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Investment Patterns of VC in Europe

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Aim

- To Report **descriptive evidence** based on VICO 2.0 data on **VC-backed firms** and **VC investments**
- To Provide **instructions** on how to use the STATA version of VICO 2.0
- Tables and Figures shown in this presentation have been derived from:
 - **VICO 2.0_Companies.dta**
 - Unit of analysis: Company
 - **VICO 2.0_Investments.dta:**
 - Unit of analysis: Company-Investor-Investment year
 - **VICO 2.0_Investors.dta**
 - Unit of analysis: Investor

VICO 2.0_Companies.dta

VICO 2.0_Companies.dta

- In the Company table the unit of analysis is the **VC-backed company**
- Variables mainly refer to general company characteristics (industry, location age)
- A couple of variables related to VC investment patterns
 - *AgeAtFirstInvestmentReceived*: age of the company when receiving the first VC investment
 - *FirstInvestmentReceivedYear*: year in which the company receives the first VC investment
- Some measures related to the status of the company as in 2015 (*CompanyListed*, *CompanyAcquired*, *CompanyFailed*)

Company Industry

CompanyIndustry	Freq.	Percent	Cum.
Software & Internet	4,009	30.49	30.49
R&D and Engineering	1,233	9.38	39.87
Life Sciences	1,193	9.07	48.94
Wholesale & retail trade	1,052	8.00	56.94
Other	1,011	7.69	64.63
Support services	870	6.62	71.24
Consultancy	845	6.43	77.67
High-tech manufacturing	830	6.31	83.98
Financial services	605	4.60	88.58
Culture & entertainment	410	3.12	91.70
Telecommunication Services	333	2.53	94.24
Construction & real estate	294	2.24	96.47
Food	221	1.68	98.15
Energy & environment	138	1.05	99.20
Chemicals	105	0.80	100.00
Total	13,149	100.00	

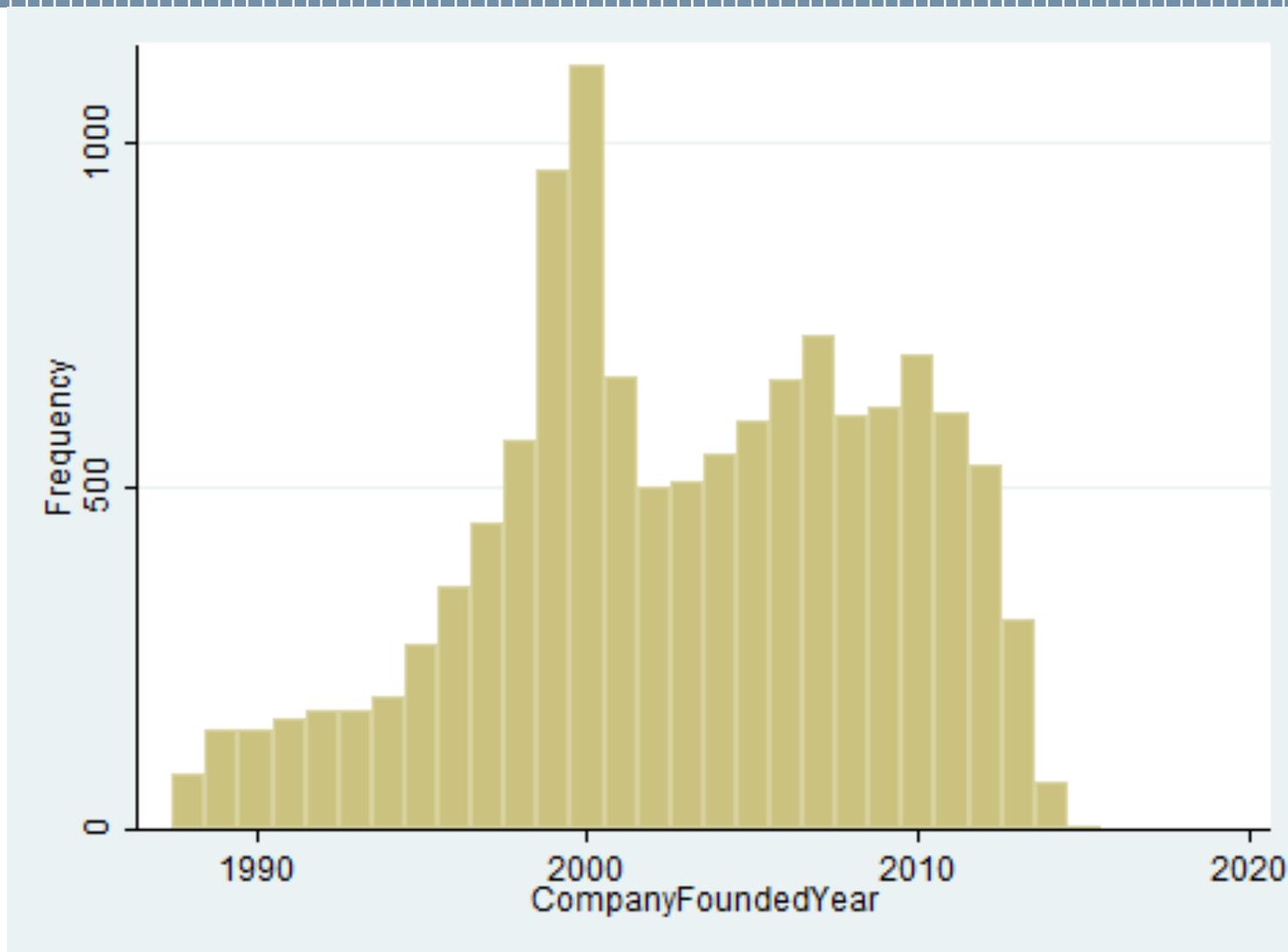
Company Country

CompanyNation	Freq.	Percent	Cum.
United Kingdom	5,861	32.82	32.82
France	3,868	21.66	54.49
Germany	3,094	17.33	71.81
Spain	1,454	8.14	79.96
Israel	1,240	6.94	86.90
Finland	1,044	5.85	92.75
Italy	738	4.13	96.88
Belgium	557	3.12	100.00
Total	17,856	100.00	

Company City

CompanyCity	Freq.	Percent	Cum.
London	2,027	11.59	11.59
Paris	1,192	6.82	18.41
Berlin	625	3.57	21.99
Madrid	368	2.10	24.09
München	339	1.94	26.03
Helsinki = Helsingfors	329	1.88	27.91
Barcelona	327	1.87	29.78
Tel Aviv-Yafo	304	1.74	31.52
Hamburg	224	1.28	32.80
Cambridge	217	1.24	34.04
Milano	193	1.10	35.15
Manchester	153	0.88	36.02
Espoo = Esbo	139	0.80	36.82
Edinburgh	122	0.70	37.51
Köln	121	0.69	38.21
Glasgow	103	0.59	38.80
Brussel=Bruxelles	97	0.55	39.35
n.a.	93	0.53	39.88
Herzliya	87	0.50	40.38
Lyon	82	0.47	40.85
Leeds	78	0.45	41.29
Liverpool	76	0.43	41.73
Frankfurt am Main	75	0.43	42.16
Birmingham	71	0.41	42.56
Bristol	71	0.41	42.97

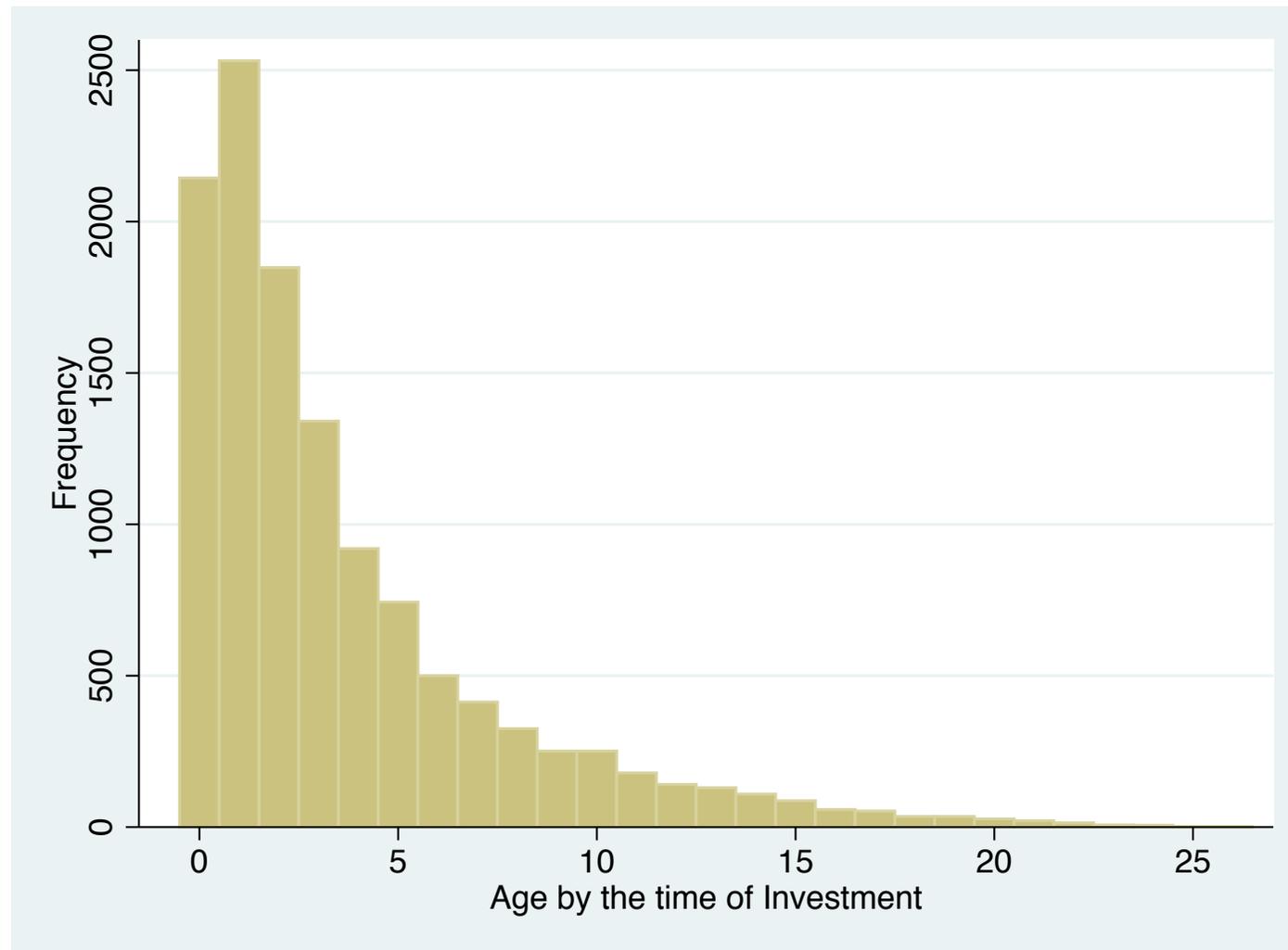
Company Foundation Year



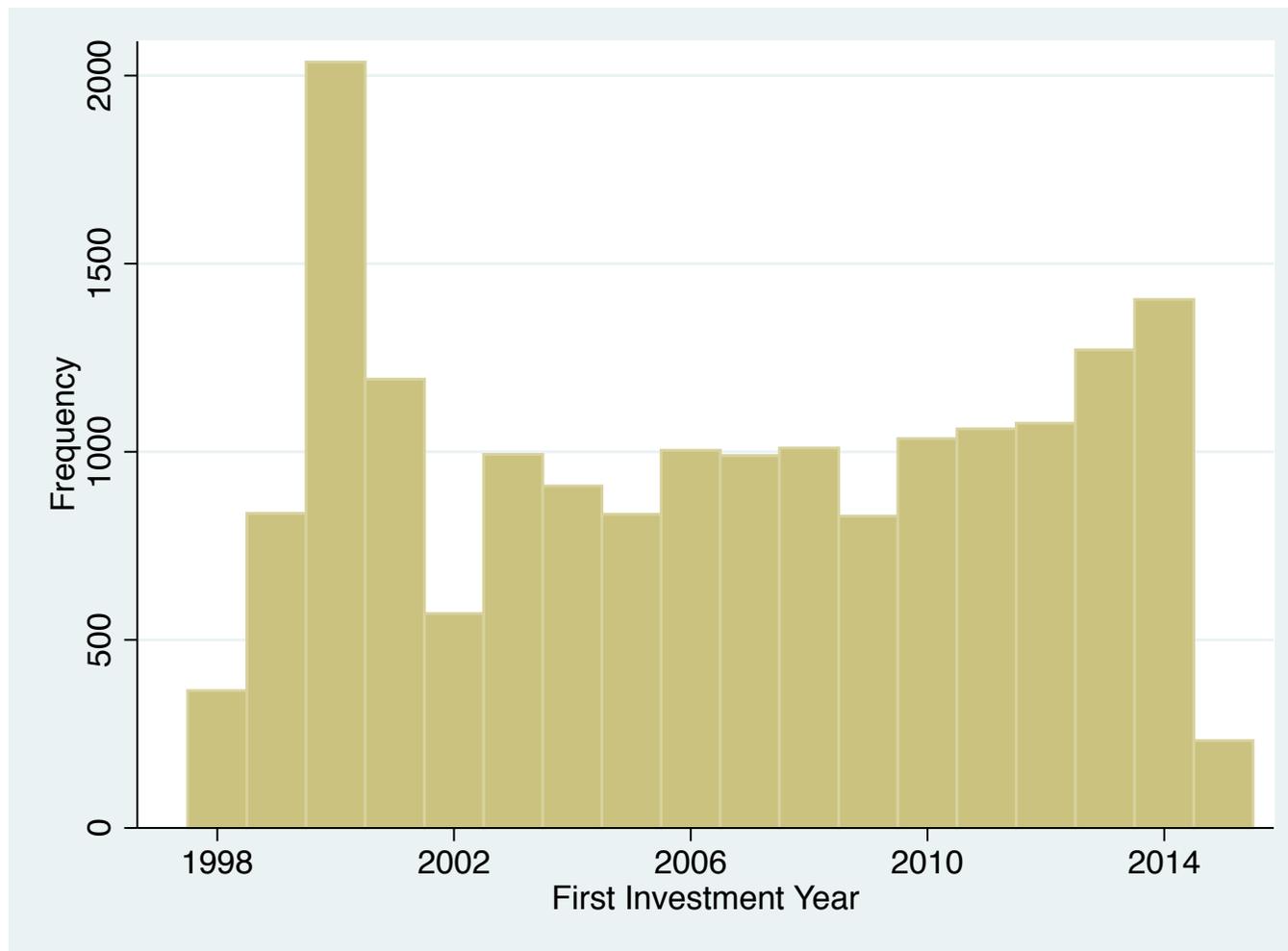
Company Foundation Period

foundation_ period	Freq.	Percent	Cum.
1988 - 1999	3,665	29.59	29.59
2000 - 2005	3,920	31.65	61.23
2006 - 2010	3,286	26.53	87.76
2011 - 2015	1,516	12.24	100.00
Total	12,387	100.00	

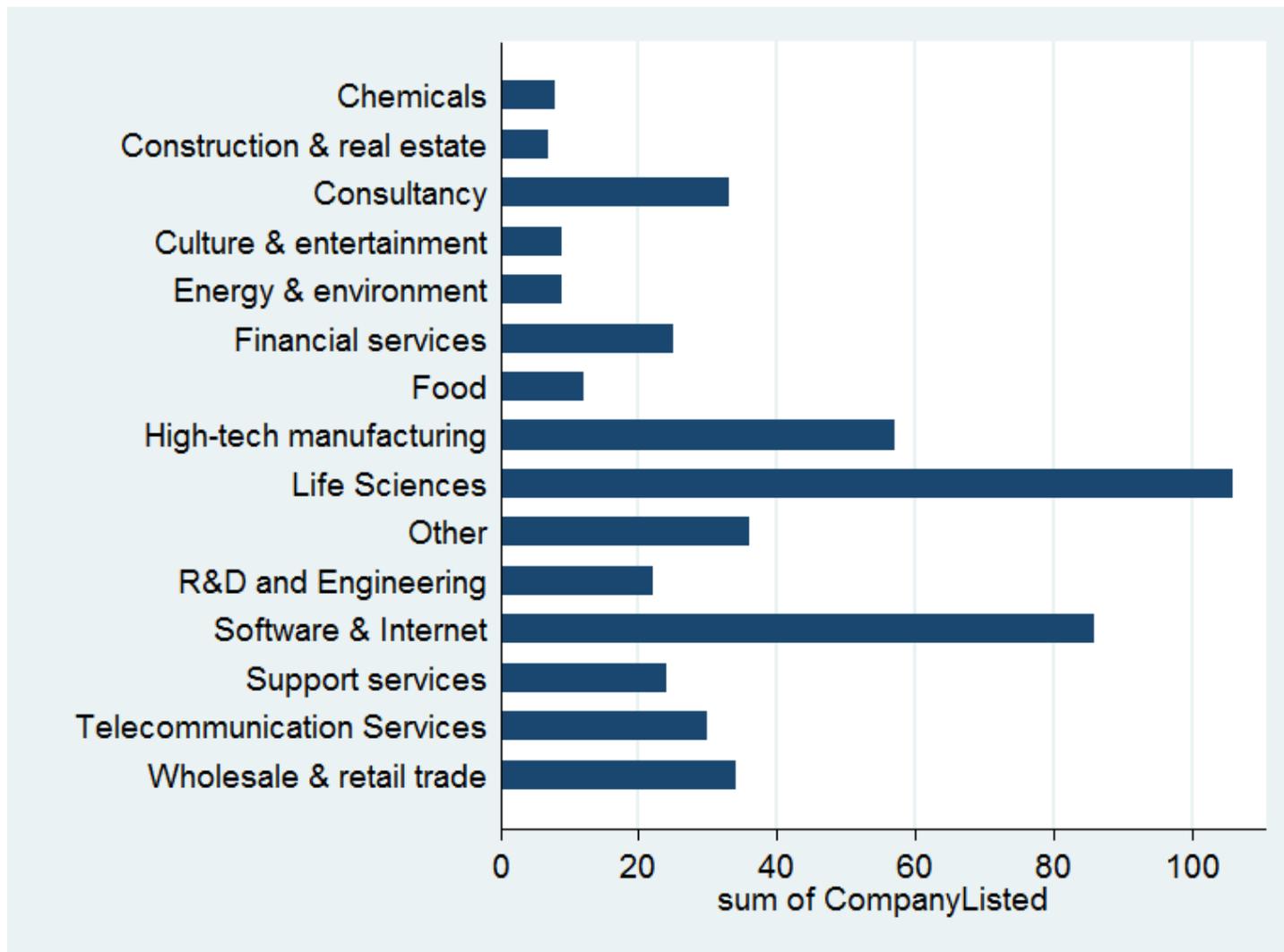
Company Age at first VC investment



First VC investment year



Status by industry: listed companies



Status by industry: listed companies (percentage)

CompanyIndustry	CompanyListed		Total
	0	1	
Chemicals	91.67	8.33	100.00
Construction & real e	97.33	2.67	100.00
Consultancy	95.66	4.34	100.00
Culture & entertainme	97.58	2.42	100.00
Energy & environment	93.18	6.82	100.00
Financial services	95.55	4.45	100.00
Food	94.00	6.00	100.00
High-tech manufacturi	92.79	7.21	100.00
Life Sciences	90.54	9.46	100.00
Other	96.14	3.86	100.00
R&D and Engineering	98.12	1.88	100.00
Software & Internet	97.57	2.43	100.00
Support services	96.98	3.02	100.00
Telecommunication Ser	90.13	9.87	100.00
Wholesale & retail tr	96.48	3.52	100.00
Total	95.85	4.15	100.00

Status by industry: acquired companies (percentage)

CompanyIndustry	CompanyAcquired		Total
	0	1	
Chemicals	84.15	15.85	100.00
Construction & real e	87.84	12.16	100.00
Consultancy	86.32	13.68	100.00
Culture & entertainme	86.51	13.49	100.00
Energy & environment	89.62	10.38	100.00
Financial services	91.65	8.35	100.00
Food	86.06	13.94	100.00
High-tech manufacturi	88.29	11.71	100.00
Life Sciences	88.30	11.70	100.00
Other	88.79	11.21	100.00
R&D and Engineering	90.52	9.48	100.00
Software & Internet	83.12	16.88	100.00
Support services	82.07	17.93	100.00
Telecommunication Ser	81.48	18.52	100.00
Wholesale & retail tr	90.51	9.49	100.00
Total	86.64	13.36	100.00

Status by industry: failures (percentage)

CompanyIndustry	CompanyFailed		Total
	0	1	
Chemicals	94.79	5.21	100.00
Construction & real e	93.51	6.49	100.00
Consultancy	89.03	10.97	100.00
Culture & entertainme	92.74	7.26	100.00
Energy & environment	96.21	3.79	100.00
Financial services	90.43	9.57	100.00
Food	91.50	8.50	100.00
High-tech manufacturi	95.20	4.80	100.00
Life Sciences	94.21	5.79	100.00
Other	93.13	6.87	100.00
R&D and Engineering	93.69	6.31	100.00
Software & Internet	91.23	8.77	100.00
Support services	84.92	15.08	100.00
Telecommunication Ser	91.12	8.88	100.00
Wholesale & retail tr	92.01	7.99	100.00
Total	91.81	8.19	100.00

VICO 2.0_full.dta

VICO 2.0_full.dta

- The **VICO 2.0_full.dta** STATA dataset has been derived by merging the Investments Table with the Companies and Investors Tables
- In what follows, we report some descriptive statistics on VC activity related to:
 - Basic company characteristics (industry, age, location)
 - VC investor/investment characteristics (VC type, domestic vs cross-border)
 - Investment patterns of different VC types and cross-border VCs

VICO 2.0_full.dta

Company characteristics

VC investments by industry

CompanyIndustry	Freq.	Percent	Cum.
Software & Internet	12,803	31.86	31.86
R&D and Engineering	4,928	12.26	44.12
Life Sciences	4,868	12.11	56.23
High-tech manufacturing	3,162	7.87	64.10
Wholesale & retail trade	2,861	7.12	71.21
Support services	2,535	6.31	77.52
Consultancy	2,019	5.02	82.55
Other	2,003	4.98	87.53
Telecommunication Services	1,236	3.08	90.60
Financial services	1,234	3.07	93.68
Culture & entertainment	915	2.28	95.95
Construction & real estate	582	1.45	97.40
Food	461	1.15	98.55
Energy & environment	311	0.77	99.32
Chemicals	273	0.68	100.00
Total	40,191	100.00	

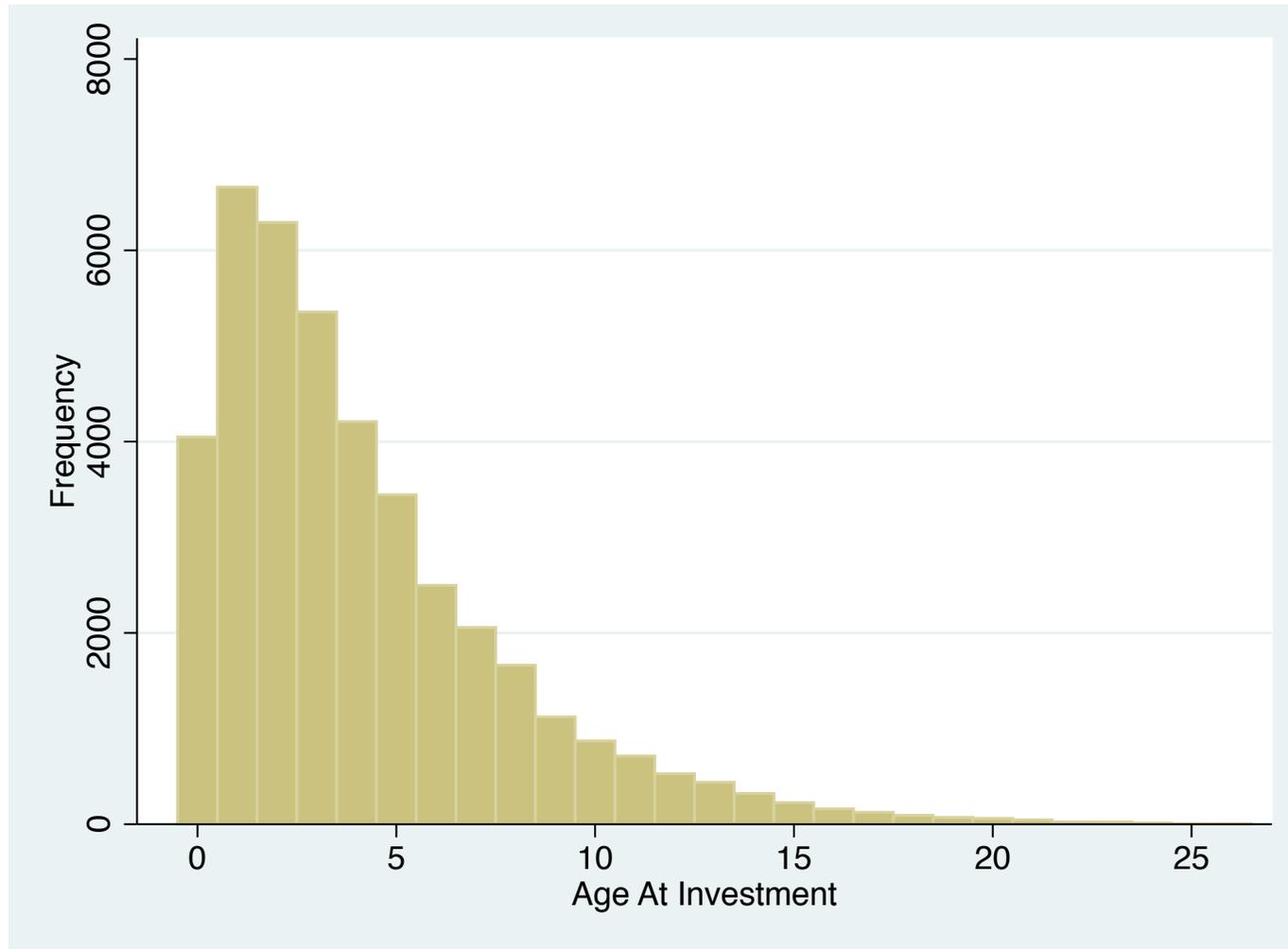
VC investments and VC investor entry

- VC investments:
 - Unit of analysis: Company-Investor-Investment Year
 - Multiple rounds of financing provided by the same investor to a given company, which is called staging
- VC investor entry:
 - Unit of analysis: Company-Investor-Entry year
 - Focus on the entry of a VC investor in a given company (i.e. first VC investment of the focal investor in a given company)
 - *InvestorFirstInv* dummy variable equals 1 for first VC investments (zero otherwise)

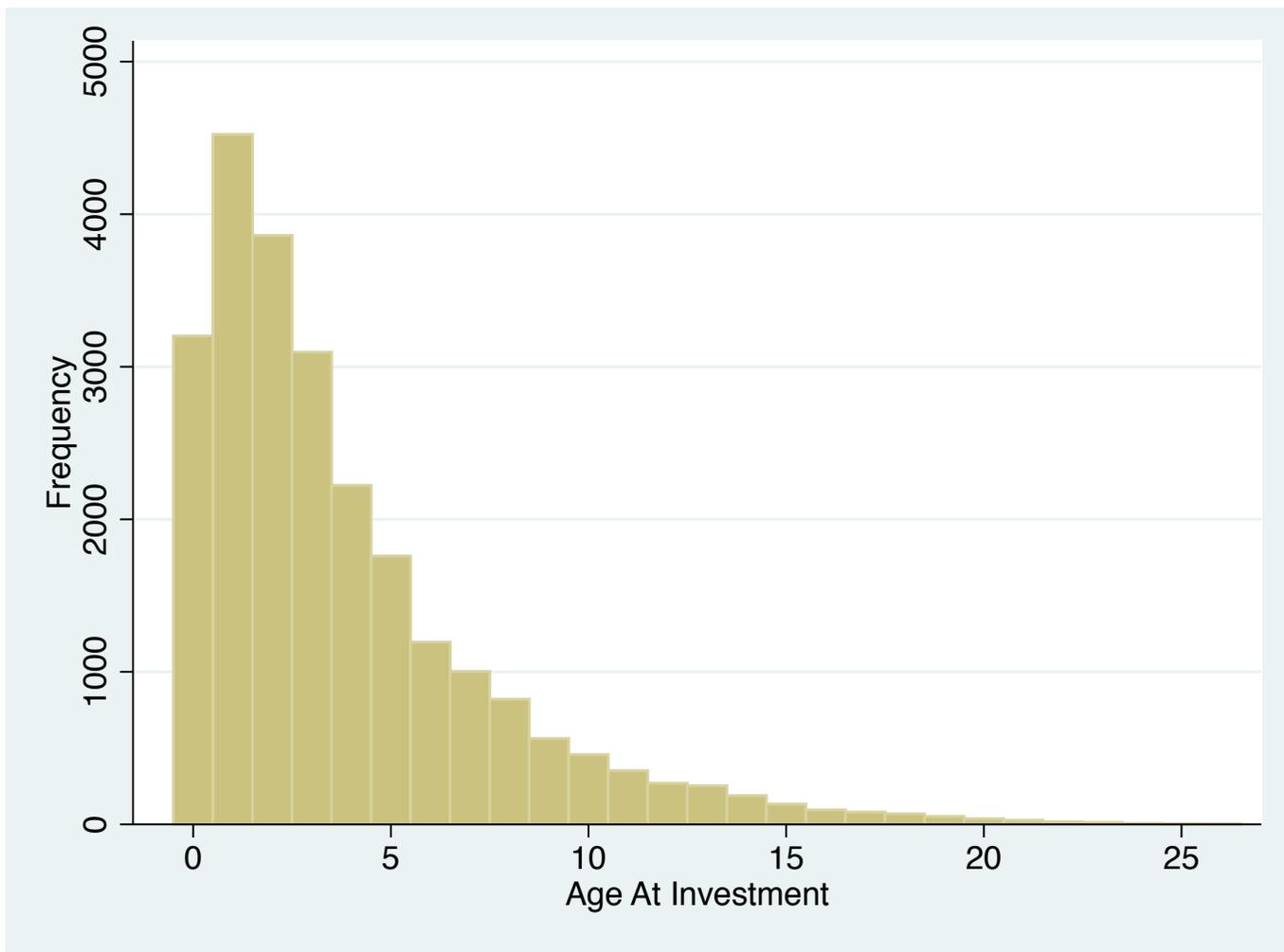
VC investments (investor entry) by industry

CompanyIndustry	Freq.	Percent	Cum.
Software & Internet	7,758	31.95	31.95
Life Sciences	2,738	11.28	43.23
R&D and Engineering	2,701	11.12	54.35
High-tech manufacturing	1,784	7.35	61.70
Wholesale & retail trade	1,760	7.25	68.94
Support services	1,519	6.26	75.20
Other	1,398	5.76	80.96
Consultancy	1,306	5.38	86.34
Financial services	877	3.61	89.95
Telecommunication Services	716	2.95	92.90
Culture & entertainment	601	2.48	95.37
Construction & real estate	409	1.68	97.06
Food	324	1.33	98.39
Energy & environment	212	0.87	99.26
Chemicals	179	0.74	100.00
Total	24,282	100.00	

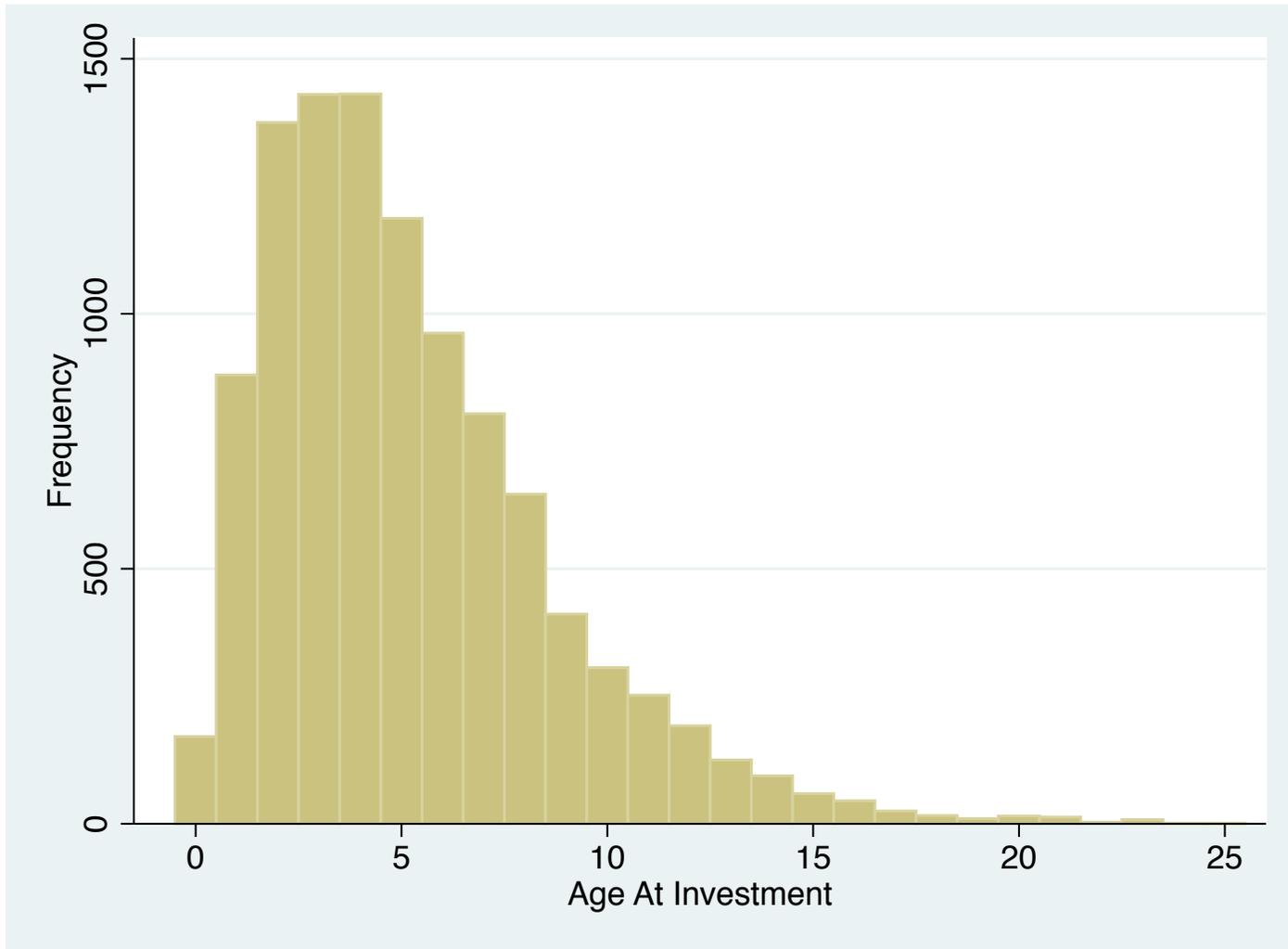
VC investments by age



VC investments (investor entry) by age



VC investments (follow-on rounds) by age



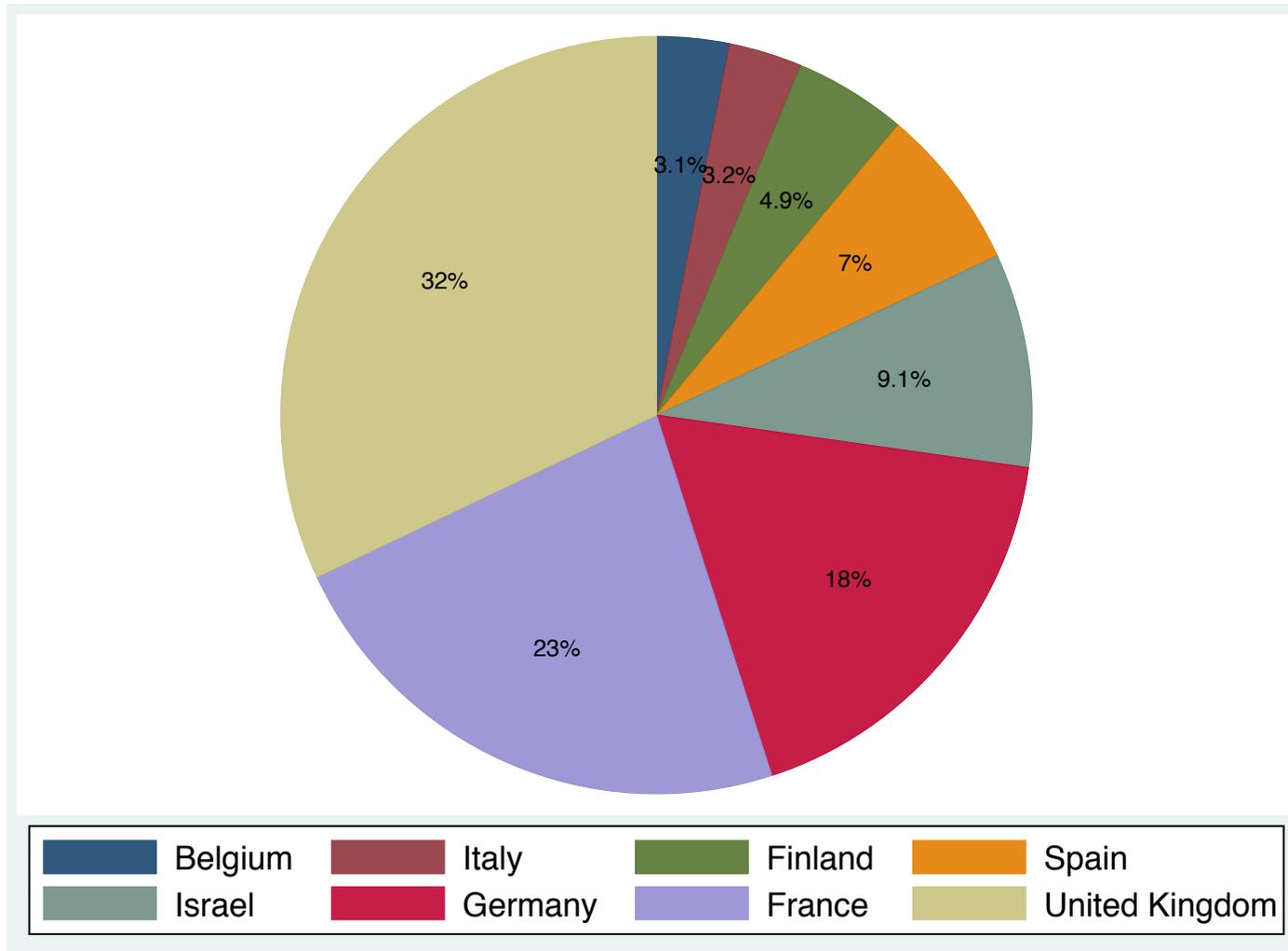
VC investments (investor entry) by age

AgeAtInvestment					
	Percentiles	Smallest			
1%	0	0			
5%	0	0			
10%	0	0	Obs		24,300
25%	1	0	Sum of Wgt.		24,300
50%	3		Mean		3.788601
			Std. Dev.		3.764406
		Largest			
75%	5	26			
90%	9	26	Variance		14.17075
95%	12	26	Skewness		1.716402
99%	17	26	Kurtosis		6.548067

VC investments (investor entry) by age class

AgeAtInvestmentRound	Freq.	Percent	Cum.
A - Less than 3 years	17,001	45.20	45.20
B - From 3 to 5 years	9,564	25.43	70.63
C - From 5 to 10 years	7,336	19.50	90.14
D - More than 10 years	3,710	9.86	100.00
Total	37,611	100.00	

VC investments (investor entry) by country



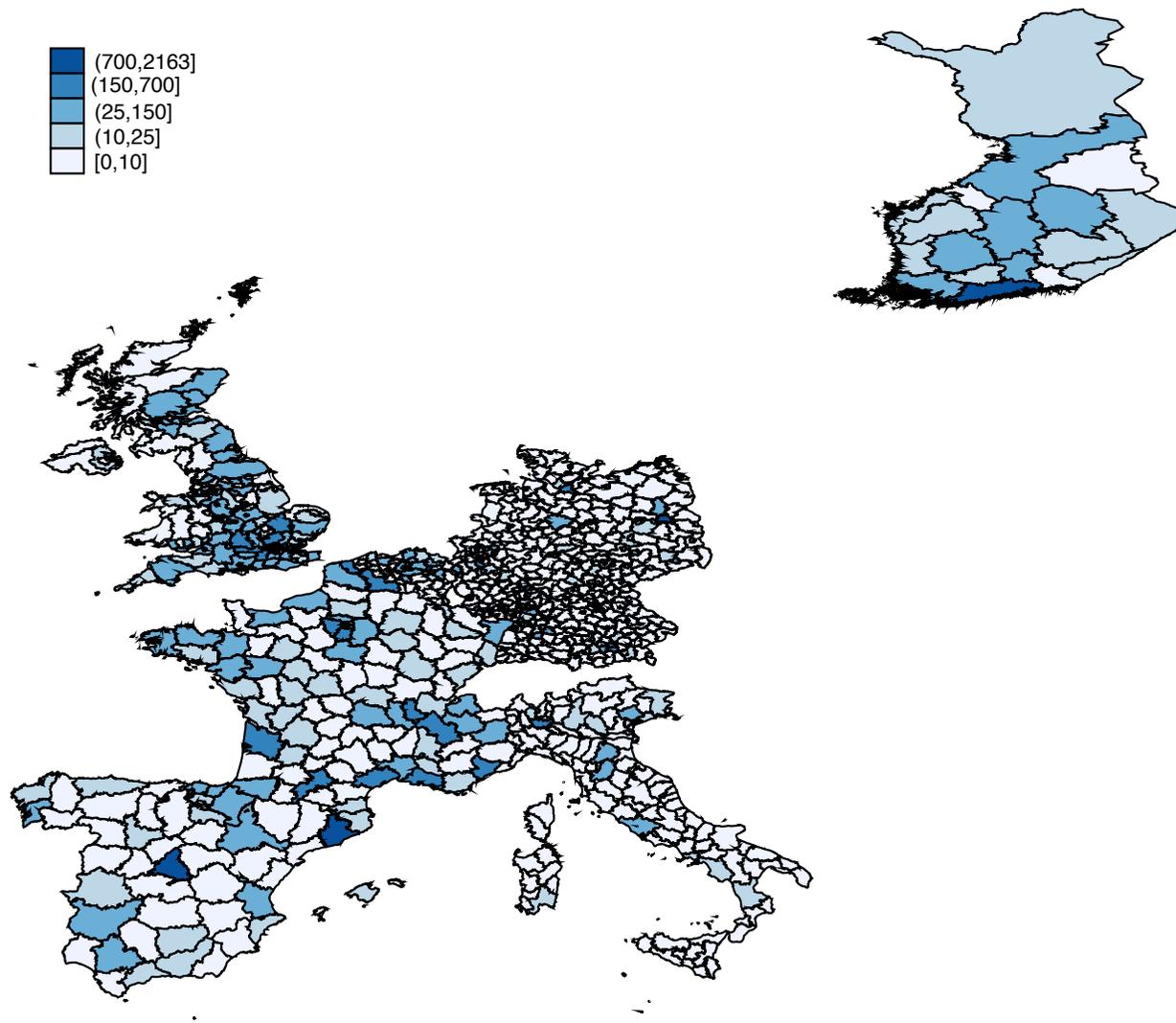
VC investments (investor entry) by city

CompanyCity	Freq.	Percent	Cum.
London	3,808	12.01	12.01
Paris	2,242	7.07	19.08
Berlin	1,340	4.22	23.30
München	734	2.31	25.61
Tel Aviv-Yafo	675	2.13	27.74
Cambridge	632	1.99	29.74
Madrid	618	1.95	31.68
Barcelona	610	1.92	33.61
Helsinki = Helsingfors	547	1.72	35.33
Hamburg	375	1.18	36.51
Milano	291	0.92	37.43
Edinburgh	281	0.89	38.32
Espoo = Esbo	235	0.74	39.06
Köln	233	0.73	39.79
Herzliya	215	0.68	40.47
Manchester	215	0.68	41.15
Lyon	186	0.59	41.74
Jerusalem	180	0.57	42.30
Brussel=Bruxelles	167	0.53	42.83
Bristol	159	0.50	43.33
n.a.	157	0.50	43.83
Glasgow	156	0.49	44.32

VC investments (investor entry) by NUTS (level 3)

CompanyNUTS 3	Freq.	Percent	Cum.
FR101	2,163	7.51	7.51
UKI31	1,721	5.98	13.49
DE300	1,346	4.67	18.16
FI1B1	892	3.10	21.26
FR105	888	3.08	24.34
ES300	720	2.50	26.84
UKI32	716	2.49	29.33
ES511	704	2.44	31.77
DE212	700	2.43	34.20
UKH12	679	2.36	36.56
UKJ14	426	1.48	38.04
FR716	380	1.32	39.36
DE600	371	1.29	40.65
UKJ11	329	1.14	41.79
ITC4C	325	1.13	42.92
UKI43	317	1.10	44.02
DE21H	304	1.06	45.08
UKM25	273	0.95	46.02
FR714	272	0.94	46.97
FR824	260	0.90	47.87
UKI33	240	0.83	48.70
FR104	232	0.81	49.51
DEA23	231	0.80	50.31
FR623	221	0.77	51.08

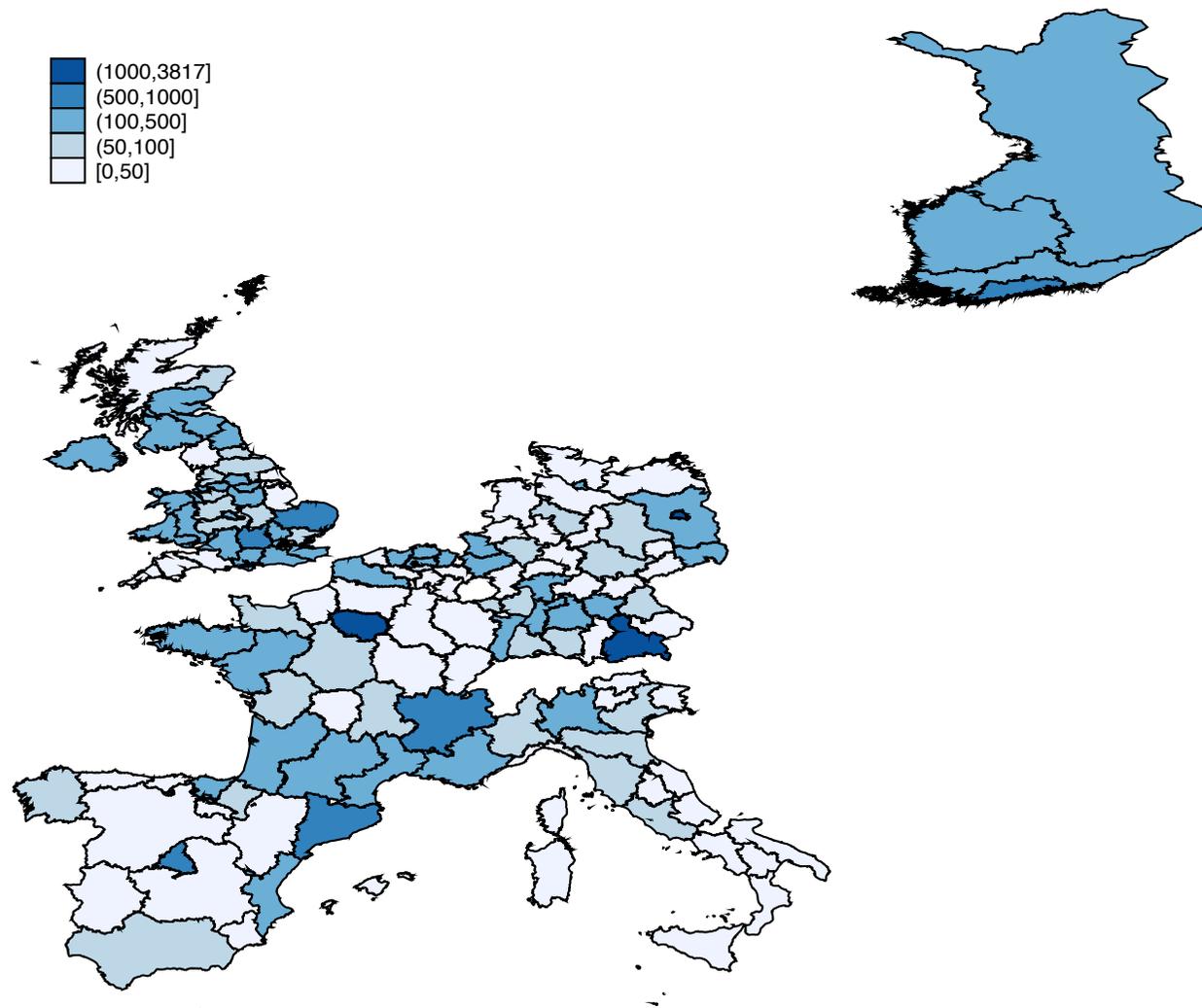
VC investments (investor entry) by NUTS (level 3)



VC investments (investor entry) by NUTS (level 2)

CompanyNUTS 2	Freq.	Percent	Cum.
FR10	3,817	13.25	13.25
UKI3	2,719	9.44	22.70
DE30	1,346	4.67	27.37
DE21	1,160	4.03	31.40
UKJ1	905	3.14	34.54
FI1B	892	3.10	37.64
UKI4	873	3.03	40.67
FR71	839	2.91	43.58
UKH1	763	2.65	46.23
ES51	731	2.54	48.77
ES30	720	2.50	51.27
UKM2	491	1.70	52.98
FR82	481	1.67	54.65
DEA2	410	1.42	56.07
ITC4	379	1.32	57.39
UKJ2	375	1.30	58.69
DE60	371	1.29	59.98
UKK1	366	1.27	61.25
UKI7	328	1.14	62.39
UKD3	315	1.09	63.48
DE71	285	0.99	64.47
FR62	270	0.94	65.41
FR52	261	0.91	66.31
FI19	238	0.83	67.14
FR61	238	0.83	67.97
FR81	236	0.82	68.79
FR51	229	0.80	69.58
UKM3	217	0.75	70.33

VC investments (investor entry) by NUTS (level 2)



VC investments (investor entry) by investment hub (FUAs)

CompanyFUA_Name_rev	Freq.	Percent	Cum.
London	4,175	13.46	13.46
Paris	3,802	12.25	25.71
No FUA	3,648	11.76	37.47
No FUA (Israel)	2,948	9.50	46.97
Berlin	1,459	4.70	51.67
München	1,114	3.59	55.26
Helsinki	859	2.77	58.03
Madrid	721	2.32	60.35
Barcelona	684	2.20	62.56
Cambridge	645	2.08	64.64
Hamburg	400	1.29	65.92
Lyon	385	1.24	67.17
Milano	329	1.06	68.23
Bruxelles / Brussel	291	0.94	69.16
Edinburgh	291	0.94	70.10
Marseille	262	0.84	70.95
Köln	257	0.83	71.77
Manchester	253	0.82	72.59
Grenoble	244	0.79	73.38
Toulouse	229	0.74	74.11
Frankfurt am Main	189	0.61	74.72
Bordeaux	165	0.53	75.25
Bristol	164	0.53	75.78
Montpellier	161	0.52	76.30
Glasgow	156	0.50	76.80
Oxford	156	0.50	77.31
Gent	153	0.49	77.80

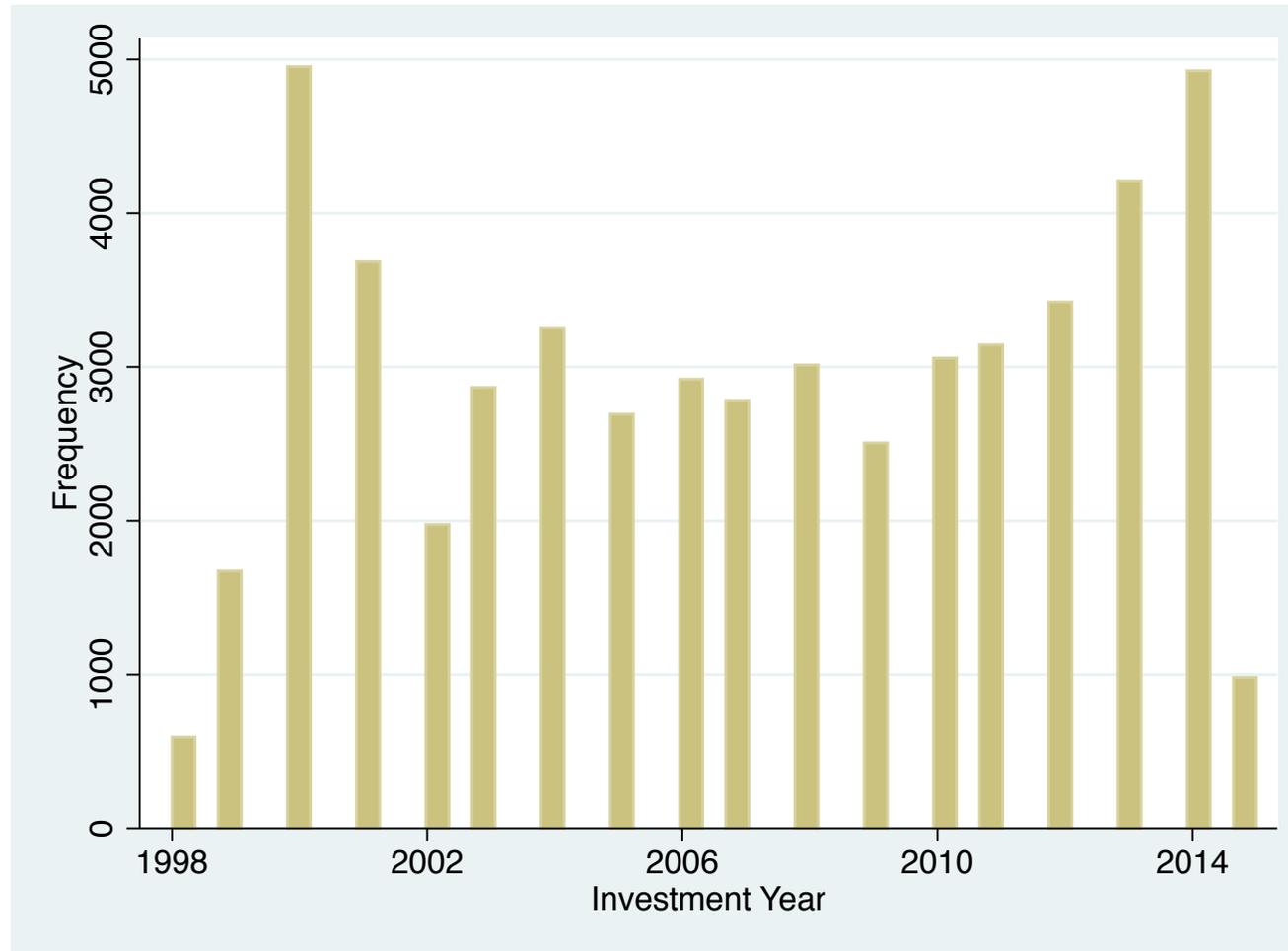
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VC investor/investment characteristics

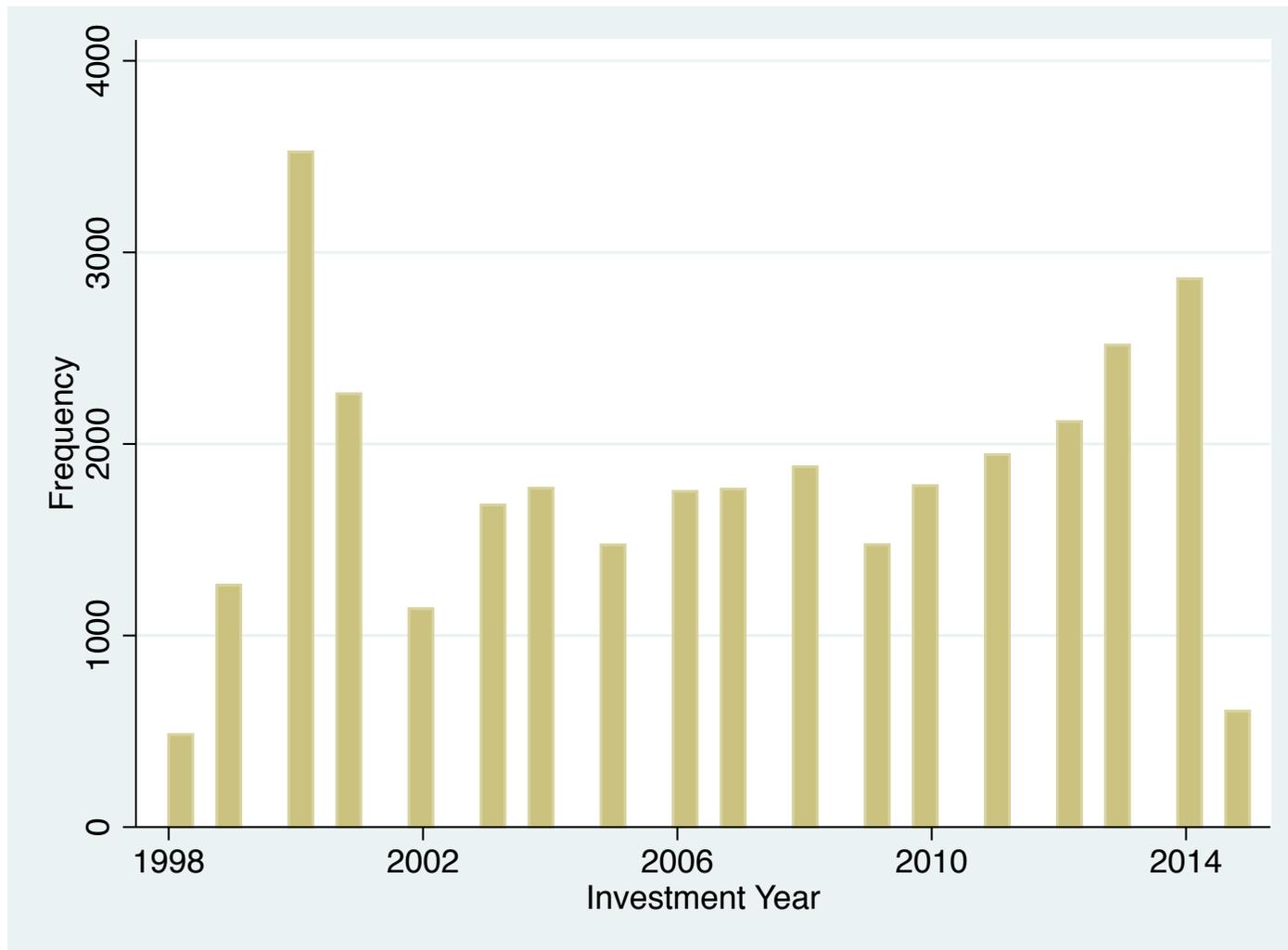
VC investments by investment year

Investment Year	Freq.	Percent	Cum.
1998	592	1.12	1.12
1999	1,673	3.18	4.30
2000	4,953	9.41	13.71
2001	3,684	7.00	20.70
2002	1,976	3.75	24.46
2003	2,867	5.44	29.90
2004	3,255	6.18	36.08
2005	2,693	5.11	41.20
2006	2,920	5.55	46.74
2007	2,783	5.29	52.03
2008	3,013	5.72	57.75
2009	2,506	4.76	62.51
2010	3,058	5.81	68.32
2011	3,144	5.97	74.29
2012	3,422	6.50	80.79
2013	4,211	8.00	88.78
2014	4,926	9.35	98.14
2015	981	1.86	100.00
Total	52,657	100.00	

VC investments by investment year



VC investments by investment year (VC investor entry)



Investments by investor type

InvestorType	Freq.	Percent	Cum.
BA	3,388	6.44	6.44
BVC	4,308	8.18	14.62
CVC	4,022	7.64	22.26
Crowdfunding	31	0.06	22.32
GVC	2,083	3.96	26.28
IVC	37,960	72.12	98.39
Other	564	1.07	99.46
UVC	282	0.54	100.00
Total	52,638	100.00	

Investments by investor type (investor entry)

InvestorType	Freq.	Percent	Cum.
BA	2,141	6.63	6.63
BVC	3,497	10.83	17.47
CVC	3,127	9.69	27.15
Crowdfunding	6	0.02	27.17
GVC	1,602	4.96	32.13
IVC	21,191	65.65	97.78
Other	491	1.52	99.30
UVC	226	0.70	100.00
Total	32,281	100.00	

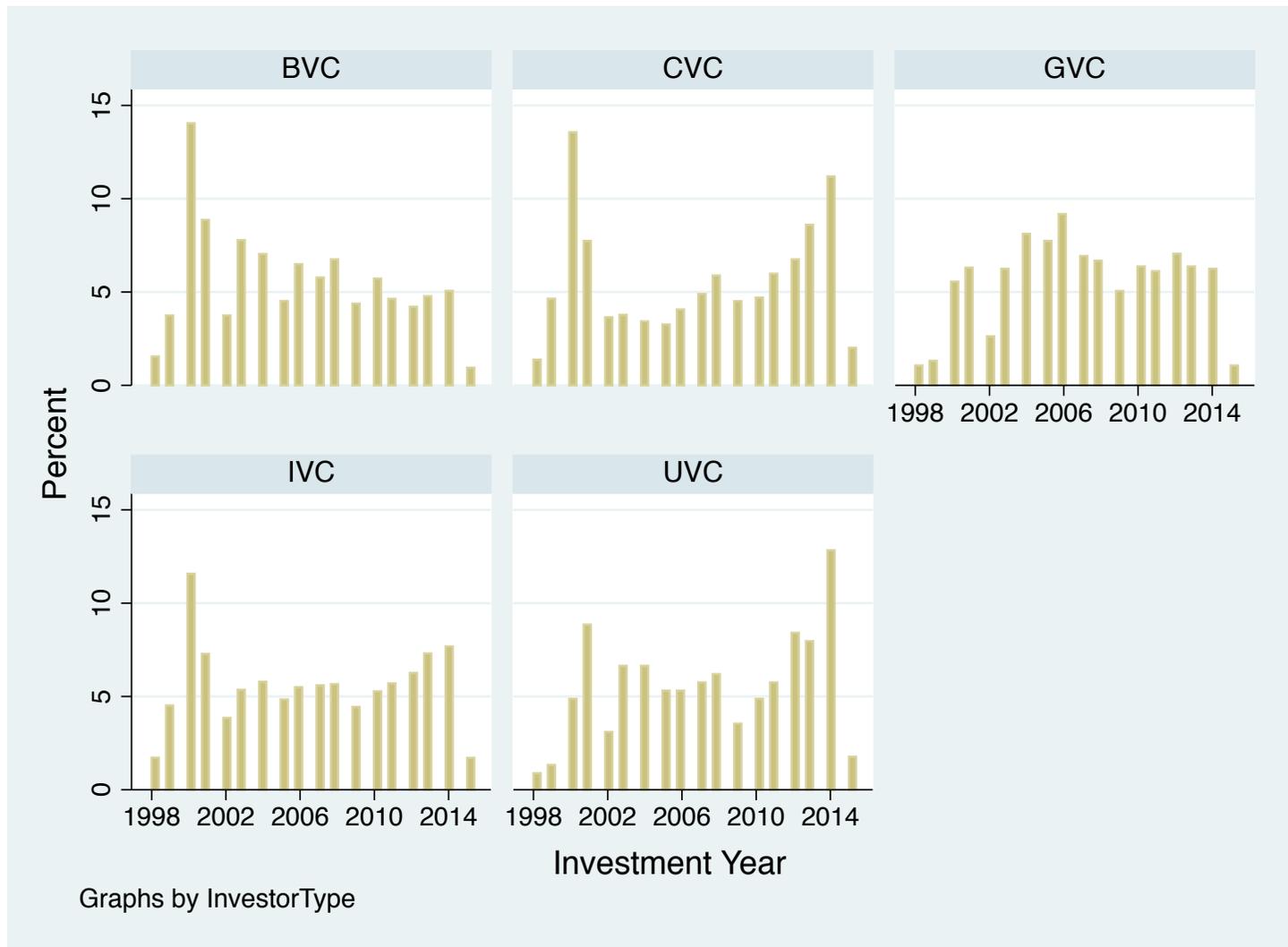
Investments by investor type (follow-on rounds)

InvestorType	Freq.	Percent	Cum.
BA	1,247	6.13	6.13
BVC	811	3.98	10.11
CVC	895	4.40	14.51
Crowdfunding	25	0.12	14.63
GVC	481	2.36	16.99
IVC	16,769	82.37	99.37
Other	73	0.36	99.72
UVC	56	0.28	100.00
Total	20,357	100.00	

VC investments (investor entry) by year and VC type

Investment Year	InvestorType					Total
	BVC	CVC	GVC	IVC	UVC	
1998	54	43	17	364	2	480
1999	131	145	21	957	3	1,257
2000	491	424	89	2,453	11	3,468
2001	310	242	101	1,542	20	2,215
2002	131	114	42	815	7	1,109
2003	272	118	100	1,134	15	1,639
2004	246	107	130	1,226	15	1,724
2005	158	102	124	1,025	12	1,421
2006	227	127	147	1,164	12	1,677
2007	202	153	111	1,185	13	1,664
2008	236	184	107	1,199	14	1,740
2009	153	141	81	940	8	1,323
2010	200	147	102	1,117	11	1,577
2011	162	187	98	1,208	13	1,668
2012	147	211	113	1,326	19	1,816
2013	167	269	102	1,547	18	2,103
2014	177	350	100	1,627	29	2,283
2015	33	63	17	362	4	479
Total	3,497	3,127	1,602	21,191	226	29,643

VC investments (investor entry) by year and VC type



Investments by investor country

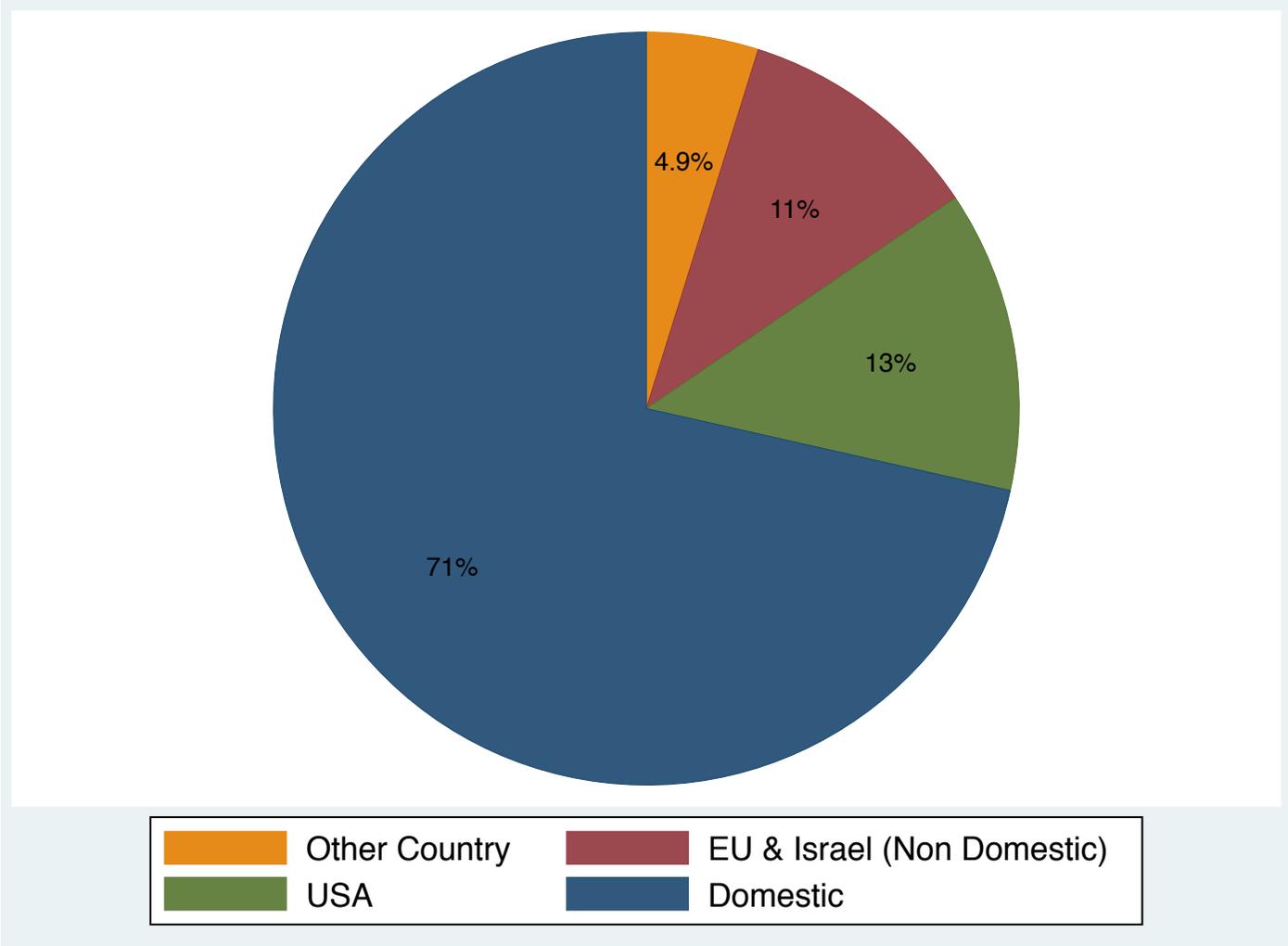
InvestorNation_rev	Freq.	Percent	Cum.
United Kingdom	10,917	26.02	26.02
France	8,715	20.77	46.79
Germany	5,718	13.63	60.42
United States	5,437	12.96	73.38
Israel	2,114	5.04	78.42
Spain	2,013	4.80	83.21
Finland	1,718	4.09	87.31
Belgium	1,214	2.89	90.20
Italy	904	2.15	92.36
Switzerland	768	1.83	94.19
Netherlands	516	1.23	95.42
Sweden	207	0.49	95.91
Denmark	195	0.46	96.37
Luxembourg	164	0.39	96.77
Norway	159	0.38	97.14
Ireland	150	0.36	97.50
Japan	150	0.36	97.86
Russian Federation	137	0.33	98.19
Canada	127	0.30	98.49
Singapore	87	0.21	98.70
Austria	72	0.17	98.87
Hong Kong	55	0.13	99.00
Australia	53	0.13	99.13
China	39	0.09	99.22
Portugal	33	0.08	99.30
Estonia	28	0.07	99.36
India	22	0.05	99.42
Taiwan	21	0.05	99.47
Korea, Republic Of	18	0.04	99.51

Cross-border investments

- By comparing the country of the company and the country of the VC investor it is possible to identify cross-border VC investments
- The *Crossborder* variable is a dummy variable that equals 1 if the investor's country is different from the company's country

Crossborder	Freq.	Percent	Cum.
0	29,999	71.50	71.50
1	11,958	28.50	100.00
Total	41,957	100.00	

Cross-border investments



Company - investor distance (investor entry)

Percentiles		Smallest		
1%	0	0	Obs	28,291
5%	1.318221	0	Sum of Wgt.	28,291
10%	2.743523	0	Mean	1348.741
25%	13.25507	0	Std. Dev.	2844.323
50%	183.8814		Variance	8090175
		Largest	Skewness	2.403248
75%	554.647	17116.13	Kurtosis	7.730857
90%	6126.638	17163.33		
95%	8925.334	18814.01		
99%	11913.32	19854.79		

Summary for variables: distance
by categories of: Crossborder

Crossborder	mean	sd	min	max
0	158.4134	213.9612	0	6740.844
1	4621.104	3950.04	8.64862	19854.79
Total	1348.78	2844.366	0	19854.79

Age (investor entry) by cross-border investments

Summary for variables: AgeAtInvestment
by categories of: Crossborder

Crossborder	mean	p50
0	3.902124	3
1	3.730578	3
Total	3.854434	3

Age (investor entry) by cross-border investments

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	16,715	3.902124	.0302204	3.907096	3.842889	3.961359
1	6,436	3.730578	.0432936	3.473215	3.645708	3.815448
combined	23,151	3.854434	.0249231	3.792168	3.805583	3.903285
diff		.1715458	.0556201		.0625268	.2805648

diff = mean(0) - mean(1) t = 3.0842
 Ho: diff = 0 degrees of freedom = 23149

Ha: diff < 0
 Pr(T < t) = 0.9990

Ha: diff != 0
 Pr(|T| > |t|) = 0.0020

Ha: diff > 0
 Pr(T > t) = 0.0010

Syndicate size (entry round)

SyndicateSize

Percentiles		Smallest		
1%	1	1		
5%	1	1		
10%	1	1	Obs	32,292
25%	1	1	Sum of Wgt.	32,292
50%	2		Mean	2.694321
			Std. Dev.	1.982313
		Largest		
75%	3	21	Variance	3.929567
90%	5	21	Skewness	2.138964
95%	6	21	Kurtosis	10.54204
99%	10	21		

Mean investment amount per round

RoundNumber	N	mean	sd
1	16428	2998.87	17366.99
2	4961	3781.56	8777.606
3	2193	4961.748	17871.97
4	1165	4767.606	13076.73
5	636	4286.166	10626.55
6	401	3885.8	7835.617
7	246	3743.087	6715.076