Job creation achievement made by startup companies and the corresponding policy tasks

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2014. 12.

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Summary

Chapter 1. Introduction

The purpose of this study is to conduct an empirical analysis on several issues that have not yet been fully explained in previous research home and abroad in relation to the assessment of job creation achievement by startup companies. In addition, this study aims to explore issues not covered in the previous studies such as changes in job creation achievement by startup companies and the determinants. Through this, this study would draw a picture of desired startup policies that can enhance job creation of startup companies, and present specific measures for improvement.

To this end, this study used different approaches from previous studies in several aspects, and important contents are as follows.

First, this study more thoroughly explored the current state of startups in Korea and made comparisons with other countries around the world by using the Administrative statistics on the newly established or liquidated companies of the Statistics Korea. Such

research was possible as the Administrative statistics on the newly established or liquidated companies written in accordance with international standards of Eurostat and the OECD was finally made available since 2012. In this sense, it could be considered that this study made up for limitations in the previous studies occurred due to the limitations in utilizing the statistics. In addition, this study reviewed and compared the accuracy of various domestic statistics (produced by the Statistics Korea, the National Tax Service and the Small and Medium Business Administration) related to newly started companies.

Second, this study explored the overall state by conducting static analysis, comparative static analysis and dynamic analysis in assessing the job creation of startup companies. As well, the study figured out limitations and problems of each empirical analysis and measures for improvements. Up until now, the previous studies home and abroad focused on one analysis model such as static analysis or dynamic analysis in many cases. According to the findings in this study, it was found that a comprehensive analysis is important as each analysis method has both strength and weakness.

Third, this study tried to refine the policy implications necessary to establish desired startup policies in the future by identifying changes in achievements related to job creation by startup companies over the past few years and analyzing the determinants of the changes. Such a research approach is significant in that it was not used in the previous studies. So far, most of studies home and abroad focused on the issue of assessing the achievement of job creation by startup companies and such research results offered only a simple policy arguments that there should be more startups

established to create jobs.

Chapter 2. Current state of startup companies in Korea and comparison with the rest of the world

According to the 'Administrative statistics on the newly established or liquidated companies' of Statistics Korea, as seen in <Table 1>, the number of newly started companies in the entire industry in Korea is about 770 thousand as of 2012 and the number of employees in the companies is roughly 12.75 million persons. In the entire industry, the number of liquidated companies is about

Table 1. Current state of the newly established or liquidated companies in each major industry and the number of employees

Unit : 1000 companies, 1000 persons, %

	Number of companies				Number of employees			
	Newly established companies		Liquidated companies		Newly established companies		Liquidated companies	
	(2012)	Composition ratio	(2011)	Composition ratio	(2012)	Composition ratio	(2011)	Composition ratio
Total	770	100.0	683	100.0	1,275	100.0	967	100.0
Wholesale· Retail business	219	28.4	196	28.7	291	22.8	233	24.1
Accommod ation · Food business	155	20.1	154	22.5	192	15.1	167	17.3
Real estate · Leasing business	126	16.4	104	15.2	137	10.7	109	11.3
Manufacturing business	51	6.7	39	5.7	213	16.7	133	13.7

Data : Statistics Korea, "As of 2012, the result of 「Administrative statistics on the newly established or liquidated companies」", Dec 2013.

683 thousand as of 2011 and the number of employees in the liquidated companies is about 967 thousand.

Next, as a result of looking into changes of startup rates and liquidation rate that show the ratio of startup companies or liquidated companies out of the entire companies doing business currently, the startup rates recorded 17.9% in 2007 and then decreased further to 15.1% in 2009 and 14.3% in 2012. In contrast, the liquidation rate showed cyclical fluctuations without significant changes maintaining about 13.0% from 13.0% in 2007 to 12.9% in 2011.

Lastly, it turned out that the enterprise birth rates showed significant gaps between major industries but by regions there were no significant differences.

Meanwhile, according to the result of 'comparative analysis on the current state of the newly established or liquidated companies in Korea and EU countries' announced by the Statistics Korea in 2014, as of 2010 the enterprise birth rate in Korea recorded 15.0%, the highest among 20 European countries surveyed. However it turned out that Korea's liquidation rate is as high as the startup rate and the survival rate of companies after 5 years from the establishment stood at about 30% which is 10-20% lower than major advanced countries.

Chapter 3. Assessing the achievement of startup companies concerning job creation

This chapter explored major contents of the previous studies conducted in Korea and overseas countries concerning achievement of job creation by startup companies, and by doing so the

study drew three key issues which are highly controversial and then conducted an empirical analysis on the three issues.

The first issue related to an argument that contribution of startups to job creation is much bigger than that of the existing companies, and the reason why startups, whose management stability would be relatively very vulnerable compared to the existing companies, could be so prolific in creating jobs.
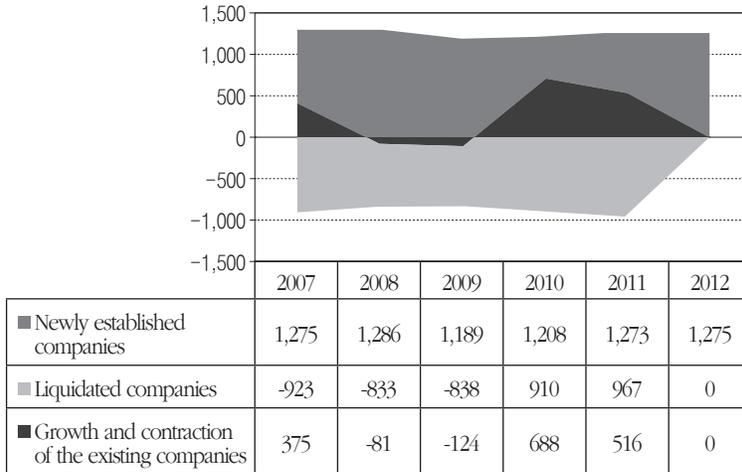
The second issue is that the existing arguments saying that the job creation achievement of startups would undergo well-shaped S type of dynamic spillover process for about 10 years are somewhat ideal and in reality it is highly likely that the process would not have well shaped S type rather it would go through simply felt spillover process.

The third issue is that the assertion arguing that startups are significantly contributing to job creation is contradict to the argument that high growth firms or Gazelles are the driving force of job creation. Because it was found that a significant number of high growth firms are not startup companies.

In order to find solutions for the three issues, this study comprehensively analyzed the achievement of startups concerning job creation from the static aspect, comparative static aspect and dynamic aspect. In particular, in the dynamic analysis four estimation models were designed and actual estimation results were reviewed and compared.

According to the analysis of this study, as in the case of the US covered in the study conducted by Kane (2010), in Korea much of net job creation was done by startups, and it was found that the existing companies experienced net job losses.

Figure 1. Changes in the job creation of newly established, existing or liquidated companies

	2007	2008	2009	2010	2011	2012
■ Newly established companies	1,275	1,286	1,189	1,208	1,273	1,275
■ Liquidated companies	-923	-833	-838	910	967	0
■ Growth and contraction of the existing companies	375	-81	-124	688	516	0

Date : Text <Figure 3-4>

Specifically as shown in the <Figure 1>, the share of startups in net job creation is absolute and the figure is stable recording about 1.2 million new jobs annually from 2007 to 2012. Effect of job loss due to liquidated companies has been stable in the period of analysis showing reduction of 923 thousand workers in 2007 and 967 thousand workers in 2011. In comparison it turned out that employment due to growth and contraction of the existing companies were fluctuated considerably recording increase of 375 thousand workers in 2007, reduction of 124 thousand in 2009 and increase of 516 thousand again in 2011. It is estimated that the figures are resulted from reactions sensitive to the economic cycle.

However, when looking at the changes in distribution of entire

companies by age from 2007 to 2012 in the comparative static perspective, as Stangler and Kedrosky(2010) pointed out, contributions of startups to job creation found in the static analysis can be seen as a structural phenomenon occurred as startups always represent large portion in the composition of entire companies. Therefore, with regard to the first issue, it was unreasonable to interpret that startups are having more capabilities to create jobs compared with the existing companies.

When looking at the changes in the distribution of the entire companies from 2007 to 2012, excluding startups of the current year, young firms created more jobs than old firms and it turned out that this was due to liquidation rate of old firms was lower than the young firms.

In the dynamic analysis model for contribution of startups to job creation, four analysis models were all estimated including distributed-lag model, the existing Almon model, Almon and Koyck model considering liquidation rate. As a result, the answer to the second issue presented in this study could be summarized as follows. In other word, dynamic ripple process as argued in the previous studies does not undergo well shaped S type which is the most ideal form, and rather it shows the structure of rapid simple experience. The reason is that the survival rate of startup companies shows rapid decrease after the establishment. In addition, it could be seen that the startup effect and the liquidation effect are canceling each other out after having direct effect in the first one or two years. (See specific empirical results at Chapter 3-2-(3)).

The third issue was that about 80% of high growth companies are not startups; therefore, an argument that high growth firms are

the driving force of job creation and the other that startups are the driving force of job creation are contradicting to each other on the surface. However it was the difference occurred due to different criteria and methods of measurement. In fact, the two arguments are all valid and not conflicting with each other, and rather it was found through specific examples that the two arguments are all true in the real setting.
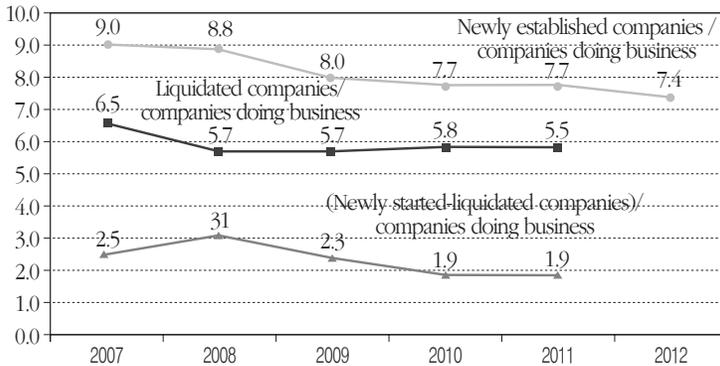
Chapter 4. Changes in the achievement of startups concerning job creation and analysis of the determinants

In this chapter, this study looked into the changes in the achievement of startups concerning job creation for the past few years by differentiating from the previous studies which focused on assessment of the achievement of startups concerning job creation, and explored the current state and issues by each determinant. Based on this, this study wanted to draw the look of desirable policies that can create more jobs.

First of all, it turned out that the achievement of startups in Korea concerning job creation has been on the decrease since 2007. As shown in the below <picture 2>, the share of employees working in startups (compared to the employees in companies doing businesses) from 2007 when the Administrative statistics on the newly established or liquidated companies was started recording 9.0% decreased further to 7.4% in 2012.

Next, in this chapter, this study explored important determinants which have significant impact on the achievement of job creation by startup companies by classifying the factors into three
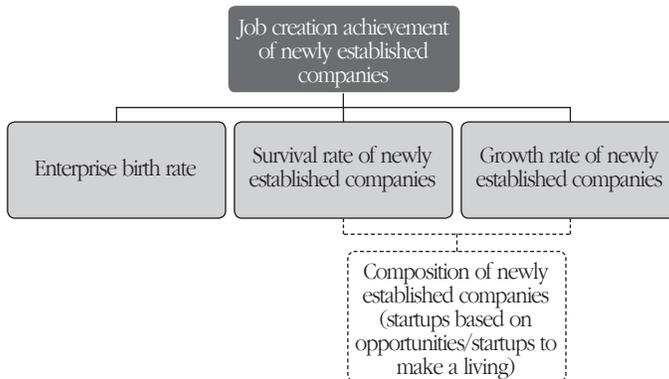
Figure 2. Changes in achievements of job creation by newly established companies

Date : Statistics Korea, Administrative statistics on the newly established or liquidated companies DB.
Note : The statistics is on the basis of the number of employees

Figure 3. Determinants of job creation achievement of newly established companies

including the enterprise birth rate, the survival rate of newly started enterprises and the growth rate of newly established companies as explained in <Figure 3>. <Figure 3> shows a natural logical struc-

ture in which more jobs would be created by startup companies with higher the enterprise birth rate, higher survival rate of newly started companies and higher growth of survived startup companies. In addition, the survival rate and the growth would be influenced by various factors, but in particular it is highly influenced by the composition of startups including startups to make a living and those based on opportunities.

First, the enterprise birth rate in Korea both based on the number of companies and the number of employees has been on the decrease since 2007, and when referring to statistics of the IRS, it could be estimated that the rate has decreased from 2001 to 2012 for more than 10 years.

The important fact with regard to the declining trend of startup rate is that the possibility of reversing the declining trend of five or ten years is very low. The reason is that currently Korea has very high level of enterprise birth rate and comparing to the economic scale the number of companies are relatively big so it is difficult to expect the fast next increase of the number of companies. If the startup rate goes up, the effect of net job creation would not be big as the liquidation rate would also increase.

Second, it turned out that high enterprise birth rate accompanies low survival rate of startups of five years from their establishment. It is found not only in the comparisons with other countries but also in the cross-sectional analysis of each of major industry in Korea. Such fact indicates that achieving both high enterprise birth rate and the survival rate together in setting the goals of startup policies can be ideal but difficult to achieve in the real settings.

Of course, it does not mean that startup policies in Korea should

give up one of goals of improving enterprise birth rate or survival rate, and it seems that startup policies should be more harmonious between enterprise birth rate and survival rate.

Third, it is difficult to figure out the growth potential of startups as there are no panel data on the newly established or liquidated companies covering long term period. However, according to the results figured out given the fact that roughly 99% of startups are small businesses (with one to nine employees), it could be estimated that growth potential of startups in Korea is sluggish and gradually on the decrease.

Fourth, as a reference, according to GEM report (2013), Korea is one of countries with the highest portion of small businesses started to make a living out of startups based on opportunities recording 84.2% on average from 2011 to 2013 along with India (108.3%) and China (107.7%). The reason for such high portion is that as we can see in the definition of small businesses started to make a living there are not enough jobs for workers to choose instead of starting businesses. Therefore in order to reduce excessive number of small businesses started to make a living, it is important to facilitate the startups based on opportunities but fundamentally it is required to provide job creation policies and job training policies that can generate more jobs for people who are forced to start small businesses to make a living.

Chapter 5. Policy implications: measures for improvement for startup policies

As reviewed in Chapter 4, condition of startups in Korea can

be illustrated with high enterprise birth rate, high liquidation rate, and low growth potential. Under such circumstances, high enterprise birth rate accompanies high liquidation rate and as a result it is highly likely to lead to low survival rate and sluggish growth potential. Therefore, it is hard to consider that high enterprise birth rate guarantees excellent job creation.

In order to make policies that would create more jobs, it turned

Table 2. Policy issues and implications of this study

Policy issues	Current state	Policy implications
Long-term decline of enterprise birth rate	Long-term decline of enterprise birth rate: (Based on the number of employees) 9.7%(2007) →7.4%(2012) (Based on the number of companies) 17.9%(2007) → 14.3%(2012)	Should policy support to enhance the enterprise birth rate be strengthened? - Objectives of startup policies and rearrangement of supporting system
Low survival rate of newly started companies	Survival rate after 5 years from the establishment: about 30% Major economies: 40~50% There is a trade-off relation between enterprise birth rate and survival rate	Selective suppression of 'startups with lack of preparation' – putting emphasis on the function of verifying startups Improve effectiveness of startup infrastructure (business incubator)
Sluggish growth of newly established companies	Increased share of newly established companies whose growth is stagnant	Reinforcing growth incentives (tax and funding) for startups
Excessive number of small businesses started to make a living	Along with India and China, the share of small businesses started to make a living is excessively high (84.2%)	Strengthening provision of startup information (commercial supremacy information system) and consulting Reducing the pressure to start small businesses to make a living: supporting reemployment through workforce training (connected with employment policies)

Data : This part is written based on the discussion in the Chapter 4.
Note : The reason why policy implications were separated with a dotted line, not a solid line is that various policy implications are mutually interconnected and overlapped rather than existing independently.

out that first it is required to fix goals of startup policies and supporting system in three aspects. It includes ① the establishment of policy objectives putting importance on harmonization of enterprise birth rate, survival rate of startups and their growth potential, ② making startup support system that can select and suppress startups lack of preparations, and ③ modification of complex and multi-functional startup support systems. In addition, in order to enhance the survival rate, it turned out that it is required to improve the effectiveness of business incubator projects and enhance funding and tax support systems to spur growth (employment) of startups. <Table 2> is a summary of policy issues and implications shown in the analysis results of this study.

When considering the current condition of starting new businesses, achieving both a high enterprise birth rate and high survival rate of newly started companies together would be an ideal goal, but in real settings achieving the two goals together cannot be pursued at the same time. In short, realistically it is inevitable to endure the decline of enterprise birth rate for some extent to increase the survival rate of newly established companies. To this end, it is required to repair the startup support system in a way that selectively suppresses companies who start their business lack of preparation. In order to do this, it is important to reinforce the function of verifying startups and provide various startup support projects connected to funding, training, mentoring and business incubator.

Next, Korea is faced with challenges in that it has to improve the low survival rate and growth of newly started companies in Korea. In this context, it is all the more important to boost effec-

tiveness of business incubator projects. Up to now, there have been many business incubator projects implemented but there are lots of criticisms that the achievements of the projects are low.

In order to increase the effectiveness of business incubator projects, it is needed to induce competition for performance among business incubator centers, perform a drastic restructuring of underperforming business incubator centers, and enhance government support for the centers with excellent performances. Such contents are already included in the activation plans in 2007 and 2011 for business incubator centers. The issue here is continuity of policy implementation and thorough performance management.

Lastly, it turned out that Korea should provide significantly more policy funds for SMEs including venture capital funds for newly started companies compared with other OECD member countries. In this sense, challenges of startup policies are not about increasing policy funds rather the challenges are about reforming systems of providing policy funds in a way that strengthen incentives for growth and job creation. To this end, it is needed to reduce supports for startups with a low level of job creation and stagnant growth, while providing relatively more support for startups that showed significant growth and created many jobs.

In addition, in terms of tax incentives, it is required to increase incentives for growth and job creation of startups and SMEs by offering more tax reduction for specific activities such as job creation, investment and technology developments while reducing the incentives given to those legally qualified as startups or SMEs.