

# CVC IN JAPAN: CORPORATE VENTURE CAPITAL ACTIVITIES BY JAPANESE COMPANIES

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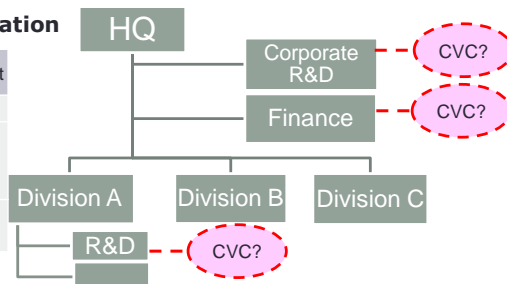


## Our Research Project

- Study of Japanese “open innovation” activities through corporate investments in startups
- Goal: Evaluate long-term effects on innovation streams and new business development in Japan
- Today:
  - Data overview
    - Who are the investors? , Who are the targets?
    - Any difference between Corporate investment and CVC Fund?
  - Lay out research design

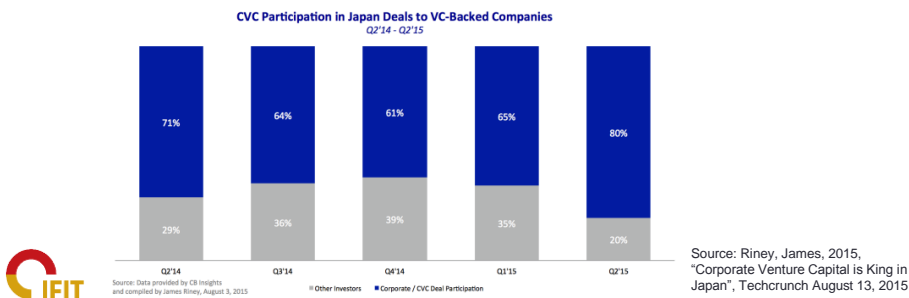
### Locus of CVC and its effect on innovation

Who manages CVC?	Characteristics	Innovation Impact
Finance	Goal is ROI? OI? Wide range, long horizon?	none?
Corporate R&D	Clear target, needs- based?	Long term?
Product division		Short term?



# 1. Why CVC?

- CVC plays a dominant role in Japanese VC
  - An estimated 80% of deals in Japan in 2015 had CVC participation, compared to only 23% in the U.S. (CB Insights)
- These investments are not included in the VEC data of Japanese VC
  - Leads to an underestimation of total VC activities in Japan
- “Open Innovation” is a hot topic in Japan right now
  - What are companies actually doing?

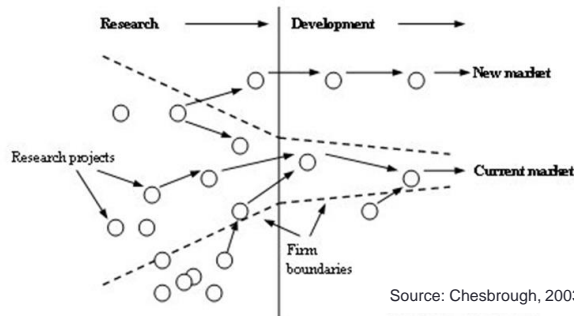


## What we know about CVC

- Generally, entrepreneurs consider CVC the lesser option:
  - It's better to get straight VC funding
  - Large companies are said to be slow, not reliably committed in the long run, and too hierarchical
  - Japanese firms may be tempted to “mess” with the startup by sending people over there, etc.
  - Japanese firms may not be very good at integrating acquisitions into their main lines of business
  - Only advantage of a CVC may be an immediate sales channel.
- But: Research shows positive impact on startup performance
  - More successful in proceeding to an IPO (initial public offering) (Gompers and Lerner, 1998; Kann, 2001).
  - Higher valuation of the start-up firm (Dushnitsky and Lenox, 2006)
  - Accelerated innovation activity of start-up firms (Chemmanur et al., 2014)



## What is “Open Innovation”?



Need to seek outside the boundaries of the firm for innovation

- Using outside knowledge for **ideas of research**
- Using outside institutions for **business development**



CVC is one way to move to “open innovation”

## Why is “open innovation” a hot topic in Japan?

- Dysfunction (apparent or alleged) of sole focus on in-house innovation
  - Lifetime employment limits cross-fertilization: system has run stale
  - Failure to address disruptive technologies
  - “NIH” ( Not Invented Here) Syndrome
  - In-house R&D departments too expensive?
- “Open Innovation” = buy ideas in the market, integrate with main company, develop new businesses
  - CVC is the vehicle to “fish” for these ideas
    - Follows the model of VC activity
    - Rather than investing in funds, CVC makes own investment decisions
  - CVC usually become limited partners and form syndicates with VC and other CVC



# Research Question of our project

- Exploring the characteristics of investment behavior of Japanese CVC
  - Who are they?
  - What do they aim for?
    - Return on investment?
    - New ideas for new business development, regardless of returns?
  - How do they manage their investment targets?
  - How successful are they?
- Finding the impact of “open innovation” through CVC on corporate renewal and change in Japanese companies.
  - Is “open innovation” a promising approach?



## 2. Our Dataset

Data is collected from CB Insight (U.S. commercial database of start-up investments).

Showing 1-100 out of 19,198 results

Investor	Investor Description	Inv. URL	# Deals	# Exits	Investor Type	Inv. Country	Inv. State	Inv. City
Intel Capital	Intel Capital is a global investing organizati...	intelcapital...	1545	N/A	Corporate Venture	United States	California	Santa Clara
Kickstarter	Kickstarter is a global crowdfunding platfor...	kickstarter...	473	N/A	Corporation	United States	New York	New York
Google Ventures	GV (Google Ventures) seeks to discover an...	gv.com	462	N/A	Corporate Venture	United States	California	Mountain View
Qualcomm Ventures	Qualcomm Ventures (QCV) was formed and...	qualcommv...	402	N/A	Corporate Venture	United States	California	San Diego
Cisco Systems	Cisco Systems, Inc. (Cisco) provides netw...	cisco.com	342	N/A	Corporation	United States	California	San Jose
Microsoft	Founded in 1975, Microsoft (Nasdaq: "MSET")	microsoft.c...	299	N/A	Corporation	United States	Washington	Redmond
Mitsui & Co. Global Inv...	Mitsui & Co. Global Investment (MGI), form...	mitsui-globa...	273	N/A	Corporate Venture	Japan		Tokyo
Google	Google's search technologies connect millio...	google.com...	266	N/A	Corporation	United States	California	Mountain View
Novartis Venture Funds	Novartis Venture Funds primarily focuses o...	nvfund.com	240	N/A	Corporate Venture	Switzerland		Basel
Siemens Venture Capital	Siemens Venture Capital (SVC) is the corpo...	siemens.ven...	231	N/A	Corporate Venture	Germany		Munich
Motorola Solutions Ven...	Motorola Solutions Venture Capital is the glo...	motorolasol...	230	N/A	Corporate Venture	United States	Illinois	Schaumburg
Samsung Ventures	Samsung Ventures was established in 1999...	samsungve...	229	N/A	Corporate Venture	South Korea		Seoul
Salesforce Ventures	Salesforce Ventures-Salesforce's corporate...	salesforce...	216	N/A	Corporate Venture	United States	California	San Francisco
Investor Growth Capital	Investor Growth Capital is the wholly owned...	investorab...	215	N/A	Corporate Venture	Sweden		Stockholm
In-Q-Tel	In-Q-Tel identifies and partners with compa...	iq.torg	204	N/A	Corporate Venture	United States	Virginia	Arlington
Johnson & Johnson In...	Johnson & Johnson Innovation, formerly Jo...	jjinnovatio...	198	N/A	Corporate Venture	United States	Massachusetts	Cambridge
SR One	SR One is the corporate venture capital ar...	srone.com	197	N/A	Corporate Venture	United States	Massachusetts	Cambridge
Oracle	Oracle is a global enterprise software comp...	oracle.com	172	N/A	Corporation	United States	California	Redwood Sho...
GE Healthcare	GE Healthcare provides services in medical...	gehealthcar...	171	N/A	Corporation	United Kingdom		Buckingham...
Time Warner Investme...	Time Warner Inc. is a media and entertainm...	timewarner...	168	N/A	Corporate Venture	United States	New York	
IBM	International Business Machines (IBM) (NY...	ibm.com	167	N/A	Corporation	United States	New York	Armonk
Tencent	Tencent provides value-added Internet, mob...	tencent.com	163	N/A	Corporation	China		
Novo A/S	Novo A/S, the holding company in the Nov...	novoo.dk	159	N/A	Holding Company	Denmark		Hellerup

Intel Capital is biggest CVC player(1,545 deals)

Mitsui&Co is 7th (273deals)

Among the top 300 CVC, 32 are Japanese companies



## Japanese corporations and CVC among top 300 CVC investors (current deals outstanding)

Name of Company/Fund	#of deal	Name of Company/Fund	#of deal
Mitsui&Co Global Investment	272	Takeda Venture	40
Mitsubishi UFJ Capital	105	DeNA	39
Cyberagent ventures	89	Rakuten	39
Sony USA	80	NEC USA	35
Mitsubishi Electronics Irvine	76	Nissay Capital	33
Panasonic Ventures	74	Hitachi	29
Recruit SP US	74	Marubeni	29
DG Incubation	72	Itochu Corp	28
Itochu Technology Ventures US	68	NTT Communications	28
Transcosmos	62	KDDI Open Innovation Fund	27
Itochu Techno Solutions	61	SMBC Venture Capital	27
Sumitomo	54	Mitsui&Co	25
Astellas Venture	52	Toshiba	25
Softbank Corp	52	NTT Finance	24
GREE ventures	46	Panasonic USA	23
Docomo capital	44	NTT DoCoMo Ventures	22



is CVC Fund, Red Character is US subsidiary

## Data Collection

- We collected all deal information of CVC, Corporations, Venture Capital etc., headquartered in Japan (2,728 deals).
- We added deal information from US subsidiaries of major Japanese companies (609deals)

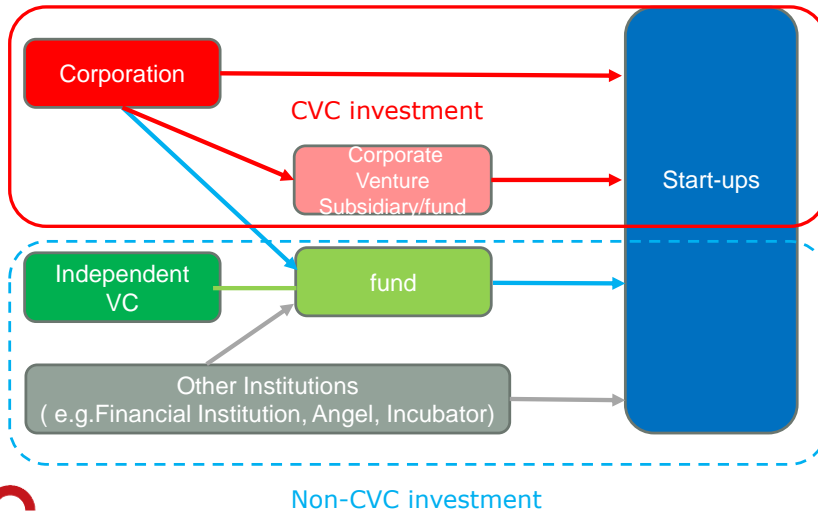
- Total number of deals: 3,337
- From these, we remove from the analysis
  - Deals that are not straight VC investments
    - Acquisitions, debt finance, etc.
  - Follow-on investments
- Total number of new investment deals: 1,993
  - Number of Corporations are 161, Corporate Venture Funds are 43.

Number of companies in CB insight

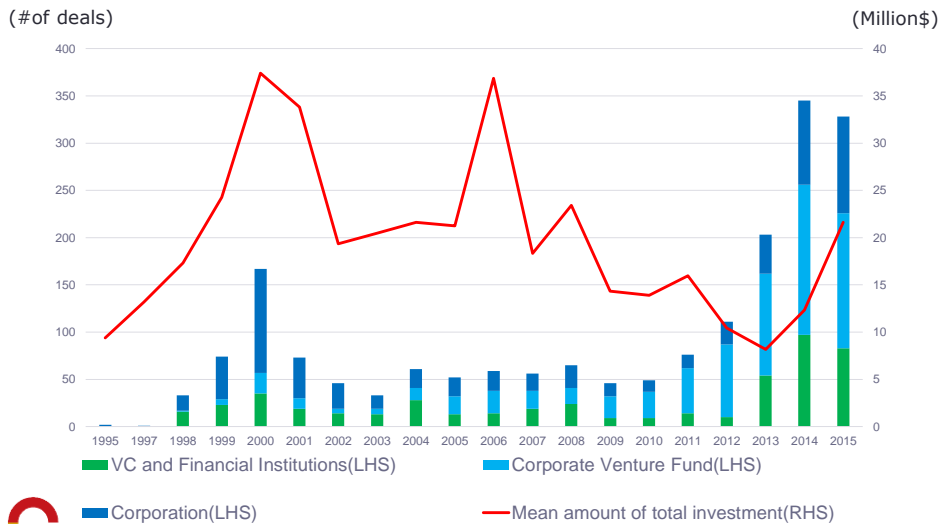
	Japan		United states	
Corporation	272	64.60%	11,486	53.10%
CVC	40	9.50%	243	1.10%
Venture capital	56	13.30%	2,280	10.50%
Financial Institution	28	6.70%	2,745	12.70%
Incubator	10	2.40%	417	1.90%
Angel	5	1.20%	1,738	8%
Other	10	2.40%	2,739	12.70%
Total	421	100.00%	21,648	100.00%



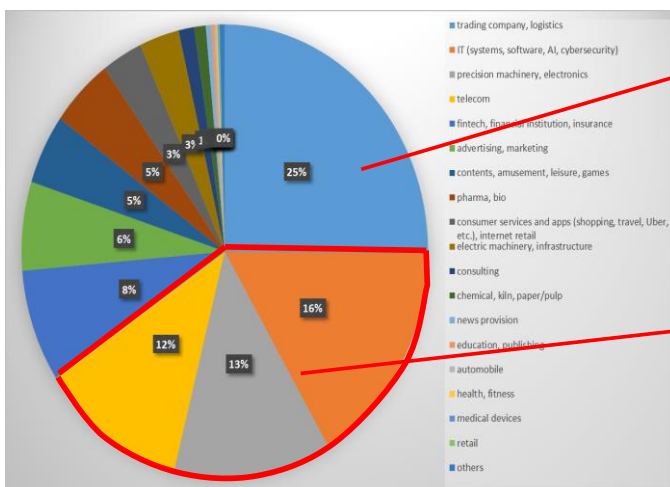
## Our operational definition of Corporate Venture Capital(CVC) Investment



## 3. Characteristics of Japanese CVC investment, over time



## J-CVC Investments, by Industry (# deals)

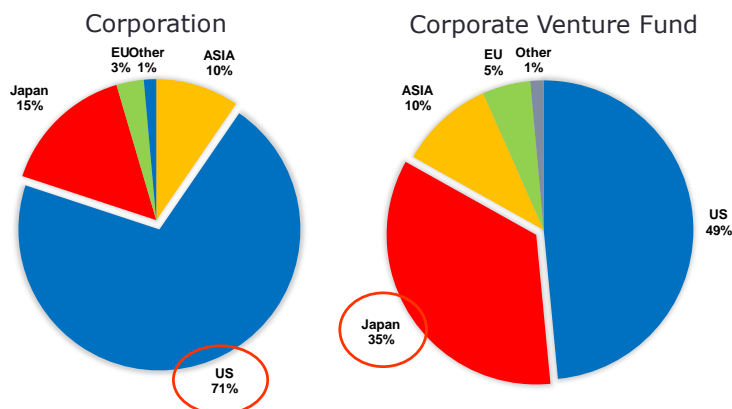


Trading companies are largest investor segment (25%)

IT, Electronics and Telecommunication account for 40%



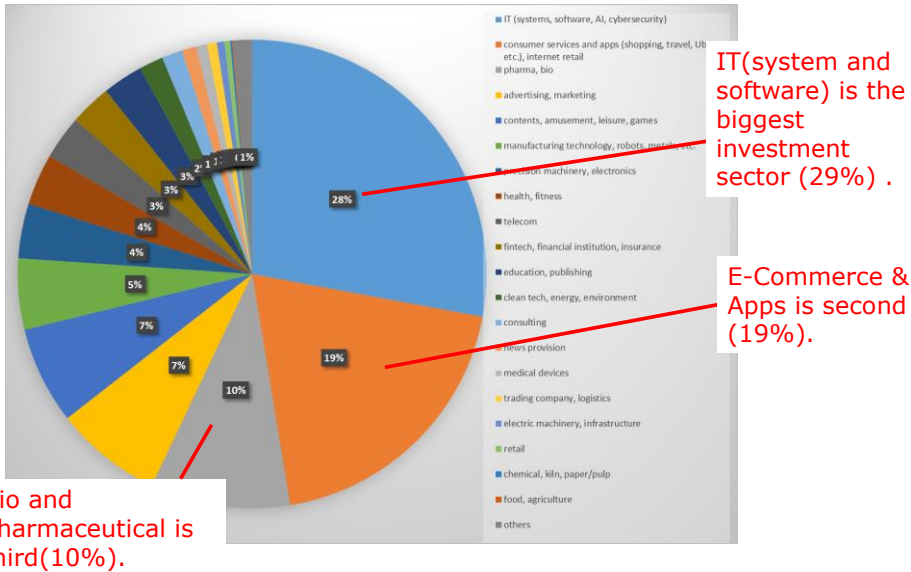
## Startup Target Companies, by Region



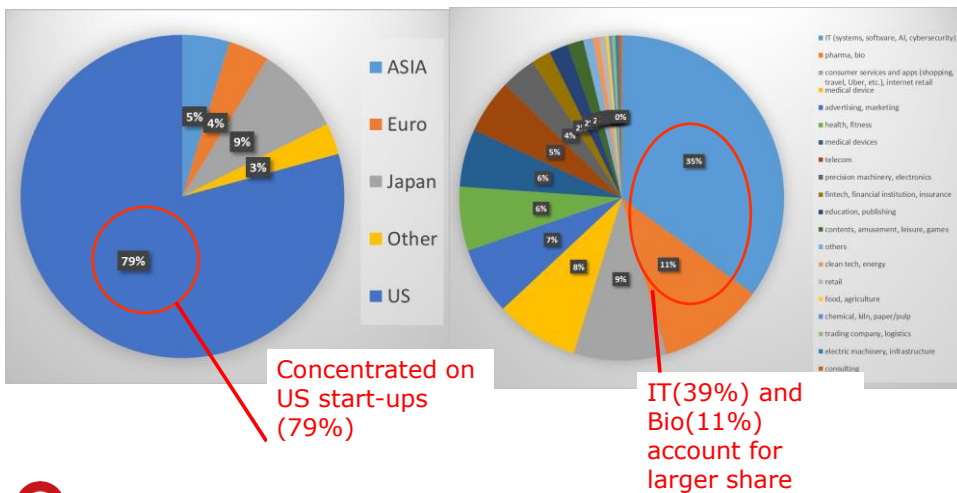
Corporations invest more overseas, CVC also invest actively within Japan.



## Startup Target Companies, by Industry



## Trading companies (総合商社)





## 4. Investment behavior of Corporation and CVC fund

	Mean financial round*	Number of co-investors in each deal	Mean amount of investment in each deal ( in total)
Corporation	3.05	5.12 ( companies)	30.19 ( million\$)
Corporate Venture Fund	2.42	3.40	13
Independent VC and Financial Service	2.58	4.04	14.75

\* We coded financial round of each deal as Seed =1, Series A =2, Series B=3, Series C =4, and so on

Corporate Venture Funds are more early stage-oriented;  
Corporations (direct investments) are more later stage-oriented.



## Patterns of Exit

	Probability of Exit*	Proportion of IPO in Exit	Mean time for exit
Corporation	25.40%	13.40%	6.08 (years)
Corporate Venture Fund	18.40%	19.30%	4.76
VC and Financial institution	19.60%	26.00%	5.63

\*We calculated probability of Exit as follows;  
(Number of IPO + Number of M&A) / Total number of deals

Corporations (direct investments) shows slightly high probability of exit, They prefer M&A and has much longer time period for exit



## Difference between Young and Established Companies

Divide investor (corporation) by age. Cut-off point is 20years

		N	mean	SD
Number of Deals	20years+	975	72.66	84.698***
	<20years	414	42.19	33.276
Amount of Total Investment	20years+	840	27.24	78.293***
	<20years	315	7.81	13.545
Finance Round	20years+	821	3.05	1.368***
	<20years	383	1.94	1.112
Number of Co-investors	20years+	975	4.74	4.371***
	<20years	414	3.00	3.350
Exit (M&A and IPO)	20years+	975	.26	.439***
	<20years	414	.11	.318
Exit (M&A or IPO)	20years+	254	.15	.357
	<20years	47	.21	.414

Established companies have experienced more deals, with larger investments, focusing on later stage, and with more co-investors



\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

## Difference between Japan and US

Divide investor(corporation) by location of Head-quarter.

		N	mean	SD
Number of Deals	JP	1098	65.08	83.093
	US	294	57.34	21.694
Amount of Funding	JP	905	20.50	66.496
	US	253	26.88	71.346
Finance Round	JP	965	2.60	1.402***
	US	242	3.08	1.288
Number of Co-investors	JP	1098	4.04	4.152***
	US	294	4.85	4.157
Exit (M&A and IPO)	JP	1098	.18	.386***
	US	294	.34	.476
Exit (M&A or IPO)	JP	200	.17	.372
	US	101	.15	.357

US CV and CVC are focused more on later stage, with more co-investors, and higher probability of exit.



\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

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## 5. Findings

- By industry, trading companies, IT/Electronics and Telecommunications are major CVC players in Japan.
  - Their targets are in IT, E-commerce/Apps, and Biotechnology
- Corporations and CVC display different investment behavior
  - Corporations (direct investment) are more US oriented, CVC also invest heavily with Japan
  - Corporations engage more in later-stage, larger investments than CVC, which are more early-stage oriented.
    - NB: The larger the company, the more pronounced this effect
    - Possibility of different effect on innovation
      - Corporate investments are closer tied/related to current businesses?
      - CVC investments are more future-oriented, disruptive innovation?



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## Research Design going forward

- Our interest: how are Japanese companies integrating “open innovation” into new business development, and with what success?
  - Identify the core businesses (industries) of the CVC/company
  - Identify where in the company the CVC is located
    - Central R&D, product divisions, Finance, etc.
  - Identify the industries of the target investments
    - What is the company buying? Is it an extension? Is there a pattern?
- True effect on innovation may only be visible in a few years; in the meantime we can
  - Evaluate the investment portfolio patterns
    - E.g., are all companies in one industry investment in the same thing?
  - Observe how the targets are managed?
  - Add qualitative research of companies (surveys, interviews) to identify goals and processes for each company



## Appendix A

### Details of investment behavior: Financial Round

		Seed	SeriesA	SeriesB	SeriesC	SeriesD	SeriesE+	Total
Independent VC and Financial Service	Number	90	99	86	62	18	16	371
	%	24.3%	26.7%	23.2%	16.7%	4.9%	4.3%	100.0%
Corporate Venture Fund	Number	146	155	124	71	32	19	547
	%	26.7%	28.3%	22.7%	13.0%	5.9%	3.5%	100.0%
Corporation	Number	66	100	144	109	49	24	492
	%	13.4%	20.3%	29.3%	22.2%	10.0%	4.9%	100.0%
Total	Number	302	354	354	242	99	59	1410
	%	21.4%	25.1%	25.1%	17.2%	7.0%	4.2%	100.0%

Corporate Venture Funds are more early stage-oriented; Corporations (direct investments) are more later stage-oriented.



## Amount of total investment in each deal

	(million\$)	1 <	1~10	10~50	50~100	100~500	500+	Total	Mean
Independent VC and Financial Service	Number	51	197	180	21	4	0	453	14.8
	%	11.3%	43.5%	39.7%	4.6%	0.9%	0.0%	100.0%	
Corporate Venture Fund	Number	61	286	213	21	7	0	588	13.0
	%	10.4%	48.6%	36.2%	3.6%	1.2%	0.0%	100.0%	
Corporation	Number	25	210	299	42	24	6	606	30.2
	%	4.1%	34.7%	49.3%	6.9%	4.0%	1.0%	100.0%	
Total	Number	137	693	692	84	35	6	1647	19.8
	%	8.3%	42.1%	42.0%	5.1%	2.1%	0.4%	100.0%	

Corporations participate in larger deals.



## Syndicating and Number of Co-Investor

		0	1~5	6~10	11~15	16~20	20+	Total
Independent VC and Financial Service	Number	61	312	100	26	8	2	509
	%	12.0%	61.3%	19.6%	5.1%	1.6%	0.4%	100.0%
Corporate Venture Fund	Number	150	463	112	25	8	1	759
	%	19.8%	61.0%	14.8%	3.3%	1.1%	0.1%	100.0%
Corporation	Number	48	392	168	51	13	5	677
	%	7.1%	57.9%	24.8%	7.5%	1.9%	0.7%	100.0%
Total	Number	259	1167	380	102	29	8	1945
	%	13.3%	60.0%	19.5%	5.2%	1.5%	0.4%	100.0%

Corporate Venture Funds have fewer co-investors than corporations, and often engage in solo investments.



## Patterns of Exit

		Non-Exit	IPO and M&A	Total
Independent VC and Financial Service	Number	409	100	509
	%	80.4%	19.6%	100.0%
Corporate Venture Fund	Number	619	140	759
	%	81.6%	18.4%	100.0%
Corporation	Number	505	172	677
	%	74.6%	25.4%	100.0%
Total	Number	1533	412	1945
	%	78.8%	21.2%	100.0%

Corporations show greater probability of exit

		M&A	IPO	Total
Independent VC and Financial Service	Number	74	26	100
	%	74.0%	26.0%	100.0%
Corporate Venture Fund	Number	113	27	140
	%	80.7%	19.3%	100.0%
Corporation	Number	149	23	172
	%	86.6%	13.4%	100.0%
Total	Number	336	76	412
	%	81.6%	18.4%	100.0%

Corporations and CVC both engage in more acquisitions than IPO.



## Time of Exit

	<1year	1-3year	3-5year	5-10year	10year+	Total	Mean
VC and Financial institution	5 5.0%	41 41.0%	22 22.0%	26 26.0%	6 6.0%	100 100.0%	5.63
Corporate Venture Fund	5 3.6%	70 51.1%	38 27.7%	19 13.9%	5 3.6%	137 100.0%	4.76
Corporation	3 1.9%	71 43.8%	33 20.4%	39 24.1%	16 9.9%	162 100.0%	6.08
Total	13 3.3%	182 46.1%	93 23.5%	80 20.3%	27 6.8%	395 100.0%	

CVC have shorter period to exit (avg 4.76 years) than Corporations (avg. 6.08).



## Appendix B: Factors affecting on Exit( IPO and M&A)

### • Result of logistic regression analysis

	Corporation b/t	Corporate Venture b/t	All b/t
Investor information			
JapanHQ	-0.80 [-2.15]**	-0.39 [-1.07]	-0.51 [-2.25]**
age 20years+	0.35 [0.80]	-0.47 [-0.80]	0.00 [0.01]
Number of Deals	0.00 [0.85]	0.00 [0.46]	0.00 [2.80]**
IT Industry?	0.14 [0.30]	-0.07 [-0.12]	-0.04 [-0.10]
Pharma industry?	0.65 [0.78]	1.27 [2.22]**	0.59 [1.46]
Trading company?	-0.56 [-1.62]	0.85 [1.74]*	-0.26 [-0.86]
Deal information			
Financial Round	0.19 [1.89]*	0.43 [4.58]**	0.30 [4.57]**
Number of Co-Investor	0.09 [3.31]**	0.04 [1.41]	0.08 [3.96]**
Start-up information			
JAPAN startups	-2.77 [-2.59]**	-0.47 [-1.07]	-1.18 [-3.12]**
US startups	0.25 [0.68]	0.41 [1.26]	0.41 [1.75]*
Bio startups?	-0.41 [-0.89]	-0.11 [-0.23]	-0.15 [-0.49]
IT startups?	-0.47 [-1.80]*	-0.04 [-0.13]	-0.19 [-1.01]
Constant	-1.76 [-2.66]**	-2.88 [-4.33]**	-2.54 [-5.83]**
N	495	666	1161

\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

- In investments by corporation, **investors located in Japan and Japanese startups** are less successful in Exit.
- In investments by Corporate Venture, **pharmaceutical and trading company** are more successful in Exit.
- For overall tendency, **number of total deals of investor and number of co-investor** is positively associated with probability of exit.

