

UNIVERSITI PUTRA MALAYSIA

THE EFFECTS OF RUPIAH REAL EFFECTIVE EXCHANGE RATE CHANGES ON INDONESIA'S MANUFACTURED EXPORTS, 1981-1992

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CHAPTER I

INTRODUCTION

Background

Indonesia's foreign exchange earnings since 1965 owed much to the exports' revenues generated from its petroleum sector. Between 1968 and 1973, an average contribution of petroleum to the total exports was more than 40 percent. By 1976, the contribution of petroleum in Indonesian export earnings was about 72 percent (US\$ 5.3 billion). As a member of Organization of Petroleum Exporting Countries (OPEC), Indonesia gained a significant benefit of the oil boom during 1974-1976. In January 1974, the OPEC decided to increase the oil price from US\$ 3.1 to US\$ 11.7 per barrel; soon after, the Arab countries embargoed shipments of oil to the United States and the Netherlands in January 1974.

The major shares of the foreign exchange earnings went to the government. Consequently, the government foreign reserve increased drastically from US\$ 202 million in 1970 to US\$ 1.6 billion in 1974 (IMF, 1978). The oil revenue contribution to the total government revenue amounting to about 49 percent in 1974/75 fiscal years, declined

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significantly in 1989/90 to 21 percent; then increased again to 29.6 percent in 1991/92 (CBS Financial statistics, 1993).

An increase in the prospects of the balance of trade, due to an increase in the exports of oil and capital-inflow (as equity and soft loan) to finance imported capital resulted in a significant increase of the high powered money. The net capital account increased from US\$ 0.5 billion 1971 to US\$ 1,3 billion 1977 (Subarjo, 1987). Under the floating exchange rate mechanism, the surplus in current account and capital account would result in currency appreciation. Rosendale (1981) estimated that rupiah effective exchange rate had appreciated by 3 percent in 1973.

However, Indonesia's government adopted a fixed exchange rate during the oilboom period. To maintain the nominal exchange rate, the government sterilized the surplus on the balance of payments through market operation. Because of a large increase in the foreign reserve, the high powered money automatically increased. The total money supply increased from 320 billion rupiahs in 1971 to two trillion rupiahs in 1977 (IMF, various issues). The amount of bank credit had also increased from 680 billion rupiahs in 1972 to four trillion rupiahs in 1977 (Bank Indonesia, 1980). The increase in the money supply, lowered the interest rate, encouraging domestic investment expenditure. Investors bought more imported capital goods to increase output. While, inflation also increased significantly from 9 percent per year in 1970 to 33 percent in 1974, then dropped to 12 percent in 1977 (IFS, various issues). During 1971-76, the share of the imported capital goods was around 38 percent of the total imported goods, while the share of the intermediate goods was around 42 percent.

A substantial amount of investment by the Indonesian government in steel, cement, fertilizer, paper and agro-chemicals and high level of a tariff for consumers' goods in the period of 1971 to 1977 showed very clearly that the government was adopting import-substitution policy. Pitt (1971) estimated that there were 26 industrial sectors having effective protection more than 100 percent. By comparing with the other industrial sectors that compete with imported goods that have effective protection of 66 percent, he concluded that the Indonesian government trade policy fell under a category of inward-looking. The level of a tariff in 1973 was 52.3 percent, 22.5 percent and 19 percent for consumer, intermediate and capital goods respectively.

Todaro (1989) described that the inward-looking policy is to encourage indigenous 'learning by doing' in manufacturing and the development of indigenous technologies appropriate to a country's resource endowment. Inwards looking or importsubstitution policy entails an attempt to replace commodities that are being imported, usually manufactured goods, with domestic sources of production and supply. According to Panero (1986) that there are two stages of import substitution which have sharply contrasting effects. The first stage, the substitution of home-produced consumer goods for imported consumer goods, is usually characterized by rapid growth in industrial output and employment, accompanied by a significant decline in the share of imports in total demand for manufactures. The second stage, or substitution of home-produced for imported capital goods and intermediate products, is characterized by slow industrial growth, some sharp declines in employment opportunities, and little further reduction, or evens an increase in the import component of total demand for manufactures. It is argued that under import-substitution policy, the typical strategy is first to erect tariff barriers or quotas on the importation of certain commodities, and then try to setup a local industry to produce these goods.

The economic rationale put forward for the establishment of import-substituting manufacturing operation is that the industry will eventually be able to reap the benefits of large-scale production and lower-costs. It is expected that the balance of payments will improve as fewer consumer goods are imported.

One most obvious effect of many import substitution strategies has been their impact on traditional primary-product exports. To encourage locally manufacturing through the importation of cheap capital and intermediary goods, the exchange rates are often artificially "overvalued". Overvaluing exchange rates, in import substitution policies, would encourage capital-intensive production technology still further, which penalizes the traditional primary-product export's sector by artificially raising the price of exports in foreign currencies. The Heckscher-Ohlin theory (1933) suggests that countries that are rich in capital will export capital intensive goods, and countries that have much labour will export laborintensive goods. Therefore, overvaluing the currency would encourage investors to invest in capital-intensive production methods resulting in inefficient resource allocation.

Accordingly, Indonesia that has plenty of excess labour, should emphasize more on producing tradable labor-intensive goods. But, the artificially increase in the price of exports in foreign currency, would cause local producers to be less competitive in the world market and discourage local producers to produce tradable goods.

Between 1973 and 1976, the oil export increased from US\$ 1.6 to US\$ 6.1 billion. However, the growth of Indonesia's manufactured output decreased from 16 percent of the GDP to less than 10 percent of GDP. Declined in the domestic manufactured output was followed by an increase in the imports of the manufactured goods. By 1976, the import of manufactured good into Indonesia was around US\$ 2.2 billion that were far exceeded exports. Some economist called this phenomenon as a Dutch-disease. The Dutch-disease occurs when the exploitation of natural resources such as oil, is accompanied by a fall in the output of manufacturing industry. This is because oil exports cause the currency to appreciate causing the domestically produced manufactures to be priced out of foreign markets. A prolonged Dutch-disease could make the country in a serious economic problem and inability of country to manage the external shocks.

Warr (1992) argued that dependence on petroleum exports has brought with it two major problems. First, the instability of international petroleum prices has meant instability of both exports' earnings and government revenues, leading to significant problems of short-term macroeconomics adjustment. Second, while exports' revenues from petroleum were clearly beneficial, their domestic absorption produced medium-term structural problems within the Indonesian economy. Then, uncontrolled inflation and severe recessions at home combined with heavy external indebtedness have produced not only economic hardship but political turmoil as well.

It was estimated that the correlation between Indonesia's commodity terms of trade, an index of the average international prices of its exports to those of its imports and an index of the international price of petroleum is very strong. Consequently, any changes in Indonesia's external trading environment are dominated by changes in international petroleum prices.

Problem Statement

This study attempts to look into the role of macroeconomic management in avoiding the potential of severe economic instability. Indonesia's exchange rate policy is a major component of the policy adjustments to be studied. The general research problem may be identified as follows: what is the impact of real effective exchange rate changes on Indonesia's manufacturing exports? and how effective is the rupiah devaluation as an instrument for the export-lead growth strategy?

Except crude palm oil, the trend in world market prices for Indonesia's plantation crops' exports has declined since 1970. Studies have suggested that the growth of world demand for these commodities be very low due too low income elasticity. Furthermore, the elasticities of supply and demand with are also low, as a result, devaluation will only bring minor effect to the exports of these commodities. Therefore, this study will only concentrate on the manufactured exports which are more responsive to the change in exchange rate.

Export's performance of manufactured goods is more important because it can generate higher economic growth. Wai (1990) suggested that, it is useful to make a distinction between the impact of the currency depreciation on exports of commodities and exports of manufactures and services. Therefore, a more specific research problem is to analyse the impact of the rupiah devaluation on the exports of the selected Indonesia's manufactured goods. This study will dis-aggregate the manufactured goods into 14 sub-groups (2 digit SITC). This dis-aggregation is made because an analysis based on aggregate relationship covering all manufactured goods could produce misleading results, owing to differences in the degree of sensitivity to price and income changes among types of exports of manufactured goods. In inward-oriented countries that adopt import-substitution policy, the exchange rates were generally overvalued, while in outward-oriented countries maintained realistic exchange rate. Apparently the outward-oriented countries continued to gain export market shares in manufactured exports while inward-oriented countries experienced losses in foreign market. Singapore is one best example of a country that has successfully pursued export-promotion strategy. Over the last twenty years, Singapore has built herself into a major manufacturing and trading centre for Southeast Asia. Since 1980, manufactured goods have accounted for an average 59 percent of total exports, while total merchandise exports contributed on average about 30 percent of GDP. Balassa (1989) found that there was a group of developing economies that maintained realistic exchange rates that had contributed to export expansion and to import substitution.

Lewis and Devarajan (1992) argued that exchange rate policy and management are nearly universal elements in the standard adjustment package prescribed for developing economies, reflecting popular recognition of the sweeping influence that this single price has on incentives to produce for exports. Under a fixed exchange rate regime, the objective of devaluation is to reduce pressure on the balance of payments and to remove distortions in the relative price of tradables and nontradables. While the objective of exchange rate management is to reduce the impact of adverse external development, through open market operations. Villegas (1990) argued that devaluation is an important tool in stimulating and restructuring exports, though it is not a guaranteed recipe for growth; similarly, exports do not guarantee economic growth. Devaluation is powerful force in stimulating growth but the internal economic structure must also can support and finance the growth. For example, the Philippine depreciation in 1985 did not stimulate growth or exports because its economy could not produce for the world market as it took place during low investment, high consumption and political turmoil.

Therefore, the knowledge about the changes of the exchange rate to the economy, specifically it's impact on the Indonesia's manufactured exports is very important, eventhough, the international competitiveness of the manufactured exports is not only determined by the level of the exchange rate. For Indonesia's competitiveness is determined at least, by three critical factors; exchange rate, labour wages and the tarifffree status in the Generalized System of Preferences (GSP) in the U.S market.

Organization of the Study

This study is organized as follow; Chapter I provide the background information explaining the nature of the problem, the research objectives and its justification. Chapter II presents an overview of the Indonesian Economy. Chapter III describes the Indonesian Manufacturing Performance within the period of analysis. While Chapter IV provides a comprehensive view and assessment of existing literature in an attempt to develop a conceptual model. The theoretical framework to support the specification of the model is presented in Chapter V. The empirical export demand model is discussed in Chapter VI, followed by the discussion on the estimation method on Chapter VII. The findings and data analysis and simulation are presented in Chapter VIII. Chapter IX will discuss the results of the causality test between exports and economic growth. Finally Chapter X summarizes the results, the efficacy of the devaluation and policy implication and suggestions for further research.



BIBLIOGRAPHY

- Ahmad, M.I. (1990), "Foreign Manufacturing Investments in Resource-Based Industries <u>Comparison between Malaysia and Thailand"</u>, ASEAN Economic Research Unit, Paper No.71, 1990.
- Ariff, Mohammed, (1991), "Multilateral Trade Negotiations : ASEAN Perspective," Ed.
 Ariff et.al. <u>The Uruguay Round : ASEAN Trade Policy Options</u>. Asean Economic Research Unit. ISEAS. pp.1-37.
- Ali, Ifzal, (1987) "India's Manufactured Exports : An Analysis of Supply Factors," <u>Developing Economies</u>. 1987, XXV-2, pp.152-170.
- Almon, S., (1965), "The Distributed lag Between Capital Appropriations and Expenditures." <u>Econometrica</u>. 1965, 33, pp. 178-196.
- Alexander, S. (1952) 'Effects of Devaluation on a Trade Balance', <u>I.M.F. Staff Papers</u>, April.
- Alexander, S. (1959) ,Effects of Devaluation : A Simplified Synthesis of Elasticities and Absorption Approaches', <u>American Economic Review</u>, March.
- Armington, P (1969), "A theory of Demand for Products Distinguished by Place of Production". <u>I.M.F Staff Papers</u> 16,pp. 159-178.
- Arrow K.J., Chenery H.B., Minhas B.S., and Solow R.M. "Capital-labour substitution and economic efficiency" <u>Review of Economics and Statistics</u>. Vol XLIII-1961, pp.225-250.
- Aspe, P. and F.Gavazzi (1982), "The Short-Run Behaviour of Prices and Output in the Exportables Sector : The Case of German Machinery", Journal of International Economics, pp. 83-93.
- Artus, J.R. (1973) 'The Short Run Effects of Domestic Demands Pressure on Export Delivery Delays for Machinery', Journal of International Economics, February.
- Artus, J.R. "The Short-Run Effects of Domestic Demand Pressure on British Export Performance." <u>I.M.F Staff Papers</u>, Vol.XVII, 1970, pp.247-274.
- Artus, J.R. (1975) 'The 1967 Devaluation of Pound Sterling', <u>I.M.F Staff Papers</u>, November.

- Artus, J.R. and Sosa S.C. (1978) 'Relative Price Effects on Export Performance : The Case of Nonelectrical Machinery'. <u>I.M.F Staff Papers</u>, March.
- Baharumshah, A.Z. (1991), "<u>Testing for Partial Adjustment and Adaptive Expectations</u> <u>Model : An Application to the Rice Model in Malaysia</u>. PKDP Occasional Papers No.13. CAPS, University Pertanian Malaysia.

Branson, William H., (1972), "The Trade Effects of the 1971 Currency Realligments," Brookings Papers on Economic Activity. pp.15-69.

- Branson, William H., (1983), "Economic Structure and Policy for External Balance", ed.Branson W.H.et.al. Economic Policy for External Balance. pp.39-74.
- Bautista, Romeo (1980), "Exchange Rate Adjustment under Generalized Currency <u>Floating : Comparative Analysis Among Developing Countries : World Bank</u> <u>Staff Working Paper No.436</u>. Washington.
- Balassa, B., (1978), "Exports and Economic Growth : Further Evidence," Journal of Development Economics, V, pp.181-191.
- Bautista, R.M., (1977) "Effects of Major Currency Realigment on Philippine Merchandise Trade," <u>Review of Economics and Statistics</u>, LIX, pp 152-160.
- Blejer, M.I. and N. Halevi (1980), "Effective Devaluation and Domestic Rate of Inflation," Journal of Development Economics, VII. pp. 117-122.
- Branson, William H., and Lauka T. Katseli-Papaefstratiou, (1980), "Income Stability, Terms of Trade, and The Choice of Exchange-Rate Regime," Journal of Development Economics, Vol.7, pp.49-69.
- Box, G.E.P. and D.R.Cox (1964), "An analysis of transformations", Journal of the Royal Statistical Society, 26., Series B.pp.211-243.
- Box, G.E.P, and G.M.Jenkins (1970), "<u>Time series analysis : Forecasting and Control</u> (holden-Day, San Francisco).
- Booth, A., McCawley, P. (1990), "Ekonomi Orde Baru", LP3ES, Jakarta,
- Chambers, Roberts G and Richard E. Just, (1981), "Effects of Exchange Rate Changes on U.S. Agriculture : A Dynamic Analysis." <u>American Journal of Agricultural</u> <u>Economics</u>, Vol. 63, No.1. pp.32-46.

- Chambers, Roberts G and Richard E. Just, "A Critic of Exchange Rate Treatment in Agricultural Trade Models," <u>American Journal of Agricultural Economics</u>. 1979, Vol.61, No.2, pp. 249-257.
- Cheng, H.S. (1959), "Statistical estimates of elasticities and propensities in International trade a survey of published studies", <u>I.M.F Staff Papers</u>, 7, pp.107-158.

Christensen, Laurits R.; Jorgenson, Dale W.; and Lau, Lawrence J. "Transcendental Logarithmic Production Frontiers." <u>Review of Economics and Statistics</u> 55 (1973): 28-45.

- Chow G.C., "Test of equality between sets of coefficients in two linear regressions." Econometrica Vol.28-1960, pp.591-605.
- Citrin, D, (1985), "Exchange Rate Changes and Exports of Selected Japanese Industries". IMF Staff Papers, Vol. 32, No.3, pp.404-29.
- Corden, W.M. Inflation, Exchange Rates and The World Economy, 3rd edition, Clarendon Press, Oxford. 1985.
- Deppler, M.C. and D.M.Ripley (1978), "The world trade model : Merchandise trade". <u>I.M.F Staff Papers</u>, 25, pp.147-206.
- Diewert, E.W. and Morrison, C.J.(1986), "Export Supply and Import Demand Functions : A Production Theory Approach." <u>Empirical Methods for</u> <u>International Trade</u>, Edited by. Robert C.F., The MIT Press Cambridge Massachusets.
- Dornbusch, Rudiger.(1973), "Currency Depreciation, Hoarding, and Relative Prices." Journal of Political Economy 81, No.4, pp.893-915.
- Dornbusch, Rudiger. (1973), "Devaluation, Money adn Non-Traded Goods" <u>American</u> <u>Economic Review 63</u>, pp.871-883.
- Dornbusch, Rudiger. "Currency Depreciation, Hoarding, and Relative Prices." Journal of Political Economy 81, No.4 (July/August 1973):893-915.
- Deaton, A., and J.Muellbauer (1980), <u>Economics and Consumer Behaviour</u>. Cambridge, England : Cambridge University Press.
- Diewert, W.E. "Functional Forms for Profit and Transformation Functions." <u>Journal of</u> <u>Economic Theory</u> 6 (1973):284-316.

De Melo, J, and S.Robinson (1985), Product Differentiation and Trade Dependence of the Domestic Price System in Computable General Equilbrium Trade Models.Ed.Peeters et.al., <u>International Trade and Exchange Rates : In the Late</u> <u>Eighties</u>. North Holland, Amsterdam.

Dunis, C; Feeny, M. "Exchange Rate Forecasting", Woodhead-Faulkner, London, 1989.

- Durbin. J., (1970), "Testing for Serial Correrlation in Least-Squares Regression when Some of the regression are Lagged Dependent Variables," <u>Econometrica</u>, XXXVIII, pp.410-421.
- Geraci, V.J and W.Prewo (1980), "An empirical demand and supply model of multilateral trade", Review of Economic and Statistics,
- Goldstein M and M.S.Khan (1985), "Income and Price Effects in Foreign Trade". <u>Handbook of International Economics, Vol.II</u> edited by R.W.Jones and P.B.Kenen. North Holland, Amsterdam.
- Goldstein M. and Khan M.S. (1978(), "The supply and demand for exports : a simultaneous approach." <u>Review of Economics and Statistics</u>, Vol.LX-1978, pp.275-286.
- Gotur, Padma.(1985), "Effects of Exchange Rate Volatility on Trade: Some Further Evidence." IMF Staff Papers., Vol.32, No. 3.
- Griliches, Z., "Distributed Lags A Survey," Econometrica, 1967, 35, 16-49.
- Harberger, A.C. (1953), "A structural approach to the problem of import demand".<u>American Economic Review</u>, 43, pp.148-159.
- Hausman, J.A. (1978), "Specification tests in econometrics", <u>Econometrica</u>, 46, pp.1251-1272.
- Hickman, B and L.Lau (1973), "Elasticities of Substitution and Export Demand in a World Trade Model", <u>European Economic Review</u>, 4, pp.347-380.
- Harberger, A.C.(1950), "Currency Depreciation, Income, and the Balance of Trade." Journal of Political Economy 58, No.1 ,pp. 47-60.
- Houthakker, H.S., and Stephen P, Magee (1969), "Income and Price Elasticities in World Trade," <u>Review of Economics and Statistics</u>, 51. pp. 11-125.

Hill, H. Investasi Asing dan Industrialisasi di Indonesia, LP3ES, Jakarta, 1990.

- Hickman, Bert G., and Lawrence J.Lau (1973), "Elasticticities of Substitutiuon and Export Demands in a World Trade Model," Reserach Memorandum No.141, Stanford University, Research Center in Economic Growth, 1973 (forthcoming in the European Economic Review).
- Huib, P, Kuyvenhoven, A., Jansen, J.(1990), "<u>Indutrialisation and Trade in Indonesia</u>", Gajah Mada University Press.
- Hock, L.K and Shyamala, N. "<u>The Malaysian Economy Beyond 1990</u> : International and Domestic Perspectives", Persatuan Ekonomi Malaysia, Kualalumpur, 1991.
- Isard, P (1977), "How Far Can We Push The Law of One Price?" <u>American Economic</u> <u>Review</u> 67, pp.942-948.
- Johnson, S and Z.A.Hassan, and R.D. Green, (1984) "Demand Systems Estimation : Methods and Applications," The Iowa State University Press/Ames.
- Johnston J. Econometric Methods, 2nd edition 1972, McGraw-Hill, New-York.
- Junz, Helen B., and Rudolf R. Rhomberg, (1965), "Prices and Export Performance of Industrial Countries, 1953-1963," IMF Staff Papers, 12. pp. 224-269.
- Kemp, M.C. (1962a), "Errors of Measurement and bias in estimates of import demand parameters", <u>Economic Record</u>, September, pp.369-372.
- Keesing, D.B., (1979), "Trade Policy for Developing Countries," World Bank Staff Working Papers No.353. (August, 1979).
- Kemp, M.C. (1962b), "The Demand for Canadian imports : 1926-55" (University of Toronto Press, Toronto).
- Khan, M.S. (1974), "Import and export demand in developing countries", <u>IMF Staff</u> <u>Papers.</u> 21, pp.678-693.
- Khan, M.S. and K.Z.Ross (1975), "Cyclical and secular income elasticities of the demand for imports", <u>Review of economics and Statistics</u>. 57,pp.357-361.
- Khan, M.S. and K.Z.Ross (1977), "The functional form of the aggregate import equation", Journal of International Economics, 7, pp.149-160.

- Kohli, U.R. (1982), "Relative price effects and the demand for imports", <u>Canadian</u> Journal of Economics, May, pp.205-219.
- Kreinin, M.E. (1967), "Price elasticitiews in international trade". <u>Review of Economics</u> and <u>Statistics</u>, 49. pp.510-516.
- Kreinin, M.E. (1977), "The effect of exchange rate changes on the prices and volume of foreign trade". <u>IMF Staff Papers</u>, 24. pp.207-329.
- Kreinin, M.E. (1979), "International economics : A Policy Approach", (Harcourt Brace Jovanisch, New York).
- Kravis, Irving B., and Robert E Lipsey, (1969), "International Price Comparisons by Regression Methods," <u>International Economic Review</u>, 10, pp. 233-246.
- Krueger, Anne O.,(1969) "Balance of Payments Theory". Journal of Economic Literature, 7. pp. 1-26.
- Kwack, Sung Y., (1972), "The Determination of U.S. Imports and Exports " : A Disaggregated Quarterly Model, 1960 III-1967 IV," Southern Economic Journal, 38. pp 302-314.
- Leamer, E.E. and R.M.Stern (1970), <u>Quantitative international economics</u> (Allyn and Bacon, Boston).
- Lipschitz, L., (1979), "Exchange Rate Policy for a Sma;; Developing Country, and the selection of an Appropriate Standard," <u>IMF Staff Papers</u>, XXVI (1979) pp. 423-449.
- Lipschitz, L. and Sumdrarajan, "The Optimal Basket in a world of Generalized Floating." <u>I.M.F Staff Papers</u>, 1980, 27, pp.80-100.
- Maddala G.S. Econometrics, McGraw-Hill, 1977. New York.
- Magee, Stephen P. "Prices, Income, and Foreign Trade." in <u>International Trade and</u> <u>Finance : Frontiers for Research.</u> Edited by Peter B. Kenen. Cambridge University Press, 1975. Pp.175-252.
- Mangkusuwondo, S.,D. Simandjutak Ariff and S.Surono,(1991),"Trade Policy Options For Indonesia,".Ed. Ariff et.al. <u>The Uruguay Round : ASEAN Trade Policy</u> <u>Options</u>. Asean Economic Research Unit. ISEAS. pp.38-64.

- Maciejewski, Edward B., "Real Effective Exchange Rate Indices : A Re-examination of the Major Conceptual and Methodological Issues." <u>I.M.F Staff Paper</u>, 1983, Vol. 30, No.3.
- Minford, P. (1978), "Substitution effects, speculation and exchange rate stability (North Holland, Amsterdam).
- M.O.I. "<u>REPELITA V Five Year Development Plan 1989/90-1993/94</u>, Republic Indonesia.
- Marian, E.B.,(1987), "An Econometric Study of Primary Commodity Exports from Developing Country Regions to the World." <u>IMF Staff Papers</u>, Vol.34,.
- Murray, T. and P.Ginman, (1976), "An empirical examination of the traditional aggregate import demand model", <u>Review of Economics and Statistics</u>, 58, pp.75-80.
- Negishi, Takashi, (1968), "Approaches to the Analysis of Devaluation," <u>International</u> <u>Economic Review</u>, 9, pp.218-227.
- Orcutt, Guy H., (1950), "Measurement of Price Elasticities in International Trade", <u>Review of Economics and Statistics</u>, 32, pp.117-132; reprinted in Caves and Johnson,eds.. (1968, pp.528-552).
- Paauw, D.S, (1978), "Exchange Rate Policy and Non-Extractive Exports." <u>Economics</u> <u>and Finance in Indonesia, XXVI (june 1978), pp.205-218.</u>
- Perkins, J.O., (1968), "Australia and the 1967 Devaluation of Sterling," <u>Economic</u> <u>Record</u>, 44, pp. 1-14.
- Ramsey, J.B. (1969), "Test for specification errors in classical least-squares regression analysis", <u>Journal of the Royal Statistical Society</u>, 31. Series B.pp.350-371.
- Rhomberg, R.R., (1976) " Indices of Effective Exchange Rate," <u>I.M.F Staff Papers</u>, XXIII (March 1976). pp. 88-105.
- Rhomberg, Rudolf R., and Lorette Boissonneault, (1964) 'Effects of Income and Price Changes on the U.S. Balance of Payments," <u>I.M.F Staff Papers</u>, 11, 59-122.

Robison, R. "Indonesia : The Rise of Capital", Allen and Unwin, Sidney, 1986.

Ronald MacDonald, "Floating Exchange Rate : Theories and Evidence", Unwyn Hyman, London, 1988.

- Somkid J. <u>The Exporting Behaviour of Manufacturing Firms</u>, UMI Research Press, Ann Arbor, Michigan, 1986.
- Sarwar, G and D,G. Anderson (1987), "Estimating U.S. Soybean Exports : A Simultaneous Supply/Demand Approach, Journal of Economics Studies, pp.44-55.

Spitaeller, E. (1980), "Short-run effects of exchange rates on terms of trade and trade balance", <u>I.M.F Staff Papers, 27.</u> pp. 320-348.

- Stone, Joe A. (1979), "Price elasticities of demand for imports and exports : Industry estimates for the U.S., the E.E.C. and Japan", <u>Review of Economics and Statistics.61</u>, pp.117-123.
- Taplin, Grant B., (1967) "Models of World Trade", I.M.F Staff Papers, 14, pp. 433-458
- Theil, H and K.W., Clements (1987), "Applied Demand Analysis : Results from System-Wide Approaches", Ballinger Publishing Company. Cambridge, Massachusetts.
- Theil, Henri. Principles of Econometrics. New York: Wiley, 1971.
- Todaro M.P. <u>Economics for a developing world</u>, 2nd edition, Longman, Essex-UK. 1982.
- Yusoff, Mohammed B and Mohamad B. Salleh, (1987), "The Elasticities of Supply and Demand for Malaysian Primary Commodity Exports." <u>Malaysian Journal of</u> <u>Agricultural Economics</u>. Vol.4, pp.40-59.
- Yusoff, Mohammed B,(1989b), "The Effect of Exchange Rate on Malaysian Export of Manufactures." In The Inaugral International Conference on Asian-Pasific Financial Markets, November, Singapore.
- Weisskoff, R. (1979), "Trade, Protection and import elasticities for Brazil", <u>Review of</u> <u>Economics and Statistics</u>. 51. pp.58-66.
- Winters, L.A. "An Econometric Model of The Export Sector : UK Visible Exports and Their Prices 1955-1973. Cambridge University Press. 1981.
- Winter, L.A. "International Economics", 3rd edition, George Allen & Unwin, Boston, 1985.

- Wilson. J.F and W.Takacs (1979), "Differential respnses to prices and exchange rate influences in foreign trade of selected industrial countries", <u>Review of Economics</u> and <u>Statistics</u>, 51. pp.267-279.
- Zellner A. "An Efficient Method of Estimating Seemingly Unrelated Regressions, and Tests for Aggregation Bias, Journal of the American Statistical Association, Vol.57, 1962, pp.348-368.

Official data sources-periodical

National Income of Indonesia, Main Tables (1975-1990), annual, BPS Jakarta.

Economic Indicator, (1975-1990), monthly, BPS Jakarta.

CBS Brief Bulletin, (1975-1990), monthly, BPS Jakarta.

Export Bulletin, (1975-1990), annual, BPS Jakarta.

Import Bulletin, (1975-1990), annual, BPS Jakarta.

Manufacturing Statistics, (1975-1990), annual, BPS Jakarta.

Financial Statistics, (1975-1990), annual, BPS Jakarta.