## **Daniel Pindur**



## Value Creation in Successful LBOs

With a foreword by Prof. Dr. Frank Richter

Dcuiiled Contents X[

## **Detailed Contents**

| I.  | Int  | roduction   | 1  |
|-----|--|---|----|
|     | A.   | On the Status ol' Research on Value Creation in LBOs          | 3  |
|     |  | 1. Theoretical Approaches to Analyzing Value Creation in LBOs | 3  |
|     |  | 1.1 Neoclassic Financial Theory                               | 4  |
|     |  | 1.2 Institution Economics                                     | 6  |
|     |  | 2. Empirical Work to Assess Value Creation in LBOs            | 10 |
|     |  | 2.1 Premia-Paid Analysis in Public-to-Private Transactions    | 11 |
|     |  | 2.2 Operational Performance Studies                           | 14 |
|     |  | 2.3 Private Equity Performance Studies                        | 17 |
|     | В.   | Shortcomings and Research Gap                                 | 21 |
|     |  | 1. With Respect to the Research Object                        | 21 |
|     |  | 2. With Respect to the Perspective of the Analysis            | 23 |
|     |  | 3. With Respect to the Notation of Value Creation             | 25 |
|     | C.   | Research Design to Assess Value Creation in LBOs              | 26 |
| II. | Preparatory Considerations for Value Creation Analysis in LBOs on Investment Level |   | 31 |
|     | A.   | Research Object: Realized LBO Investments                     | 31 |
|     |  | 1. Defining Leveraged Buyouts                                 | 31 |
|     |  | 2. The LBO Investment Process                                 | 33 |
|     |  | 3. Modes of Entry for LBO Investments                         | 35 |
|     |  | 3.1 Public-to-Private Entry (Going Private)                   | 36 |
|     |  | 3.2 Private-lo-Private Entry                                  | 37 |
|     |  | 4. Modes of Exit for LBO Investments                          | 39 |
|     |  | 4.1 Private-to-Public Exit (Going Public)                     | 40 |
|     |  | 4.2 Private-to-Private Exit                                   | 42 |
|     | В.   | Perspective: Equity Investors in LBOs                         | 44 |
|     |  | 1. The Concept of Sources and Uses in LBOs                    | 44 |

XII Detailed Contents

|      | 2. Equity Financing Instruments   | 4/ |
|------|---|----|
|      | 2.1 Common Stock  | 47 |
|      | 2.2 Quasi-Equity Financing Instruments  | 48 |
|      | 3. Debt Financing Instruments   | 50 |
|      | 3.1 Senior Debt   | 50 |
|      | 3.2 Subordinated Debt   | 50 |
|      | C. Objective Function: Value Creation in LBOs   | 52 |
|      | 1. Total Proceeds to Equityholders in LBOs  | 53 |
|      | 2. Accounting for the Uncertainty of Total Proceeds or What's the Right Discount Rate | 54 |
|      | 3. Value Creation Performance Measures  | 59 |
|      | 3.1 The Concept of Times Money  | 60 |
|      | 3.2 IRR as Timing-Adjusted Performance Measure  | 61 |
|      | 3.3 Alternative Performance Measures  | 64 |
| III. | Value Creation Analysis in the Context of the LBO Transaction Model                   | 67 |
|      | A. The LBO Transaction Model  | 67 |
|      | 1. Financial Leverage and the Variation in the Entity and Equity Market Value         | 67 |
|      | 2. Components of Total Proceeds to Equity Investors                                   | 69 |
|      | 3. Perspectives of Value Creation in LBOs   | 71 |
|      | B. Internal Perspective: FCF Effects  | 74 |
|      | 1. Principal-Agent Theoretical Considerations   | 74 |
|      | 1.1 A Clarification of Agency Costs   | 75 |
|      | 1.2 Reducing Agency Costs in a LBO Governance Structure                               | 82 |
|      | 2. Management Support   | 90 |
|      | 2.1 The Impact of the PE Fund and the LBO Organizational Form                         | 90 |
|      | 2.2 Means of Equity Investor's Operational and Strategic Involvement                  | 92 |
|      | 3. Wealth Transfer Hypotheses   | 95 |
|      | 3.1 Wealth Transfer from Bondholders  | 95 |
|      | 3.2 Wealth Transfer from Employees  | 97 |

## Detailed Contents

|     |    | 3.3 Wealth Transfer from the Government   | 98          |
|-----|----|---|-------------|
|     | C. | External Perspective: Variation in the Transaction Multiple                           | 100         |
|     |    | 1. Conceptual Valuation Framework   | 101         |
|     |    | 1.1 The Risk-Neutral Valuation Theorem  | 102         |
|     |    | 1.2 The Binomial Cash Flow Model  | 102         |
|     |    | 1.3 Valuation with Multiples  | 105         |
|     |    | 2. From the Valuation to the Transaction Multiple                                     | 108         |
|     |    | 2.1 Market Timing, Supply and Demand and the Impact of the Capital Market Environment | 109         |
|     |    | 2.2 Information Asymmetries and Competition in the Divestment Process                 | <b>1</b> 16 |
| IV. | Re | search Model, Derivation of Hypotheses and Operationalization of Variables            | 125         |
|     | A. | Research Model  | 125         |
|     | В. | Derivation of Hypotheses and Operationalization of Independent Variables              | 126         |
|     |    | 1. Internal Perspective: FCF Effects  | 127         |
|     |    | 1.1 Agency Cost Reduction Related   | 127         |
|     |    | 1.2 Management Support Related  | 132         |
|     |    | 2. External Perspective: Variation in the Transaction Multiple                        | 137         |
|     |    | 2.1 Conceptual Valuation Framework Related  | 137         |
|     |    | 2.2 Capital Market Environment Related  | 140         |
|     |    | 2.3 Information Asymmetries Related   | 143         |
|     |    | 3. Control Variables  | 146         |
|     | C. | Operationalization of Dependent Variables   | 153         |
|     |    | 1. Internal Perspective: FCF Effects  | 153         |
|     |    | 1.1 Operating Cash Flow   | 154         |
|     |    | 1.2 Net Investing Cash Flow   | 158         |
|     |    | 2. External Perspective: Variation in the Transaction Multiple                        | 158         |
|     |    | 3. LBO Performance Measures   | 159         |
| v.  | Eı | mpirical Analysis   | 161         |
|     | Α. | Data Sample   | 161         |

XIV Detailed Contents

|    | 1. Investment Selection Criteria   | 162 |
|----|--|-----|
|    | 2. Potential Sample Bias   | 166 |
|    | 3. Tests for Representativeness  | 168 |
| B. | Methodology  | 171 |
|    | 1. Financial Data  | 171 |
|    | 2. Statistical methods   | 174 |
| C. | Independent Variables Descriptive Statistics                             | 176 |
|    | 1. Control Variables   | 176 |
|    | 2. Purely Internal Perspective Related                                   | 178 |
|    | 2.1 Agency Cost Reduction Related Aspects                                | 178 |
|    | 2.2 Management Support Related   | 182 |
|    | 3. Purely External Perspective Related                                   | 183 |
|    | 3.1 Conceptual Valuation Framework Related Aspects                       | 183 |
|    | 3.2 Capital Market Environment Related Aspects                           | 185 |
|    | 3.3 Information Asymmetries Related Aspects                              | 187 |
| D. | Total Proceeds to Equity Investors                                       | 189 |
|    | 1. The LBO Transaction Model   | 189 |
|    | 1.1 Financial Leverage and (he Variation in the Entity and Equity Value  | 189 |
|    | 1.2 Components of Total Proceeds to Equity Investors                     | 195 |
|    | 2. Internal Perspective: FCF Effects                                     | 200 |
|    | 2.1 Operating Cash Flow  | 200 |
|    | 2.2 Net Investing Cash Flow  | 213 |
|    | 2.3 Cumulated FCF Generation   | 214 |
|    | 2.4 Internal Perspective Intermediary Results                            | 220 |
|    | 3. External Perspective: Variation in the Transaction Multiple           | 224 |
|    | 3.1 Descriptive Differences by Exit Mode                                 | 226 |
|    | 3.2 Variation in the Transaction Multiple of IPO Exited LBOs             | 227 |
|    | 3.3 Vanation in the Transaction Multiple of Secondary Buyout Exited LBOs | 231 |
|    | 3.4 External Perspective Intermediary Results                            | 234 |

Detailed Contents XV

|     | E.           | Relative LBO Performance Measures   | 235 |
|-----|--------------|---|-----|
|     |              | 1. Times Money Analysis   | 236 |
|     |              | LI Times Money Descriptive Statistics and Decomposition                   | 236 |
|     |              | 1.2 Separating Steady vs. Improved Operational Performance                | 239 |
|     |              | 1.3 Times Money and the Length of (he Investment                          | 240 |
|     |              | 2. Investment IRR Analysis  | 241 |
|     |              | 2.1 Investment IRR Descriptive Statistics                                 | 241 |
|     |              | 2.2 Investment 1RR Sensitivity Analyses                                   | 246 |
|     |              | 2.3 Investment IRR Inferring Statistics                                   | 250 |
|     |              | 3. Alternative Performance Measures                                       | 252 |
|     |              | 3.1 Excess Investment JRRs  | 253 |
|     |              | 3.2 Standardized NPVs   | 253 |
|     |              | 3.3 LBO Performance Measure Correlation Analysis                          | 256 |
| VI. | Co           | onclusion   | 259 |
|     | A.           | Components of/and their Relative Cotitribution to Value Creation Measures | 259 |
|     | В.           | Determinants of Value Creation in LBO Investments                         | 263 |
|     | C.           | Discussion and Outlook  | 267 |
| App | Appendix     |   |     |
| Bib | Bibliography |   |     |