

Chapter 1

Introduction

Statement of Problem

The Asian region has many cooperation between developing countries such as Association of South East Asian Nations (ASEAN). At the moment, ASEAN countries are experiencing the worst economy and currency crisis in their long history. The currency crisis began in Thailand in mid-1997 after manage float was announced on July 2, 1997, and rapidly spread throughout ASEAN countries. The effect of the baht devaluation, one of the solutions on foreign reserve deficit, will reduce trade imbalances, if it translates to a real devaluation and trade flows respond to relative prices in a significant and predictable process. Although trade flows consist of exports and imports, we consider only the imports from Japan and the United States to ASEAN countries, and exports from ASEAN countries to Japan and the United States who are the important trade partners in ASEAN countries. The devaluation of home currency is a main engine of export growth through relative prices that are compared between import prices and home goods prices, and could be the expenditure switching to lower price goods.

On the other hand, consumption of or demand for import goods available is defined by permanent income; the average income that people expect to receive over a period of years in future. Therefore, it will be interesting for ASEAN countries to explore trade flows responding to permanent income and

relative prices. The focus of the studies is considered on the effect of home currency devaluation on tradable prices. The devaluation of home currency in ASEAN, for instance, the Indonesian currency, the rupiah's value had fallen to around 200% from the end of December 1996 to year end 1997. Malaysia ringgit stood at more than M\$2,054:US\$1 at the end of the year but strengthened to M\$2.50:US\$1 during the first half of 1996 before falling by the year's end. Philippines peso's value has thus fluctuated broadly in line with the dollar: yen rate; in 1995 it was down by 39% from 1991, but in 1996 the fall was only 15.4%. Singapore dollar would tolerate a weaker currency early in 1997, long before the regional currency crisis force other countries in the region into sharp depreciation of their currencies. Lastly, Thailand currency, the baht has devaluated more than 100% in the past six months after manage float was announced. This should not be a convincing argument for devaluation. But, it may be easier and quicker to improve the profitability of exports by the devaluation of the domestic currency. The prices of tradable that are set in world markets will become cheaper relative to their home goods especially exports, prompting domestic consumers to switch to them. Moreover, domestic consumption tradable will change because of higher or lower aggregate demand from permanent incomes and relative price effects. Devaluation is not only an integral part of adjustment in many developing countries but also increase international competitiveness and promote export growth. Hence, it is interesting to examine such case as the case of ASEAN countries that are going through the crisis. Whether these countries use devaluation to solve their problem. This paper re-examines the relationship between permanent income and relative prices affecting the trade flows in ASEAN countries.

Objective and Scope of the Study

1. To estimate the income and price elasticities for export and import demand of Indonesia, Malaysia, Philippines, Singapore, and Thailand to Japan and the United States during 1967 to 1996.
2. To prove permanent income and relative prices have long run relationship with export and import values of Indonesia, Malaysia, Philippines, Singapore, and Thailand to Japan, and the United States during 1967 - 1996.
3. To estimate the magnitude of long run relationship of permanent income and relative prices which affect export and import values of Indonesia, Malaysia, Philippines, Singapore, and Thailand to Japan, and the United States during 1967 - 1996.

Benefit of the study

After tested and estimated, we can explain relationship between permanent income and relative prices which affect export and import values of Indonesia, Malaysia, Philippines, Singapore, and Thailand to Japan, and the United States.

1. To learn the importance of differential potential of import and export in each ASEAN countries, when permanent income and relative prices have been changed.
2. To learn the effect of import and export in ASEAN region, when permanent income and relative price have been changed.

Review of Literature

The first examination on trade flows systematically respond to the change in relative prices produced by the devaluation. An earlier literature, interested to be used in this paper, is Reinhart¹(1995) which re-examined the role of relative prices in affecting trade, and the effectiveness of devaluation policies in light of recent time-series literature that deals with variables. All data are annual and cover the period of 1968-1992 from IMF's World Economic Outlook. The theoretical discussion under pins the import and export determination in the context of an inter-temporal optimizing version of the simple imperfect substitutes model. The empirical analysis, establishes the time series properties of the relevant variables through the standard unit root tests: the Dickey-Fuller and Augmented Dickey-Fuller tests, and then applies the co-integration tests of Johansen (1988) to determined if the specifications suggested by theory adequately define the steady-state behavior under "market clearing condition" of imports and exports. The analysis in accordance with standard microeconomic theory suggest that income and relative prices are both necessary and sufficient to pin down steady state trade flows. However, the "traditional" specification appears to fare better when modeling developing-country demand for imports than when applied to industrial-country demand for developing-country exports. The latter may suggest that a fruitful area to investigate is intra developing country trade. It found that relative prices are a significant determinant of the demand for imports and exports. While relative prices have a predictable and

¹ Carmen M. Reinhart, "Devaluation, Relative Prices, and International Trade: Evidence from Developing Countries," *IMF Staff Papers* 42 (June 1995): 290-312.

systematic impact on trade, price elasticities tend to be low, in most instances well below unity. It also suggests that large relative price swings were required to have an appreciable impact on trade patterns. Pooling into regional blocks, the time-series data of the various countries was analysed in order to highlight some of the stylized facts that characterize trade flows among developing and industrial countries and the distinct patterns that prevail among geographical regions. While industrial-country income elasticities are well above their Asia and Latin American developing-country counterparts, it suggests that in a framework of balanced growth the developing country trade balance should improve. Although this is not the case for Africa because the high primary commodity content of African exports probably accounts for the result.

On the other side, Ostry(1988), Rose(1992), and Bayoumi(1996) have suggested that once the time-series properties of the variables are properly taken into account, the estimation that relative prices have a significant and predictable impact on trade variables. At first, Ostry²(1988) consider the effect in terms of trade disturbances on the trade balance in a real, intertemporal, optimizing, general equilibrium model of a small open economy in which some commodities are assumed not to be tradable internationally. It was analyzed how changes, in terms of trade, affect the path of the equilibrium real exchange rate, and how movements in the real exchange rate induced by the change, in terms of trade, affect the relationship between the terms of trade and the trade balance.

² Jonathan D. Ostry, "The Balance of Trade, Terms of Trade, and Real Exchange Rate: An Intertemporal Optimizing Framework," *IMF Staff Papers* 35 No. 4 (Dec 1988): 541-573.

Optimizing agents consume three goods in each period which determine to what extent the introduction of a nontradables sector alters the relationship between changes in terms of trade, and balance of trade. Temporary, current, future, and permanent changes in terms of trade are considered. The two temporal relative prices -the terms of trade and real exchange rate- are linked. These changes in the real exchange rate represent a separate and distinct channel through which changes in the terms of trade affect a country's trade balance. Specifically, the effects of temporary shocks to the terms of trade were found to depend critically on two factors: firstly, the relative magnitudes of temporal and intertemporal elasticities of substitution. Secondly, the relative magnitudes of the intertemporal elasticity of substitution and the ratio of imports to consumption of importables. In this paper, agents were assumed to have perfect access to the world capital market. The results suggests that the relationship between the terms of trade and the current account (called Herber-Laursen-Meztler effect) is sensitive to the model of incorporates nontradable goods. Thus, the real exchange rate may be an important variable through which terms of trade shocks are transmitted to the current account.

Next, Rose³ (1992) does not model imports and exports separately, but examines the empirical relationship between the real effective exchange rate and the aggregate real trade balance for five major OECD countries in the post-Bretton Woods era. The chief concern of this paper is to test the hypothesis that the exchange rate is not an important determinant of the trade balance in these

³ Andrew K. Rose, "The Role of Exchange Rates in Popular Model of International Trade," Journal of International Economics, 30 (1991): 301-316.

models. Meanwhile to answer the question if the Marshall-Lerner condition hold on the assumption that the depreciation is typically to improve the trade account at least after a suitable length of time. The methodology is the theoretical framework of the imperfect substitute model of international trade. The analysis is set in the popular 'two-country' model of trade. Import (export) demand and supply are modeled as functions of the relative price of the imports (exports) and expenditures or output. Most of the data are taken from the OECD's Main Economic Indicators span 1974 through 1986. Linear regression techniques are used to test the hypothesis. Another test for this analysis is Geweke's approach to test for linear feedback from the exchange rate to the trade balance at various frequencies. The locally weighted regression technique is used to estimate and test the relationship between trade flows and the exchange rate in a non-parametric fashion. From the result, there is little evidence to indicate that the exchange rate is a significant determinant of the trade balance. This may indicate that the non-parametric technique has poor small-sample power. More precisely, the data accept the hypothesis that generalized Marshall-Lerner condition hold.

Lastly, Bayoumi⁴ (1996) studied international trade and real exchange rates in the APEC region on the relative price. Explanation of the exchange rate volatility appears to point to a small direct effect on trade volumes. An estimated APEC trade elasticities, a small estimated elasticities on the real exchange rate indicate a degree of elasticity pessimism, which is again not an unusual result from this type of estimation for developing countries. The impact of change in

⁴ Tamim Bayoumi, "International Trade and Real Exchange Rates," Exchange Rate Movements and their Impact on Trade and Investment in the APEC Region" Occasional Paper 145 (1996): 29-46.

bilateral exchange rates on trade has been explained. It is interesting that the likely impact on real exports, real imports, and net trade as a percentage of GDP of change in the dollar and yen, the two key currencies in the region by Dickey-Fuller tests of the data from 1974-1993. The impact on nominal trade balance will be smaller than that on real net trade because changes in prices will partially offset the change in volumes. In addition, it should be recalled that the results refer to a real exchange rate movement cause offsetting movements in domestic prices, the effects of nominal exchange rate changes will be smaller. The trilateral trade pattern of many of these economies further complicates this situation, because movements in the bilateral rate of the dollar against the yen also create changes in their external term of trade. Such a situation creates significant complications for policy maker when the bilateral exchange rate between the dollar and the yen shows a significant divergence from its long-term trend, as occurred in the mid-1980s with the appreciation and subsequent depreciation of the dollar. Hence, although there is considerable evidence that real exchange rates do effect trade volumes in the expected directions, the results are quite pessimistic as regards the size of the elasticities.

On the other side, the time-series properties of the explanatory variables are estimated that permanent income has a significant impact on imports. Clarida⁵ (1994) employed two-goods versions of the rational-expectations permanent-income model. By derived a structural econometric equation can be used to estimate the parameters of the demand for imported consumer goods.

⁵ Richard H. Clarida, "Cointegration, Aggregate Consumption, and the Demand for Imports: A Structural Econometric Investigation," American Economics Review 84 (March 1994): 298-308.

The log of the demand for foreign goods is shown to be linear in term of the log of the relative price of imports, the log of the demand for domestic goods, and the log of an unobservable shock to test. The rational-expectations permanent income hypothesis in conjunction with the addilog preference structure implies that the log of the demand for domestic goods is the correct variable on the right-hand side of the import demand equation because the consumption of domestic goods is a noisy proxy for the unobservable log utility index of permanent income, the marginal utility of wealth. In quarterly U.S. data, it is not possible to reject the hypothesis that log consumption of domestic nondurable goods is nonstationary in levels but is stationary in first differences. His model implies that, in the open-economy macroeconomic equilibrium, log consumer goods imports, the log price of imports and log consumption of domestically produced varieties are cointegrated and that the cointegrating vector is unique. Using the approach of Engle and Granger (1987), he was able to reject decisively the null hypothesis that imports, the relative price of imports, and the consumption of home goods are not cointegrated. Moreover, he employed the non-linear least-squares technique recently proposed by Peter Philips and Mico Loretan (1991) to estimate the parameters of the structural import demand equations.

For the most part, this paper mentions the income and price elasticity demand for import and export goods. Similarly, Marquez and Mcneilly⁶ (1988) estimated income and price elasticities of non-oil exports of developing countries to major industrial countries for the major SITC commodity groups based on the quarterly data for 1973-1984. From an empirical standpoint, the key issues in

⁶Jaime Marquez and Caryl McNeilly, "Income and Price Elasticities for Exports of Developing Countries," *Review of Economics and Statistics* vol. 70: 306-314.

modeling import demand are the selection of explanatory variables, for instance, income and relative import price. Import from non-OPEC developing countries are both imperfect substitute for domestic products and separable from oil purchase. The choice of a logarithmic formulation is based on the results from Box-Cox tests including dummy variables in order to control the effects of one-time events on imports. This paper test for the constancy in structural parameters, an important consideration in view of both the need for accurate forecasts and the volatility in prices and exchange rates. Testing for parameter constancy amounts to applying an *F*-test to the hypothesis that the expected forecast error is zero. Finally, this paper tests whether the residual exhibits serial independence, normality tested with Jarque-Bera statistic, and for homoskedasticity with ARCH test. However, the sensitivity of the results is assessed using Shiller's lags and Band Spectrum estimation. An important limitation of this analysis is the treatment of non-OPEC developing countries as a homogeneous bloc of countries. The parameters are estimated using two stage least squares. The main finding is that non-oil imports of industrial countries from developing countries have an income elasticity relatively narrow range of variation when compared to their previous studies. Also, the result point to important differences in elasticity estimates across countries and commodities, a finding of interest for developing policy response to the interactions between debtor and creditor countries.

Its could be concluded that the relationship between relative prices and trade variable, First, Ostry (1988) suggested that the real exchange rate may be an important variable through which terms of trade shocks are transmitted to the current account. Second, Reinhart (1995) found that relative prices are a

significant determinant of the demand for imports and exports. Third, Bayoumi (1996) shows considerable evidence that real exchange rates do effect trade volumes in the expected directions. Lastly, Rose (1992) was indicated that there is still some evidence that exchange rates significantly affect trade balances, and also accepted the hypothesis that the generalized Marshall-Lerner condition hold. Moreover, the relationship between permanent income and trade variable, for instance, Clarida (1994) was able to accepted decisively the null hypothesis that imports, the relative price of imports, and the consumption of home goods, which is a proxy for the unobservable log utility index of permanent income, was cointegrated. While, Marquez and Mcneilly (1988) indicated that there are differences in elasticity estimates across countries and commodities for developing countries, a finding of interest for developing policy response to the interactions between debtor and creditor countries.