

Business Ratios

2nd Edition

Steven M. Bragg

Table of Contents

Chapter 1 – Overview of Measurements	1
Learning Objectives	1
Introduction.....	1
What to Measure	1
Mandatory Measurements	2
Breaking with Tradition	3
Measurement Usage Levels	3
Measurement Timing	4
Measurement Consistency.....	4
Measurements and the Soft Close	5
Measurement Clutter	5
Limitations of Ratio Analysis	6
Summary.....	7
Review Questions.....	8
Review Answers	9
Chapter 2 – Performance Measurements	10
Learning Objectives	10
Introduction.....	10
Overview of Performance Measurements.....	10
Sales Returns and Allowances to Sales	10
Contribution Margin Ratio	11
Gross Profit Ratio	12
Operating Income Ratio	12
Net Profit Ratio	13
Deflated Profit Growth.....	14
Effective Tax Rate	15
Core Earnings Ratio	15
Quality of Earnings Ratio	16
Operating Ratio	17
Operating Leverage	18
Breakeven Point	19
Margin of Safety	19
Discretionary Cost Ratio	20
Summary.....	21
Review Questions.....	22
Review Answers	23
Chapter 3 – Liquidity Measurements	24
Learning Objectives	24
Introduction.....	24
Overview of Liquidity Measurements.....	24
Cash Conversion Cycle	25
Days Sales in Accounts Receivable	25
Days Sales in Inventory	26
Days Payables Outstanding	27
Liquidity Index.....	27
Current Ratio.....	28
Inventory to Current Assets Ratio.....	29
Quick Ratio.....	30
Cash Ratio.....	30
Defensive Interval Ratio.....	31
Net Working Capital Ratio.....	32
Working Capital Productivity	33

Table of Contents

Working Capital Roll Forward.....	34
Illiquid Asset Conversion Ratio.....	34
Solvency Ratio.....	35
Summary.....	36
Review Questions.....	37
Review Answers.....	38
Chapter 4 – Cash Flow Measurements.....	39
Learning Objectives.....	39
Introduction.....	39
Overview of Cash Flow Measurements.....	39
Free Cash Flow.....	39
Cash Flow Returns.....	40
Cash Flow per Share.....	40
Cash Flow Return on Sales.....	41
Cash Flow Return on Assets.....	42
Cash Flow from Operations Ratio.....	42
Cash Reinvestment Measurements.....	43
Cash Reinvestment Ratio.....	43
Funds-Flow Adequacy Ratio.....	44
Summary.....	44
Review Questions.....	46
Review Answers.....	47
Chapter 5 – Return on Investment.....	48
Learning Objectives.....	48
Introduction.....	48
Return on Equity.....	48
Economic Value Added.....	50
Book Value Analysis.....	52
Net Book Value.....	53
Tangible Book Value.....	54
Book Value per Share.....	55
Return on Assets.....	55
Return on Assets.....	56
Return on Operating Assets.....	57
Earnings per Share.....	58
Dividend Performance.....	60
Dividend Payout Ratio.....	60
Dividend Yield Ratio.....	61
Summary.....	62
Review Questions.....	63
Review Answers.....	64
Chapter 6 – Share Performance Measurements.....	65
Learning Objectives.....	65
Introduction.....	65
Overview of Share Performance Measurements.....	65
Price / Earnings Ratio.....	66
Capitalization Rate.....	67
Total Shareholder Return.....	67
Market Value Added.....	68
Market to Book Ratio.....	69
Insider Buy/Sell Ratio.....	69
Options and Warrants to Common Stock Ratio.....	71
Short Interest Ratio.....	72
Institutional Holdings Ratio.....	72

Table of Contents

Summary.....	73
Review Questions.....	74
Review Answers.....	75
Chapter 7 – Growth Measurements.....	76
Learning Objectives.....	76
Introduction.....	76
Overview of Growth Measurements.....	76
Sales Growth.....	76
Deflated Sales Growth.....	77
Sales Growth Consistency.....	77
Core Sales Growth.....	78
Customer Growth.....	79
Expense Growth.....	79
Profit Growth.....	80
Profit Growth.....	80
Profit Growth Consistency.....	81
Affordable Growth Rate.....	81
Summary.....	82
Review Questions.....	83
Review Answers.....	84
Chapter 8 – Constraint and Throughput Measurements.....	85
Learning Objectives.....	85
Introduction.....	85
Overview of Constraint Measurements.....	85
Bottleneck Utilization.....	85
Bottleneck Effectiveness.....	86
Bottleneck Schedule Fulfillment.....	87
Buffer Penetration.....	88
Bottleneck Maintenance to Operating Ratio.....	89
Bottleneck Rework Processing.....	89
Post-Bottleneck Scrap.....	90
Manufacturing Effectiveness.....	91
Manufacturing Productivity.....	91
Manufacturing Effectiveness.....	92
Manufacturing Throughput Time.....	93
Delayed Throughput.....	94
Summary.....	94
Review Questions.....	96
Review Answers.....	97
Chapter 9 – Cash Management Measurements.....	98
Learning Objectives.....	98
Introduction.....	98
Overview of Cash Management Measurements.....	98
Auto Cash Application Rate.....	98
Suspense to Receivables Ratio.....	99
Actual Cash Position versus Forecast.....	100
Average End of Day Available Balance.....	100
Earnings on Invested Funds.....	101
Unhedged Gains and Losses.....	101
Summary.....	102
Review Questions.....	103
Review Answers.....	104

Table of Contents

Chapter 10 – Credit and Collection Measurements	105
Learning Objectives	105
Introduction.....	105
Overview of Credit and Collection Measurements	105
Days Sales Outstanding	106
Best Possible DSO	107
Collection Effectiveness Index	107
Measurements Based on Time Buckets	108
Days Delinquent Sales Outstanding.....	109
Average Days to Pay per Collector	110
Collection Dispute Cycle Time	110
Deduction Turnover	110
Average Time to First Contact.....	111
Bad Debt Percentage.....	111
Collection Performance Report	111
Average Time to Establish Credit.....	112
General Management Measurements	112
Summary.....	113
Review Questions.....	114
Review Answers	115
Chapter 11 – Customer Service Measurements.....	116
Learning Objectives	116
Introduction.....	116
Overview of Customer Service Measurements.....	116
On-Time Delivery Percentage	117
Order Cycle Time.....	117
Order Fill Rate	118
Orders Damaged in Transit.....	119
Customer Turnover.....	120
First Contact Resolution.....	121
Escalation Rate	122
Caller Abandonment Rate.....	122
Incident Volume.....	123
Inbound Caller Retention	124
Customer Opinions	124
Customer Satisfaction Ratio.....	124
Net Promoter Score	125
Summary.....	126
Review Questions.....	127
Review Answers	128
Chapter 12 – Facility Measurements	129
Learning Objectives	129
Introduction.....	129
Overview of Facility Measurements.....	129
Cost per Square Foot.....	129
Occupancy Cost Ratio	130
Square Feet per Person.....	131
Percent of Storage in High-Cost Locations.....	131
Floor Space Utilization	132
Cubic Volume Utilization	133
Percentage of Storage Bins Utilized	134
Honeycombing Percentage.....	134
Summary.....	135
Review Questions.....	136
Review Answers	137

Table of Contents

Chapter 13 – Financing Measurements **138**
 Learning Objectives 138
 Introduction..... 138
 Overview of Financing Measurements 138
 Debt to Equity Ratio 138
 Ability to Pay Measurements..... 139
 Interest Coverage Ratio 139
 Debt Service Coverage Ratio..... 140
 Fixed Charge Coverage Ratio..... 140
 Cash Coverage Ratio..... 141
 Average Cost of Debt..... 141
 Borrowing Base Usage 142
 Summary..... 143
 Review Questions..... 144
 Review Answers 145

Chapter 14 – Fixed Asset Measurements **146**
 Learning Objectives 146
 Introduction..... 146
 Overview of Fixed Asset Measurements 146
 Sales to Fixed Assets Ratio 146
 Accumulated Depreciation to Fixed Assets Ratio 147
 Cash Flow to Fixed Asset Requirements Ratio..... 148
 Repairs and Maintenance Expense to Fixed Assets Ratio..... 148
 Summary..... 149
 Review Questions..... 151
 Review Answers 152

Chapter 15 – Human Resources Measurements..... **153**
 Learning Objectives 153
 Introduction..... 153
 Overview of Human Resources Measurements..... 153
 Position Fulfillment Speed..... 153
 Unfilled Requisitions Ratio 154
 Recruiter Effectiveness Ratio..... 155
 Intern Conversion Ratio 156
 Cost per Hire 157
 Employee Replacement Cost..... 158
 Accession Rate..... 159
 Employee Turnover 159
 Annualized Compensation per Employee..... 160
 Net Benefits Cost per Employee 161
 Sales per Person 162
 Profit per Person..... 163
 Administrative Staff Ratio..... 163
 Ergonomic Injury Rate 164
 Outsourcing Cost Effectiveness 165
 General Management Measurements 166
 Summary..... 166
 Review Questions..... 167
 Review Answers 168

Chapter 16 – Inventory Measurements..... **169**
 Learning Objectives 169
 Introduction..... 169
 Overview of Inventory Measurements 169
 Average Inventory Calculation 169

Table of Contents

Inventory Turnover Measurements.....	170
Inventory Turnover Ratio.....	171
Raw Materials Turnover.....	171
Work-in-Process Turnover.....	172
Finished Goods Turnover.....	173
Inventory Accuracy Percentage.....	173
Excess Inventory Measurements.....	174
Obsolete Inventory Percentage.....	174
Percent of Inventory Greater than XX Days.....	175
Returnable Inventory Valuation.....	176
Opportunity Cost of Excess Inventory.....	176
Summary.....	177
Review Questions.....	178
Review Answers.....	179
Chapter 17 – Payroll Measurements.....	180
Learning Objectives.....	180
Introduction.....	180
Overview of Payroll Measurements.....	180
Payroll Transaction Error Rate.....	180
Form W-2c to Form W-2 Ratio.....	181
Proportion of Manual Checks.....	181
Payroll Entries to Headcount Ratio.....	182
Outsourced Payroll Cost per Employee.....	183
Summary.....	183
Review Questions.....	184
Review Answers.....	185
Chapter 18 – Pricing Measurements.....	186
Learning Objectives.....	186
Introduction.....	186
Overview of Pricing Measurements.....	186
Price Elasticity of Demand.....	186
Cross Price Elasticity of Demand.....	188
Throughput per Minute.....	188
Proportion of Discounted Prices.....	189
Selling Price Variance.....	190
Sales Volume Variance.....	191
Summary.....	191
Review Questions.....	192
Review Answers.....	193
Chapter 19 – Production Measurements.....	194
Learning Objectives.....	194
Introduction.....	194
Overview of Production Measurements.....	194
Department-Level Performance.....	194
Order Cycle Time.....	194
Manufacturing Efficiency.....	195
Productivity Cause and Effect Ratio.....	196
Degree of Unbalance.....	197
Operational Takt Time.....	198
Equipment Measurements.....	198
Equipment Effectiveness.....	198
Setup Time.....	199
Unscheduled Downtime Percentage.....	200
Maintenance and Repair Ratio.....	200

Table of Contents

Average Run Time	201
Yield Measurements	202
First-Pass Yield.....	202
Material Yield Variance	202
Expense Proportions	203
Indirect Labor to Direct Labor Ratio.....	203
Overhead to Direct Cost of Goods Ratio.....	204
General Management Measurements	205
Summary	205
Review Questions.....	206
Review Answers	207
Chapter 20 – Product Design Measurements.....	208
Learning Objectives	208
Introduction.....	208
Overview of Product Design Measurements.....	208
Product Development	208
Number of Design Platforms	208
Reused Components Percentage.....	209
Design Cycle Time.....	210
Bill of Material Accuracy.....	210
Financial Outcomes	211
Percentage of Target Cost Attained	211
Percentage of New-Product Sales.....	212
Return on Research and Development.....	212
Warranty Claims Percentage	213
Summary.....	214
Review Questions.....	215
Review Answers	216
Chapter 21 – Purchasing Measurements	217
Learning Objectives	217
Introduction.....	217
Overview of Purchasing Measurements	217
Proportion of Purchase Orders above Threshold.....	218
Procurement Card Usage Percentage.....	219
Proportion of Spend Managed	219
Proportion of Spend with Preferred Suppliers.....	220
Proportion of Certified Suppliers.....	220
Supplier Performance Measurements	221
Supplier Fulfillment Rate.....	221
Supplier Defect Rate.....	222
Supplier Billed Price Variance	223
Economic Order Quantity.....	224
Proportion of Targeted Inventory Dispositioned.....	224
General Management Measurements	225
Summary.....	225
Review Questions.....	226
Review Answers	227
Chapter 22 – Payables Measurements	228
Learning Objectives	228
Introduction.....	228
Overview of Payables Measurements	228
Transaction Error Rate.....	228
Full-Time Equivalent Measurements	229
FTEs per \$1 Million of Revenue	229

Table of Contents

Staff Cost per FTE	229
Line Items per FTE	230
Paperless Measurements	230
Percent of Paperless Invoices	230
Percent of Paperless Payments	230
Additional Payables Measurements	230
Summary	231
Review Questions	232
Review Answers	233
Chapter 23 – Sales and Marketing Measurements	234
Learning Objectives	234
Introduction	234
Overview of Sales and Marketing Measurements	234
Sales Productivity	234
Incremental Salesperson Effectiveness	235
Sales Effectiveness	236
Sales and Marketing as Percentage of Sales	237
Existing Customer Solicitation Ratio	237
Order Placement Rate	238
Sales per Customer	239
Quote to Close Ratio	240
Sales Backlog Ratio	240
Throughput Measurements	241
Throughput Quoted	241
Ratio of Throughput Awarded to Quoted	242
Ratio of Throughput Booked to Billed	242
Marketing Measurements	243
Advertising Value Equivalency	243
Sales to Unique Visitors Ratio	244
Direct Mail Effectiveness	245
Market Share	245
General Management Measurements	246
Summary	247
Review Questions	248
Review Answers	249
Glossary	251
Index	255