

# PRIVATE EQUITY

Fund Types, Risks and Returns,  
and Regulation

*Douglas Cumming, Editor*

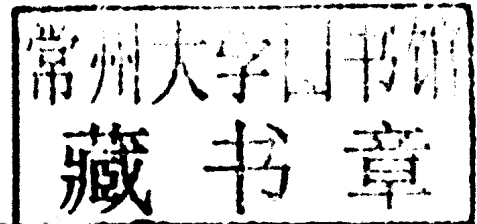
**KOLB SERIES IN FINANCE**

Essential Perspectives

# PRIVATE EQUITY

## Fund Types, Risks and Returns, and Regulation

Douglas Cumming



The Robert W. Kolb Series in Finance



WILEY

John Wiley & Sons, Inc.

Copyright © 2010 by John Wiley & Sons, Inc. All rights reserved.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.  
Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 750-4470, or on the web at [www.copyright.com](http://www.copyright.com). Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permissions>.

**Limit of Liability/Disclaimer of Warranty:** While the publisher and author have used their best efforts in preparing this book, they make no representations or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor author shall be liable for any loss of profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages.

For general information on our other products and services or for technical support, please contact our Customer Care Department within the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books. For more information about Wiley products, visit our web site at [www.wiley.com](http://www.wiley.com).

***Library of Congress Cataloging-in-Publication Data:***

Cumming, Douglas.

Private equity / Douglas Cumming.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-470-49915-3 (cloth)

1. Private equity. I. Title.

HG4751.C86 2010

332.6-dc22

2009028343

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

# PRIVATE EQUITY

The *Robert W. Kolb Series in Finance* provides a comprehensive view of the field of finance in all of its variety and complexity. The series is projected to include approximately 65 volumes covering all major topics and specializations in finance, ranging from investments, to corporate finance, to financial institutions. Each volume in the *Kolb Series in Finance* consists of new articles especially written for the volume.

Each *Kolb Series* volume is edited by a specialist in a particular area of finance, who develops the volume outline and commissions articles by the world's experts in that particular field of finance. Each volume includes an editor's introduction and approximately thirty articles to fully describe the current state of financial research and practice in a particular area of finance.

The essays in each volume are intended for practicing finance professionals, graduate students, and advanced undergraduate students. The goal of each volume is to encapsulate the current state of knowledge in a particular area of finance so that the reader can quickly achieve a mastery of that special area of finance.

# Contents

<b>1</b>	<b>Introduction to Private Equity</b>	<b>1</b>
	Introduction	1
	Notes	4
	References	4
	About the Editor	5
	<b>PART I The Structure of Private Equity Funds and Fund-Raising</b>	<b>7</b>
<b>2</b>	<b>Institutional Investment in Private Equity: Motivations, Strategies, and Performance</b>	<b>9</b>
	Introduction	9
	Institutional Investment: Motivations and Behavior	9
	Structure and Strategies	13
	Performance	16
	<i>Measuring the Returns to Private Equity</i>	17
	<i>The Measurement of Risk</i>	20
	Conclusion	25
	Notes	26
	References	26
	About the Author	29
<b>3</b>	<b>IPOs and Other Nontraditional Fund-Raising Methods of Private Equity Firms</b>	<b>31</b>
	Introduction	31
	Recent Trends in the Private Equity Industry	33
	Traditional Fund-Raising Methods	36
	<i>Factors that Led to the Growth of Private Equity Industry</i>	36
	<i>What Went Wrong?</i>	37
	Nontraditional Fund-Raising Methods	38
	<i>(I)rationality behind Private Equity IPOs</i>	38
	<i>Then Why Are These Companies Going Public?</i>	39
	Private Equity IPOs: Performance and Implications for the Future	39
	<i>Short-Term Performance</i>	40
	<i>Long-Run Performance and Implications for Future IPOs</i>	41

Sovereign Wealth Funds Complementing and Substituting for Private Equity Investments	45
Conclusion	48
Notes	49
References	50
About the Authors	50
<b>4 Listed Private Equity</b>	<b>53</b>
Introduction	53
Listed Private Equity: Definitions and Categorization	54
Terms and Definitions	55
<i>Investment Styles</i>	55
<i>Financing Styles</i>	56
<i>Categorization of Listed Private Equity</i>	56
Further Empirical Insights on Listed Private Equity	60
Conclusion	68
Notes	69
References	69
About the Authors	69
Acknowledgment	70
<b>PART II The Structure of Private Equity Investments</b>	<b>71</b>
<b>5 The Syndication of Private Equity</b>	<b>73</b>
Introduction	73
Motives for Syndication	75
<i>Risk Sharing</i>	75
<i>Risk Reduction</i>	76
<i>Access to Deal Flow</i>	77
Partner Selection	78
Structuring and Managing the Syndicate	81
<i>Equity Ownership Structure</i>	81
<i>The Investment Agreement</i>	81
<i>Contractual Enforcement</i>	82
<i>Monitoring of Investees</i>	83
<i>Decision Making</i>	84
Syndication and Performance	84
The Future of Syndication Research	85
<i>Emerging Themes in PE</i>	86
Notes	89
References	90
About the Authors	92
<b>6 The Structure of Venture Capital and Private Equity Fund Portfolios</b>	<b>93</b>
Why the Structure of Venture Capitalists' Portfolios Matters	93
Optimal Effort Levels	94
Optimal Portfolio Size and Profit-Sharing Rule	98

Empirical Tests	99
<i>Data Source</i>	100
<i>Summary Statistics</i>	101
<i>Regression Analysis</i>	103
Conclusion	105
Notes	106
References	107
About the Authors	108
Acknowledgment	109
<b>7 The Rise of the PIPE Market</b>	<b>111</b>
Introduction	111
What Is a PIPE?	112
Contract Terms in PIPE Offerings	115
<i>Antidilution Protection</i>	115
<i>Redemption Rights</i>	116
<i>Investor Registration Rights</i>	116
<i>Investor Board Representation</i>	116
<i>Trading/Hedging Restrictions</i>	116
<i>Company-Forced Conversion</i>	117
<i>Investor Call Option, Investor Right of First Refusal, and         Company Put Option</i>	117
Firms Issuing PIPES	118
<i>Why Firms Choose PIPES</i>	118
<i>Cost of PIPES</i>	119
<i>Stock Performance at Closing and in the Long Run</i>	119
Investors in the PIPE Market	120
The Role of Placement Agents	122
Issues in the PIPE Market and SEC Regulations	123
The PIPE Market Down the Road	126
Notes	127
References	127
About the Author	128
<b>8 Private Placements by Small Public Entities: Canadian Experience</b>	<b>129</b>
Introduction	129
The Canadian Context	130
<i>The Canadian Stock Market</i>	130
<i>Regulation of Private Placements in Canada</i>	131
Private Placements and the Issuers	132
<i>Data</i>	132
<i>Which Firms Issue Private Placements?</i>	134
<i>Industry Clustering</i>	135
<i>Financing Strategies and Clustering of Issuers</i>	136
<i>Operating Performance</i>	137
<i>Preissue Performance</i>	138
<i>The Postplacement Performance</i>	139



Returns Surrounding Private Placements	140
<i>The Estimation of Abnormal Returns</i>	140
<i>The Preissue Return of the Public Investors</i>	141
<i>The Postissue Return of the Public Investors</i>	144
<i>Analysis of Differences in Long-Run Performance</i>	145
<i>Discussion</i>	145
Discounts	146
<i>Previous Evidence and Explanations</i>	146
<i>Measure and Stylized Facts</i>	147
<i>Discount and Long-Run Performance</i>	148
Conclusion	149
Notes	150
References	151
About the Authors	152
<b>9 Hedge Funds' Activism: A New Trend of Convergence toward Private Equity in Public Firms?</b>	<b>155</b>
Introduction	155
Hedge Funds and Private Equity: Market Data and Trends toward Convergence	156
<i>Private Equity and Hedge Funds: Competitors or Allies?</i>	157
Hedge Funds' Approach to Activism	159
Features of Targeted Companies	162
How Hedge Funds Engage a Fight against Incumbent Management	163
<i>Stake Owned, Wolf Packs, Empty Voting, and Hidden Ownership</i>	165
Clinical Study of Carl Icahn versus Time Warner, Inc.	167
<i>The Parties Involved</i>	168
<i>Why Did the Activists Intervene?</i>	172
<i>What Happened: The Path Followed</i>	174
<i>The Event Study Analysis</i>	177
Conclusion	182
Notes	184
References	191
Reference Web Sites	192
About the Authors	193
<b>PART III Financial and Real Returns to Private Equity</b>	<b>195</b>
<b>10 Projection of Private Equity Fund Performance: A Simulation Approach</b>	<b>197</b>
Introduction	197
Related Literature	199

A Simulation Approach for Venture Capital Performance	
Projection and Risk Management	201
<i>Description of the General Approach</i>	201
<i>Data Description</i>	204
<i>Econometric Analysis and Modeling</i>	213
<i>Monte Carlo Simulation</i>	218
Simulation Results for Two Fictitious Venture Capital Funds	221
<i>Structure of the Fictitious Venture Capital Funds</i>	221
<i>Simulation Results</i>	222
Conclusion	224
Notes	226
References	226
About the Authors	228
<b>11 Value Creation in Middle-Market Buyouts:</b>	
<b>A Transaction-Level Analysis</b>	<b>229</b>
Introduction	229
Background, Context, and Prior Literature	230
<i>Sample and Data</i>	232
<i>Variables</i>	233
<i>Descriptive Statistics</i>	234
<i>Differences by Subsamples</i>	236
Regression Results	241
Conclusion	245
Appendix 11.A: Summary of PE Firms	247
Notes	248
References	253
About the Authors	255
Acknowledgments	255
<b>12 Risk and Return of Private Equity: An Overview</b>	
<b>of Data, Methods, and Results</b>	<b>257</b>
Introduction	257
The Data	258
<i>Publicly Traded Vehicles</i>	258
<i>Round Valuation Data</i>	258
<i>Investment Data</i>	259
<i>Fund Data</i>	260
<i>Sample Biases</i>	260
Methodology	266
<i>Publicly Traded Vehicles</i>	266
<i>Round Valuation Data</i>	266
<i>Investment and Fund Data</i>	269
Results	270
<i>Publicly Traded Vehicles</i>	270
<i>Round Data</i>	270
<i>Investment Data</i>	271
<i>Fund Data</i>	272

Additional Discussion	275
<i>Examples of the Challenge Facing Performance Evaluation</i>	275
<i>Other Approaches to Estimate Risk and Abnormal Return</i>	277
Conclusion	279
Appendix 12.A: Discussion on Staleness Correction	279
Notes	280
References	281
About the Author	282
Acknowledgments	282
<b>13 Private Equity Fund Selection: How to Find True Top-Quartile Performers</b>	<b>283</b>
Introduction	283
Hypothesis Development	284
The Research Approach	285
Measurement and Operationalization	285
<i>Performance Track Record</i>	286
<i>Deal Flow</i>	286
<i>GP Experience</i>	286
<i>Differences between the Focal and Prior Funds</i>	286
Which Factors Correlate with Future Performance?	286
Random Choice versus the Crystal Ball: An Approach to Measuring PE Fund Selection Efficiency	287
The Peracs Private Equity Selection Efficiency Measure™	289
The Selection Efficiency of Performance-Based Fund Selection Rules	289
Shortcomings of the Traditional Benchmarking Approach	290
Using and Interpreting the Right Public Market Benchmarks	291
Advanced Private Equity Benchmarking Based on Deal-Level Benchmarks	293
Quantitative Due Diligence Case Study: Advanced Private Equity Benchmarking	294
The Fund Selection Efficiency of Advanced Private Equity Benchmarking Techniques	296
Conclusion	297
Note	298
References	298
About the Author	299
<b>14 Real Effects of Private Equity: Empirical Evidence and a Research Agenda</b>	<b>301</b>
Introduction	301
Evidence of the Real Effects of Private Equity	301
Research Agenda	307
References	308
About the Author	309
Acknowledgment	310

<b>15</b>	<b>Employment, Wage, and Productivity Effects of Private Equity Transactions</b>	<b>311</b>
	The Universe of Private Equity Transactions	311
	Task of the Chapter	311
	<i>Pitfalls for the Unwary</i>	312
	Employment and Productivity Identities	313
	Employment, Wage, and Productivity Effects	315
	<i>U.S. Empirical Studies</i>	319
	<i>U.K. Empirical Studies</i>	321
	Conclusion	326
	Notes	327
	References	329
	About the Author	330
	<b>PART IV International Perspectives on Private Equity and Regulation</b>	<b>333</b>
<b>16</b>	<b>Valuation and (Financial) Disclosure in the Private Equity Industry: Institutional Set-Up, Incentives, and Empirical Analysis</b>	<b>335</b>
	Introduction	335
	Institutional Setup	337
	<i>Valuation and Disclosure Rules for Privately Held (Portfolio) Firms</i>	337
	<i>Valuation and Disclosure Guidelines for Private Equity Funds</i>	339
	<i>A Brief Evaluation of Valuation Guidelines</i>	341
	Main Problems and Conflicts of Interest	342
	Incentives for Voluntary Disclosure versus Mandatory Disclosure	343
	<i>Disclosure of Firm-Specific Information</i>	344
	<i>Determinants of Potential Reporting Biases of Private Equity Funds</i>	345
	<i>Financial Standards, Disclosure, and Regulation</i>	346
	Disclosure and Reporting Patterns of Venture-Backed Portfolio Firms	347
	<i>Reporting Biases of Private Equity Funds Valuation</i>	348
	Conclusion	352
	Notes	354
	References	355
	About the Authors	356
	Acknowledgment	357
<b>17</b>	<b>Private Equity Regulation: A Comparative Analysis</b>	<b>359</b>
	Introduction	359
	The Growth of Private Equity	363
	<i>The Performance of Private Equity</i>	364
	<i>The Supply-and-Demand Side of Private Equity</i>	365

Dealing with Agency Problems: Contractual Arrangements	368
<i>The Relationship between Investors and Fund Managers:</i>	
<i>The Limited Partnership Structure</i>	369
<i>The Relationship between Investors and Fund Managers:</i>	
<i>Restrictive Covenants</i>	373
<i>The Relationship between the Fund and Its Portfolio Companies</i>	376
Regulation of Private Equity Funds	379
<i>Self-Regulation</i>	379
<i>Coregulation</i>	382
<i>The Regulatory Response</i>	384
<i>Legal Tools</i>	386
<i>Regulatory Responses to Hedge Fund and Private Equity</i>	
<i>in Canada, the European Union, Germany, the Netherlands,</i>	
<i>and the United Kingdom</i>	388
Conclusion	389
Notes	390
References	392
About the Authors	393
<b>18 International Private Equity Flows</b>	<b>395</b>
Introduction	395
A Brief Overview of International Fund-Raising	396
International Investments of Private Equity Funds in	
Western Europe, North America, and Australia	398
<i>Most Important International Investor Countries</i>	399
<i>Most Important International Target Countries</i>	402
<i>Regional Clustering of the International PE Investment Market</i>	406
<i>International Syndication of Buyouts</i>	408
Private Equity in Emerging Markets	410
Conclusion and Avenues for Research	411
Notes	414
References	414
About the Authors	416
Acknowledgments	417
<b>19 Private Equity in Emerging Markets</b>	<b>419</b>
Introduction	419
International Comparison	420
What Determines Emerging Market PE Activity?	421
Survey among Institutional Investors on the Importance	
of Emerging Markets' Allocation Criteria	424
<i>Perceptions of Particular Allocation Criteria in Emerging Markets</i>	429
<i>Investors' Preferences Regarding Different Emerging Regions</i>	431
Conclusion	432
Note	434
References	434
About the Author	436

<b>20</b>	<b>Private Equity in Europe</b>	<b>437</b>
	Introduction	437
	History	438
	The Structure of Private Equity Funds	439
	Private Equity Investment	441
	Internationalization of Private Equity	446
	Private Equity Performance	450
	<i>The Literature</i>	450
	<i>Performance Measures</i>	451
	<i>Evidence from Europe</i>	453
	Conclusion	455
	Notes	458
	References	458
	About the Author	461
<b>21</b>	<b>Private Equity and Leveraged Buyouts in Italy: To Prohibit or Not to Prohibit, That Is the Question</b>	<b>463</b>
	Introduction	463
	The Buyout Market and Its Puzzling Trend	465
	The LBO Scheme and Related Criticisms	468
	<i>Critical Features</i>	468
	The LBO Legal Environment: Past, Present, and Future Trends	469
	<i>The Past Debate</i>	469
	<i>The Inconsistent Case-Law and the Supreme Court Prohibition</i>	470
	<i>The Investors' Reaction and the Subsequent Turning Point</i>	471
	<i>Regulatory Restrictions of LBOs prior to 2004: A Closer Look</i>	472
	<i>The European Context</i>	474
	<i>The 2004 Reform: Conditions for the LBO Legitimacy and     Unsolved Issues</i>	475
	<i>New Criminal Prosecutions in Case of Financial Assistance</i>	478
	<i>Consequences in Case of Bankruptcy</i>	479
	The Economic Impact of the 2004 Reform	480
	<i>Data and Methodology</i>	480
	<i>Sample Characteristics and Representativeness</i>	481
	<i>Impact on Investor Behavior: A Descriptive Analysis</i>	486
	Conclusion	494
	Appendix 21.A: The Past Debate on the Legitimacy of LBOs in Italy	496
	A Closer Examination of Why LBOs Appeared to Be Illegal in Italy	496
	<i>Article 2357: Share Buyback Restrictions</i>	496
	<i>Article 2358: Financial Assistance Prohibition</i>	497
	Appendix 21.B: The Regulation of Financial Assistance in the United Kingdom	498
	Appendix 21.C: Survey Details	500
	Notes	502
	References	505
	About the Author	510

<b>22</b>	<b>Venture Capital and Private Equity in Germany</b>	<b>511</b>
	Introduction	511
	The Development of the German Venture Capital Industry	513
	<i>An International Comparison of the Relative Importance of Venture Capital</i>	515
	<i>Sources of Venture Capital Funds in Germany</i>	518
	<i>Venture Capital Investments</i>	521
	<i>Specialization and Ownership Structure of Venture Capital Firms in Germany</i>	527
	<i>Financial Contract Design by Venture Capital Firms in Germany</i>	528
	<i>Exit Alternatives and Exit Strategies of Venture Capital Firms in Germany</i>	530
	Going Public as an Exit Route for Venture Capital and the Performance of Venture-Backed IPOs in Germany	534
	<i>Going Public as an Exit Route for Venture Capital</i>	535
	<i>Performance of Venture-Backed Initial Public Offerings in Germany</i>	536
	<i>Empirical Evidence on the Long-Run Performance and Exit Behavior of Venture-Backed IPOs in Germany</i>	537
	<i>Other Venture Capital-Related Issues</i>	545
	Conclusion	548
	References	549
	About the Authors	553
<b>23</b>	<b>Private Equity in Denmark: Capital Structure and Taxes</b>	<b>555</b>
	Introduction	555
	<i>History of Buyouts in Denmark</i>	556
	Consequences for Capital Structure of Portfolio Companies	558
	<i>Leverage and Takeovers</i>	558
	<i>Capital Structure of Private Equity Funds</i>	559
	<i>An Empirical Investigation</i>	560
	<i>Some Case Studies</i>	563
	<i>Financial Performance of Investments</i>	564
	<i>Summing Up</i>	564
	Implications for Tax Payments	565
	<i>Taxes and Takeovers</i>	565
	<i>A Simple Example of a Private Equity Takeover</i>	566
	<i>The Example with Numbers: Implications for Corporate Tax Payments</i>	567
	<i>Wider Tax Implications of PE Takeovers</i>	571
	<i>A Hypothetical Case</i>	572
	<i>More Complications</i>	573
	<i>Summing Up</i>	575
	Conclusion	575
	Notes	576
	References	576
	About the Authors	577

<b>24</b>	<b>Venture Capital and Private Equity in Canada: Phasing Out an Inefficient Tax Credit</b>	<b>579</b>
	Introduction	579
	Description of 2008 YORKbiotech Survey Data	582
	Multivariate Regression Evidence	588
	<i>Capital-Raising Hurdles</i>	588
	<i>Time to Failure</i>	594
	<i>The Extent of Value-Added</i>	596
	Conclusion	598
	Notes	599
	References	600
	About the Authors	602
	<b>Index</b>	<b>603</b>



# Introduction to Private Equity

**DOUGLAS CUMMING**

Associate Professor and Ontario Research Chair, York University,  
Schulich School of Business

## INTRODUCTION

Private equity markets experienced a golden age up to the second quarter of 2007 (Shadab 2009). The massive amounts of capital flowing to private equity funds up to this period are highlighted on an absolute and relative basis in Exhibits 1.1 and 1.2, respectively. This rise of the private equity market has been attributed to the superior governance model of private equity relative to the publicly traded corporation (Jensen 1989), regulatory costs of being a publicly traded company (see more generally, e.g., Bushee and Leuz 2005), the comparatively low price of debt finance up to the second quarter of 2007 (Acharya et al. 2007; Kaplan 2007), the rise of the hedge funds (Acharya et al. 2007; Shadab 2007) and sovereign wealth funds (Fotak et al. 2008; Bortolotti et al. 2009), among other things.

The collapse in private equity since mid-2007 can be explained perhaps most directly by the collapse in credit markets and inability to effectively leverage private equity investments. Further, there are diseconomies of scale in managing private equity funds (Kannianen and Keuschnigg 2003, 2004; Cumming 2006; Bernile et al. 2007; Cumming and Dai 2008; Cumming and Walz 2009; Lopez de Silanes and Philappou 2009). Funds grew too large leading up to 2009, thereby leading to too much money chasing too few quality deals, inefficient due diligence, and too little value-added provided by fund managers. The crisis has brought on increasing calls for regulation of private equity funds (Cumming and Johan 2009), as well as hedge funds (Verret 2007; Cumming and Dai 2007, 2009) and sovereign wealth funds (Epstein and Rose 2009).

In the 1980s and 1990s, there was comparatively little academic work on private equity finance. This gap in the literature was largely attributable to a dearth of systematic private equity data. More recently, however, there has been a growing number of academics who have taken an interest in the topic and have collected systematic data for empirical studies both in the U.S. context and abroad. This empirical work has in turn inspired theoretical analyses of private equity finance. As of 2009 there are a significant number of academics who have contributed greatly to our understanding of private equity markets.

This book provides a comprehensive view of private equity by describing the current state of research to better understand the current state of the private equity market. The chapters herein discuss the structure of private equity funds