## CONTENTS

1. Introduction 01 – 20
   1.1 Introduction 01
   1.2 Review of Literature 07
   1.3 Summary of the Thesis 15

2. Analysis of Some Continuous Review Inventory Systems Using GLD Approximations 21 – 46
   2.1 Introduction 21
   2.2 The GLD Family 24
   2.3 Continuous Review (Q, r) Model with a Mixture of Backorders and Lost Sales 27
   2.4 Base Stock System 38
   2.5 Comparison with Murphy’s Approximation 42

3. Analysis of Multiple Supplier Inventory Models 47 – 75
   3.1 Introduction 47
   3.2 Moments of Order Statistics from the GLD Family 49
   3.3 Lead Times in the Multiple Sourcing Models 52
   3.4 Two Supplier Inventory Model with Different Reorder Levels 63

4. Inventory Models with Variable Lead Time 76 – 99
   4.1 Introduction 76
   4.2 (Q, r, L) Policy with Deterministic Variable Lead Time 78
   4.3 (T, S, L) Policy with Deterministic Variable Lead Time 83
   4.4 A Dual Sourcing Inventory Model with Lead Times as Decision Variables 90
5. Inventory Models with Time Weighted Backorders 100 – 126

5.1 Introduction 100

5.2 (Q, r) Model with a Mixture of Lost Sales and Time Weighted Backorders 102

5.3 Multi-item HMMS Model 121

CONCLUDING REMARKS 127

EPILOGUE 128

APPENDIX 129 – 169

REFERENCES 170 – 177