

# Investment decision making in Japanese venture capital firms

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Tetsuaya Kirihata, Ph.D., is professor at the College of Business Administration, Ritsumeikan University.

He has held positions as a journalist for the Nippon Hoso Kyokai (Japan Broadcasting Corporation), researcher at Mitsubishi Research Institute, associate professor at the Nara Institute of Science and Technology and associate professor at Graduate School of Management, Kyoto University.

His research interests are in entrepreneurship, entrepreneurial finance and intellectual property management.

He has published articles and books such as “Post-Investment Activities of Venture Capitalists When Making Investments in New Technology-Based Firms in Japan” (Kyoto Economic Review, 2009), “The Challenges and Issues with Nanotechnology at the Product Development Stage” (Journal of Intellectual Property, 2008), “The Commercialization Process of New Technology Based Firms in Japan” (Kyoto Economic Review, 2008).

Kirihata’s book, How to win in the nanotechnology revolution (in Japanese), Kodansha(2005), explains the effect of the nanotechnology revolution on Society and insist that it is good chance for potential entrepreneur to set up new nano-ventures.



# My Latest research about VC

## -Investment decision making in Japanese venture capital firms-

1. Role of VCists
2. Investment style of Japanese VCFs
3. Effect of the Global financial crisis
4. Research Questions
5. Methodology
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### **\*Fostering NTBFs**

-VCists have played an important role in fostering the new technology based firms, many of which have become today's large businesses such as Google, Apple and Intel (Florida and Kenney, 1988; Pfirrmann, Wupperfeld and Lerner, 1997).

### **\*Scouts and Coaches**

-VCists play a part in investment selection by acting both as “scouts” able to identify future potentials and as “coaches” who can help realize them (Baum and Silverman, 2003).



## 2. Investment style of Japanese VCF

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### **\*Shift to the early stage and technology based firms**

-In Japan, the investment style of VCFs has changed rapidly since the late 1990s.

-There has been a notable growth in the percentage of investment in the technology based and early stage firms, as well as, in total Japanese VC investment amounts to hit a peak of 279 billion yen in fiscal year 2006.

### **\*Later stage and non high-tech sector-before 1990s-**

-Before the late 1990s, Japanese VCFs mainly had invested in later stage firms which were maturing and prepared to IPO and had not been willing to invest in new startup firms (Hamao, Packer and Ritter, 2000).

-One of the weakness of Japanese innovations system is the low percentage of high tech sector in Japanese VC investment, such as internet, biotechnology and nanotechnology(OECD, 2008)



### **\*Early stage investment -after the late 1990s-**

-In 2011, the percentage of investments amount in seed firms was 4.4, early stage, 28.1, expansion stage 34.4 and later stage 33.1 (Venture Enterprise Center, 2012). Before the late 1990s, more than 50 percent of VC investments in Japan went to later stage firms that had at least 10 years of experience since being set up.

-The percentage of investments in firms during the first 5 years of inauguration was 17.2 percent in 1995, which has increased to more than 60 percent early 2000's, and gradually declined to around 30 percent in 2011 (Ministry of international trade and industry, 1995-1996; Venture Enterprise Center 1997-2012).





### **\*High-tech Investment -after the late 1990s-**

-Up to the latter half of the 1990s, Japan's VCFs had invested in the areas of wholesale/retail/food and beverage industries, other industries, construction industries and financial and insurance industries, all of which are essentially conventional industries (Ministry of international trade and industry, 1995-1996; Venture Enterprise Center 1996-2000).

-In 2011, 31.7 percent of investment amount of Japanese VCF was IT-related, 13.7 percent, biotechnology, medical and healthcare.

Thus, the investment in new technical innovation areas held a considerable share (Venture Enterprise Center, 2012).



### 3. Effect of the Global financial crisis

- 2007-2008 global financial crisis swept across the world triggered by the collapse of Lehman Brothers.
- Japanese VC investment amounts have sharply declined for three consecutive years after hitting a peak of 279 billion yen in fiscal year 2006 (Venture Enterprise Center, 2012).
- The number of IPO in Japan also sharply dropped form 188 in 2006 to 19 in 2009 including 7 VC backed firms (Venture Enterprise Center, 2012). In fiscal 2009, in particular, total investment dipped below 100 billion yen.

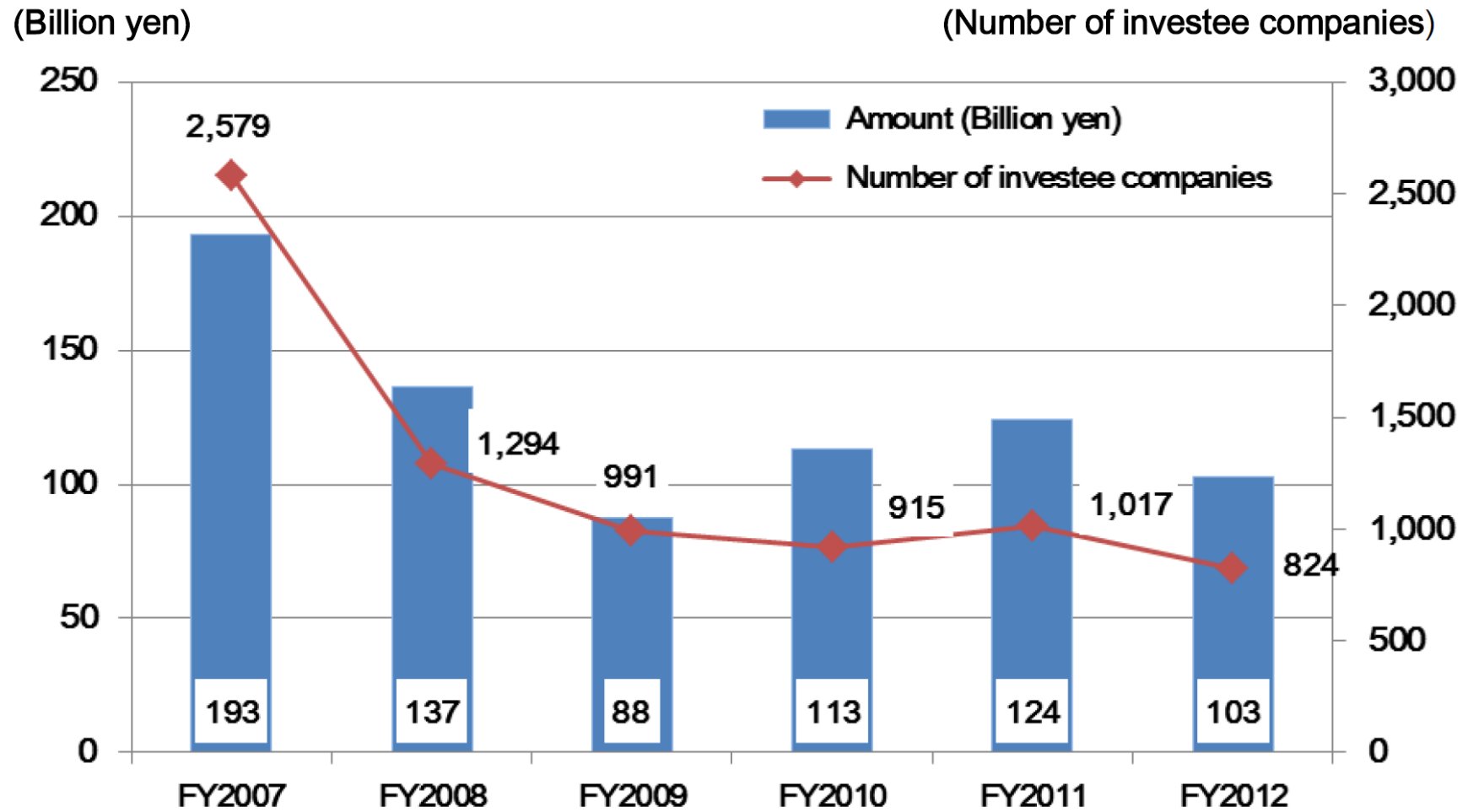
#### Annual investment amount

	amount of investment (bill. yen)	number of recipients
FY2006	279.0	2774
FY2007	193.3	2579
FY2008	136.6	1294
FY2009	87.5	991
FY2010	113.2	915
FY2011	124.0	1017


Source: Venture Enterprise Center (2012)

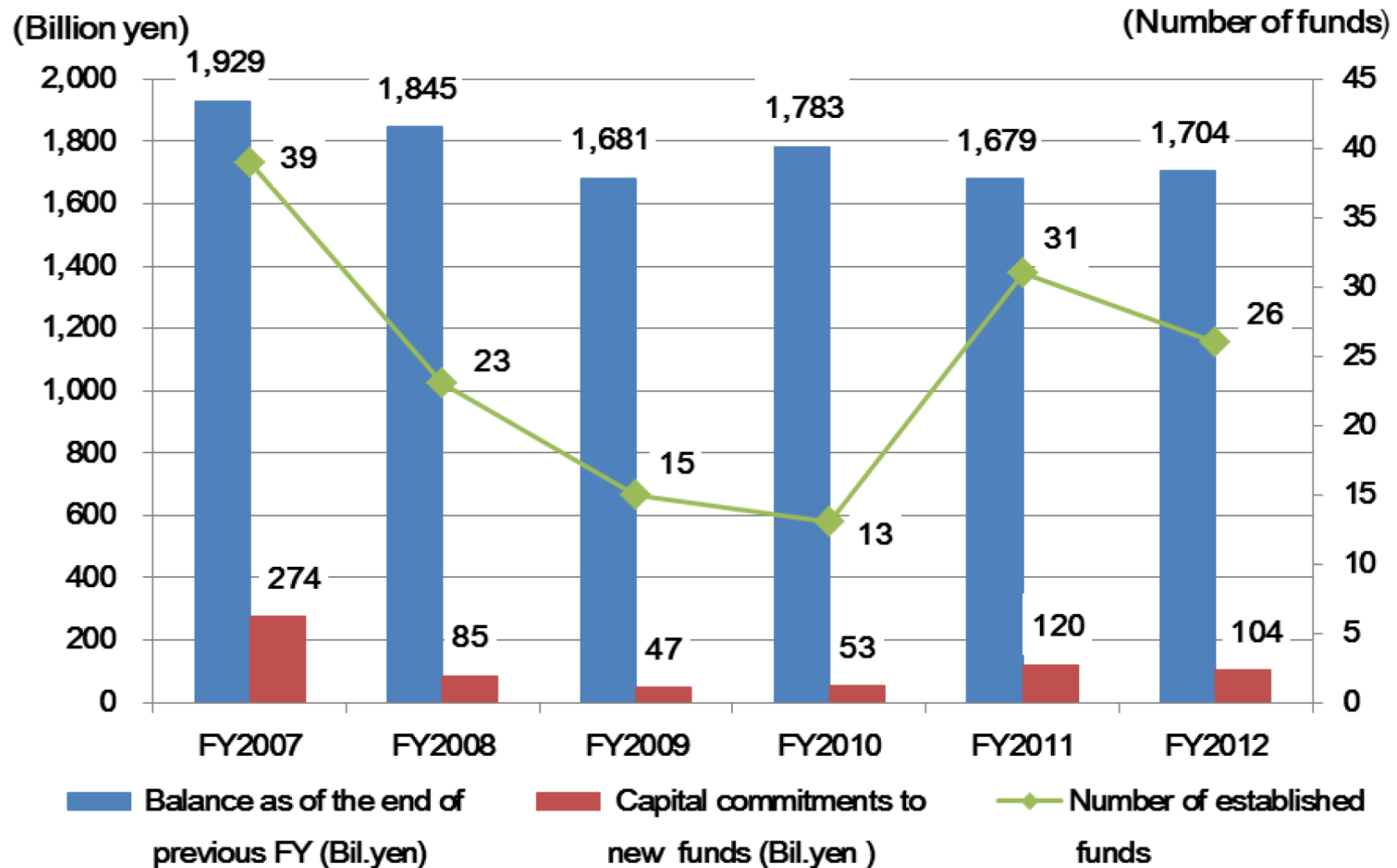


# Annual Investment Amount



Source: VEC, Survey on Trends in Venture Capital Investment

 Total balance of funds, number of established funds and capital commitments to new funds





## 4. Research Questions

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**(1) How do Japanese VCFs value their potential portfolio companies?"**

**(1).A. Sources of information for valuation**

-The VCists who invest in the biotechnology based new firms have a potential to "scout" excellent technologies (Baum and Silverman, 2003)

H→Japanese VCFs might have been focusing on the technologies of their potential portfolio companies as the primary source of information used when deciding which firms to invest in because of the increase in new technology related investment.

-VCists in the network-based countries are likely to place greater importance on the personal quality of entrepreneurs and information provided by management and their acquaintance as sources of information for valuation (Manigart, Waele, Wright, Robbie, Sapienza and Beekman, 2000).

→Manigart et al. (2000) did not mention specifically of Japanese VCFs but it seems obvious that, according to their definition, Japan can be included as one of the network-based countries.

H-Japanese VCFs pay greater attention to the quality of management than other things (Ray and Turpin, 1993; Nishizawa, 1998).



### **(1).B.Methods used in evaluating potential portfolio companies**

H-Japanese VCFs rely on the use of book values and recent transaction prices in the sector(Hasegawa, 2004).

-However, these two methods are evaluated to be less advanced when compared to other valuation methods such as the discounted value of free cash flows and capitalized maintainable earning which are widely used by many VCists in the U.S. (Manigart et al., 2000).



### **(2) How does the global financial crisis affect Japanese VCFs' valuation? -Source of information and method-**

-After the late 1990s, Japanese VCFs have invested in the **new technology firms** even though they are basically high-potential but high-risk compared to the relatively mature firms that Japanese VCFs mainly invested in before the late 1990s.

**H→Under the sever management environment due to the global financial crisis, it seems that Japanese VCFs should reconsider the primary source of information and methods used in evaluating potential portfolio companies.**

→Need to examine their valuation of potential portfolio companies and whether or not their pre-investment valuation have changed after the global financial crisis based on questionnaire surveys of Japanese VCFs.

### **\*Survey in 2006**

Date: From late July to mid-August, 2006

Number of sending: 157(VCFs)

-Corporate members of the Japan Venture Capital Association and companies listed on the “Japan Venture Capital Directory in FY2005” published by Venture Enterprise Center in 2006.

Response : 41

Response rate: 26.1%.

-During late August to late September, I contacted non-responding VCFs via phone, fax, and email to remind them of questionnaire response.

### **\*Survey in 2010**

Date: From late January to early February, 2010

Number of sending: 188 (VCFs)

-Corporate members of the Japan Venture Capital Association and companies listed on the “Japan Venture Capital Directory in FY2009” published by Venture Enterprise Center in 2009.

Response: 40

Response rate: 21.2%.





## 6.1. Primary Source of Information

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### **\*Questions**

-VCFs were asked to rate the following items on a scale of 1 (never use) to 5 (always use).

-These items were selected based on the study by Manigart et al.(2000)

### **\*Y2010 survey**

(2) Interview with entrepreneurs was ranked the highest on average, followed by the (8) Business plan: overall coherence of business plan.

### **\*Y2006 survey**

(2) Interview with entrepreneurs was also ranked the highest on average, followed by the (1) Curriculum vitae of management in 2006.

### **\*The comparison between in 2010 and in 2006**

-Japanese VCFs have placed more importance on (10) Business plan: balance sheet account (+0.38), (9) Business plan: profit & loss account (+0.24), (8) Business plan: overall coherence of business plan (+0.22).

-They have less focused on (7) Due diligence by accounting/consulting firms (-0.43), (13) Business plan: qualified audit report (-0.37), (3) Interviews with other company personnel (-0.30).



## Sources of information for valuation

	Japan			Manger et al. (2000)			
	(A) Y2006	(B) Y2010	(B)-(A)	USA	UK	Belgium/ Netherlands	France
(1) Curriculum vitae of management	4.73	4.72	-0.01	4.19	3.91	4.34	4.41
(2) Interviews with entrepreneurs	4.93	4.87	-0.06	4.22	3.65	4.47	4.25
(3) Interviews with other company personnel	4.30	4.00	-0.30	3.74	3.17	4.00	4.25
(4) Sales and marketing information	4.62	4.64	0.02	3.89	3.80	4.24	4.25
(5) Production capacity/technical information	4.59	4.74	0.15	3.71	3.42	3.71	4.19
(6) Own due diligence report	4.30	4.26	-0.04	4.88	4.47	4.61	4.57
(7) Due diligence by accounting/consulting firms	3.30	2.87	-0.43	3.82	3.75	4.03	4.03
(8) Business plan: overall coherence of business plan	4.63	4.85	0.22	4.19	4.06	4.47	4.77
(9) Business plan: profit & loss account	4.50	4.74	0.24	3.81	4.36	4.48	4.38
(10) Business plan: balance sheet account	4.33	4.71	0.38	3.42	4.00	4.26	4.31
(11) Business plan: unaudited management projections (1 year ahead)	4.65	4.79	0.14	3.40	4.03	4.08	4.57
(12) Business plan: unaudited management projections (more than 1 year ahead)	4.58	4.67	0.09	3.27	3.63	4.03	4.36
(13) Business plan: qualified audit report	3.65	3.28	-0.37	3.41	3.70	4.21	4.44
Average	4.39	4.40	0.01	3.84	3.84	4.23	4.37

### **\*Questions**

-VCFs were asked to rate the following items on a scale of 1 (never use) to 5 (always use).

### **\*Result**

-(1) Capitalized maintainable earning (P/E multiples) was ranked the highest on average, followed by the (7) Investor's special "rule of thumb" pricing ratios in both in 2010 and in 2006.

### **\*The comparison between in 2010 and in 2006**

-The average went down.

-Japanese VCFs have placed more importance on the (6) Dividend yield basis (+1.11).

-They have less focused on (5) Payback period (-1.3), (4) Discounted value of free cash flows (-0.41), (7) Investor's special "rule of thumb" pricing ratios (-0.27), (2) Capitalized maintainable earning (EBIT multiples)(-0.26).



## Methods used in evaluating potential portfolio companies

	Japan		Manger et al. (2000)				
	(C) Y2006	(D) Y2010	(D)- (C)	USA	UK	Belgiu m/Net herlan ds	Franc e
(1) Capitalized maintainable earning (P/E multiples)	4.05	3.92	-0.13	3.63	4.31	3.58	3.66
(2) Capitalized maintainable earning (EBIT multiples)	3.34	3.08	-0.26	3.83	3.90	3.76	3.66
(3) Recent transaction prices for acquisitions in the sector	3.19	3.26	0.07	3.78	3.63	3.61	4.22
(4) Discounted value of free cash flows	3.79	3.38	-0.41	3.62	-	3.89	3.26
(5) Payback period	3.73	2.43	-1.30	3.47	-	2.92	4.20
(6) Dividend yield basis	2.12	3.23	1.11	2.14	2.22	3.03	2.29
(7) Investor's special "rule of thumb" pricing ratios	4.00	3.73	-0.27	3.61	2.97	2.97	4.13
Average	3.46	3.29	-0.17	3.44	3.41	3.39	3.63



## 71. Summary

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### **\*Primary source of information**

-Y2010: (2) Interview with entrepreneurs was ranked the highest on average, followed by the (8) Business plan: overall coherence of business plan.

-Y2006: (2) Interview with entrepreneurs was also ranked the highest on average, followed by the (1) Curriculum vitae of management in 2006.

### **\*The comparison between in 2010 and in 2006**

-Japanese VCFs have placed more importance on (10) Business plan: balance sheet account (+0.38), (9) Business plan: profit & loss account (+0.24), (8) Business plan: overall coherence of business plan (+0.22).

### **\*The methods used in evaluating potential portfolio companies**

(1) Capitalized maintainable earning (P/E multiples) was ranked the highest on average, followed by (7) Investor's special "rule of thumb" pricing ratios in both in 2010 and in 2006.

### **\*The comparison between in 2010 and in 2006**

Japanese VCFs have placed more importance on the (6) Dividend yield basis (+1.11).

## **(1).How do Japanese VCFs valuate their potential portfolio companies?”**

### **(1).A.Sources of information for valuation**

-VCists in the U.S. and U.K. place a greater importance on own due diligence report than any other means for their source of information for potential portfolio companies(Manigart et al., 2000)

F→The Japanese VCFs emphasize more on the curriculum vitae of management, and interview with entrepreneurs.

I→This finding corresponds to the conclusions of the researches by Ray and Turpin (1993) and Nishizawa (1998)—for Japanese VCFs, the valuating potential portfolio companies equates the selection of management.

## (1).B.Methods Used in Evaluating Potential Portfolio Companies

-Relatively high proportion of Japanese VCFs use capitalized maintainable earnings (P/E multiples).

→While Hasegawa (2004) maintained that many VCFs adopt the book value, and recent transaction prices in the sector as their valuation methods, capitalized maintainable earnings (P/E multiples) which is considered to be commonly used in countries with well-developed capital markets (Manigart et al., 2000) is also widely adopted by Japanese VCFs.

F→Japanese VCFs have come to attach a greater importance to capitalized maintainable earnings (P/E multiples) in evaluating potential portfolio companies in recent years just as those in the U.S. and U.K.



### **(2) How does the global financial crisis affect Japanese VCFs' valuation? -Source of information and method-**

-Japanese VCFs have focused on the business plan, especially profit & loss account and balance sheet.

F-The percentage of using dividend yield basis has been increased sharply.

F→Japanese VCFs have been putting more importance on the dividend and present value of the profit, & loss, balance sheet, not on the future value of potential portfolio companies.

I→They are more conservative than before the crisis.





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## Why VC research?

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After World War II, Japan was able to achieve economic growth at a speed rarely seen in history, and built a position as the world's third largest economy.

Through continuous innovation by entrepreneurs, highly value-added goods were produced on a consistent basis.

Japan remains at the forefront of cutting-edge technology, and is generally recognized as one of the leading countries as far as industrialization is concerned.

Toyota, Honda, Sony, Panasonic - these are just some of the globally known Japanese firms with a strong foundation in advanced technology.

Japan can overcome the challenges currently faced, and in a global economic crisis that is steadily becoming more competitive and difficult to survive, whether the former shine to the economy can be restored





## Science and Innovation Profile of Japan

	Japan	Ave.
1) Triadic patents per million population	100.00	36.66
2) Percentage of firms undertaking non-technological innovation (as a percentage of all firms)	100.00	50.98
3) Gross domestic expenditure on R&D as percentage of GDP	72.90	48.60
4) Business expenditure on R&D as percentage of GDP	71.98	42.86
5) Researchers per thousand total employment	66.73	44.26
6) Science & engineering degrees as percentage of all new degrees	63.40	59.80
7) Human resources in science and technology occupations as percentage of total employment	40.92	77.02
8) Scientific articles per million population	37.22	46.94
9) percentage of firms collaborating (as a percentage of all firms)	33.29	57.02
10) percentage of firms with new-to-market product innovations(as a percentage of all firms)	29.76	44.02
11) Patents with foreign co-inventors	5.47	13.35
12)Percentage of Gross domestic expenditure financed by abroad	1.84	38.81
13) Venture capital as percentage GDP	1.39	23.07

Source: OECD(2008) Science,Technology and Industry Outlook, OECD Publication Service.



Japan has managed to surpass the OECD average in the following indicators: 1) triadic patents per million population, 2) percentage of firms undertaking non-technological innovation (as a percentage of all firms), 3) gross domestic expenditure on R&D as a percentage of GDP, 4) business expenditure on R&D as a percentage of GDP, 5) researchers per thousand total employment, and 6) science & engineering degrees as a percentage of all new degrees.

Indicators in which Japan showed lower values than the average included 7) Human resources in science and technology occupations as percentage of total employment, 8) Scientific articles per million population, 9) percentage of firms collaborating (as a percentage of all firms), 10) percentage of firms with new-to-market product innovations (as a percentage of all firms), 11) Patents with foreign co-inventors, 12) Percentage of Gross domestic expenditure financed by abroad and 13) Venture capital as percentage GDP.

From this data, we can infer that Japan's science and innovation industry is centered on the private sector, with advantages in R&D investments, patents, and non-technological innovations. On the other hand, Japan is lagging behind in inter-firm collaborations, collaborations with foreign investors and venture capital investments.

## Venture capital investments

Czech Republic	3.69	Austria	86.37	Russian Federation (2012)	398.00
Slovenia	5.28	Norway	94.57	Korea	635.47
Greece	6.42	Denmark	107.17	United Kingdom	740.38
Luxembourg	7.02	Belgium	118.83	Israel	895.00
Estonia	8.20	Spain	134.98	France	902.24
Poland	20.76	Ireland	145.46	Germany	932.85
New Zealand (2012)	21.71	Finland	170.95	Japan (2012)	1,284.58
Hungary	22.93	Australia	252.93	Canada (2011)	1,406.58
Portugal	50.40	Netherland	257.02	United States	29,364.96
Italy	80.70	Switzerland	260.63		
South Africa (2012)	81.34	Sweden	307.26		

Table 4. Source: OECD(2014)  
Notes: Millions US dollars



## Venture capital investments as a percentage of GDP

	Seed/start-up/early stage	Later stage venture
United States	0.0637	0.1111
Canada (2011)	0.0246	0.0544
Sweden	0.0241	0.0310
Finland	0.0375	0.0291
Israel	0.2876	0.0196
France	0.0150	0.0179
Estonia	0.0160	0.0175
Ireland	0.0535	0.0133
United Kingdom	0.0173	0.0120
Denmark	0.0205	0.0119
Netherlands	0.0217	0.0105
Germany	0.0159	0.0098
Slovenia	0.0020	0.0093
Austria	0.0118	0.0090
Switzerland	0.0314	0.0086
Hungary	0.0092	0.0085
Belgium	0.0160	0.0074
Australia	0.0092	0.0074
Norway	0.0134	0.0051
Spain	0.0050	0.0050
Japan (2012)	0.0182	0.0034
Portugal	0.0196	0.0033
Poland	0.0017	0.0023
Greece	0.0004	0.0022
Italy	0.0022	0.0017
Czech Republic	0.0012	0.0006
Luxembourg	0.0116	0.0000

Source: OECD(2014)

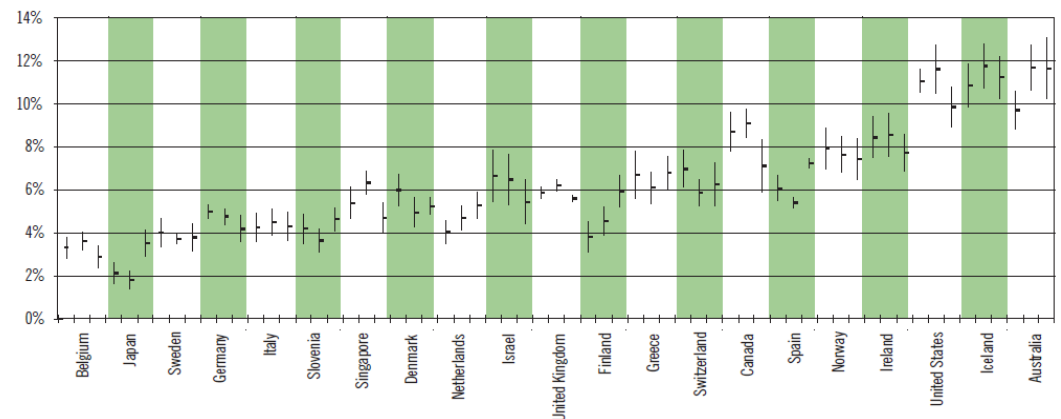


According to the report by the Organization for Economic Cooperation and Development (OECD), **Japan has the lowest rate for establishing new businesses among all OECD countries**, and a state in **which the rate of business closures are much higher than the rate of business establishment**.

As such, Japan has an extremely sluggish business establishment rate that is rare amongst developed countries (OECD, 2008).

Furthermore, in the research conducted by the Global Entrepreneurship Monitor (GEM), it was shown that Japan was one of the least advanced countries out of high-income countries with regards to entrepreneurial activities (GEM, 2007, Takahashi, 2007).

It is generally recognized that the Japanese are **stability-oriented, and prefer becoming employed in a well-established global enterprises** as compared to becoming entrepreneurs, and in general lack the challenge spirit to independently start-up their own businesses.



Innovation Network Corporation of Japan (INCJ), a unique public-private partnership aimed at promoting innovation and enhancing the value of businesses in Japan, was launched in July 2009.

Leveraging the rich history of Japanese technological prowess, INCJ aims to provide financial, technological and management support in order to promote the creation of next-generation businesses through “open innovation,” or the flow of technology and expertise beyond the boundaries of existing organizational structures.

INCJ will draw on funding as well as management and technological expertise from the public and private sectors. INCJ is actively reviewing various investment opportunities in areas of green energy, electronics, IT and biotechnology to infrastructure-related sectors such as water supply. Each investment will be thoroughly vetted to ensure it meets the exacting standards of INCJ's Innovation Network Committee, which will make the final investment decisions.

INCJ is capitalized **at 300 billion yen**, with the Japanese government injecting 286 billion yen and 26 private corporations (refer to details in Appendix below) providing a further 14 billion yen. The government will also provide guarantees up to a total of **1,800 billion yen** for INCJ investments, giving it an investment capability of approximately **2,000 billion yen**. INCJ will be established for a period of 15 years.