The Pricing Of Successful Venture Capital Backed Hightech And Life Sciences Companies

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What factors drive the pricing of venture capital investments in technology and life sciences companies? The San Francisco Office and the San Francisco based investment research firm Venture0ne teamed up over an eighteen-month period to examine the private venture capital financings of 479 technology and life sciences companies that successfully completed their initial public offerings ("IPOs") of common stock between January 1993 and June 1997 (the "Study"). In particular, we have attempted to explain changes in the value of venture capital backed high technology and life sciences companies between the initial equity financing round (typically at inception date), interim financing rounds and their initial public offering. Through careful analyses of Venture0ne's proprietary database of venture capital investments in high tech and life sciences companies, we made observations of venture investors' activities and identified key factors involved in the pricing of venture capital investments in these companies.

The Data Comprising the Study

Due to the critical requirements for pricing awareness created from the burgeoning companies operating in these sectors that have been fueled by the venture capital community, we constructed a transaction based valuation methodology that simulates the market pricing of developing companies and their securities (including stock options) in emerging industries. The characteristics below summarize the profile of the companies included in the Study:

Completed an IPO on a U.S. stock exchange in the period between January 1993 and June 1997, and, therefore, represent only the group of "winners" that achieved sufficient "success" to go public.

Shareholders are professional, institutional venture capital partnerships investing primarily in the U.S. and hold equity, rather than debt, in the company prior to IPO.

Produce and develop products (high tech and life sciences), rather than providing services.

The data were segmented for the purpose of analyzing the pricing factors in great detail using a manageable valuation methodology. The segmentation of the data was comprised of three primary dimensions:

Stage of Development: describes where the company is in its business evolution (Startup, Product Development, Product Shipping and Profitability).

Type of Financing Round: identifies six different round types, which follow chronological order (Seed, First, Second, Third, Mezzanine and IPO).

Industry Type: six industries are grouped into high tech (Electronics, Semiconductors, Software and Communications) and life sciences (Medical Compounds/Biotechnology, and Medical Devices).

Summarized data concerning the companies by industry, financing round and development stage follow below. Since only those companies that completed the initial public offering of their common stock are included in the Study, there are as many companies as IPO rounds.

	Financing Round						Development Stage			
Industry	Seed	1st	2nd	3rd	Mezz	IPO	Startup	Develop	Shipping	Profit
Electronics	10	37	32	23	10	54	17	29	70	50
Semiconductors	11	37	38	26	19	50	19	39	65	58
Software	23	102	79	49	40	134	34	53	195	145
Communications	17	66	53	32	32	78	28	55	125	70
Biotech	43	89	71	53	42	96	59	271	53	11
Medical Devices	24	63	55	40	31	67	34	133	94	19
Total Transactions	**128**	**394**	**328**	**223**	**174**	**479**	**191**	**580**	**602**	**353**

The Analyses

We conducted two complementary analyses on the pricing of 1,726 financings (that is, 1,247 private investments by venture capitalists at the seed, first, second, third, and mezzanine rounds, plus 479 IP0s). First, a transactional analysis measures certain variables such as increases in equity value (step-ups) between financing rounds, amounts raised per round of financing, premoney valuations, and price-to-trailing revenues multiples, among others. Second, we have performed a statistical analysis to test the significance of the conclusions reached from the empirical data analyzed, and most importantly, to assess the explanatory power of the variables with regard to pricing. Following the key definitions below, we list certain of the general findings of the Study.

Key Definitions

PreMoney Valuation: post-money valuation of a company at a financing round minus the amount raised at that round. For example, a postmoney valuation of $10 million after raising $3 million implies a premoney valuation of $7 million.

Step-Up in Value: increase in a company's pre-money valuation between two financing rounds. It is calculated as the pre-money valuation at a round divided by the pre-money valuation at a prior round.

Return on Capitalization ("ROC"): annualized change, or growth, in pre-money market capitalization between two rounds. ROC represents the annualized returns on equity for an investor without considering the potential dilution effects caused by the entrance of new investors.

Selected Observations

- When pricing an emerging company, the particular financing round, industry, stage of development and market conditions are the most significant market pricing factors.
- Of the six industries analyzed, communications companies received the highest premoney valuations at mezzanine and IPO financing rounds.
- Hightechnology companies tend to raise smaller amounts of capital than life sciences companies at all financing rounds, except IPO, due in part to shorter time to IPO and favorable stock market appetite for their stock during all years of the Study.
- The closer a company is to profitability (the fourth stage of development), the greater the amount of capital raised. Companies that reach the profit stage receive significantly higher valuations than development and shipping stage companies.
- High technology companies achieve higher step-ups in value than life sciences companies (the multiple by which value increases between consecutive rounds), especially from the seed and first financing rounds to IPO.
- Mezzanine investors realize higher returns than investors in prior rounds because of the very short time between the mezzanine round and the IPO.
- The closer a financing round is to the IPO, the smaller the step-up in value at the IPO price.
- The briefer the period from inception to any given round, the greater the step-up at the IPO.
- The more quickly a company reaches milestones required for subsequent funding, the greater the step-up in value.

- Communications companies had higher valuations than companies in any other industry studied, as well as significantly higher step-ups. Communications and networking companies were more likely to have higher valuations than companies in other industries with the same business (development) stage, location, and start date.
- High technology companies yielded better returns on capitalization than life sciences companies, which is attributed primarily to the exceptionally high returns of software and communications companies.
- Companies located on either coast (particularly in California and Massachusetts) receive significantly higher valuations.
- Step-ups in value decline from startup to profitability stage, as the company matures, and as the absolute dollar amount raised at any round increases.

Application of the Study

This Study incorporates elements that are key in any security valuation. It examines institutional investors' risk/return profiles of private placements of equity over a four and a half year period for very young companies in emerging technologies and industries. In addition, it provides indications regarding the importance and prioritized weights of several variables with regard to pricing. Moreover, it demonstrates valuable insights about the differences among distinct stages of development and types of financing rounds under alternative scenarios (which correspond to the cycles observed by IPO year).

We applied certain findings of this analysis to valuations of technology companies in conjunction with generally accepted valuation methodologies; the results are compelling. The methodology, which combines the transactional and statistical analyses, provides a powerful tool for the valuation of technology and life sciences companies (especially those in very early stages of development), and the pricing of their securities. The valuation of nascent businesses does not respond to classic pricing methodologies or models. Technological advances are swift, and the market's reaction to new products and services is somewhat unpredictable. The discounted cash flow (DCF) analysis may not deal effectively with factors that defy supportable modeling (such as selecting an appropriate discount rate). In these cases, a better indication of value comes from a market approach that is based on an analysis of truly comparable companies. The analytical method presented herein is such an approach, and the resulting valuation methodology conforms to observed and measured private pricing transactions.

This methodology adds much to the overall analysis and in certain instances provides a superior and unique insight into valuing early stage technology and life sciences companies.

For instance, market pricing based on this data does not require subjective assumptions about a key factor in determining a private company's value: the lack of marketability adjustment, which reduces the value of an otherwise marketable security due to the illiquidity of the private firm's stock. Because the data used in our analysis corresponds to companies that were private during all of their financing rounds, the premoney valuations implicitly consider the illiquidity factor at the time of the investment in the private company. Pension funds and other non-venture capital financial investors, private and corporate investors, joint venturers, "investment angels" and entrepreneurs will benefit from this Study of the primary data of institutional transactions, as they attempt to assess the investment value of similar companies, their securities and intangible assets.