

Problems & Solutions in Inventory Management

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Preface

When we started writing the manuscript for this book, we had three principles in mind:

- Focus on the academic audience.
- Use simple language.
- Match the theoretical content with numerical examples.

We are glad we have been able to stick to these principles.

This book has been written for undergraduate business as well as industrial engineering students who are taking a course on inventory management or operations management. We believe the content presented in this book is just enough and has been organized well to keep the reader engaged. We have worked out several numerical problems in inventory management. This would particularly come in handy for instructors teaching a course on inventory management.

This book has been divided into four parts with the first part dealing with basic inventory management concepts and terms, including relevant inventory costs and methods of computing those. Toward the end of Chap. 2, we present a case study – Rosettas Tortilleria. This case study has been treated as a running example. Different scenarios for the same case have been presented throughout the book to give readers a common ground for learning. We believe the reader would be able to relate to reality and learn the concepts faster.

The second part of the book has four chapters. In these chapters, we discuss single-item inventory models including items with deterministic demand (without and with shortages allowed), dynamic demand (quantity discount), time-varying demand, and stochastic inventory models. More than 40 solved problems and 4 case studies have been presented in this part of the book.

The third part of the book deals with inventory models involving multiple items. This part of the book has two chapters in which we discuss inventory models subject to constraints (budget, space, and number of orders) as well as selective inventory control techniques. Coordinated replenishment of items is also covered in

this part of the book. Solved numerical problems and case studies have also been included in this part.

The fourth and final part of the book discusses advanced inventory models including models for perishable and style items, maintenance and repairable inventory, and two-stage, multi-echelon inventory models. This may not be part of an undergraduate course curriculum; however, those with a keen mind on inventory management would find this section of the book very interesting.

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Contents

Part I Basics of Inventory Management

1	Introduction to Inventory Management	3
1.1	What Is Inventory?	3
1.2	Functions of Inventory	5
1.2.1	Decoupling Inventory	5
1.2.2	Cycle Inventory	5
1.2.3	Pipeline Inventory	6
1.2.4	Buffer Inventory	6
1.3	Inventory Management: Key Issues	7
1.4	Inventory Management: An Overview of Mathematical Models	8
1.5	Summary	9
1.6	Case Study: Tequila Production Process	9
1.7	Practice Problems	10
	References	10
2	Inventory Control Systems: Design Factors	13
2.1	Design Factors	13
2.1.1	Review Frequency	13
2.1.2	Timing of Replenishment Order	14
2.1.3	Size of Replenishment Order	14
2.2	Review of Inventory Control Systems	15
2.2.1	Continuous Review, Fixed Order Quantity (s, Q) System	15
2.2.2	Continuous Review, Order-Up-to-Level (s, S) System	16
2.2.3	Periodic Review, Order-Up-to-Level (T, S) System	16

2.3	Inventory Costs	17
2.3.1	Carrying Costs	19
2.3.2	Ordering Costs	21
2.3.3	Shortage Costs	23
2.4	Running Example: Managing Inventory at Rosettas Tortilleria	24
2.4.1	Steady, Constant Demand Items	25
2.4.2	Taking Advantage of Supplier Discounts	26
2.4.3	Items with Time-Varying Demand	26
2.4.4	Items with Uncertain Demand	27
2.4.5	Management Under Constraints	27
2.4.6	Managing Perishable Items	28
2.4.7	Production Infrastructure	29
2.4.8	Distribution to Retailers	29
2.5	Summary	30
2.6	Practice Problems	30
	References	31

Part II Single-Item Inventory Models

3	Deterministic Inventory Models	35
3.1	Introduction to Economic Order Quantity (EOQ) Model	35
3.1.1	Assumptions	36
3.1.2	EOQ Derivation	36
3.1.3	EOQ Dimensions	38
3.1.4	TIC Computation: Alternative Method	39
3.2	When to Order: Incorporating Lead Time	44
3.3	EOQ Model with Gradual Replenishments	45
3.4	EOQ Model with Planned Shortages	49
3.5	Periodic Review Model: Deterministic Demand	54
3.6	Summary	56
3.7	Case Study: Fixed Order Quantity System	57
3.8	Practice Problems	58
	References	61
4	Dynamic Inventory Control Models	63
4.1	Single Price-Break Model	63
4.2	All-Units Discount: Instantaneous Supply Model	67
4.3	Summary of All-Units Discount (Instantaneous Supply) Solution Procedure	69
4.4	All-Units Discount: Gradual Supply Model	72
4.5	Incremental Discount Model	74
4.6	Summary of Incremental Discount Solutions Procedure	79
4.7	All-Units Discount and Incremental Discount: A Comparison	79

- 4.8 One-Off, Fixed-Period Discount (Special Discount) 82
- 4.9 Summary 84
- 4.10 Case Study: All-Units Discount 85
- 4.11 Practice Problems 87
- References 89
- 5 Lot-Sizing Heuristics 91**
 - 5.1 Introduction 91
 - 5.1.1 Assumptions 92
 - 5.2 Lot-Sizing Heuristics 92
 - 5.2.1 Lot-for-Lot Heuristic 93
 - 5.2.2 Part-Period Balancing 95
 - 5.2.3 Silver-Meal Heuristic 104
 - 5.2.4 Least Unit Cost Heuristic 116
 - 5.2.5 Wagner-Whitin Heuristic 127
 - 5.3 Summary 137
 - 5.4 Case Study – Finishing School for Investment Bankers 137
 - 5.5 Practice Problems 140
 - References 143
- 6 Stochastic Inventory Models 145**
 - 6.1 Introduction 145
 - 6.2 Continuous Review-Based Models 146
 - 6.3 Service Levels and Safety Stock 146
 - 6.4 Determining Safety Stock Level 147
 - 6.4.1 Using Frequency and Cumulative Distribution 148
 - 6.4.2 Using Statistical Distributions 153
 - 6.5 Reorder Level – Planned Shortages Allowed 165
 - 6.6 Periodic Review-based Models 166
 - 6.6.1 Order Quantity – Variable Demand
and Constant Lead Time 167
 - 6.6.2 Order Quantity – Constant Demand
and Variable Lead Time 170
 - 6.6.3 Order Quantity – Variable Demand
and Lead Time 171
 - 6.7 Summary 173
 - 6.8 Case Study – Trading 173
 - 6.9 Practice Problems 174
 - Appendix 6A: EOQ – When Shortage Costs Are Known 176
 - Appendix 6B: Using GOAL SEEK function in MS Excel 177
 - References 178

Part III Multi-item Inventory Models

- 7 Multi-item Inventory Models Subject to Constraints 181**
 - 7.1 Introduction 181
 - 7.2 Budget Constraint 182

- 7.3 Space Constraint 187
- 7.4 Number of Orders Constraint 192
- 7.5 Multiple Constraints 196
 - 7.5.1 Budgetary and Number of Orders Constraint 197
 - 7.5.2 Space and Number of Orders Constraint 197
 - 7.5.3 Budgetary and Space Constraint 197
- 7.6 Coordinated Replenishment 199
 - 7.6.1 Costs in Coordinated Replenishment 199
 - 7.6.2 Assumptions 200
 - 7.6.3 Coordinated Replenishments: Unequal Number of Orders 202
- 7.7 Summary 203
- 7.8 Case Study: Joint Replenishment 203
- 7.9 Practice Problems 206
- Appendix 7A: Using GOAL SEEK to Determine Lagrangean Multiplier 207
- References 209
- 8 Selective Inventory Control Models 211**
 - 8.1 Need for Selective Inventory Control 211
 - 8.2 ABC Classification 212
 - 8.3 Exchange Curves 217
 - 8.4 VED Classification 219
 - 8.5 FSN Analysis 221
 - 8.6 Other Selective Inventory Control Techniques 221
 - 8.7 Summary 223
 - 8.8 Case Study: Exchange Curves for Multi-item Management 223
 - 8.9 Practice Problems 227
 - References 229

Part IV Advanced Inventory Models

- 9 Inventory Models for Perishable Items and Style Goods 233**
 - 9.1 Introduction 233
 - 9.2 Perishable Items: Deterministic Demand 235
 - 9.3 Single Period Inventory Model with Stochastic Demand 236
 - 9.3.1 Assumptions 236
 - 9.3.2 Relevant Costs 236
 - 9.3.3 Case of Normally Distributed Demand 239
 - 9.3.4 Case of Uniformly Distributed Demand 242
 - 9.3.5 Case of Poisson Distributed Demand 243
 - 9.3.6 Case of Discrete Distribution 245
 - 9.4 Graphical Approach 246
 - 9.5 Incorporating Beginning Inventory 247

- 9.6 Summary 247
- 9.7 Case Study: Managing Sales of Sports Gear 248
- 9.8 Practice Problems 249
- References 250
- 10 Inventory Models for Maintenance and Repairable Items 251**
 - 10.1 Introduction to Maintenance Inventories 251
 - 10.2 Classification of Maintenance Inventories 252
 - 10.3 Managing Fast-Moving Items 253
 - 10.4 Managing Slow-Moving Items 254
 - 10.4.1 Special Items 255
 - 10.4.2 Items that Provide Adequate Warning 256
 - 10.4.3 Items that Provide Inadequate Warning 256
 - 10.5 Managing Rotables 260
 - 10.6 Summary 263
 - 10.7 Case Study: Managing Spare Parts at a Thermal Power Plant 264
 - 10.8 Practice Problems 265
 - References 266
- 11 Multi-echelon Inventory Models 267**
 - 11.1 Multi-echelon: Definition 267
 - 11.2 Two-Stage Inventory Model: Deterministic Demand 268
 - 11.3 Two-Stage Inventory Model: Probabilistic Demand 274
 - 11.4 Summary 275
 - 11.5 Case Study 275
 - 11.6 Practice Problems 276
 - References 277
- Index 279**