Evaluating the Efficiency of Technology Innovation in SMEs

Minho Lee (kieslo@nsu.ac.kr), Namseoul University
Kwangtae Park (ktpark@korea.ac.kr), Korea University

Abstract

Technology innovation is considered as an important factor for the service industry as well as for the manufacturing industry as service industry such as financial service, business service, media service, etc. is going to grow. Company in manufacturing industry grows from a small and medium enterprise (SME) through technological competitiveness and company in service industry grows from a startup company through technology innovation. Service industry accounts for 60 percents of total GDP in Korea and thus government policy for the service industry and technology innovation are getting more important issue recently.

We need to compare the degree of technology innovation of SMEs in service industry as well as manufacturing industry. Innovation generally appears in the product/service or process. We develop the matrix to categorize innovation activities of SMEs using innovation activities and industry characteristics as criteria (See the table below)

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<thead>
<tr>
<th>Industry Characteristics</th>
<th>Innovation Activities</th>
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<td>Product (Service) Innovation</td>
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<tr>
<td>Manufacturing Industry</td>
<td>Group 1</td>
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<td>Service Industry</td>
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We use AHP to select the important input and out variables based on expert’s opinion for analyzing the efficiency of technology innovation. Input variables may be the number of researchers and the amount of research investment. Output variables may be the number of new product (service), number of patents and profit. We then use DEA to analyze the efficiency of technology innovation. We provide some managerial implications for the efficient SMEs and inefficient SMEs.
A Diagnostic Toolkit to Design a Learner-Centered Entrepreneurship Pedagogy in Higher and Adults Education

Young-Dall Lee, Assistant Professor, Dongguk University, Seoul, Korea

Abstract

Entrepreneurship education is significantly emerged as educating life skills for all generations for over the last few decades in many countries. Several entrepreneurial countries, USA, UK, and northern European countries, are creating new ways of educating entrepreneurship in terms of their national innovation and entrepreneurship strategy.

Even though its importance is being tremendously emphasized as a national strategy, there are few investigations to develop practical and effective diagnostic toolkits to understand learners’ current status to starting a business or to try entrepreneurial innovations at their work places.

Since the pedagogical evolution and development in entrepreneurship education has been faced in recent, its regular educational programs couldn’t consider learners’ diversity and current phases to proceed any entrepreneurial challenges.

The Gallup has released the Entrepreneurial StrengthsFinder which is modified version of the StrengthsFinder to see students’ talents in entrepreneurship. Assessment tools and indicators for entrepreneurship education (ASTEE) project in Europe also has released the assessment of entrepreneurial competences of pupils and students across the three educational levels, primary, secondary and tertiary level, respectively.

Despite they developed with big size investments and commitments, it has a limitation to be directly applied for higher and adult educational level. These are helpful and effective to look for students’ future carrier paths. However, the leaners at higher and adult educational level has an intention or a plan to start a business and entrepreneurial innovations at their work places rather than primary and secondary level students.

The toolkit for higher and adult educational level recognizes and includes a controversial perspective, nature vs. nurture in entrepreneurship development, to cover wide range of diversity of learners. Totally 40 balanced indicators have developed to see learners current status for entrepreneurial challenges in terms of nature and nurture perspective. The “Nature” side indicators contain entrepreneurial traits and talents. Entrepreneurial skills & knowledge and networks are representing the “Nurture” side indicators.

The toolkit has been applied for nascent, novice, and serial entrepreneurs to see their preliminary statement for an effective education. They are different in terms of above 4 dimensions even they are all classmates and same programs’ applicants, so that the pedagogy should be respectively developed in terms of learners’ nature and nurture level of entrepreneurship to ensure the effectiveness. The investigation implies that educators should see leaners’ body and their current status to enable their entrepreneurial intentions before getting the educational programs as a diagnostic phase particularly in higher and adult educational level.
The Use of Online Lending in SME Financing: Focusing on the Convergence of Regulatory Schemes

Gyoung-Gyu Choi, Dogguk University, Seoul, Korea

Abstract

Objectives of the Study

Since the financial crisis of 2008, prolonged low growth and ultra-low interest rates have led to reduced profitability the financial industry. As a part of efforts in search of new profits and growth momentum, online lending driven by financial technology (FinTech) has sharply risen in prominence as an alternative financial instrument, breaking down the dominance of the traditional financial sector.

Utilizing FinTech, IT companies have provided online lending services that can substitute for existing financial services. The core feature of FinTech is a differentiated financial-platform (marketplace) business model. With full governmental support combined with active deregulation, FinTech has now become a must, not a choice.

The goal of this study is to analyze online marketplace lending as a financing channel for small and medium sized enterprises (SMEs), and to formulate the proper level of regulatory schemes to promote fair and transparent marketplaces. The financial services community and regulators around the world have faced turbulent times in recent years. Regulation may promote or suffocate businesses, industries and markets under its scrutiny. When it comes to FinTech, it is much more controversial.

Some analysts argue that it is a stumbling block to progress in the industry, and others assert that it is the friend of alternative financial service providers and the startups they fund. As a platform for the distribution channel of funding, FinTech firms have changed from face to face transactions at the “mart” to “smart” platforms. In order to integrate these new transaction trends into a stabilized financial ecosystem, it is essential to establish rules for fair transactions that would ensure coexistence among the market participants. The structural reasons for unfair transactions in online lending marketplaces are threefold: one, the industry consists of a large number of small-scale businesses; two, the distributors of capital maintain dominant positions in the transactions; and three, the credit scoring and evaluation of SMEs are difficult.

This study discusses ways to improve the regulatory system so as to ensure a fair market share for all participants, including investors, platforms, and consumers (including SMEs). To do this, we perform two sets of analyses in this study: first, we analyze various types of online lending marketplaces in the US, UK, China, and Korea. Second, we examine available legal and regulatory materials, such as case law and the decisions of the SEC/FTC from the US, the UK, and Korea. Based on this analysis, we aim to derive the common denominators for global regulatory standards as well as unique disciplinary insights for the US and Korea according to regulatory practices and system of each country.
The Use of Online Lending in SME Financing:
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Gyoung-Gyu Choi, Dogguk University, Seoul, Korea

Background of the Study

In recent years, banks have become more risk-averse when it comes to lending to SMEs. In fact, SMEs have experienced a sharp cutback in financing from the traditional banking sector, which has adversely impacted their capability to grow and create additional jobs.1 The benefits of FinTech for SMEs via online marketplace lending include less paperwork, quicker application processing, and data-driven metrics for measuring suitability. In turn, start-ups with timely financing drive innovation and technological advances, leading to higher long-run economic productivity.

This gap in demand and supply of capital has been filled in recent years by online lending, complemented by peer-to-peer (P2P) loans and crowdfunding. These latter two categories are both variations on the theme of lending from non-bank institutions, where P2P lending is a one-to-one relationship while crowdfunding is many-to-one. P2P loans were first started by the U.K. company Zopa, and followed by U.S. firms such as Lending Club and OnDeck. In China, CreditEase launched its first service in 2007, and many P2P loan platforms emerged after the year 2009.

Crowdfunding can be defined as an act of raising funds from public with the purpose of attracting small investment or sponsorship. It became publicly recognized after the success of the US and European crowdfunding platforms such as Indiegogo (‘Keep What You Raise’ method), Kickstarter (‘All or Nothing’ method), Crowdcube (‘Equity Investment’ method). In Korea, the ‘All or Nothing’ method of crowdfunding is mainly used. In fact, the United States enacted the ‘Jumpstart Our Business Startups Act’ (so called “JOBS” Act) in April 2012, which allowed equity investment in SMEs and start-up companies be crowdfunded. This captured significant attention from capital markets as it deregulated crowdfunding.

In global markets, crowdfunding has been long serving as a pillar in the world of start-ups. During the early days, it consisted primarily of ‘sponsor-type’ and ‘donation-type’, but ‘equity investment type,’ first initiated in United Kingdom, is also being widely used nowadays. To date, crowdfunding in Korea has been more regulated than facilitated due to the ‘Charitable Giving Act’ and ‘Financial Scam Act’. However, crowdfunding is slated for implementation from January 2016, as the revised Capital Markets Act had been approved by the National Assembly. It is very rare for venture companies in Korea to gain success and be listed on KOSDAQ. This is mostly due to the failure in overcoming the ‘Funding Gap’ in financing. The funding gap is a phenomenon of being unable to meet the capital demands from the venture companies. There are high risks of failure for venture companies due to the ‘death valley’ on their profit stabilization phase, after going through the survival phase.

1 Data from FDIC-insured institutions shows that the share of commercial and industrial loans under $1 million (used to measure SME lending has fallen to 21% of all commercial loans from 34% before the “credit crunch.”
This gives rise to the necessity for funding system to overcome ‘death valley’, which then leads to the solution of creating crowdfunding ecosystem. Investors of the crowdfunding can collect their funds when the company attracts funding from venture capital upon profit stabilization after crossing death valley. Such crowdfunding ecosystem can provide numerous benefits not only to venture companies and investors, but also to the whole economy. Meanwhile, as the market for these FinTech expands, rising scrutiny in many areas including their revenue, business operations and regulatory environment, may be crucial in sustaining confidence in this young and largely unproven industry. The importance of trust shouldn’t be underestimated. If regulators fail to work with FinTech firms to safeguard consumers and businesses, if there’s a major incident concerning an alternative provider such as subprime mortgage incidences, trust will be lost, with dire consequences for things such as job creation and competition. To build confidence and trust, consistency is essential. Unfortunately, FinTechs were left in limbo for quite some time as they waited for the regulatory framework to catch up with the pace of innovation, although regulators are working to help FinTechs build credibility and trust.

As SMEs encounters the funding gap, stakeholders including regulators may stumble over the ‘Regulation Gap’, despite that the industry advertises enthusiastically self-regulation. Although regulators are big fans of self-regulation, self-regulation in online lending industry should go long way to the goal: Building best practices, putting together in code of conduct, and policing them rigorously, for example, through mini-trials. Even if Funding Circle supports online lending as “Small Business’ Bill of Rights,” just one mishap of the influential player would destroy the confidence of SMEs and of the whole marketplace.

As the financial services industry goes through the biggest period of upheaval in its history, it needs a coordinated guiding hand from regulators around the world to avoid turmoil, since the boundaries of a country may be blurred. The convergence of the regulatory schemes in global standard is essential to support innovative SMEs growth: Global standards of transparency and fairness in lending principle should be promulgated to protect SMEs in need of capital, let alone no hidden charges and no prepayment penalties in practice. As mentioned above, our study aims to derive the common denominator for the global regulatory standards as well as the unique disciplinary insights for the US and Korea.
The Use of Online Lending in SME Financing: Focusing on the Convergence of Regulatory Schemes

Gyoung-Gyu Choi, Dogguk University, Seoul, Korea

References


Abstract

This research investigates the relationship between firm age and tax avoidance and examines the association between firm growth and tax avoidance.

Companies maximize firm value and exert effort to grow consistently. Although certain firms do not grow their sales or assets continuously after its foundation, most companies increase their sales and assets consistently and position themselves in a stable status. As a firm ages and grows, its expense ratio grows exponentially larger than its sales ratio, the profit ratio will also increase considerably due to the rapid growth rate. Therefore, the taxable income, which is calculated by adjusting tax categories based upon the income in the financial report income, will also increase, consequently resulting in higher tax costs for growing companies. A company tends to maximize its firm value by minimizing net cash outflow. However, older firms who often enjoy a more stable position in the market may have higher tendency to abandon its aggressive tax strategy, even considering the influence on firms that choose aggressive tax planning and despite incurring higher tax cost.

Generally, firm growth tends to decrease as it ages (Evans, 1987; Yasuda, 2005). In the early stages of a firm’s foundation, the firm may exert efforts to improve sales and increase its market share through energetic marketing activities. However, sales and profit increase rate generally slow down as the firm ages. If the firm’s growth diminishes, its financial and taxable incomes also experience a decreasing trend. Tax cost decreases along with corporate size and thus, a firm’s aggressive tax strategies might be reduced as the firm ages and its growth rate decreases.

This study examines firms listed with the Korean Securities Dealers Automated Quotations (KOSDAQ), which are mostly small and medium enterprises (SMEs), from 1999 to 2011. Tax avoidance of SMEs tends to be more sensitive than that of other companies because they are relatively small and tend to be financially unstable (Na et al., 2014). As a proxy for firm age, we adapted natural log to determine the gap between a firm’s foundation year and the present year. The proxy of firm growth is the change ratio of sales of this year to those of last year.

The results show a significantly negative (-) relation between firm age and tax avoidance. This finding means older and more stable firms tend not to take risks to save on tax expenditure, namely, net cash outflow. The company manger always has to consider both tax and non-tax costs despite increase of the absolute tax cost along with the firm’s size growth and ageing. In other words, older firms who have a very stable position are unlikely to select aggressive tax strategies because they consider maintaining a positive image or reputation more important than saving tax expense. The second result reported a significantly positive (+) relationship between

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1 Many prior studies (Hanlon and Heitzman, 2010; Slemrod, 2004; Shackelford and Shevlin, 2001) have defined “tax aggressiveness” as pursuing active strategies to reduce tax costs.

2 SMEs are categorized into firms pursuing profit (including personal business entities), non-profit corporation, organization, unions (except for business organization without corporate personality), and firms that fit the principle of industrial three-year average sales amount. Their total assets should be below 500 billion won and they should not be in a mutual investment prohibited company group (Small and Medium Business Administration, http://www.smba.go.kr).
saving tax expense. The second result reported a significantly positive (+) relationship between firm growth and tax avoidance. This implies that as growth of a firm slows down as the firm ages, relative tax cost also decreases to firm size even with the increase in sales and profit rates. Hence, the firm may not pursue aggressive tax strategies. On the contrary, if the growth increases along with tax cost, SMEs without a relatively sound financial structure (unlike big companies) will pursue more aggressive tax strategies to alleviate its tax burden.

This study has the following contributions. First, this paper analyzes the pattern of tax avoidance of SMEs as the change of a firm age. This approach means firm age is utilized as an indicator that predicts the level of tax avoidance of a firm. Second, this study analyzes interrelationship between firm growth and tax avoidance along with firm age and business surroundings, and reports consistent results. These implications will provide useful information across various fields.
Win-Win Growth and Small Giant Suppliers’ Growth Determinants
Case Study of Samsung Electronics Corporation’s Small Giant Suppliers

Chong Ook Rhee, Professor, Department of Economics, Seoul Women’s University
Seoul, Republic of Korea

Abstract

This paper to study the effect to stimulate corporate entrepreneurship through win-win program investigates the structural transformation of financial variables of small giant suppliers selected by Samsung Electronics Corporation annually from 2012, and shows how different their growth stages are from the comparison group.

To succeed in the development and incubation of Korean small giants, we need some information in structural adjustment of future hidden champions’ financial variables on how the growth stage of hidden champion has been developed, how the structure of hidden champion’s financial statement has been transformed, etc.

Coincidently, Samsung Electronics Corporation to promote corporate entrepreneurship has announced small giant suppliers around March annually from 2012 up to now which are selected among small suppliers promoted by win-win programs,. Since the selection criteria have not been opened, the selected suppliers can be evaluated by applying Simon’s three criteria to select German hidden champion: 1) 1 – 3 rank in the world market share or the first rank in the continent in which the firm is located, 2) less than 5 billion euro sales, 3) low recognition in the public.

Graphical analysis points to a fact that sales of small giants are getting faster than two comparison groups. This finding is directly and indirectly related to facts 8 to 10 among 10 stylized facts (Klette and Kortum, 2004). First, the stylized fact 8 is that smaller firms have a lower probability of survival, but those that survive tend to grow faster than larger firms. Also among larger firms, growth rates are unrelated to past growth or to firm size. Second, the stylized fact 9 is that the variance of growth rates is higher for smaller firms. Thirdly, the stylized fact 10 is that younger firms have a higher probability of exiting, but those that survive tend to grow faster than older firms. The market share of an entering cohort of firms generally declines as it ages.

As listed in stylized facts on firm size distribution and firm dynamics, we can infer from Figure 1 that the firms which survive and are selected as small giants tend to grow faster than the average growth rate of both manufacturing and electronics industries.

Hence the regression analysis to use pooled data has been developed to find the determinants of salient characteristics found in the small giants’ sales trend compared with two categories of both manufacturing and electronics industries.
The regression analysis to use pooled data has been developed to find the determinants of salient characteristics found in the small giants’ sales trend compared with two categories of both manufacturing and electronics industries.

The pooled model in this study is estimated by the least squares method to investigate determinants of sales growth. Generally the regression model to use pooling data as in (1) can be used.

\[ y = \beta_0 + \beta_1 \Delta X' + \beta_2 \Delta Z + e \]  

(1)

Where \( y \) is sales; \( x \) the vector consisting of intangible assets, tangible assets, and capital; \( Z \) time-series explanatory variable vector (sales of manufacturing sector, sales of electronics sector, Samsung sales, etc.)

From the empirical analysis using pooling data to investigate small giant suppliers’ sales determinant, we find the capital is critical and positive, and intangible assets are positive and more important than tangible assets which are negative. The competitive development of small giant suppliers is at the stage of innovation-driven growth. Rising importance of intangible assets in suppliers’ growth is the same as that in German hidden champions.
K-Entrepreneurship: Tracking the Evolutionary Path of Samsung Electronics Suppliers

Ki-Chan Kim, John Laurence (The Catholic University of Korea)

Purpose

The Republic of Korea has impressed the world with its rapid economic growth and its ability to bounce back from the Asian financial crisis of 1997-98. Along with it, the history of Korean companies, such as Samsung and Hyundai Motors, becoming not only globally competitive but dominant in their respective industries within a few decades has sparked wide interest and curiosity in economics and management studies. Observers have sought insight into how Korea was able to “miraculously” produce globally competitive companies within such a short time span. The study at hand contributes to the discussion by arguing that one of the key contributing factors for this economic success has been a specific form of corporate entrepreneurship.

All businesses experience crisis but only a few manage to survive for decades through different periods of change and environmental shifts. Some of these firms exist today in a form that is very different from their original business venture. As Schumpeter (1939) has defined the business cycle, explained by (Nunes & Breene, 2011a, 2011b), as the recurrent sequence of prosperity and recession, the successful companies are those who are able to reinvent themselves at end of their current life cycle. These survivors are the ones who are able to manage both existing business lines while preparing for the inevitable change. Resilient organizations are capable of regaining stability by itself through changing its processes and structure (Elmqvist et al., 2003; Peterson, Allen, & Holling, 1998).