



Regional knowledge production and entrepreneurial firm creation: Spatial Dynamic Analyses[☆]



In Hyeock Lee^{a,*}, Eunsuk Hong^{b,**}, Laixiang Sun^{b,***}

^a Loyola University Chicago, USA

^b SOAS, University of London, UK

ARTICLE INFO

Article history:

Received 1 September 2012

Received in revised form 1 December 2012

Accepted 1 January 2013

Available online 5 March 2013

Keywords:

Regional innovation capacity

Entrepreneurship

Firm creation

Knowledge spillovers

System GMM

ABSTRACT

This study assesses whether and to what extent new knowledge available in a region and its surrounding regions induces and facilitates new firm creation, an important topic that is largely left untested in the literature. Using a full population firm-level dataset of 44,434 newly created entrepreneurial firms in the manufacturing sector in 234 regions of South Korea between 2000 and 2004, its econometric estimations indicate a positive externality effect of new knowledge production on activities of new firm creation within and across the regional boundaries, with the intra-regional effect being stronger than the inter-regional one. The estimations also show that both the intra- and inter-regional effects are stronger in high-tech industries than in low-tech industries.

© 2013 Elsevier Inc. All rights reserved.

1. Introduction

The creation of new firms is fundamentally important for economic development at both the regional and national levels. New entrepreneurial firms play pivotal roles in generating new jobs and fostering economic growth through the continuous introduction of new products and the cultivation of new markets (Knight, 2001). For example, the OECD (1997) reports that newly created small and medium-sized enterprises (SMEs) generate over 50% of new jobs on average across all member countries. On the other hand, previous literature recognizes that prospective entrepreneurs are subject to resource disadvantages compared to established companies (Cooper & Folta, 2000). Therefore, a better understanding of new firm creation

activities by prospective entrepreneurs is of both academic and policy importance.

A large body of studies exists in the entrepreneurship literature exploring factors that stimulate new firm creation. For individual entrepreneurs, many acknowledge that the level of expertise and technological knowledge they possess is positively associated with their ability to exploit opportunities (Casson & Wadeson, 2007; Venkataraman, 1997). Previous experience in the targeted sector is the best source of entrepreneurial knowledge for creating a new firm (Aldrich, 2003; Cooper, 1986; Vesper, 1996). The existence of a successful role model nearby can also facilitate entrepreneurial activities through imitation and learning processes (Aldrich & Martinez, 2001; Bonzo, Valadares de Oliveira, & McCormack, 2012; Vesper, 1996). The organization and network perspective recognizes that entrepreneurs and their new firms need to rely on other organizations to overcome resource constraints (Cooper & Folta, 2000). New relationships with outside resource suppliers and existing networks across organizations provide entrepreneurs with the knowledge and experience needed for seizing new opportunities as well as access to critical resources, all of which is indispensable for overcoming business obstacles in the process of new firm creation (Floyd & Wooldridge, 1999; Hills, Lumpkin, & Singh, 1997; Johannisson, Alexanderson, Nowicki, & Senneseth, 1994; Low & MacMillan, 1988; Sapienza, Manigart, & Vermeir, 1996). In terms of business environment, a favorable environment (i.e., a good pool of resources) is critical for new firm creation (Pfeffer & Salancik, 1978). For example, a dense concentration of similar firms in a locality enriches the pool of prospective entrepreneurs and increases the success rate of start-ups (Brooks, 2011; Sorenson & Audia, 2000). This concentration provides prospective entrepreneurs with more opportunities to imitate

[☆] The authors thank the seminar participants at SOAS of the University of London and the Management School of Queen's University Belfast, and participants at the Academy of Management (AOM) 2011 Annual Meeting and the 2012 Global Innovation and Knowledge Academy (GIKA) Conference for helpful comments and discussions. They also acknowledge and are grateful for constructive comments and guidelines from the guest editors and two reviewers for this special issue of the *Journal of Business Research*.

* Correspondence to: I.H. Lee, Department of Management, Quinlan School of Business, Loyola University Chicago, 1 East Pearson, Chicago, IL 60611, USA. Tel.: +1 312 915 7656; fax: +1 312 915 6988.

** Correspondence to: E. Hong, Department of Financial and Management Studies (DeFiMS), SOAS, University of London, Thornhaugh Street, Russell Square, London WC1H 0XG, UK. Tel.: +44 20 7898 4564; fax: +44 20 7898 4089.

*** Correspondence to: L. Sun, Department of Financial and Management Studies (DeFiMS), SOAS, University of London, Thornhaugh Street, Russell Square, London WC1H 0XG, UK. Tel.: +44 20 7898 4821; fax: +44 28 7898 4089.

E-mail addresses: ilee1@luc.edu (I.H. Lee), e.hong@soas.ac.uk (E. Hong), LS28@soas.ac.uk (L. Sun).

other successful entrepreneurs with effective routines and competencies (Miner & Haunschild, 1995) and to establish effective networks with their counterparts in the same region (Cooper & Folta, 2000).

Recent literature also pays increasing attention to location-specific factors that affect variation in new firm formation across regions. These factors include the availability of local labor forces, the size of local market, geographic agglomeration and clustering, government support for regional economic development, and regional knowledge spillovers and technological regime (e.g., among others, [Armington & Acs, 2002](#); [Audretsch, Lehmann, & Warning, 2005](#); [Audretsch & Stephan, 1996](#); [Carlton, 1983](#); [Carod & Antolin, 2004](#); [Fritsch & Falck, 2007](#); [Kalnins & Chung, 2004](#); [Keeble & Walker, 1994](#); [Lee, Florida, & Acs, 2004](#); [Lindelöf & Löfsten, 2003](#); [Lomi, 1995](#); [Prevezer, 1997](#); [Reynolds, Storey, & Westhead, 1994](#); [Stuart & Sorenson, 2003](#); [Sutaria & Hicks, 2004](#); [Swaminathan, 2001](#); [Tödtling & Wanzenböck, 2003](#); [VanOort & Atzema, 2004](#); [Zucker, Darby, & Brewer, 1998](#)).

Despite the vast amount of literature, what remains untested is the link between locally-created new knowledge and firm founding activities of local entrepreneurs and the geographical boundaries of such a link. According to the theory of knowledge spillover entrepreneurship ([Audretsch & Keilbach, 2007](#)), new knowledge usually generates entrepreneurial business opportunities and as a result, entrepreneurial founding activities are greater when and where the outcomes of new knowledge production are greater ([Acs, Braunerhjelm, Audretsch, & Carlsson, 2009](#); [Stuart & Sorenson, 2003](#)). Furthermore, the knowledge spillover causing entrepreneurship is spatially mediated within close geographic proximity owing to the largely tacit nature of knowledge and therefore prospective entrepreneurs who consider creating their own firms need to locate close to the sources of the knowledge so that they can exploit and commercialize this advantage successfully ([Audretsch & Feldman, 2004](#); [Audretsch & Lehmann, 2005](#); [Audretsch et al., 2005](#); [Rothaermel & Thursby, 2005](#)).

Building on the recent development of the knowledge spillover theory of entrepreneurship, this paper aims to quantify empirically the effects of regional knowledge production on the creation activities of domestic new entrepreneurial firms in a given region. More specifically, the paper attempts to answer the following research questions empirically: (a) Is the richness and strength of technological opportunities rendered possible by local knowledge production an important factor for explaining variations in new firm formation across different geographic regions? (b) If so, are entrepreneurial founding activities greater when and where the outcomes of new knowledge production are larger in a region and its neighboring regions? and (c) Do firm creation activities in high-tech industries associate more closely with the outcomes of regional knowledge production than in low-tech industries?

The authors employ Korean data to carry out empirical assessments and tests. The reasons for employing Korean data are twofold. First, the Republic of Korea (hereafter Korea) provides a full population firm-level dataset of 44,434 newly created entrepreneurial firms in the manufacturing sector in 234 regions of Korea between 2000 and 2004, which is arguably the best available dataset for the test. Second, the case of Korea is highly suitable for the study because several international survey reports – for example, the 2002 Global Entrepreneurship Monitor Report ([Reynolds, Bygrave, Autio, & Hay, 2002](#)), the 2008 Global Entrepreneurship Monitor Report ([Bosma, Acs, Autio, Coduras, & Levie, 2009](#); [Mousa & Wales, 2012](#)), and the 2009–2010 Global Competitive Report ([Lee & Yoo, 2012](#); [Schwab, 2009](#)) – have consistently identified Korea as one of the most entrepreneurial and knowledge-intensive societies in the world. Also note that despite its entrepreneurial strength, Korea is under-represented in the existing literature.

The econometric method employed is the system generalized method of moments (GMM) estimator. The system GMM is capable of correcting for the potential endogeneity of knowledge production variables and other explanatory variables, and allows for unobserved region-specific effects and measurement errors. The estimating results

indicate that both intra- and inter-regional spillovers of innovation and knowledge production influence entrepreneurs' decisions to situate new firms in a given region. The effects of knowledge spillover on new firm creation tend to be geographically bounded and decay rapidly across geographic space. Furthermore, firm creation activities in high-tech industries associate more closely with the outcomes of regional knowledge production than in low-tech industries.

This research contributes to the literature in several ways. The research is among the first to make a testable distinction between intra-regional and inter-regional spillover effects of knowledge production that may affect the activity level of new firm creation in a locality and to show that the former effects are greater than the latter. The work also highlights the high-tech versus low-tech sector difference in terms of the link between the output of regional knowledge production and the activity level of new firm creation and shows that the activities of new firm creation are more sensitive to the output of regional knowledge production in high-tech sectors than in low-tech sectors.

The paper is organized as follows. [Section 2](#) develops hypotheses. [Section 3](#) describes the data, variables, and the specifications of the econometric model used for hypothesis testing. [Section 4](#) reports the empirical results and [Section 5](#) discusses practical and policy implications.

2. Hypothesis development

A standard cost-benefit consideration for creating a new entrepreneurial firm is that the expected present value of profits generated from the new firm in the future is greater than the expected present value of the prospective entrepreneur's wage income from her/his own existing and/or prospective employment in the same time horizon. Such a consideration is entitled the occupation choice theory of entrepreneurship. This theory indicates that when prospective entrepreneurs consider creating their own firms to exploit their new business ideas in the market, they deliberately compare the two occupational choices available; that is, entrepreneurial entry into the market with their own firms versus continuing to work for an incumbent company where they are currently working, and choose the best option that generates the highest expected present value of remuneration ([Audretsch, 1998, 1999](#); [Audretsch & Feldman, 2004](#); [Moura-Leite, Padgett, & Galan, 2012](#)).

While the expected present value of wage income can be regarded as the opportunity cost of entrepreneurial firm creation, the expected benefits from new firm creation would be closely associated with the availability of new knowledge as argued by the theory of knowledge spillover entrepreneurship. In other words, the new firm creation by prospective entrepreneurs is an endogenous response to the availability of new knowledge or output level of new knowledge production in the targeted area ([Acs et al., 2009](#); [Audretsch & Keilbach, 2007](#); [Audretsch & Lehmann, 2005](#)). The larger the output of knowledge production in a certain region and its surrounding regions, the higher the expected profit is from the new firm and, therefore, the higher the level of new firm creation activities in the region. This is because new knowledge available in a region and its neighboring regions creates new opportunities that local prospective entrepreneurs can exploit profitably, resulting in their proactive founding activities ([Acs et al., 2009](#); [Audretsch & Keilbach, 2007](#); [Audretsch & Lehmann, 2005](#); [Keen & Etemad, 2012](#); [Stuart & Sorenson, 2003](#)). The above discussion indicates that the level of new firm creation activities is a function of the difference between expected profit, which is a function of knowledge production level and other determinants, and the opportunity cost of establishing a new firm, which is a function of the prospective entrepreneur's current wage income. This leads to Eq. (1) and H1.

$$\text{Level of Firm Creation Activities} = f\{\pi(\text{Knowledge, other variables}) - c(\text{Wage})\} \quad (1)$$

Download English Version:

<https://daneshyari.com/en/article/1017994>

Download Persian Version:

<https://daneshyari.com/article/1017994>

[Daneshyari.com](https://daneshyari.com)