



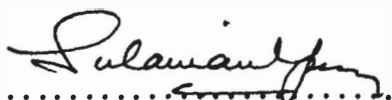
UNIVERSITI PUTRA MALAYSIA

**SUPPLY RESPONSE OF THE PADDY SECTOR IN
WEST MALAYSIA - AN ECONOMETRIC ANALYSIS**

Virgilio T. Villancio

FEP 1988 3


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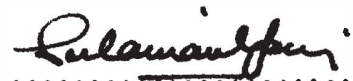
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SUPPLY RESPONSE OF THE PADDY SECTOR IN WEST MALAYSIA -
AN ECONOMETRIC ANALYSIS

by

Virgilio T. Villancio

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science
in the Faculty of Economics and Management,
Universiti Pertanian Malaysia

1988



Didicated to Blessie and my family



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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	xi
LIST OF APPENDICES	xii
CONVERSION TABLE	xvi
ABSTRACT (English)	xvii
ABSTRACT (Bahasa Malaysia)	xix
CHAPTER I INTRODUCTION	1
IMPORTANCE OF THE RICE SECTOR	1
STATEMENT OF THE PROBLEM	5
OBJECTIVES	12
HYPOTHESES	12
ORGANIZATION OF THE STUDY	13
CHAPTER II CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE	14
ANALYSIS OF SUPPLY RESPONSE	14
Types of supply curve	15
Supply response hypotheses	17
Alternative approaches to the study of supply response	16
Directly estimated supply response models. . .	23



	Page
Specification of the supply response models	25
The simple Nerlovian expectation model	27
The Nerlovian adjustment model	31
The logarithmic model of NAM	33
Estimation of the supply model	35
 FACTORS AFFECTING SUPPLY RESPONSE	 37
Production condition and disaggregation of analysis	37
Prices of input and output	40
Yield	43
Institutional constraint	45
Technology	46
Risk	49
Weather	51
Government policies	52
Farm household consumption characteristics	56
 CHAPTER III METHODOLOGY	 64
THE STRUCTURE OF THE RICE SECTOR IN WEST MALAYSIA	64
SPECIFICATION OF THE SUPPLY MODEL	68
Analysis of Area Response	70
Variables affecting area response	70
Price formulations affecting area response	75



	Page
Area response models	77
Analysis of Yield Response	79
Variables affecting yield response.	80
Yield response equations	82
Total Paddy Output	84
Evaluation of the impact of price policy on paddy output	87
ESTIMATION OF THE MODEL	89
DATA COLLECTION	92
 CHAPTER IV - DISCUSSION OF EMPIRICAL RESULTS	 94
 ANALYSIS OF AREA RESPONSE	 94
Area Response Equations	95
Area Response to Farm Price of Paddy	96
Farm price of paddy and consumer prices	96
Area response to paddy-rubber price ratio	107
Area response to profitability of paddy production	110
Area Response to Damage Variable	113
Area Response to Unusual Years	115
Area Response to Institutional constraints	116
ANALYSIS OF YIELD RESPONSE	125
Yield response to Farm Price of Paddy	126
Yield Response of Paddy to Fertilizer Price	133



	Page
Yield Response to Rainfall	137
Yield Response to Damage Variable	138
Yield Response to Unusual Years	140
Yield response to institutional constraints	141
 ESTIMATION OF PADDY OUTPUT	 145
Simulation Performance of the Model	154
Projection of Paddy Output	158
Effect of Changes in Price Policy on Paddy Output	162
The GMP and paddy output	163
The retail price of rice and paddy output	164
Fertilizer subsidy and paddy output	166
 CHAPTER V - SUMMARY AND CONCLUSION	 169
SIGNIFICANCE OF THE STUDY	169
REVIEW OF LITERATURE	170
METHODOLOGY	171
SUMMARY OF FINDINGS	172
POLICY IMPLICATION	174
CONCLUSION	179
 BIBLIOGRAPHY	 181
APPENDICES	188



LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1	Incidence of poverty among paddy farm households, West Malaysia, 1970-83	2
2	Cultivated crop areas in West Malaysia, 1983	4
3	Government expenditure on paddy and fertilizer subsidy, West Malaysia, 1981-84	8
4	Average annual growth rate in rice/paddy production among ASEAN countries, 1974-84	8
5	Guaranteed Minimum Price and the rate of fertilizer subsidy, West Malaysia, 1961-84	10
6	Short-run price elasticity of area planted to paddy by area response model and by state, main season, West Malaysia, 1966-84	98
7	Short-run price elasticity of area planted to paddy by area response model and by state, off-season, West Malaysia, 1966-84	99
8	Long-run price elasticity of area planted to paddy by area response model and by state, main season, West Malaysia, 1966-84	100
9	Long-run price elasticity of area planted to paddy by area response model and by state, off-season, West Malaysia, 1966-84	101
10	Elasticity of area planted with respect to rubber price formulations by state and by season, West Malaysia, 1966-84	108
11	Elasticity of area planted with respect to wage formulations by state and by season, West Malaysia, 1966-84	112



<u>Table</u>	<u>Title</u>	<u>Page</u>
12	Coefficient of damage variable by area response model and by state, West Malaysia, 1966-84	114
13	Coefficient of dummy variables for unusual years by area response model and by state, West Malaysia, 1966-84	117
14	Adjustment coefficient of area planted to paddy by area response model and by state, main season, West Malaysia, 1966-84	119
15	Adjustment coefficient of area planted to paddy by area response model and by state, off-season, West Malaysia, 1966-84	120
16	Number of years required for 95 percent effect of price change to materialize on area planted to paddy by area response model and by state, main season, West Malaysia, 1966-84	121
17	Number of years required for 95 percent effect of price change to materialize on area planted to paddy by area response model and by state, off-season, West Malaysia, 1966-84	122
18	Short-run price elasticity of yield with respect to farm price formulation by yield response model and by states, main season, West Malaysia, 1966-84	128
19	Short-run price elasticity of yield with respect to farm price formulation by yield response model and by states, off-season, West Malaysia, 1966-84	129
20	Long-run price elasticity of yield with respect to farm price formulation by yield response model and by states, West Malaysia, 1966-84	130
21	Price elasticity of yield with respect to effective farm price of fertilizer by yield response model and by states, West Malaysia, 1966-84	135



<u>Table</u>	<u>Title</u>	<u>Page</u>
22	Coefficient of damage variable by yield response model and by state, West Malaysia, 1966-84	139
23	Coefficient of dummy variable for unusual years by yield response model and by state, West Malaysia, 1966-84	142
24	Yield adjustment coefficient by yield response model and by season, West Malaysia, 1966-84	144
25	Selected area response equation of paddy sector by state, main season, West Malaysia, 1966-84	146
26	Selected area response equation of paddy sector by state, off-season, West Malaysia, 1966-84	148
27	Selected yield response equation of paddy sector by state, main season, West Malaysia, 1966-84	150
28	Selected yield response equation of paddy sector by state, off-season, West Malaysia, 1966-84	152
29	Comparison of the Theil's inequality coefficient of the paddy supply response model estimated for West Malaysia	156
30	Comparison of actual and estimated paddy output by model, main season, West Malaysia, 1966-84	159
31	Comparison of actual and estimated paddy output model, off-season, West Malaysia, 1966-84	160
32	Comparison of actual and estimated total paddy output by model, West Malaysia, 1966-84	161
33	Effect of changes in GMP, the retail price, and; the rate of fertilizer subsidy on total paddy output, Model PO4 and By-state Model, West Malaysia	168



LIST OF FIGURES

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
1	Effect of government restrictive policies on the farm price recieved by farmers	54
2	Effect of an increase in consumer price of rice on the composition of paddy farm household rice consumption	59
3	Effect of an increase in farm price of paddy on the composition of paddy farm household rice consumption	62
4	Structure of the rice sector in West Malaysia	66



LIST OF APPENDICES

<u>Appendix</u>	<u>Title</u>	<u>Page</u>
A.1	List of price data used in the supply response model of the paddy sector, West Malaysia	186
A.2	List of price formulation used in the supply response model of the paddy sector, West Malaysia	188
A.3	Value of price variables used in the supply response model of the paddy sector, West Malaysia, 1965-84	192
B.1	Area planted to paddy during the main season, West Malaysia, 1965-84	196
B.2	Area planted to paddy during the off-season, West Malaysia, 1965-84	198
C.1	Area harvested to paddy during the main season, West Malaysia, 1965-84	200
C.2	Area harvested to paddy during the off-season, West Malaysia, 1965-84	202
D.1	Paddy production during the main season, West Malaysia, 1965-84	204
D.3	Paddy production during the off-season, West Malaysia, 1965-84	206
E.1	Monthly rainfall (mm), Station no. 6204039, Kepala Batas, Kedah/Perlis, 1965-85	208
E.2	Monthly rainfall (mm), Station no. 6122068, Station Kajicuaca, Pengkalan, Chepa, Kelantan, 1965-85	209
E.3	Monthly rainfall (mm), Station no. 5204048, Station Kajicuaca, Bayan Lepas, Pulau Penang, 1965-85	210
E.4	Monthly rainfall (mm), Station no. 4906022, Selinsing, Perak, 1965-85	211



<u>Appendix</u>	<u>Title</u>	<u>Page</u>
E.5	Monthly rainfall (mm), Station no. 3411016, Parit Sg. Burong, Selangor, 1965-85	212
E.6	Monthly rainfall (mm), Station no. 2636169, Endau, Johore, 1965-85	213
E.7	Monthly rainfall (mm), Station no. 2423001, Tebong, Malacca, 1965-83	214
E.8	Monthly rainfall (mm), Station no. 2820011, Kg. Ulu Klawang, N. Sembilan, 1965-85	215
E.9	Monthly rainfall (mm), Station no. 3924071, Peri Jerantut, Pahang, 1965-85	216
E.10	Monthly rainfall (mm), Station no. 5725005, Rumah Merinyo Taliair, Jerteh, Trengganu, 1965-65	217
F.1	Area trend equation for the main season paddy, West Malaysia, 1966-84	218
F.2	Area trend equation for the off-season paddy, West Malaysia, 1966-84	219
G.1	Area response equation of paddy sector during the main season by state, Model A1, West Malaysia, 1966-84	220
G.2	Area response equation of paddy sector during the off-season by state, Model A1, West Malaysia, 1966-84	222
G.3	Area response equation of paddy sector during the main season by state, Model A2, West Malaysia, 1966-84	224
G.4	Area response equation of paddy sector during the off-season by state, Model A2, West Malaysia, 1966-84	226
G.5	Area response equation of paddy sector during the main season by state, Model A2, West Malaysia, 1966-84	228
G.6	Area response equation of paddy sector during the main season by state, Model A2, West Malaysia, 1966-84	230



<u>Appendix no.</u>	<u>Title</u>	<u>Page</u>
G.7	Area response equation of paddy sector during the main season by state, Model A4, West Malaysia, 1966-84	232
G.8	Area response equation of paddy sector during the off-season by state, Model A4, West Malaysia, 1966-84	234
G.9	Area response equation of paddy sector, West Malaysia, 1966-84	236
H.1	Yield response equation of paddy sector during the main season by state, Model Y1, West Malaysia, 1966-84	238
H.2	Yield response equation of paddy sector during the off-season by state, Model Y1, West Malaysia, 1966-84	240
H.3	Yield response equation of paddy sector during the main season by state, Model Y2, West Malaysia, 1966-84	242
H.4	Yield response equation of paddy sector during the off-season by state, Model Y2, West Malaysia, 1966-84	244
H.5	Yield response equation of paddy sector during the main season by state, Model Y3, West Malaysia, 1966-84	246
H.6	Yield response equation of paddy sector during the off-season by state, Model Y3, West Malaysia, 1966-84	248
H.7	Yield response equation of paddy sector during the main season by state, Model Y4, West Malaysia, 1966-84	250
H.8	Yield response equation of paddy sector during the off-season by state, Model Y4, West Malaysia, 1966-84	252
H.9	Yield response equation of paddy sector, West Malaysia, 1966-84	254
I.1	Proportion of the Theil's inequality coefficient of the selected paddy area response equation by state, West Malaysia	256



<u>Appendix no.</u>	<u>Title</u>	<u>Page</u>
I.2	Proportion of the Theil's inequality coefficient of the selected paddy yield response equation by state, West Malaysia	258
I.3	Proportion of the Theil's inequality coefficient of the selected output area response equation by state, West Malaysia	260
J.1	Effect of changes in the Guaranteed Minimum Price (GMP) on paddy output, Model PO4, West Malaysia	262
J.2	Effect of changes in the Guaranteed Minimum Price (GMP) on paddy output, by-state model, West Malaysia	263
J.3	Effect of changes in the retail price of rice on paddy output, Model OP4, West Malaysia	264
J.4	Effect of changes in the retail price of rice on paddy output, by-state model, West Malaysia	265
J.5	Effect of reduction in the rate of fertilizer subsidy on paddy output by model, West Malaysia	266



CONVERSION TABLE

400 gantang paddy = 1 ton paddy
1 acre = 0.40469 hectare
1 picul = 60.5 kilogram
1 ton = 1.016 metric ton
1 kati = 1.33 lbs.
1 metric ton = 2204.6 lbs.



An abstract of the thesis presented to the Senate of Universiti Pertanian Malaysia in partial fulfillment of the requirements for the degree of Master of Science.

SUPPLY RESPONSE OF THE PADDY SECTOR IN WEST MALAYSIA -
AN ECONOMETRIC ANALYSIS

by

Virgilio T. Villancio

June, 1988

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Co-supervisor : Dr. Fatimah Mohd. Arshad

Faculty : Economics and Management

Paddy production in West Malaysia showed impressive growth in 1967-73 with an annual growth rate of seven (7) percent. However, despite the increasing intervention of the government in the rice sector, paddy production in 1974-84 decreased with the highest decline in 1981-84 at an annual rate of 6.3 percent.

This study is conducted to describe the pattern of supply response of paddy producers in West Malaysia for the period 1966-84 and to evaluate the impact of changes in the level of price support and subsidy, fertilizer subsidy and retail price of rice on total domestic paddy output with 1980-84 as the base period. The Nerlovian Adjustment Model (NAM) is used to describe the paddy area and yield response to various formulation of the



paddy, rubber and input prices, damage variable as a proxy for risk, dummy for unusual years, and lagged paddy area and yield. The estimated area planted and yield equations are used to estimate the paddy output and to evaluate the impact of price policy changes.

The results show that paddy farmers in West Malaysia responded to relative changes in the price of paddy in relation to prices of consumer goods, rice, rubber, and fertilizer. The short-run elasticities of area planted with respect to the paddy-rice price ratio for West Malaysia are -0.261 during the main season and -0.726 during the off-season. Given a more responsive acreage during the off-season, government programs to improve the production conditions during the off-season could be appropriate.

Results of policy simulation involving changes on the input and output price policy favored a policy which lessens the difference between the farm and retail price. A reduction in the GMP at \$M10 per 100 kg of paddy results to 17 percent increase in paddy output while an increase in the retail price at the same magnitude results to five percent increase in paddy output. Furthermore, partial withdrawal of the fertilizer subsidy scheme does not have significant effect on domestic paddy output.



Abstrak tesis yang dikemukakan kepada Senat Universiti Pertanian Malaysia sebagai memenuhi sebahagian daripada syarat-syarat untuk mendapatkan ijazah Master Sains.

GERAKBALAS PENAWARAN DALAM SEKTOR PADI DI SEMENANJUNG MALAYSIA -
SATU ANALISIS EKONOMETRIK

oleh

Virgilio T. Villancio

June, 1988

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Pengeluaran padi di Semenanjung Malaysia menunjukkan pertumbuhan yang menggalakkan dari tahun 1967 ke 1973 dengan kadar pertumbuhan tahunan sebanyak 7 peratus. Walaupun penglibatan kerajaan dalam sektor beras semakin bertambah, pengeluaran padi dari tahun 1974 ke 1984 semakin berkurangan. Penurunan yang tertinggi berlaku dari tahun 1981 ke 1984 pada kadar 6.3 peratus setahun.

Objectif kajian ini adalah untuk menerangkan corak gerakbalas penawaran pengeluar-pngeluar padi di Semenanjung Malaysia dari tahun 1966 ke 1984, dan, untuk menilai kesan perubahan dalam paras sokongan harga dan subsidi, subsidi baja dan harga runcit bagi beras ke atas jumlah pengeluaran padi tempatan dengan menggunakan 1980-1984 sebagai tempoh asas. Model "Nerlovian Adjustment" (NAM) telah digunakan untuk menerangkan



luas kawasan padi dan gerkbalas hasil kepada berbagai formulasi harga padi, getah dan input, angkubah kerosakan sebagai proxi untuk risiko, angkubah patung untuk tahun-tahun yang luar biasa, dan; keluasan padi jeda (lagged) dan hasil. Anggaran keluasan yang ditanam serta persamaan hasil digunakan untuk menganggar keluaran padi dan untuk menilai kesan terhadap perubahan kepada polisi harga.

Keputusan menunjukkan bahawa petani-petani padi di Semenanjung Malaysia bertindak secara rasional terhadap perubahan relatif dalam harga padi berhubungan dengan harga barangan pengguna, beras, getah dan baja. Keanjalan jangka pendek luas kawasan yang ditanam yang berkaitan dengan nisbah harga padi-beras untuk Semenanjung Malaysia adalah -0.261 dalam musim utama dan -0.726 diluar musim.

Keputusan simulasi perubahan-polisi harga input dan output menunjukkan kebaikan polisi yang mengurangkan perbezaan di antara harga ladang dan runcit. Pengurangan dalam GMP sebanyak M\$ 10 bagi setiap 100 kg akan menambalikan pengeluaran padi sebanyak 17 peratus, sementara pertambahan dalam harga runcit dalam kadar yang sama akan menambalikan pengeluaran padi sebanyak 5 peratus. Selain daripada itu, penarikan sebahagian daripada skim subsidi baja tidak akan memberi kesan yang bererti ke atas pengeluaran padi tempatan.

CHAPTER I

INTRODUCTION

THE IMPORTANCE OF THE RICE SECTOR

The rice sector assumes an important role in Malaysian agriculture and economy as a whole - economically, socially and politically. The importance of the sector can be traced on its various characteristics. Firstly, Malaysia depends heavily on rice as a major staple food. About 50-60 % of Malaysian's per capita calorie intake are obtained from rice and about 24 percent of the expenditures on food items is for rice (Wan Ibrahim, 1986). Hence, assuring the Malaysian consumers of adequate rice supply at all times has become the primary objective of government rice policy.

Secondly, the rice sector of the West Malaysian economy has a high incidence of poverty with 54 percent of household engaged in paddy production are considered to be poor in 1983 (Table 1). The incidence of poverty is mainly attributed to small landholdings and low return in paddy farming. Despite the fact that paddy areas occupy only about 13 percent of the total cultivated area in West Malaysia (Table 2), paddy production accounts for approximately 20 percent of the total employment in



TABLE 1

INCIDENCE OF POVERTY AMONG PADDY FARM HOUSEHOLDS,
WEST MALAYSIA, 1970-83.

SECTOR	1970	1975	1980	1983
Total number of household ('000)	140.0	148.5	145.0	138.9
Total number of poor household ('000)	123.4	114.3	76.4	75.0
Incidence of poverty(%)	88.1	77.0	52.7	54.0
Percentage among poor	15.6	13.7	12.0	10.5

Source: Fourth Malaysia Plan, 1981-85 and Mid-term Review of the Fourth Malaysia Plan, 1981-85.