Chapter 6
The Effect of Asset Composition Strategy on Venture Capital Firm Efficiency: An Application of Data Envelopment Analysis

E.J. Jeon, J.-D. Lee, and Y.-H. Kim

6.1 Introduction

The Korean government has driven the venture capital market since KTB Network was created in 1981 to provide capital to the high tech firms. Due to the venture policy, the venture capital market has undergone a compressed growth in a short period of time. In 1986, the government enacted the “Small and Medium Business Start-up Support Act” and “Finance Act to Support New Technology Businesses” to provide legal bases to establish venture capital (VC) firms. The government pushed the VC firms to carry out equity investments on small and medium businesses within the age of 7 years. Hence, the Korea Development Bank Capital and TG Venture, the archetypes of today’s VC firms, have been established to finance high tech firms such as Medison, Mirae, and Sambo Computer (Lee 2003). In spite of the efforts made by the government, until the mid-1990s, there were problems in constructing the venture capital market, due to poor system to finance technology and lack of policy measures to support the high tech firms. There was no exit system to liquidize the equity investments, and most of the investment targets were from mature industries which brought low returns. Further debt financing was preferred to equity investment because of the low risk and high interest rate.

In 1996, the object-oriented economy started growing since the internet rapidly spread out in the entire nation. The Kim Dae Jung Government (1998–2003) enacted the “Special Act to Foster High Tech Firms” in 1997 to overcome the financial crisis (1997–1998) by promoting market efficiency, industrial restructuring, research and development, and job creations. This in effect induced enormous number of start-ups of high tech firms. The KOSDAQ boomed and there was a tremendous growth in the information technology industry and the venture capital market in 1999. The venture policy took a dominant role in creating the venture capital market during the introduction stage in 1981–1986 and market formation.

However, the success of the venture policy was only temporary and backfired by inducing high tech firms to devote their resources on rent seeking rather than R&D investment. Moral hazard problems such as, illegal lobbying, window dressing, solicitation to the media for advertisement, and cozy relations between politics and business permeated the venture business society (Ji 2006). When the market crashed due to the dot com crises and the venture gates, the government decided to continuously provide public funds to the venture capital market and focused to amend the fundamentals by increasing transparency and improving the exit system.

The Korean government has been successful in creating a venture capital market and substantially financing the equity gaps. However, the venture capital market settled in an anomalous form with the characteristic of low risk and low return. Park (1997) showed that during 1994–1996, VC firms had lower return on equity than the local banks and lease companies. Kwak (2001) figured that during 1991–1998, the VC firms, compared to the market portfolio and the stock beneficiary certificates, focused on low risk investments and produced relatively low returns. Chung and Ryou (2004) compared the performances of venture capital funds of Korea to those of the United States and suggested that the Korean venture capital had relatively low-risk and low-return.

The questions are continuously raised whether the venture policy induced effective financing to the equity gaps and bore successful high tech firms. Obviously, high tech firms were directly financed by government loans and the problem of screening and monitoring of these firms has been overlooked. Specifically, the venture policy failed to notice the important role of the VC firms as ‘risk controllers’ and ‘high tech firm managers’. Even though the VC firm is the key solution to the innate problems of information asymmetry, uncertainty, and moral hazard, it has not been the interest of the venture policy. To answer the question of why the venture capital market is showing the characteristics of low risk and low return and why there are so few successful high tech firms, the role of the VC firm in attaining the venture policy goal should be studied. This study investigates the asset composition strategies with which the VC firms raise their operating efficiency, and whether these profit maximizing strategies are meeting the policy demands of maximizing the social benefit. The purpose of this study is to figure out the efficiency maximizing strategies of the VC firms in respect to asset composition and configure them with the venture policy in Korea.

This is the first paper to study the efficiency of the VC firms in Korea and to focus on the features of asset composition strategies. Not only is the data envelopment analysis (DEA) applied on the venture capital, but also the strategic variations causing such results are analyzed. Furthermore, whether the efficient VC firms are fulfilling the social expectations are examined. In summation, two research questions are raised: How should a VC firm compose its investment assets to raise its operating efficiency? Are the strategies of the efficient VC firms fulfilling the social expectations?

Studying the efficiency of the VC firms has two implications. First, the absolute measures of performance such as, revenue, profit, level of investment have