

Table of Contents

1	Introduction	1
1.1	Portfolio strategies of private equity firms	1
1.2	Objective of thesis	3
1.3	Basics of private equity financing	4
1.4	Structure of thesis	6
2	Related literature and previous research	7
2.1	Introduction	7
2.2	Return and risk of private equity investing	8
2.2.1	Return and risk of single private equity investments	8
2.2.2	Return and risk of private equity funds	9
2.2.3	Comparison of previous results	12
2.3	Portfolio strategies and optimal structure of private equity funds	13
2.3.1	Choice of portfolio strategies	13
2.3.2	Portfolio diversification and performance	14
2.3.3	Comparison of previous results	15
2.4	Summary: research gaps and contribution of thesis	15
3	Optimal level of diversification in private equity funds	17
3.1	Introduction	17
3.2	Modern portfolio theory	18
3.3	Optimal number of investment clusters	20
3.3.1	Assumptions	20
3.3.2	Efficient combinations of companies	23
3.3.3	Choice of the optimal portfolio	26
3.3.4	Interpretation of key findings	28
3.3.5	Discussion of assumptions and further extensions	30
3.4	Summary: implications for empirical analysis	31

4	Construction of data set and variables	33
4.1	Introduction	33
4.2	Data sets used by other authors	34
4.2.1	Thomson Venture Economics	34
4.2.2	Dataset of Ljungqvist & Richardson	35
4.2.3	CEPRES Center for Private Equity Research	35
4.3	Description of data set used in this thesis	36
4.3.1	Data source and sample	36
4.3.2	Selection biases	39
4.4	Description of variables	43
4.4.1	Measurement of portfolio strategy	43
4.4.2	Measurement of performance	46
4.4.3	Measurement of additional variables	51
4.5	Summary: advantage and drawback of data set	54
5	Choice of portfolio strategies by private equity firms	57
5.1	Introduction	57
5.2	Data and key variables	58
5.3	‘Naive’ diversification across portfolio companies	62
5.3.1	Determinants of ‘naive’ diversification	62
5.3.2	Descriptive analysis	63
5.3.3	Multivariate analysis	65
5.4	‘Systematic’ diversification across financing stages, industries, and countries	69
5.4.1	Determinants of ‘systematic’ diversification	69
5.4.2	Diversification across financing stages	71
5.4.3	Diversification across industries	76
5.4.4	Diversification across countries	80
5.5	‘Dynamic’ diversification across time	85
5.5.1	Determinants of ‘dynamic’ diversification	85
5.5.2	Descriptive analysis	86
5.5.3	Multivariate analysis	87
5.6	Summary: importance of market conditions and firm characteristics	91
6	Performance of private equity funds: does diversification matter?	95
6.1	Introduction	95

6.2	Impact of diversification on private equity funds' performance	96
6.3	Descriptive analysis	99
6.3.1	Data and key variables	99
6.3.2	Bivariate relationships	103
6.4	Multivariate analysis	107
6.4.1	Methodology	107
6.4.2	Impact of diversification on rate of return	111
6.4.3	Impact of diversification on intra-fund variation of return	116
6.4.4	Impact of diversification on shortfall probability	122
6.4.5	Influence of intra-fund variation of return and shortfall probability on rate of return	123
6.5	Summary: two basic strategies to increase rate of return	130
7	Summary	135
	Bibliography	139
A	Appendix chapter 3	145
A.1	Expected rate of return and risk of an investment cluster	145
A.2	Risk of a fund	146
A.3	Optimal number of investment clusters	147
A.4	Comparative statics	148
B	Appendix chapter 4	151
C	Appendix chapter 5	153
D	Appendix chapter 6	161