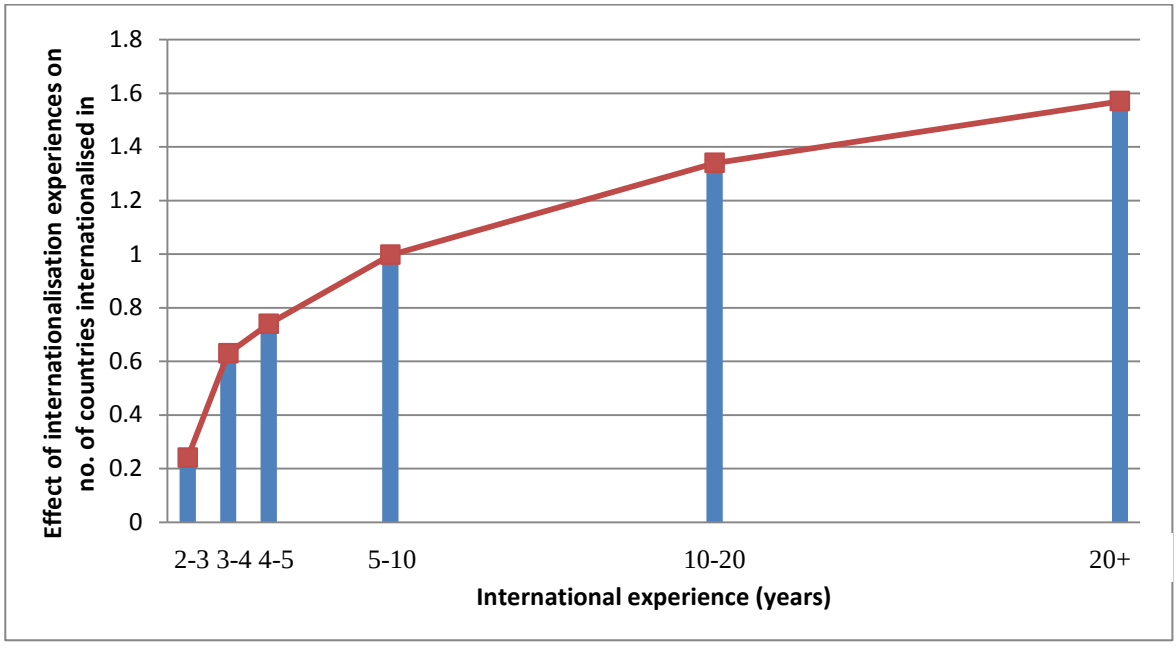


Figure 3: Effect of internationalisation experiences on the number of regions internationalised in (Ordered Probit)

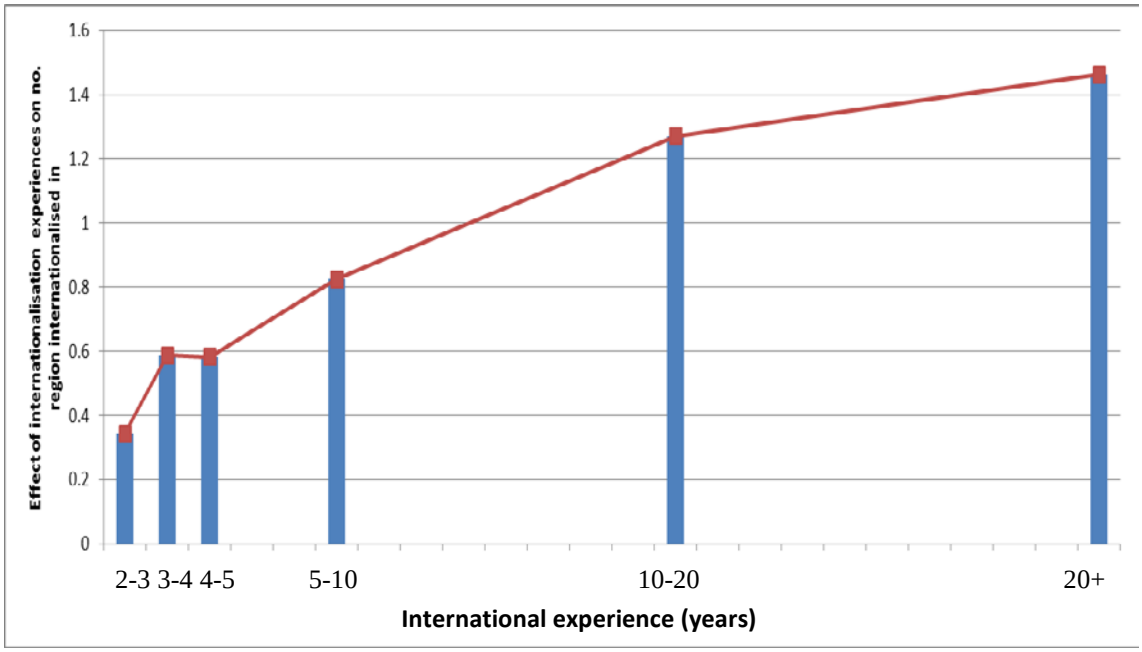
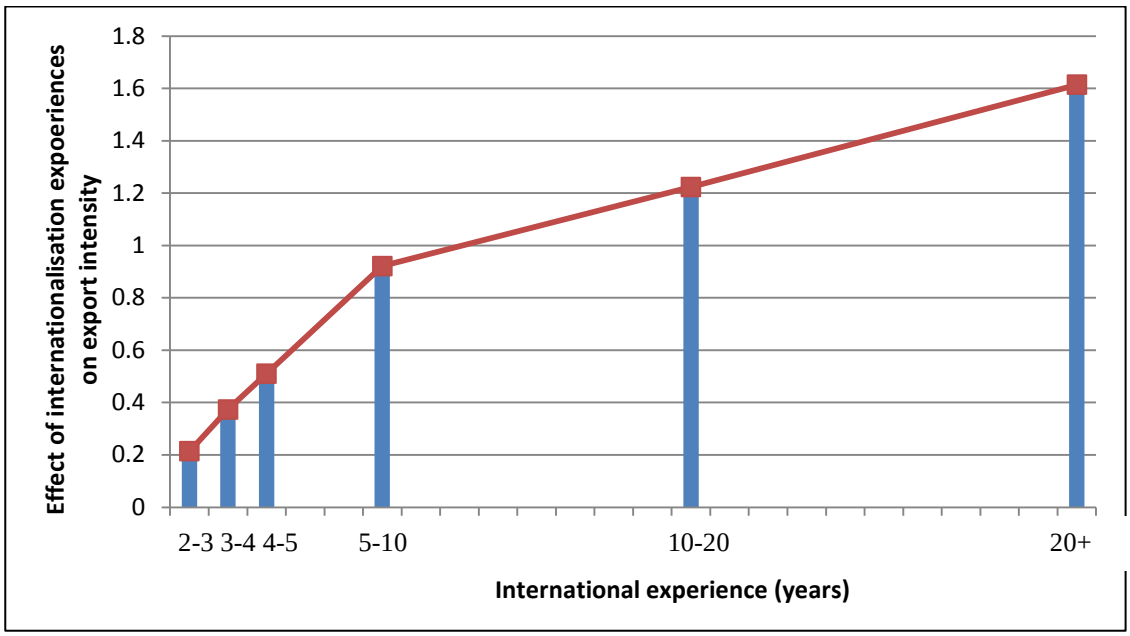


Figure 4: Effect of internationalisation experiences on export intensity



While the effect of internationalisation experience is consistent across our three measures of export performance, the age variables show more variation. In terms of the number of countries to which SMEs export (Table 3), we see little evidence of any significant age relationship, although firms aged 2-3 years have more geographical scope than very young firms (the base category). On average, however, firms which are 3-4 years old are 3.89 per cent less likely to be exporting to 6-10 countries than firms which are 1-2 years old[9]. There is more indication of a negative relationship between age and the number of regions to which SMEs export (Table 4), principally for firms aged 3-4 years and 10-20 years. Most other age coefficients are insignificant. Again, firms which are 3-4 years old are 5.37 per cent less likely to be exporting to four global regions than firms which are 1-2 years old. For export intensity, however, our age effects are consistently negative for firms aged above five years, and monotonically increasing. This suggests that older firms tend to have lower export intensity than younger firms, and that older firms tend to be less likely to export beyond their home region once the effect of experience is taken into account, contrary to the findings of Gallego and Casillas (2014). To illustrate the scale of these effects our models suggest that firms which are 3-4 years old are 1.27 per cent less likely to be exporting 16-25 per cent of their sales than younger firms 1-2 years old. Our results therefore provide only limited support for Hypothesis 2 and the idea that older firms may be less receptive to external knowledge on exporting than younger firms. Note, however, that where age effects are detected, they are almost always negative once we allow for firms' international experience.

Our third hypothesis relates to the potential effect on exporting of employing managers with prior internationalisation experience, what Fletcher and Harris (Fletcher and Harris 2012) call 'grafted' knowledge. Here, as with the organisational learning effect envisaged in Hypothesis 1, the effect of having management with previous internationalisation

[9] We calculate these percentages as the difference in the predicted probability that a firm falls into the category for exporting to 6-10 countries for firms which are 1-2 and 3-4 years old. All other variables are set to their mean values.

experience is unambiguously positive and highly significant in all three sets of models (Tables 3, 4 and 5). Having managers with prior international experience increases firms' probability of exporting to 6-10 countries by 4.15 per cent, the probability of exporting to four global regions by 2.38 per cent, and of earning 16-25 per cent of sales from exports by 2.86 per cent[10]. The implication is that grafted knowledge can be an important supplement to experiential learning in shaping the extent and intensity of firms' export activity[11]. As our data are cross-sectional, however, some care is necessary in interpreting this association. We cannot be clear that higher levels of prior managerial experience drive stronger exporting profiles; it may be instead that internationally oriented businesses tend to attract managers with a similar market orientation.

Our fourth Hypothesis suggests that firms having early experiences of internationalisation may enjoy greater exporting success. Our results do suggest that early exporters are significantly more export intensive than other firms (Table 5), and that they export to a significantly greater number of countries than other similar firms, supporting Hypothesis 4a (Table 3). More specifically, early exporters are 4.52 per cent more likely to export to 6-10 countries and 2.19 per cent more likely to export 16-25 per cent of their sales.[12] In terms of the regional scope of exports (Table 4), however, the early exporter variable has a consistently insignificant coefficient. This suggests that early exporters are no more or less likely to export beyond their home region than later exporters, contrary to Hypothesis 4b. Taken together, these findings appear to support the view that early exporters tend to be 'born regional' rather than 'born global' (D'Angelo et al 2013; Gallego and Casillas 2014).

[10] We derive these percentages as the difference in the predicted probability of firms falling into each of these categories when they have and do not have management with prior international experience.
[11] The significance of the prior management experience variables here are contrary to the findings of Ganotakis and Love (2012) who find no relationship between prior management experience and export intensity.
[12] We derive these percentages as the difference in the predicted probability that firms fall into these categories where they were and were not early internationalising. The (insignificant) effect of early internationalising increases the probability of firms selling in four global regions by 1.61 per cent.

Our final hypothesis posits a positive relationship between (product) innovation and exporting. The results indicate that both types of innovation (new to firm and new to the industry) are positively associated with geographical scope in terms of both number of countries and number of regions (Tables 3 and 4). However, the pattern of effects varies suggesting a positive relationship between the novelty of firms' innovation and the geographical scope of their export reach. In particular, while the coefficients on new-to-the-firm innovation are markedly greater than that on new-to-the-industry innovation in the case of country scope, the reverse is evident in the case of regional scope. This suggests that while 'standard' levels of innovation help SMEs enter more national markets within their home region, it is more radical product innovation that is associated with exporting into other world regions, perhaps helping them overcome the additional liability of foreignness evident in the case of moving beyond the home region. More specifically, while new to the industry innovation increases the probability that a firm sells in 6-10 countries by 2.82 per cent, new to the firm innovation has a smaller 1.97 per cent effect[13]. Similarly, while new to the industry innovation increases the probability of selling to four global regions by 1.70 per cent, new to the firm has a 1.84 per cent effect. As anticipated in Hypothesis 5, and consistent with other recent evidence, product innovation is not associated with export intensity (Harris and Li, 2009; Ganotakis and Love, 2011).

Among the conditioning variables larger firms (in terms of turnover) tend to be more export intensive and to have greater geographical scope (Gashi, Hashi, and Pugh 2014), while the use of a website is (unsurprisingly) positively associated with geographic scope , but not with export intensity. This may reflect potential trade-offs between on-line and off-line commerce and the allocation of resources between the two activities (Morgan-Thomas 2009).

[13] We derive these percentages as the difference in the predicted probabilities that firms fall into these categories when they are and are not undertaking innovation. The (insignificant) effects of innovation on the probability that firms are exporting 16-25 per cent of their sales are 0.56 per cent for new to the firm innovation and -0.17 per cent for new to the industry innovation.

5. DISCUSSION AND CONCLUSIONS

Using three waves of a UK survey of internationally-inclined UK SMEs we identify five main empirical results. First, and allowing for firm age and prior managerial experience, we find a robust link between the duration of SMEs' international experience with the geographical scope of international activity at both the country and regional level, and with export intensity (D'Angelo et al 2013; Gallego and Casillas 2014). At the margin, order or timing effects reduce the impact of each successive year of international market experience on the scope or intensity of firms' internationalisation. Second, grafted knowledge – the prior experience of the management team – also has a consistent and positive impact on both the geographical scope of SMEs' international activity and export intensity (Ganatakis and Love, 2012). Third, we find some (weaker) evidence that firm age has a negative effect on the extent of SMEs' international activities. This is consistent with arguments related to the liability of aging (Sorensen and Stuart, 2000).

These three findings are broadly consistent across our three exporting indicators which reflect the geographical scope of SMEs' exporting activities across countries, across world regions and as a percentage of total sales. In conceptual terms our results provide strong support for the continued validity of process model of internationalisation, recognising that learned knowledge can be complemented by grafted knowledge. This also supports the recent call by Laufs and Schwens (2014) for more research on learning theory as an approach to understanding more about SME foreign market entry. The implication is that – at least in part – international market development is a learning process emphasising the importance of feedback and reflective management practice. The value of prior knowledge, however, also suggests the potential value of relating international market development to firms' HR and recruitment practices. More widely our results suggest the potential value of the process model in informing the structure of export development programmes. Our related results on the negative impact of firm age on exporting suggest that the liability of aging

or senescence, typically discussed in terms of managerial routines or growth, is also evident in terms of SMEs' exporting activities. In policy terms this suggests a need to recognise that beginning or expanding exports presents greater challenges where firms are older and perhaps have an established home market position.

Our final two empirical findings – relating to early internationalisation and innovation – point to the rather different determinants of inter-country and inter-regional exporting and export intensity. For example, while early internationalizing firms are more likely to have greater inter-country exporting scope and export intensity than other (internationally active) SMEs, they are no more likely to operate across global regions. Broadly, this seems to suggest that early internationalizing firms are more likely to be 'born regional' than 'born global' (D'Angelo et al 2013; Gallego and Casillas 2014). Finally, while we find a positive association between innovation and each measure of export orientation the strength of these relationships varies: inter-regional exporting is most strongly linked to radical innovation while inter-country exporting is linked more strongly to less radical new-to-the-firm innovation . It is tempting to conclude that it is new to the industry innovation which provides the entry point for firms seeking to sell into new global regions. Our data is cross-sectional, however, and the direction of causality is not therefore clear a priori: new-to-the-firm innovation may be driving inter-regional exporting, or it may be that inter-regional exporting is facilitating market exposure, more extensive knowledge search and more innovation (Freel and Aslesen 2013; Laursen and Salter 2006; Xiong, Li, and Ling 2011).

In methodological terms, contrasts in the correlates of inter-regional, inter-country exporting and export intensity suggest the value of using a range of indicators which can capture the diversity of firms' exporting profile and highlight differences in the drivers of geographical scope of exporting and export intensity. In more substantive terms our conclusions reemphasise the link between innovation and exporting, supporting other studies which suggest that the main productivity gains come from the combination (Love,

Hewitt-Dundas, and Roper 2010). Our results also suggest that the advantages of undertaking new-to-the-industry innovation extend beyond the standard first mover advantages (Kopel and Loffler 2008; Ulhoi 2012). Instead more radical new-to-the-industry innovation is linked to inter-regional market entry as firms move outside their regional market with the potential to generate economies of scale in larger markets. In managerial terms this suggests the importance of recognising the synergies between innovation and export market development and the potential for integrated development strategies.

Two implications – one general and one rather specific – follow in terms of policy and business support. In general terms our analysis again emphasises the strong positive relationship between innovation and export performance, and the potential added value of new to the industry innovation in terms of intra-regional market development. Maximising the commercial potential of innovation is likely to require timely support for export development and vice-versa. Integrating or linking innovation and export support activities is therefore likely to be strongly beneficial for most firms. A more specific policy implication also follows from our results relating to the relatively small group of early internationalising firms. These are likely to be 'born regional' (rather than truly 'born global') and therefore they will face many of the challenges of other firms as they seek to move beyond their home region. Support targeted at this important transition point may well be of particular value (Brown and Mawson, 2013).

Our study has a number of limitations which might usefully be addressed in future analyses. First, the data used here has some advantages such as providing information on multiple dimensions of exporting activity and a rich selection of potential explanatory variables including age and prior experience. One limitation of the data, however, is that only covers those firms (about a quarter of the overall population) which are internationally engaged. This limits the applicability of the results to this group. It also means that we are unable to get any feel for what determines selection into this group, i.e. the choice by firms to engage with international markets.

Some factors are likely to be same as those considered here –innovation for example provides one indication of firms' export potential. Similarly, prior managerial experience may also be important in encouraging firms into international markets. Other data is necessary, however, to establish the relative importance of these factors in the export/no-export decision. Second, we have already noted the cross-sectional nature of the data used here and the limits this places on our ability to identify causal relationships. The cross-sectional nature of our data also means we are unable to track individual firms as they move along the process curve which would be desirable to capture the potential impact of strategic decisions and timing effects. Thirdly, within the database we have no locational data for firms and so impossible to deal with contextual issues in these models (Freeman, Styles, and Lawley 2012). Finally, while our data provides significant detail on dimensions of exporting activity it is weaker in terms of the dimensions of international experience. Here, we are able to explore only the durational dimension of international experience and its relationship with exporting. As Clarke, Tamaschke, and Liesch (2013) suggest, however, international experience may also have diversity and intensity dimensions, suggesting that firms with experience of more diverse international markets or more intensive engagement with international markets may experience stronger organisational learning. Future studies might seek to address these alternative dimensions of international experience.

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