# The Factors of Natural Rubber Price Fluctuation

# 陳瑞芸、唐啟發

E-mail: 9601087@mail.dyu.edu.tw

#### ABSTRACT

The NR (Nature Rubber) benchmark price \_\_ SMR20 up from 1,819US\$/tone to 6,116US\$/tone since 1985 to the end of 2005, the price up from 3,572US\$/tone to 6,116US\$/tone during August of 2003 to the end of 2005, in this period create a biggest and highest wave of NR's price. All of the commercial material prices of the world up since 2003, in all kinds of commercial material, the complicated attribute material natural rubber absolutely not absent. The rubber industry of Taiwan is prosperous, the total production percentage of rubber industry in whole country manufactory is floating on the average of 1%, expect downward slightly in 1990. The total rubber production is 77,015,000,000 NT dollars on 2005, compare to 2004 it is negative growth 1.55% and is the first decline of contiguously growth since 2002. The total tire production upward 6% to 37,918,000,000 NT dollar, industrial and others rubber production negative growth 7.9% downward to 39,097,000,000, this two parts weight in the rubber industry, the tire is 49.2% of rubber industry, industrial and others rubber is 50.8% of rubber industry, the tire keep going growth. In July of 2005, the nature rubber price broke the historical price record in June of 1988 and the price is keep going up. The cruel oil is make the historical highest price and affect the price of synthetic rubber, in the commercial material market of the world is expect that all the material is in a serious shortage, the price maker is the material factory again, and the material factory were reluctant to sell due to anticipation of price keep going up, all of the rubber manufactories can not transfer the increasing cost to the product price it due to decrease the profit of rubber manufactories, for example, there have new cars demand in the market and improve the tire demand but still can not to make up the lose of material cost increase and due to decrease the profit of business. In Taiwan has not much any publish of rubber, only The Taiwan Rubber Production Association has magazine monthly, because the tire manufactories of Taiwan are limit to the interpreter skill to transfer the professional text books of overseas, almost no people to study the material of tire manufactory rubber, and can not to expect the fluctuation of rubber and to hedge the price up. The factors of rubber 's price fluctuation is very complicated, I will introduce the rubber industry and discuss the relationship of supply, demand and price. It is appreciate the International Rubber Study Group supply the data from 1985 to 2005 monthly, at the end of this paper I will list all of factor of rubber price fluctuation as possible as I can, and hope has more people interested about this scope.

Keywords: NR; SR; SMR20

## Table of Contents

封面內頁 簽名頁 授權書	iii 中文摘要	iv ABSTRACT	vi
誌謝viii 目錄	ix 圖目錄	xi 表目	
錄xiii 第一章 緒論	1 第一節 研究	· 動機1 第二節	ī 研究目
的2 第三節 研究流程及架構	<b>4 第二章 相關</b>	文獻回顧7 第一頁	節 天然橡
膠7 第二節 合成橡膠	17 第三節 橡膠現	貨、期貨商品市場22	第三章 研究方
法41 第一節 前言	41 第二節 基本分析	f架構41 第三節·	逐步迴歸選取
法42 第四章 實證結果分析	47 第一節 基本分	析47 第二節 ヲ	<b>F</b> 然橡膠價格複
線性迴歸方程式分析56 第五章 結論與建詞	議62 第一節	研究結論62 第	三節 研究限制
與未來研究方向建議63 附錄	71		

## **REFERENCES**

一、中文部份 1.中國橡膠工業協會 2.中國農耕經濟 3.日商聯貿期貨 4.世界熱帶農業資訊 5.台灣區橡膠工業同業公會 6.群益期貨 7.橡膠工業期刊本(CHINA RUBBER INDUSTRY) 二、英文部份 1. Astlett Rubber ,All about natural rubber,distributor in North America. 2. Association of Natural Rubber Producing Countries. 3. Boston University - Center for Polymer Studies - scientific visualization research center developing experimental and computational materials for high school science education. Includes lesson ideas. 4. Bristol University - Polymers at Interfaces Group- Terry Cosgrove's group investigates a wide variety of Polymer and Colloid systems. 5. Boston University - Center for Polymer Studies - scientific visualization research center developing experimental and computational materials for high school science education. Includes lesson ideas. 6. Bristol University - Polymers at Interfaces Group - Terry Cosgrove's group investigates a wide variety of Polymer and Colloid

systems. 7. Crude Oil Prices New York mercantile exchange, market price, graph arranged by Shinichi Kato Office. 8. Commodinet.com E-marketplace of natural rubber. 9. Dutch Information Center of Natural Rubber by Dutch Rubber Foundation. 10.Fraunhofer Institute for Applied Materials Research - works actively on research and development in the fields of near net shape production technologies and bonding technology and polymers. 11. Fraunhofer Institute for Applied Polymer Research, Teltow. 12. Fraunhofer Institute for Applied Materials Researchworks actively on research and development in the fields of near net shape production technologies and bonding technology and polymers. 13. Fraunhofer Institute for Applied Polymer Research, Teltow, 14. Geopolymer Institute - Prof. J. Davidovits research in geosynthesis of inorganic molecules, cements, ceramics, fire-resistant composites, waste encapsulation, global warming, and applied archaeology. 15. How to make natural rubber (plant tour) by Shinichi Kato Office Co.,,Ltd. Vietnam natural rubber companies. 16. International Rubber Study Group. 17. International Rubber Research and Development Board, All about natural rubber. 18.International Natural Rubber Organization, Operation for natural rubber price stabilization. 19.International Rubber Study Group. 20.Indian Rubber Journal. 21.Indian Natural Rubber Price by Rubber net working. Com. 22.Iran Polymer Institute - offers graduate level research and education in the field of polymer science and technology. 23.Japanese Natural Rubber Prices chartby Yutaka, Japan. 24. Japanese Natural Rubber Daily Prices by Tokyo Commodity Exchange. 25. Malaysian Natural Rubber Daily Prices by Malaysian Rubber Board. 26. Malaysian Rubber Export Council - strong technical back-up from the Malaysian Rubber Board and its constituent bodies, namely, Rubber Research Institute of Malaysia (RRIM), Rubber Technology Centre (RTC), and Tun Abdul Razak Research Centre (TARRC) in the United Kingdom. 27. Makromolekulare Chemie Marburg 28. Mississippi Polymer Institute. 29. Massachusetts Institute of Technology (MIT) - Mayes Group - polymer physics research. 30. New Jersey Institute of Technology-Polymer Processing Institute (PPI) - independent research group focusing on the development of processing operations. 31.NIHON UNICOM, INC. 32.Rubber Research Institute of Thailand, Plantation of natural rubber and its cost details. 33.Singapore Natural Rubber Price(UScent/kg chart) by Singapore Commodity Exchange. 34. Thailand Natural Rubber Daily Prices by Rubber research Institute of Thailand. 35. The Tokyo Commodity Exchange (TOCOM). 36. University of Bristol - Polymers and Colloids Research - information on current projects in polymers and colloids. 37. University of Massachusetts Amherst - Department of Polymer Science and Engineering - includes the Silvio O. Conte National Center for Polymer Research. 38. University of New South Wales - Centre for Applied Polymer Science - research interests span biomaterials, textiles, packaging, and industrial manufacture of resins. 39. University of Southern Mississippi - Polymer Science. 40. University of Sydney - Key Centre for Polymer Colloids. 41. University of Waterloo (Canada) - Institute for Polymer Research- applied and fundamental research in areas that are of vital interest to the plastics, coatings, adhesives, and elastomers industries. 42. University of Wollongong - research in intelligent polymers, materials, and conductive polymers. 43. University of Bristol - Polymers and Colloids Research - information on current projects in polymers and colloids. 44. University of Massachusetts Amherst - Department of Polymer Science and Engineering - includes the Silvio O. Conte National Center for Polymer Research. 45. University of New South Wales - Centre for Applied Polymer Science - research interests span biomaterials, textiles, packaging, and industrial manufacture of resins. 46.University of Southern Mississippi - Polymer Science. 47.University of Sydney - Key Centre for Polymer Colloids. 48.University of Waterloo (Canada) - Institute for Polymer Research - applied and fundamental research in areas that are of vital interest to the plastics, coatings, adhesives, and elastomers industries. 49.www.osamex.com/list/rubber.html. 50.www.econstats.com/fut/xj\_sic\_ew1.htm -(Jan1993 to Jul2002, End Price, Expire). 51. Web Directory: Polymer Science Internet Directory - resource for students exploring polymer-related Ph.D. programs in universities across the U.S. and Canada. 52.Zinc Market Prices London Metal Exchange prices.