

MARKET STRUCTURE AND PRICING POLICY
OF ANTIBIOTIC DRUGS IN THAILAND

Nusaraporn Tatiyapaiboon

A Thesis Submitted in Partial Fulfillment of the Requirements

for the Degree of Master of Science

Department of Economics

Graduate School

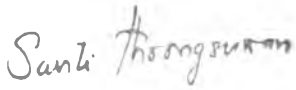
Chulalongkorn University

1995

ISBN 974-632-177-3

Thesis Title : MARKET STRUCTURE AND PRICING POLICY OF ANTIBIOTIC
DRUGS IN THAILAND
Graduate : Nusaraporn Tatiyapaiboon
Department : Economics
Advisor : Assoc. Prof. Waranya Patarasuk
Co-advisor : Assoc. Prof. Dr. Jiraporn Limpananont

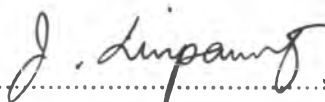
Accepted by the Graduate School, Chulalongkorn University in Partial fulfillment of the requirements for a degree of Master of Science in Health Economics.


..... Dean of Graduate School
(Assoc. Prof. Dr. Santi Thoongsuwan)

Thesis Committee :


..... Chairman
(Dr. Isra Sarntisart)


..... Advisor
(Assoc. Prof. Waranya Patarasuk)


..... Co-advisor
(Assoc. Prof. Dr. Jiraporn Limpananont)


..... Member
(Asst. Prof. Dr. Siripen Supakankunti)

C760723 : MAJOR HEALTH ECONOMICS

KEY WORD: MARKET STRUCTURE/PRICING POLICY/ANTIBIOTIC DRUG

NUSARAPORN TATIYAPAIBOON : MARKET STRUCTURE AND PRICING POLICY OF ANTIBIOTIC DRUGS IN THAILAND.

THESIS ADVISOR:ASSOC.PROF.WARANYA PATARASUK

THESIS CO-ADVISOR:ASSOC. PROF. DR. JIRAPORN LIMPANANONT

97pp.

ISBN 974-632-177-3

This study attempts to investigate the general characteristics of antibiotic drug industry,with emphasis on market structure as well as the pricing policy and to estimate the amount of money saved if generic drugs are encouraged to substitute the branded drugs.

This study requires primary data to supplement the understanding about the market structure,therefore,the field survey was carried out and the data were collected so as to analyze the market structure and to estimate the amount of money saved derived from elasticity of substitution.

It is found that antibiotic drugs market is not purely competitive in the sense of static microeconomics theory. The price competition in antibiotic drugs is intensive. The overall success of generic drugs is quite limited Most of the branded drug manufacturers are the market leaders. Moreover,even the patent life of the leading brands were expired,the branded products retain a large market share. In the case of pricing policy,the study found the existance of price discrimination among the generic drugs and branded drugs. The antibiotic drug industry may not practice price competition,but rather engage in other non-pricing competition mechanism. This study has tried to estimate the elasticity of substitution of branded drugs by generic drugs, considering the tight oligopoly market and dominant market, in 3 criteria as follows:a) no substitution between different sub-therapeutic class of drugs.
b) perfect substitution between different sub-therapeutic class of drugs.

c) substitution among group of drugs classified according to patent life. This study has found that the elasticity of substitution of branded drugs by generic drugs is quite low. There is a prevalence of generic drugs, for which patents have expired. This study has shown the greater competition and lower levels of concentration.

Some values of the elasticity of substitution of branded drugs by generic drugs, especially among the dominant market and the new antibiotic drugs, are extremely high in the absolute value which has shown the distortion in this industry. As a result,the estimated amount of money saved derived from the substitution of branded drugs by generic drugs is quite low. The consumers loss from the antibiotic drugs in tight oligopoly market and the old antibiotic drugs. On the contrary,the consumers gain for those which belonged to the dominant market and the new antibiotic drugs.

ภาควิชา..... ECONOMICS.....

ลายมือชื่อนิติ..... *Nusara*.....

สาขาวิชา..... HEALTH ECONOMICS.....

ลายมือชื่ออาจารย์ที่ปรึกษา..... *Waranya Patarasuk*.....

ปีการศึกษา..... 1994.....

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม..... *J. Limpnanont*.....

Acknowledgments

I am deeply indebted to my thesis advisor, Assoc. Prof. Waranya Paterasuk of the Centre for Health Economics, Faculty of Economics and co- advisor, Assoc. Prof. Dr. Jiraporn Limpananont , Faculty of Pharmaceutical Sciences, Chulalongkorn University, for their endless support, concern, encouragement and valuable advice throughout my period of study.

I am very grateful to the Food and Drug Administration, the Ministry of Public Health and the Infopharma Media Services Thailand Limited, for their support in acquiring the secondary data.

I would like to express my gratitude to Dr. Isra Sarntisart and Asst. Prof. Dr. Siripen Supakankunti of the Centre for Health Economics, Faculty of Economics, Chulalongkorn University for their kind advice.

Finally, I wish to express my indefinitely gratitude to my family for their love, understanding and encouragement.

Nusaraporn Tatiyapaiboon
April, 1995

Contents

	Page
Abstract	iii
Acknowledgments.....	iv
Contents.....	v
List of Tables.....	vii
List of Figures.....	viii
Abbreviations.....	ix
Chapter	
I Introduction	1
Statement of the Problem.....	1
Objectives and Scope	5
Methodology.....	6
Possible Benefits.....	20
Organization of the Study.....	20
II The Pharmaceutical Industry in Thailand.....	21
General Characteristics.....	21
Production and Distribution.....	22
The Market Structure and Degree of Competition.....	28
Government Policies toward the Industry.....	35
III Market Structure and Pricing Policy of Antibiotic Drugs.....	37
Measurement of Market Structure.....	37
Competition in Antibiotic Drugs.....	47
Pricing Activity and Firms' Pricing Policy.....	48

Chapter	Page
IV Substitution of Branded Drugs by Generic Drugs.....	60
Substitution Mechanism.....	60
Potential Gain from the Substitution.....	66
The Problems of the Pharmaceutical Industry.....	73
V Conclusions and Recommendations.....	75
Conclusions.....	75
Policy Recommendations.....	77
Recommendations for Further Study.....	78
References.....	80
Appendix	83
Vitae.....	88

List of Tables

Table	Page
1.1 Production of Major Pharmaceutical Products, 1992.....	4
1.2 Imports of Major Pharmaceutical Products, 1992.....	4
1.3 Number of Antibiotic Drug Manufacturers, 1990-1993.....	18
2.1 Number of Private Pharmaceutical Firms, 1987-1993.....	23
2.2 Number of Drugstores / Manufacturers / Importers 1991.....	24
2.3 Value of Modern Drug Manufacturing in Thailand, 1988-1992.....	33
3.1 Leaders' Market Share and Four Firm Concentration Ratio of Sample Antibiotic Drugs, 1993.....	41
3.2 Total Sample Antibiotic Drug Market Value, Classified to Branded and Generic Drug Share, 1990-1993.....	45
3.3 Leading Ten Firms, Cloxacillin Capsule Market Share of Total Market and Ranking, 1990 and 1993.....	47
3.4 Cloxacillin Capsule Market Price Statistics, 1990-1993.....	48
4.1 Branded and Generic Sample Antibiotic Drug Market Share Difference, 1993.....	62
4.2 The Elasticity of Substitution of Branded by Generic Antibiotic Drugs, the First Criterion, 1990-1993.....	63
4.3 The Elasticity of Substitution of Branded by Generic Antibiotic Drugs, the Second Criterion, 1990-1993.....	64
4.4 The Elasticity of Substitution of Branded by Generic Antibiotic Drugs, the Third Criterion, 1990-1993.....	64
4.5 Amount of Money Saved for the First Criterion.....	69
4.6 Amount of Money Saved for the Second Criterion.....	70
4.7 Amount of Money Saved for the Third Criterion.....	71

List of Figures

Figure	Page
2.1 The Drug Distribution System	24
2.2 Value of Modern Drug Manufacturing in Thailand, 1988-1992.....	34
3.1 Market Share of Sample Antibiotic Drugs in Dominant and Oligopoly Market, 1993.....	42
4.1 Changes in supply : Changing Market Equilibrium.....	67

Abbreviations

CR	= Concentration Ratio
FDA	= Food and Drug Administration
GMP	= Good Manufacturing Practice
GPO	= The Government Pharmaceutical Organization
MNCs	= Multinational Corporations
MS	= Market Size
NEDL	= The National Essential Drug List