

**Note**

*The figures that have been included in this volume are used strictly for educational purposes and take the place of visual materials that would be presented during a lecture. They are provided only for personal use by students of the Hellenic Open University (HOU), and are accompanied by a reference to their source and/or the person who created them. The figures have been reproduced at a size that facilitates comprehension of the words and symbols in them, as well as their content in general.*

*Reprinting or any other form of reproduction of this volume is prohibited. The volume is intended for the purposes of teaching and examination of HOU students. It is distributed free of charge only to those who created the teaching materials, to students enrolled at HOU, and to the relevant teaching personnel; it is not available for purchase.*

# ECONOMICS FOR MANAGERS

## Managerial Economics

**Note**

*The Hellenic Open University is responsible for the editing of this publication and the development of the text in accordance with the Methodology of Distance Learning. The scientific accuracy and completeness of the written materials are the exclusive responsibility of the authors, scientific reviewers, and academic supervisors who undertook this project.*

Copyright © 2005  
For Greece and the world  
**HELLENIC OPEN UNIVERSITY**  
Papaflessa and Ipsilanti Sts., 26222 Patras  
Tel: (2610) 367336, 367355 / Fax: (2610) 361420

**PREPARATION OF THE TEACHING MATERIAL**  
**of the Volume**  
**Managerial Economics**

**Academic Supervisor for the Development of the Program and the Textbooks**  
George Agiomirgianakis

<b>Author</b>	<b>Scientific Reviewer</b>
Minas Vlassis .....	Panagiotis Liargovas

**Supervision of the Methodology of Distance Learning**  
Antonia-Maria Chartofylaka

**Language Editing**  
Joan Stefan

**Artistic Layout**  
Artemis Petropoulou

**Layout / Production**  
**RED-T-POINT**

Coordination of the development of the educational material  
and overall supervision of the publications  
**HOU PROJECT TEAM /1997-2005**

**ISBN: 960-538-565-1**

*In accordance with Law 2121/1993,  
the partial or total republishing, or reproduction  
by any means, of this book is prohibited  
without the permission of the publisher.*



H E L L E N I C   O P E N   U N I V E R S I T Y

SCHOOL OF SOCIAL SCIENCES

PROGRAM OF STUDIES

**Masters in Business Administration**

MODULE

**Economics for Managers**

VOLUME 2

**MANAGERIAL ECONOMICS**

**PATRAS 2005**

# CONTENTS

---

<b>Preface</b>	<b>23</b>
----------------	-----------

---

## CHAPTER 1

---

<b>Economic behavior</b>	<b>25</b>
--------------------------	-----------

---

The Scope of the Chapter .....	25
--------------------------------	----

Learning Objectives.....	25
--------------------------	----

Key Words .....	25
-----------------	----

Introductory Comments .....	26
-----------------------------	----

<b>1.1 Organizational problems and managerial economics .....</b>	<b>27</b>
---	-----------

1.1.1 Organizational architecture .....	27
---	----

1.1.2 Economic analysis.....	27
------------------------------	----

<b>1.2 Darwinism and economics .....</b>	<b>29</b>
--	-----------

1.2.1 The fittest survives.....	29
---------------------------------	----

1.2.2 Benchmarking may prove unsuccessful.....	29
--	----

<b>1.3 The economics approach to organizations .....</b>	<b>30</b>
--	-----------

<b>1.4 Economic behavior.....</b>	<b>31</b>
-----------------------------------	-----------

1.4.1 Economic choice.....	31
----------------------------	----

1.4.2 Marginal analysis and opportunity costs.....	31
--	----

<b>1.5 Graphical analysis .....</b>	<b>32</b>
-------------------------------------	-----------

1.5.1 Objectives .....	32
------------------------	----

1.5.2 Indifference curves .....	32
1.5.3 Constraints.....	33
1.5.4 Optimal choice .....	34
<b>1.6 Managerial implications .....</b>	<b>36</b>
1.6.1 Structuring the terms of choice to motivate desired action .....	36
1.6.2 An application.....	36
<b>1.7 Uncertainty.....</b>	<b>38</b>
<b>Synopsis – Conclusions .....</b>	<b>39</b>
Appendix.....	40
Bibliography.....	41
Recommended Reading.....	41

## CHAPTER 2

<b>The market system and the role of knowledge .....</b>	<b>43</b>
The Scope of the Chapter.....	43
Learning Objectives.....	43
Key Words .....	43
Introductory Comments .....	43
<b>2.1 Property rights and market exchange .....</b>	<b>44</b>
2.1.1 Goals of economic entities and economic systems .....	44
2.1.2 Trading property rights.....	44
2.1.3 The price mechanism .....	45
<b>2.2 The Coase Theorem .....</b>	<b>48</b>
<b>2.3 The market system versus the system of central planning .....</b>	<b>50</b>
2.3.1 Specific knowledge and the allocation of resources.....	50
2.3.2 Contracting costs as a reason for the existence of firms.....	51
<b>Synopsis – Conclusions .....</b>	<b>52</b>
Appendix.....	53
Bibliography.....	55

---

Recommended Reading .....	55
---------------------------	----

## CHAPTER 3

---

### **Analysis of demand** **57**

---

The Scope of the Chapter .....	57
Learning Objectives .....	57
Key Words .....	57
Introductory Comments .....	57

#### **3.1 Product demand** .....

3.1.1 Demand functions and curves .....	59
3.1.2 The law of demand, elasticities and marginal revenue .....	60

#### **3.2 Defining and estimating demand** .....

3.2.1 Industry demand, network effects, product attributes and life cycles ....	64
3.2.2 Demand estimation .....	65

#### **Synopsis – Conclusions** .....

Appendix .....	68
Bibliography .....	69
Recommended Reading .....	69

## CHAPTER 4

---

### **Theory of production and costs** **71**

---

The Scope of the Chapter .....	71
Learning Objectives .....	71
Key Words .....	71
Introductory Comments .....	71

#### **4.1 Production functions** .....

4.1.1 Returns to scale and factor returns .....	72
4.1.2 Input substitutability and isoquants .....	73

<b>4.2 Minimization of costs</b> .....	<b>75</b>
4.2.1 Isocost lines and the optimal input mix.....	75
4.2.2 Cost curves .....	76
4.2.3 Profit maximization, factor demand, and cost estimation.....	79
<b>Synopsis – Conclusions</b> .....	<b>81</b>
Appendix.....	82
Bibliography.....	83
Recommended Reading.....	83

## CHAPTER 5

<b>Market structure</b> .....	<b>85</b>
The Scope of the Chapter.....	85
Learning Objectives.....	85
Key Words .....	85
Introductory Comments.....	85
<b>5.1 Markets, competitive markets and competitive equilibrium</b> .....	<b>86</b>
<b>5.2 Barriers to entry, monopoly, and monopolistic competition</b> .....	<b>89</b>
5.2.1 Barriers to entry.....	89
5.2.2 Monopoly .....	90
5.2.3 Monopolistic competition.....	90
<b>5.3 Oligopoly, Nash equilibrium and collusion</b> .....	<b>92</b>
5.3.1 Cournot-Nash equilibrium.....	92
5.3.2 Collusion and the “Prisoners’ Dilemma” .....	94
<b>Synopsis – Conclusions</b> .....	<b>95</b>
Appendix.....	96
Bibliography.....	97
Recommended Reading.....	97



---

## CHAPTER 6

---

<b>Market power</b>	<b>99</b>
The Scope of the Chapter.....	99
Learning Objectives.....	99
Key Words .....	99
Introductory Comments .....	99
<b>6.1 Single pricing</b> .....	<b>100</b>
6.1.1 Sensitivity of demand and optimal markup .....	100
6.1.2 Estimation of the profit-maximizing price .....	101
<b>6.2 Potential for higher profits and price discrimination</b> .....	<b>103</b>
6.2.1 Homogenous consumers .....	103
6.2.2 Heterogeneous consumers.....	104
<b>Synopsis – Conclusions</b> .....	<b>106</b>
Appendix.....	107
Bibliography.....	108
Recommended Reading .....	108

## CHAPTER 7

---

<b>Creating and capturing value by firms</b>	<b>109</b>
The Scope of the Chapter.....	109
Learning Objectives.....	109
Key Words .....	109
Introductory Comments .....	109
<b>7.1 The strategy of firms</b> .....	<b>110</b>
7.1.1 Value creation by firms.....	110
7.1.2 Reducing production costs .....	111
7.1.3 Reducing consumer transaction costs .....	111
7.1.4 Increasing demand .....	111

7.1.5 The introduction of new products and services.....	113
7.1.6 Cooperation to increase value.....	113
7.1.7 Converting organizational knowledge into value .....	113
7.1.8 Creating value .....	114
<b>7.2 Capturing value.....</b>	<b>115</b>
7.2.1 Market power.....	115
7.2.2 Important factors of production.....	116
7.2.3 A successful example.....	118
7.2.4 All good things must end.....	118
<b>7.3 Diversification .....</b>	<b>119</b>
7.3.1 Benefits associated with diversification.....	119
7.3.2 Costs associated with diversification.....	119
7.3.3 Management implications.....	119
<b>7.4 Strategy formulation.....</b>	<b>121</b>
7.4.1 Combining environmental and internal analyses .....	121
7.4.2 Strategy and organizational architecture .....	121
<b>Synopsis – Conclusions .....</b>	<b>122</b>
Appendix.....	123
Bibliography.....	124
Recommended Reading.....	124

## CHAPTER 8

<b>An introduction to game theory.....</b>	<b>125</b>
The Scope of the Chapter.....	125
Learning Objectives.....	125
Key Words .....	125
Introductory Comments.....	125
<b>8.1 Game theory.....</b>	<b>126</b>

8.1.1 The concept of Nash equilibrium.....	127
8.1.2 Competition vs coordination .....	128
8.1.3 Equilibria in mixed strategies.....	129
<b>8.2 Sequential interactions .....</b>	<b>131</b>
<b>Synopsis – Conclusions .....</b>	<b>133</b>
Appendix.....	134
Bibliography.....	135
Recommended Reading.....	135

## CHAPTER 9

<b>Resolving incentive conflicts .....</b>	<b>137</b>
The Scope of the Chapter.....	137
Learning Objectives.....	137
Key Words .....	137
Introductory Comments.....	137
<b>9.1 Firms as contracts .....</b>	<b>138</b>
9.1.1 Incentive conflicts within firms .....	138
9.1.2 Incentive problems through contracts .....	138
9.1.3 Costly contracting .....	139
9.1.4 Post-contractual information problems.....	139
9.1.5 Information problems .....	141
<b>9.2 Problems with implicit contracts.....</b>	<b>143</b>
<b>Synopsis – Conclusions .....</b>	<b>144</b>
Appendix.....	145
Bibliography.....	146
Recommended Reading.....	146

---

CHAPTER 10

---

<b>The organizational architecture of firms</b>	<b>147</b>
The Scope of the Chapter.....	147
Learning Objectives.....	147
Key Words.....	147
Introductory Comments.....	147
<b>10.1 The main problem.....</b>	<b>148</b>
10.1.1 The architecture of firms.....	148
10.1.2 Architectural determinants.....	149
<b>10.2 Corporate culture.....</b>	<b>150</b>
10.2.1 Inappropriate architecture.....	150
10.2.2 Benchmarks.....	150
<b>Synopsis – Conclusions.....</b>	<b>151</b>
Appendix.....	152
Bibliography.....	153
Recommended Reading.....	153

CHAPTER 11

---

<b>Decision rights I</b>	<b>155</b>
The Scope of the Chapter.....	155
Learning Objectives.....	155
Key Words.....	155
Introductory Comments.....	155
<b>11.1 Tasks and decision rights.....</b>	<b>156</b>
11.1.1 Centralization versus decentralization.....	156
11.1.2 An example.....	157
<b>11.2 Determinants of the optimal level of decentralization.....</b>	<b>160</b>

11.2.1 Recent trends .....	160
11.2.2 Assigning decision rights to teams .....	161
11.2.3 Decision management and control .....	162
11.2.4 Decision right assignment and knowledge creation.....	162
11.2.5 Influence costs.....	163
<b>Synopsis – Conclusions</b> .....	163
Appendix.....	164
Bibliography.....	165
Recommended Reading .....	165

## CHAPTER 12

---

### **Decision rights II** **167**

---

The Scope of the Chapter.....	167
Learning Objectives.....	167
Key Words .....	167
Introductory Comments .....	167

#### **12.1 Bundling tasks into jobs** .....168

#### **12.2 Bundling of jobs** .....170

12.2.1 Matrix organization .....	172
----------------------------------	-----

#### **Synopsis – Conclusions** .....174

Appendix.....	175
Bibliography.....	176
Recommended Reading .....	176

## CHAPTER 13

---

### **Qualified employment** **177**

---

The Scope of the Chapter.....	177
Learning Objectives.....	177
Key Words .....	177

Introductory Comments .....	177
<b>13.1 Contracting objectives .....</b>	<b>178</b>
13.1.1 The competitive model of employment and compensation .....	178
<b>13.2 Internal labor markets: a description.....</b>	<b>181</b>
13.2.1 Pay in internal labor markets .....	182
<b>13.3 The salary-fringe benefit mix .....</b>	<b>184</b>
<b>Synopsis – Conclusions .....</b>	<b>187</b>
Appendix.....	188
Bibliography.....	189
Recommended Reading.....	189

## CHAPTER 14

---

### **The economics of incentive compensation 191**

---

The Scope of the Chapter.....	191
Learning Objectives.....	191
Key Words .....	191
Introductory Comments .....	191
<b>14.1 The basic model.....</b>	<b>192</b>
14.1.1 The basic incentive problem.....	194
<b>14.2 Optimal risk sharing .....</b>	<b>196</b>
<b>14.3 Effective incentive contracts.....</b>	<b>198</b>
14.3.1 The principal-agent model.....	198
14.3.2 The informativeness principle .....	200
14.3.3 Group incentive pay .....	200
14.3.4 Multi-task principal-agent problems.....	200
14.3.5 Forms of incentive pay .....	201
14.3.6 Incentive compensation and information revelation .....	201

<b>14.4 Does incentive pay work?</b> .....	<b>203</b>
<b>Synopsis – Conclusions</b> .....	204
Appendix .....	205
Bibliography.....	207
Recommended Reading .....	207

## CHAPTER 15

---

### **Performance evaluation** **209**

---

The Scope of the Chapter.....	209
Learning Objectives.....	209
Key Words .....	209
Introductory Comments .....	209

#### **15.1 Performance benchmarks** ..... **210**

15.1.1 Measurement costs .....	211
15.1.2 Opportunism .....	211
15.1.3 Relative performance evaluation .....	212

#### **15.2 Subjective performance evaluation** ..... **213**

15.2.1 Multiple tasks and unbalanced effort .....	213
15.2.2 Multiple subjective evaluation methods.....	213
15.2.3 Problems with subjective performance evaluations .....	214
15.2.4 Combining objective and subjective performance measures .....	214

#### **15.3 Team performance** ..... **216**

15.3.1 Evaluating teams.....	216
------------------------------	-----

#### **Synopsis – Conclusions** ..... **218**

Appendix .....	219
Bibliography.....	220
Recommended Reading .....	220

---

CHAPTER 16

---

**Evaluation of divisional performance** **221**

---

The Scope of the Chapter.....221  
Learning Objectives.....221  
Key Words.....221  
Introductory Comments.....221

**16.1 Divisional performance**.....222

16.1.1 Cost centers.....222  
16.1.2 Expense centers.....223  
16.1.3 Revenue centers.....223  
16.1.4 Profit centers.....223  
16.1.5 Investment centers.....224

**16.2 Transfer pricing**.....225

16.2.1 The economics of transfer pricing.....225  
16.2.2 Common transfer-pricing methods.....226

**16.3 Internal accounting system**.....228

Synopsis – Conclusions.....228  
Appendix.....229  
Bibliography.....230  
Recommended Reading.....230

CHAPTER 17

---

**Alternative legal forms of organization** **231**

---

The Scope of the Chapter.....231  
Learning Objectives.....231  
Key Words.....231  
Introductory Comments.....231



<b>17.1 A menu of alternative legal forms</b> .....	<b>232</b>
17.1.1 For-profit versus non-profit.....	232
17.1.2 For-profit organizations .....	232
<b>17.2 Analyzing choices over legal organizational forms</b> .....	<b>234</b>
17.2.1 Choosing the profit status.....	234
17.2.2 Alternative for-profit organizational forms .....	235
<b>17.3 Mechanisms to achieve governance in PTCs</b> .....	<b>237</b>
17.3.1 Internal mechanisms.....	237
17.3.2 External mechanisms.....	238
<b>Synopsis – Conclusions</b> .....	<b>239</b>
Appendix .....	240
Bibliography.....	241
Recommended Reading .....	241

## CHAPTER 18

<b>Vertical integration versus outsourcing</b> .....	<b>243</b>
The Scope of the Chapter.....	243
Learning Objectives.....	243
Key Words .....	243
Introductory Comments .....	243
<b>18.1 Buying in competitive markets and reasons</b>	
<b>for non-market transactions</b> .....	<b>245</b>
18.1.1 Benefits from purchases from competitive markets .....	245
18.1.2 Turning to non-market transactions.....	245
<b>18.2 Long-term contracts</b> .....	<b>249</b>
<b>18.3 Distribution contracts</b> .....	<b>251</b>
<b>Synopsis – Conclusions</b> .....	<b>253</b>
Appendix.....	254

Bibliography.....	255
Recommended Reading.....	255

## CHAPTER 19

### **Leadership and organizational change 257**

The Scope of the Chapter.....	257
Learning Objectives.....	257
Key Words.....	257
Introductory Comments.....	257

#### **19.1 Leadership and firm decision making.....258**

19.1.1 Setting the plan and motivating individuals.....	258
19.1.2 Incentive problems .....	258

#### **19.2 Leadership power .....263**

19.2.1 Sources of leadership power.....	263
19.2.2 Logrolling .....	264

#### **Synopsis – Conclusions .....265**

Appendix.....	266
Bibliography.....	267
Recommended Reading.....	267

## CHAPTER 20

### **Government intervention and regulation 269**

The Scope of the Chapter.....	269
Learning Objectives.....	269
Key Words.....	269
Introductory Comments.....	269

#### **20.1 The economic reasoning for government intervention.....270**

#### **20.2 The economics of regulation.....273**

---

<b>20.3 Opting for government regulation</b> .....	<b>276</b>
<b>Synopsis – Conclusions</b> .....	<b>278</b>
Appendix.....	279
Bibliography.....	280
Recommended Reading.....	280

## CHAPTER 21

---

### **Business ethics and management innovations** **281**

---

The Scope of the Chapter.....	281
Learning Objectives.....	281
Key Words .....	281
Introductory Comments .....	281

#### **21.1 Ethics and corporate aims**.....**283**

#### **21.2 Ethics and incentive problems** .....

**283**

#### **21.3 Demand for management innovations** .....

**284**

#### **21.4 Reasons for innovation failure**.....**284**

<b>Synopsis – Conclusions</b> .....	<b>286</b>
Bibliography.....	287
Recommended Reading.....	287

---

## PREFACE

This volume provides a modern economic framework in which to analyze a variety of problems that managers regularly face in today's business environment. In particular, it focuses on topics which are most important to managers, like:

- Traditional Microeconomics (e.g. demand, supply, and pricing)
- Game Theory (e.g. strategic interaction, Nash equilibrium, credibility)
- Corporate Governance (e.g. assigning decision-making authority, measuring and rewarding performance, outsourcing, and transfer pricing)

Effectively, while the text covers the standard problems of managerial economics (e.g., pricing and production), it pays special attention to organizational problems. Thus, this book builds a comprehensive approach to both managerial and organizational issues, which any firm has to cope with, and the reader is guided – step by step – to an understanding of:

- How the business environment (technology, the status of competition, and regulation in input/output markets) affects a firm's choice of strategy.
- How strategy and the business environment together drive the firm's choice of organizational design (organizational architecture).

Students, particularly those already possessing an in-field business background, presumably want to develop skills that will make them more effective managers in everyday business practices. They need, further, to be adequately equipped in order to promote organizational changes within their business units. We expect that the curriculum of this volume, as well as the style in which it is written, will encourage students to coherently deal with critical business concepts arising from various sources. To this end, we also provide a number of *activities* (structured across chapters/learning objectives) along with their *answers* (given at the end of each chapter). Last, but not least, we suggest that students should further advance their study by means of the *recommended reading* in each chapter.

*Minas Vlassis*