ACC. 4544

R

AN ANALYSIS OF MANUFACTURING WAGES IN SELECTED MALAYSIAN MANUFACTURING INDUSTRIES

HO LEE PENG
(EGA99053)

SUBMITTED TO THE FACULTY OF ECONIMICS,
UNIVERSITY OF MALAYA IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE DEGREE OF MASTER OF ECONOMICS

OCTOBER 2001

Perpustakaan Universiti Malaya
A511375005

ACKNOWLEDGEMENTS

First of all, I would like to extend my gratitude to my supervisor, Dr. Yap Su Fei for her intellectual guidance, teachings and generous advice. I am grateful and appreciate very much for her patience and valuable time spent in reading my drafts to improve the presentation quality of this research paper. I also wish to extend my gratitude to Dr. Goh Kim Leng who taught me applied econometric knowledge.

I would like to extend my appreciation to Pn. Lim from Kementerian Sumber Manusia who helped me to compile the data needed in this research paper. Special thanks to Pn. Nor Aini Abd. Talib from National Productivity Centre for her valuable explanations.

My sincere thanks to all my friends, particularly Yee Ting, Zhao Wenjia, Ah Hoon, Soo Yeong, Wei Kian, Jenny Chua and Siew Meng for their warmth friendship and constant encouragement. To all my coursemates, thank you for their help and discussions during the entire course period.

Last but not least, I wish to express my heartfelt gratitude and appreciation to my beloved parents and sisters. Their love, care, concern and support have been important motivating forces in all my achievements. I dedicate this research paper especially to my parents.

ABSTRACT

A lot of focus has been placed on the importance of the relationship between wages and labour productivity in view of increasing competition due to the globalization of economies. Therefore, this paper attempts to examine whether the increase in real wages is commensurate with higher increase in labour productivity. The model of this study is adapted from Carneiro's (1998) paper which is based on union-firm wage bargaining model. This paper analyses both the long-run and short-run dynamics of wage formation in Malaysian manufacturing as a whole and also 13 sub-selected sectors of manufacturing industry using annual data from 1975 to 1997. The study analyzes long-run and short-run relationships using the Engle and Granger (1987) theorem. The theorem permits the separation of the long-run equilibrium information from the short-run dynamics of the wage equation relationship by using the residuals from the long-run equation as an error correction term (ECT) to capture long-run disequilibrium in short-run dynamics. Before preceding with the regression, the time series data was checked for stationarity. Although the variables are individually nonstationary, their linear combination is stationary. Hence, there is a long-run relationship between the variables which means that the regression is not spurious. The results of the paper show that labour productivity is positively related to real wages in Malaysian manufacturing. However, the increase in real wage is faster than the increase in labour productivity thus causing an increase in unit labour cost. In the short-run, the relationship between real wage and labour productivity is negative and insignificant statistically. This may be attributed to the lag adjustment of money wages caused by collective bargaining agreements. It is imperative for the industry to rationalize costs through productivity increases in order to enhance competitiveness. The final part of this study discusses various productivity-linked wage policy recommendations.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	i
ABSTRACT	ii
LIST OF TABLES	vi
LIST OF FIGURES	vii
Chapter 1: Introduction	
1.1 An Overview of the Malaysian Manufacturing Sector Growth	1
1.2 Rationale of Study	6
1.3 Objective of Study	8
1.4 Organization of Study	8
Chapter 2: Literature Review	
2.1 Introduction	9
2.2 Theoretical Studies	9
2.2.1 Wage under Trade Unionism	10
2.2.1.1 The Monopoly-Union Model	12
2.2.1.2 The Right to-Manage Model	12
2.2.1.3 The Efficient Bargain Model	13
2.3 Empirical Studies	15
2.4 Local Empirical Studies	21
2.5 Conclusion	24
Chapter 3: Wage Trends and Wage Determination in Malaysia	
3.1 Wage Trend: An Overview	25
3.2 Major Factors that Influenced Wage Changes during the Period 1975-1997	29
3.2.1 Market Forces	29
3.2.2 Labour Productivity	29

3.2.3 Institutional Influences in the Labour Market 35
3.2.3.1 The Role of the Government 35
3.2.3.2 The Role of Trade Unions 36
(a) The Growth of Trade Unions 37
(b) The Impact of Trade Unions on Wage Increases 38

Chapter 4: Theoretical Framework

4.1 Introduction 40
4.2 Model Specification 40
4.2.1 The Long Run Wage Relationship 44
4.2.2 The Short Run Wage Dynamics 45
4.3 Conclusion 46

Chapter 5: Methodology

5.1 Introduction 47
5.2 Scope of Study 47
5.3 Data 48
5.3.1 Definition of Variables 49
5.4 Sources of Data 50
5.5 Analysis of Method 50
5.5.1 Unit Root Tests 50
5.5.2 Testing for Cointegration 53
5.5.3 Error Correction Model (ECM) 55
5.6 Conclusion 57

Chapter 6: Analysis of Results

6.1 Introduction 58

6.2 Econometric Estimation of Aggregate Wage Formation in Malaysian Manufacturing: 1975-1997
- 6.2.1 Unit Root Test 58
- 6.2.2 Cointegration Test 59
- 6.2.3 Estimation of Long Run Wage Equation 60
- 6.2.4 Estimation of Short Run Wage Dynamics 64

6.3 Econometric Estimation of Wage Formation in Sub-Selected Sectors of Malaysian Manufacturing: 1975-1997
- 6.3.1 Estimation of Long Run Wage Equation 65
- 6.3.2 Estimation of Short Run Wage Dynamics 71

Chapter 7: Conclusion

7.1 Summary 73

7.2 Policies for Productivity-Linked Wage System
- 7.2.1 Wage reform System 74
- 7.2.2 Research and Development 75
- 7.2.3 Capital Formation 75
- 7.2.4 Reviewing of the Education and Training System 76

7.3Limitations of the Study 77

7.4 Significance of the Study 78

References 79

Appendix

LIST OF TABLES

Table	Description	Page
1.1	Malaysia: Gross Domestic Product by Sector (%) 1955-1990	5
1.2	Exports of Manufacturing from Malaysia, 1970-1989	5
1.3	Cmparison of Productivity Levels of the Manufacturing Sector with Other Asian Countries, 1994-1997	6
3.1	Average Monthly Wage by Sector (RM)	25
3.2	Wage Growth by Sector (% change)	26
3.3	Sectoral Labour Productivity (% change)	30
3.4	Growth of Labour Productivity, Labour Cost Per Employee and Unit Labour Cost of Manufacturing Sector (Annual % Rate of Change)	31
3.5	Incidence of Unionized Labour	37
3.6	Number of Collective Agreements, Workers Involved and Percentage Wage Increase in Manufacturing Sector	38
6.1	Unit Root Test on Time Series	61
6.2	Results of Long-Run Wage Equation	62
6.3	Multicollinearity Test	64
6.4	Results of Short-Run Wage Equation	66
6.5	Long-Run Wage Equation for Selected Sub-Sectors of Malaysian Manufacturing	67
6.6	Summary of Breusch-Godfrey Test	69
6.7	Summary of White's test Result (without cross product terms)	70

6.8	Re-estimation of OLS for Sub-Sectors with Serious Autocorrelation problem	71
6.9	Long-Run Wage Equation for Selected Sub-Sectors of Malaysian Manufacturing	73

List of Figures

Figure	Description	Page
1	Average Monthly Wages by Sector	27
2	Growth of Labour Productivity, Labour Cost Per Employee and Unit Labour Cost of the Manufacturing Sector	32
3	Labour Productivity, Average Wage and Unit Laboir Cost in Key Sub-Sectors of Manufacturing Sector (Annual % Rate of Change)	34