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The Effects of Devaluation of Iran's Balance of Payments

By:

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Abstracts

Devaluation has different effects on the structure of trade patterns in countries which have a fixed exchange rate regime. The experience of devaluation in many countries has clearly shown that devaluation policies have not always led to the improvement of their trade pattern structures. Some empirical studies have revealed that after employing devaluation, the real rate of money in some nations temporarily declined and then was neutralized over time. In some instances, the practice has led to an appreciation of the real rate of money. An empirical investigation of the Iranian trade model shows that, devaluation will lead to an improvement of Iranian trade patterns.

Its results reveal that devaluation tends to increase exports and decrease the demand for imports. It has also shown that within Iranian economic structure, an exportation of non-oil commodities depends more upon a money base than an exchange rate. This reveals that the elasticity of export function is low relative to the changes in the real exchange rate.

Therefore, one can conclude that a devaluation policy will not effect the exportation of non-oil commodities in any

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drastic manner. Furthermore, the results of the adjusted Marshall-Lerner condition reflect that devaluation will lead to an improvement in the Iranian trade defecit.

Introduction:

Most of the developing countries are suffering from an imbalanced trade pattern and its unfavorable effects on their domestic economies. These imbalanced trade patterns, under a situation of exchange control by economic authorities, are characterized by a high exchange rate in the parallel exchange market and a quantative exchange restriction on imports by the government. In a fixed exchange rate regime, the nominal exchange rate usually represents an excess demand in the exchange rate market which has not been cleared. Monetary and fiscal policies, direct and indirect controls and exchange rate policies are used by many countries to obtain internal and external economic equilibrium. If the market is stable (and the Marshall-Lerner condition is satisfied), devaluation can improve the trade pattern. Otherwise, the results are the reverse.

The purpose of this paper is to find theoretical and empirical answers to the following important questions:

1- What are the model (s) which best suit or reflect the Iranian trade patterns?
2- What are the effects of devaluation upon Iranian trade patterns?
3- With regards to export and import markets, is the Iranian foreign exchange market stable?
4- And finally, with regards to the current Iranian economic situation, can devaluation be counted on as an effective tool in economic policy?

In an attempt to answer the above questions, this paper will be divided into the following sections:

The first section presents a theoretical discussion, in which the gains from trade are shown. The mechanisms of international trade and those factors which affect it, along with the effects of exchange rate policies upon trade patterns are also discussed.

Section two illustrates the experiences of other countries which employed devaluation and discusses its effects upon their trade patterns. Specifically, the experience of devaluation in countries such as Zaire, Argentina, Brazil, Mexico and Indonesia is reviewed.

In section three two models of Iranian trade patterns are delineated. The first model discusses short-run reactions of output to devaluation and monetary policies in Iran. The second model shows the effects of

above mentioned model. In this section, the Marshall-Lerner condition and its adjusted version created for Iran is estimated. The paper closes with concluding remarks and policy implications.

1- The Effects of Devaluation Upon Trade Patterns

The basis of and the gains made from trade have been widely discussed in economic literature.

The conventional view argues that developing countries should try to increase their output and exports through and elimination of / or reduction of trade restrictions. From classical economists to modern theorists, the main argument has focused upon the elimination of government intervention in the trade market, because government intervention leads to a distortion of price mechanism and resource allocation. Imposing tariffs and trade restrictions may lead to deviations and distortions of the growth of competative industries, in conjunction with inefficiency of resource allocation which will show real costs in terms of domestic resources.

In the absence of government intervention, the best and the most efficient price of a good will be determined by the supply of and the demand for that particular item. Of course, if the above circumstances hold true for $((n))$ goods, competition conditions are present in the market place.

Whenever international trade is utilized, a proxy such as exchange rate must be employed in order to facilitate the exchange of goods and services. This rate explains the operation of many important economic variables and thus draws a clear picture of the economy. Since this rate affects and determines many vital economic variables, and is found under competative condition, it can cause competative conditions to flow into all aspects of the economy.

Thus, an equilibrium rate within a competative market, which is determined by an intersection of demand for and supply of exchange rate, can be one of the most important policy tools employed to correct and guide economic activities.

The equilibrium exchange rate is a regulator of the inflow and outflow of goods, services and capital between countries. The above mechanism operates in a way which makes inflow and outflow equal to one another. Assuming other variables remain constant, an inequilibrium rate in the market will cause the balance-of-payments to deviate from the equilibrium. Whenever, the nominal rate exceeds the equilibrium rate, this will result in a decline in exports and a rise in imports. In this case the balance-of-payments face deficit. When the

differences between these two rates in conjunction with the balance-of-payment's deficit continue, the distance between the rates grows wider. Thus, one way to reduce the deficit, especially for those countries who have considerable production capabilities, is to employ devaluation. However, to determine how far the value of a currency should devaluate, it is dependent upon the net elasticities of the supply and demand of exports and imports. It is noteworthy to mention that the elasticity of the supply of exports and imports depends on the rate of the factor of production mobility in two countries. Further, the price elasticity of demand for exports and imports is dependent upon the type of exportable and importable commodities and on substitute goods.

Macroeconomic variables (such as interest rate, inflation, real income, expectation, ...) can affact the supply of and the demand for the foreign exchange rate. While these variables affect the inpayments and outpayments, they can also implicity affect the value of the respectable currency and lead to an appreciation or depreciation of that currency. This is true under all exchange rate regimes. However, under the fixed-exchange rate regime, monetary authorities prevent currency value change. The value of the currency of the predetermined level can be set through international reserves, direct controls, international finance and borrowing. Under this system, if none of the above mentioned mechanisms are successful in correcting the balance-of-payments, then the authorities have no choice, but to devaluate the currency.

Prodevaluationists argue that devaluation serves as a tool to deal with external imbalances and it leads to an increase in production and exports and thus, can raise employment and income while reducing imports. As a result, the balance-of-payments improve and its deficit tend to decline.

The positive effect of devaluation on the trade balance depends on the confirmation of the Marshall-Lerner condition. Marshall-Lerner, by utilizing the concept of markets' stability, argue that whenever the total absolute value of the demand elasticity for imports and the demand elasticity for exports is greater than one, the exchange market is stable and devaluation can improve the trade balance. In-addition to the Marshall-Lerner condition, Pesaran (1984) has introduced an adjusted Marshall-Lerner ($\beta\varepsilon_X + \varepsilon_M > \beta$) for oil-exporting countries[1]. When β

1- Pesaran (1984), ((Macroeconomic policy in an oil- exporting economy with foriegn exchange controls))

is the ratio of non-oil exports to total exports and ε_x and ε_M accordingly are the demand elasticity for exports and demand elasticity for imports. Whenever the above condition is satisfied, devaluation can improve the trade balance, eliminate the excess demand and reduce the trade deficit.

2- The experience of countries concerning the effects of devaluation:

Edwards (1989) studied the effects of nomian devaluation upon the real value of currency in twenty developing countries. He has assumed that the real value of these developing countries' currencies has been set out of long-run equilibrium and has led to incorrect economic activities and more instability within the economy. Therefore, the costs of consumption and production of tradeable and nontradeable commodities are inaccurately reported.

There are several ways to correct the above situation among which devaluation is one. Devaluation will produce a variety of effects on economic variables of which one is an effect on the real value of currency. This effect does not follow a steady pattern. In some countries, devaluation was temporary and then was neutralized over time. In other cases, devaluation has resulted in an overvaluation of the real rate. Also, in some nations, devaluation has been permanent and has stabilized over time. Edwards argues that the reasons behind these occurances line not only in the differences between the economic structures of the countries involved, but also because of the utilization of the varying economic policies in conjuction with devaluation.

Bhagwati (1974) investigated the reactions of non - industrial nations in the 1960's to the effects of devaluation upon their exports and imports(1). According to his findings, the initial effect of devaluation is the rise of the price of imports and exports in terms of domestic units, although the price in terms of foreign units declines and remains constant. Higher domestic prices will enable exporters to offer a higher price to domestic producers and encourage importers to utilize domestic production. Therefore, we should expect that price changes will lead to an improvement in the tradeable terms of trade and thus, transfer the resources from other sectors to the tradeable sector. Steady policies to protect devaluation will lead to a redistribution of resources and have a positive effect on import-substitution, export-promotion and inputs.

1- Bhagwati and Yusuke, ((Export-Import Responses to Devaluation)), July 1979.

To complete our disscussion of the effects of devaluation, we will examine the situation in some selected countries:

Zaire has so far experienced three rounds of exchange policies. The first round lasted until 1976 in which its currency was pegged to the dollar. The country experienced its first devaluation with this period. The second round which began in 1976 and ended in 1983 coincided with a revision of the peg system based on the substitution of the dollar with SDR. During this period, the currency successively devaluated. In 1983, round three began with the changing of the overall exchange system and so the value of the currency floated in the exchange market. After wards, the value of the currency began to overvalue in the market. The experience of devaluation in Zaire clearly shows that in order to improve the trade balance and experience the positive effects of devaluation, such policies should be empolyed in conjunction with suitable fiscal and monetary policies as well.

In contrast with the positive effects of exchange policies in Zaire, the experience of devaluation in Argentina during April of 1986 caused the wages in the private and public sectors to rise. Successive devaluation resulted in an increase in inflation, a decrease in demand for domestic currency and an indexation of wages relative to inflation. The Argentine experience shows that every devaluation results in a quick decline of the ratio of demand for currency to the income and decline of the ratio of long term savings to income.

However, the Brazilian experience during four rounds of changes in the exchange rate system from 1953 to 1983 resulted in an increase in inflation.The exchange rate system of this country has gone through multiple revaluation in the first round, utilizing twelve different rate in the second round, employing floating rate in the third round and continous devaluation in the fourth round. As a result, the successive devaluation led to an increase in the budget deficit along with an elimination of subsidies and high inflation.

One of the most interesting cases of devaluation is evident in Mexico. Devaluation in this country created a vicious circle in which devaluation led to inflation. In order to combat inflation, further devaluation becomes neccessary and so this circle continues.

Devaluation caused the Brazilian foreign debt to double during the years from 1974 to 1976, which was partly due to the outflow of capital. In 1981, a decline in the price of oil in conjunction with the rise of international interest rates caused a deterioration in the country's budget and its trade deficit rose to $12 billion. Also, the rapid increase in wages led to another 70 percent devaluation. As a result, the

devaluation in Brazil has always caused an increace in domestic costs and foreign debt and a drain of capital from the country.

Devaluation in Indonesia caused a rise in inflation in 1978 and in 1983, but this increase helped to expand the country's non-oil sectors and to lower imports of non-oil commodities. On the other hand, trade policies together with fiscal and monetary policies countered recession and strengthened the exchange policy, and as a result real income and employment increased.

In addition to the experiences of the countries above, many economists have attempted to construct suitable trade econometrics models in order to show the effects of devaluation upon the trade patterns of developing countries including Iran. The most prominent of these economists are: Amuzegar and Fekrat (1971), Khan (1974) Feltenstein and Goldstein (1979), Rojas-Suarez (1987), and Razavi and Vakil (1984). Most of their studies have shown that devaluation caused exports to rise and imports to fall, while the Marshall-Lerner conditions have been confirmed for most of these developing nations.

3- Econometric Models Connected to Iranian Trade Patterns

I. First Model: The first model in this paper is constructed for an economy with a fixed exchange rate regime. This model discusses short - run reactions of output to devaluation and monetary policies in Iran. It emphasises the components of the money supply and the price of tradeable goods. The model also investigates the effects of devaluation on domestic production, the price of nontradeable goods and the level of foreign reserves. To obtain the final equations of exports and imports, we must consider different markets such as the labor market, the tradeable commodities market, the nontradeable commodities market and the money and credit market. The process of profit and utility maximization of households and the equilibrium conditions of demand and supply within mentioned markets have utilized in this analysis.

II. The Complete Macroeconomic Model: According to Walras' law, we can use only the goods market in our macroeconomic system because Walras law argues that if the goods market is in equilibrium, then the money market is in equilibrium. The complete equations for different markets can be written as follows:

$$(1)\quad M_t^D\Big|_{NT} = \gamma_0 + \gamma_1 \left[b_1\, E(pi_{t+1}) - p_t\right] + \gamma_2 \left(a\, h_t - p_t\right) + \varepsilon_t$$

$$(2)\quad M_t^D\Big|_T = \beta_0 + \beta_1 [b_1{}^{E(pi_{t+1} - p_t - s_t)}] + \beta_2 (a^{h_t - p_t - s_t^*}) + V_t$$

$$(3)\quad X_t^S\Big|_{NT} = \alpha_0 + \alpha_1 [a^{h_t - E(pi_{t+1})}] + \alpha_2 (1-T)[a_t{}^{E(p_t - p_t - s_t^*)}] + u_t$$

$$(4)\quad X_t^S\Big|_T = \eta_0 + \eta_1 [a^{h_t - E(pi_{t+1})}] + \eta_2 T[a_t{}^{E(p_t - p_t - s_t^*)}] + \rbrace_t$$

$$(5)\quad Pi_t = TP_t + (1-T)(p_t^* - s_t)$$

$$(6)\quad a^{ht} = W_0 + W_1 gc_t + (1-W_1) F_{t-1}$$

$$(7)\quad F_t = d_1 X_t^s\Big|_T - d_2 M^D{}_t\Big|_T + (1-d_3)(P_t^* + S_t) + d_4 F_{t-1}$$

$$(8)\quad a_t^h = LH_t$$

$$(9)\quad F_t = LF_t$$

$$(10)\quad b_1{}^{E(Pi_{t+1} - P_t^* - S_t)} = PPS_{t-1}$$

$$(11)\quad a^{h_t - P_t^* - S_t} = HPS_t$$

$$(12)\quad a^{h_t - E(Pi_{t+1})} = HP_t$$

$$(13)\quad P_t^* + s_t = PMS_t$$

$$(14)\quad T[a_t{}^{E(P_t^* - P_t - S_t)}] = TPPS$$

$$(15)\quad M_t^D\Big|_T = LM_t$$

$$(16)\quad X_t^s\Big|_T = LX_t$$

In the above equations ((T)) and ((NT)) stand for tradeable and nontradeable. LM^t is the logarithm of the value of imports; LX^t is the logarithm of non- oil exports; LH^t is the logarithm of the money base; LF^t is the logarithm of foreign reserves; PPS^{t-1} is the logarithm of the expected exchange rate; Pi^{t+1} is the domestic producer and consumer price index times the nominal exchange rate while P^{*t} is the imported price index; S^t is the nominal exchange rate; HP^t is the logarithm of the ratio of the money base to the product of the domestic price index times the nominal exchange rate; HPS^t is the logarithm of the ratio of the money base to the product of the imported price index times the nominal exchange rate;PMS^t is the logarithm of the product of the imported price index times the nominal exchange rate; $TPPS^{t-1}$ is the logarithm of the ratio of the products of the share of expenditures in nontradeable goods times the domestic price index to the product of the exported price index times the nominal exchange rate; Lgc^t is the logarithm of government credits.

Equations 1 and 2 show the demand for tradeable and nontradeable goods. Equations 3 and 4 represent the supply of tradeable and nontradeable commodities. We have excluded the nontradeable market from this analysis since the aim of this article is to analyze the effects of devaluation upon the tradeable sector of economy.

By using equations 2, 4, 6, and 7, we can construct the following behavioural relations:

$$(17)\quad LM_t = b_0 + b_1PPS_{t-1} + b_2LM_{t-1} + b_3HPS_t + b_4HPS_{t-1} + \varepsilon_1$$

$$(18)\quad LX_t = a_0 + a_1HP_t + a_2LX_{t-1} + a_3TPPS_{t-1} + a_4TPPS_{t-2} + \varepsilon_2$$

$$(19)\quad LH_t = W_0 + W_1Lgc_t + W_2LF_{t-1} + \varepsilon_3$$

$$(20)\quad LF_t = d_0 + d_1LX_t + d_2LM_t + d_3PMS_t + d_4LF_{t-1} + \varepsilon_4$$

Equations 17 and 18 (demand for and supply of tradeable goods) represent export and import equations. First, these two equations will be estimated separately and then they will be estimated simultaneously together with equations 19 and 20, which are the money base and foreign reserve equations.

Second MODEL: In order to analyze the effect of devaluation upon trade patterns, we have built another model. When we consider the import market, import demand and import supply functions should also

be defined. If we assume that Iran is a small country, and therefore, the import supply is considered exogenous and its elasticity is infinite or very large. The demand function for domestic and foreign goods usually depends on relatively good prices and purchasing power.

Thus, we first assume that the import demand is a function of income and the ratio of the price of foreign goods to domestic ones. The imported goods price index is used to measure the price of foreign goods and the consumer price index is utilized when measuring the price of domestic goods. The gross national product is used as proxy for income. The price ratio in the import function will give us the imported demand elasticity relative to the exchange rate. Thus, the imported demand function can be written as:

$$(21)\quad M = f\left(\frac{P_M}{P_D}, A, RT\right)$$

$$(22)\quad \text{where, } A = y - (X-M)$$

$$(23)\quad \text{and } \frac{\delta M}{\delta\left(\frac{-P_M}{P_D}\right)} < 0$$

$$(24)\quad \frac{\partial M}{\partial RT} > 0$$

In equation 21, M is imports; P_M is the imported goods price index; P_D is the domestic goods price index; RT is the foreign exchange revenue and A stands for absorbtion. We divide exports into correct two categories:
One for non - oil exports and the other for oil exports. We also assume that the supply of and demand for oil exports are exogenous. Thus, we have:

$$(25)\quad X = X_o + X_{no}$$

$$(26)\quad X^D = f\,(\,PX_{no},\, e,\, GNP_w\,)$$

$$(27)\quad X^S = f\,(PX_{no},\, e,\, M_{k+i}\,)$$

$$(28)\quad RT = X_o + X_{no} + F$$

$$(29)\quad F = f\,(\dot{GNP}_w,\, \dot{GNP}_D,\, \dot{r}_w,\, \dot{r}_D\,)$$

In the above equations, X^D and X^S stand for the demand for and supply of exports, X_o is oil revenue; RT is foreign exchange revenues; F is the net capital outflow; PX_{no} is the non - oil export price index; M_{k+l} is the importation of intermediate and capital goods and e is the effective exchange rate. $G\dot{N}P_w$ and $G\dot{N}P_D$ stand for the world and domestic gross national product, while r_w and r_D represent world and domestic interest rate.

Equations 21 and 27 will first be estimated separately and then equations 21, 27, and 29 will be estimated simultaneously. We will also estimate the Marshall-Lerner condition and its adjusted version. The reduced form equations for simultaneous estimation can be written as follows:

$$(30)\quad LM_t = \alpha_0 + \alpha_1 L\frac{P_M}{P_D} + \alpha_2 LRT + \alpha_3 LA + \varepsilon_1$$

$$(31)\quad LX_t = \beta_0 + \beta_1 L\frac{P_X}{P_D} + \beta_2 LMKI + \varepsilon_2$$

$$(32)\quad LMKI = LM_t - LM_c$$

$$(33)\quad L\frac{P_M}{P_D} = \gamma_0 + \gamma_1 LE + \gamma_2 LB + \varepsilon_3$$

$$(34)\quad L\frac{P_X}{P_D} = \eta_0 + \eta_1 L\frac{P_M}{P_D} + \varepsilon_4$$

In the above equations, all the variables are expressed in the logarithm form. M_t is the value of imports; $\frac{P_M}{P_D}$ and $\frac{P_X}{P_D}$ accordingly, is the ratios of import and export price to the domestic price; RT is the exchange revenue; A is the real domestic absorption; MKI is the importation of intermediate andcapital goods; M_c is the importation of consumption goods; E and B, accordingly, are the nominal and parallel exchange rate.

4- Econometric Results:

The results of the first model, when LM_t and LX_t are estimated separately for the period of 1971 to 1989, can be written as follows:

$$(35)\quad LM_t = \underset{(1.49)}{5.06} + \underset{(1.18)}{0.6\ PPS_{t-1}} + \underset{(1.04)}{0.47\ LM_{t-1}} - \underset{(-1.18)}{0.65\ HPS_t} + \underset{(1.79)}{0.8\ HPS_{t-1}}$$

$$R^2 = 0.96 \qquad D.W. = 1.69 \qquad F = 82$$

$$(36)\quad LX_t = \underset{(0.84)}{0.51} + \underset{(1.05)}{0.09\ HP_t} + \underset{(3.71)}{0.69 LX_{t-1}} - \underset{(-3.29)}{0.12\ TPPS_{t-1}} + \underset{(1.50)}{0.07\ TPPS_{t-2}}$$

$$R^2 = 0.76 \qquad D.W. = 1.98 \qquad F = 9.98$$

(the numbers in parentheses represent the value of t)

It is important to note that in the first model the real exchange rate index is defined as:
(PPS = $\frac{P}{P \cdot S}$), the ratio of the domestic price of the product to the imported price times the nominal exchange rate. Thus, an increase in the imported price inedx (P_M) will lead to the reduction of PPS and consequently a decline in imports. The positive sign of the coefficients of the PPS shown in the results, is because of the definition of exchange rate in this article.

The results when LM_t, LX_t, LH_t and LF_t are estimated simultaneously can be written as:

$$(37)\quad LM_t = \underset{(0.80)}{3.75} + \underset{(1.20)}{2.00\ PPS_{t-1}} + \underset{(2.03)}{0.83\ LM_{t-1}} - \underset{(-1.63)}{3.80\ HPS_t} + \underset{(1.63)}{3.03\ HPS_{t-1}}$$

$$R^2 = 0.72 \qquad D.W. = 1.93$$

$$(38)\quad LX_t = \underset{(2.76)}{1.52} + \underset{(-2.98)}{0.14\ HP_t} + \underset{(1.92)}{0.80\ LX_{t-1}} - \underset{(1.25)}{0.15\ TPPS_{t-1}} + \underset{(1.11)}{0.17\ TPPS_{t-2}}$$

$$R^2 = 0.49 \qquad D.W. = 2.22$$

$$(39)\quad LH_t = \underset{(-3.60)}{-0.52} + \underset{(28.07)}{0.94\ Lgc_t} + \underset{(1.92)}{0.09\ LF_{t-1}}$$

$$R^2 = 0.99 \qquad D.W. = 1.64$$

$$(40)\quad LF_t = \underset{(1.59)}{0.29} + \underset{(1.94)}{0.48\ LF_{t-1}} + \underset{(1.59)}{0.29\ LX_t} + \underset{(1.43)}{0.36\ LM_t} - \underset{(-0.25)}{0.07\ PMS_t}$$

$$R^2 = 0.85 \qquad D.W. = 2.60$$

The econometric results of single models indicate that imports are under the auspices of monetary policies and fluctuations of relative

prices. Under Iranian economic circumstances the exportation of non - oil commodities depends more upon a money base when compared to other relative prices. This shows that the elasticity of export functions is low relative to the changes in the real exchange rate. Thus, we cannot expect a serious reaction from the exportation of non - oil commodities after devaluation.

The econometric results of simultaneous models confirm the results of single models. These results indicate that devaluation leads to a reduction in the demand for imports and raises exports. All the signs of the coefficients are expected and indeed the simultaneous results are more powerful than those of the single models.

The regression estimates of model two can be found in tables one to eight. Tables 1, 2 and 3 represent the empirical results when the equations are estimated separately and table 4 shows the results when all the equations are estimated simultaneously. As the results in these tables indicate, when devaluation takes place, imports drop while exports increase and thus, the trade balance tends to improve. The equations are estimated by 2 S LS for three different time periods: 1966 - 89; 1974 - 89; 1978 - 89.

The results of table 4 illustrate that, in those countries, where the existing rate of inflation is higher than the current inflation rate, due to changes in the exchange rate, the relation between $(\frac{E}{B})$ and different types of exchange rates, [e. g. , nominal exchange rate (E) and exchange rate in the parallel market (B)] is negative. With a change in the nominal exchange rate, the domestic price index increases more than the imported price index. However, the empirical results of the simultaneous model are confirmed when the equations are estimated separately.

Tables 5 and 6 represent the results of the adjusted Marshall- Lerner condition, for these three periods of time: 1966- 89, 1974- 89 and 1978-89. These results clearly prove that the adjusted Marshall - Lerner condition was satisfied for all three time periods. Tables 7 and 8 show the results of the Marshall - Lerner condition for the same time periods mentioned above, which are similarly satisfied.

Thus, one can conclude that devaluation in the Iranian economy has a tendency to increase exports and reduce imports, which results in an improvement in the trade balance.

5- Concluding Remarks:

This paper has endeavoured to find suitable answers for the inital questions which were raised at its beginning. Following a literary review

and some experiences of selected countries regarding the effects of devaluation upon the trade patterns, two distinctive models for Iranian trade patterns emerge.

The econometric results of both models are very similar to one another and if the data employed in this study are relatively unbiased, one can conclude that these models are suitable models for the Iranian economy.

The empirical results indicated that the devaluation policy has had an initial positive effect upon Iranian trade patterns and it has led to an improvement in the trade balance. Since the Marshall - Lerner condition and its adjusted version are satisfied for all the periods under investigation, the exchange market is relatively stable. In regards to the above mentioned results, some policy implications are evident:

1- If the devaluation policy is only utilized to improve the trade balance, then it may be relied upon as a worthwhile policy. However, it should be remembered that employing a devaluation policy alone may cause internal balances to fall into inequilibrium. In order to prevent this problem, we should use suitable monetary and fiscal policies in conjunction with the implementation of a devaluation policy.

2- Employing a devaluation policy should also be in conjunction with free international trade and in elimination of all trade obstacles. Constancy regarding the ongoing trade regulation is neccessary to maintain the positive effects of devaluation.

3- Before implementing a devaluation policy, one should determine a recognized exchange policy and exchange rate which are both consistant with the economic structure.

4- The results indicate that devaluation leads to a reduction in imports. Employing an import-substitution strategy to increase the substitution goods implies more reliance on imported capital and intermediate goods. The possibility of reducing importation of the above goods is very low in the Iranian economy. Thus, instituting suitable trade policies become a neccessary key to success.

5- In regards to the empirical results and economic situation of Iran, it is apparent that devaluation as a recognized exchange policy used in conjuction with suitable monetary and fiscal policies can be an effective economic tool to correct current prices and to reach economic adjustment.

Table 1: The Import Model Including Variable A

Period	Coefficients	$\frac{P_M}{P_D}$	RT	A	R^2	D.W.
1966-89	5.49 (13.25)	-1.105 (-4.25)	0.67 (10.98)	0.14 (1.92)	0.96	1.89
1974 -89	9.25 (3.20)	-1.86 (-4.70)	0.48 (2.50)	-0.10 (-0.72)	0.68	1.87
1978 - 89	11.02 (5.37)	-2.66 (-6.53)	0.35 (2.58)	-0.20 (-1.99)	0.86	2.92

Table 2: The Import Model Excluding Variable A

Period	Coefficients	$\frac{P_M}{P_D}$	RT	R^2	D.W.
1966-89	5.8 (14.5)	-1.40 (-6.47)	0.75 (16.90)	0.95	1.80
1974 - 89	7.40 (5.20)	-1.70 -(4.03)	-1.78 (-4.99)	0.67	1.94
1978 - 89	7.53 (6.08)	-2.39 (-5.39)	0.54 (4.57)	0.79	2.50

Table 3: The Export Model

Period	Coefficients	$\frac{P_x}{P_D}$	MKI	R^2	D.W.
1966-89	9.5 (24.0)	1.60 (5.94)	-0.17 (-2.68)	0.79	1.44
1974 - 89	12.60 (8.77)	1.39 (3.18)	-0.29 (-1.34)	0.59	1.53
1978 - 89	14.14 (7.39)	1.18 (2.38)	-0.52 (-1.80)	0.66	1.60

Table 4: Model Two - The Simultaneous Results

Equation No. 30	Cofficients	1966 - 89	1974 - 89	1978 - 89
Constant	α_0	6.12	16.56	13.01
P_M / P_D	α_1	-1.96	-2.20	-2.73
RT	α_2	0.76	0.10	0.25
A	α_3	0.63	0.53	0.32
Equation No. 31				
Constant	β_0	10.37	12.13	14.02
P_x / P_D	β_1	2.67	2.25	1.07
MKI	β_2	-0.03	-0.22	-0.50
Equation No. 33				
Constion	γ_0	3.08	3.25	2.98
E	γ_1	-0.57	-0.67	-0.62
B	γ_2	-0.14	-0.11	-0.10
Equation No. 34				
Constant	η_0	-0.13	-0.02	-.54
P_{M} / P_D	η_1	-0.39	-0.13	-0.21

Table 5: Model Two - Estimates of Adjusted Marshall - Lerner Condition (Including Variable A)

Year	The share of non-oil Exportation in the Total Exports (β)	(1966- 89) $\varepsilon_x = 1.6$ $\varepsilon_m = -1.105$ $(\beta\varepsilon_x + \varepsilon_m)$	(1974- 89) $\varepsilon_x = 1.39$ $\varepsilon_m = -1.86$ $(\beta\varepsilon_x + \varepsilon_m)$	(1978- 89) $\varepsilon_x = 1.18$ $\varepsilon_m = -2.66$ $(\beta\varepsilon_x + \varepsilon_m)$
1966	0.1159	1.29		
1967	0.0926	1.25		
1968	0.1070	1.27		
1969	0.1100	1.28		
1970	0.1140	1.28		
1971	0.1290	1.31		
1972	0.1190	1.29		
1973	0.1020	1.26		
1974	0.0320	1.15	1.90	
1975	0.0310	1.15	1.90	
1976	0.0350	1.16	1.95	
1977	0.0650	1.20	1.95	
1978	0.1660	1.37	2.09	2.85
1979	0.6100	2.08	2.70	3.37
1980	0.4850	1.88	2.53	3.23
1981	0.0460	1.17	1.92	2.70
1982	0.0140	1.12	1.88	2.67
1983	0.0170	1.13	1.88	2.68
1984	0.0220	1.14	1.89	2.68
1985	0.0330	1.15	1.90	2.69
1986	0.1340	1.30	2.04	2.81
1987	0.1000	1.26	1.99	2.77
1988	0.1070	1.27	2.00	2.78
1989	0.0790	1.23	1.97	2.75
		1.28	2.03	2.83
		0.1194	0.1235	0.1511

Table 6: Model Two - Estimates of Adjusted Marshall - Lerner Lerner Condition (Including Variable A)

Year (β)	The share of non-oil Exportation in the Total Exports $\beta\varepsilon_x + \varepsilon_m$	(1978-89) $[\varepsilon_x = 1.18]$ $[\varepsilon_m = -2.39]$ $\beta\varepsilon_x + \varepsilon_m$	(1974-89) $[\varepsilon_x = 1.39]$ $[\varepsilon_m = -1.7]$ $\beta\varepsilon_x + \varepsilon_m$	(1966- 89) $[\varepsilon_x = 1.18]$ $[\varepsilon_m = -1.4]$
1966	0.1159			1.58
1967	0.0926			1.54
1968	0.1070			1.57
1969	0.1100			1.57
1970	0.1140			1.58
1971	0.1290			1.60
1972	0.1190			1.59
1973	0.1020			1.56
1974	0.0320		1.74	1.45
1975	0.0310		1.74	1.45
1976	0.0350		1.74	1.45
1977	0.0650		1.79	1.50
1978	0.1660	2.58	1.93	1.66
1979	0.6100	3.10	2.54	2.37
1980	0.4850	2.96	2.37	2.17
1981	0.0460	2.44	1.76	1.47
1982	0.0140	2.40	1.72	1.42
1983	0.0170	2.41	1.72	1.42
1984	0.0220	2.41	1.73	1.43
1985	0.0330	2.42	1.74	1.45
1986	0.1340	2.54	1.88	1.61
1987	0.1000	2.50	1.83	1.56
1988	0.1070	2.51	1.84	1.57
1989	0.0790	2.48	1.81	1.52
		2.56	1.86	1.58
		0.1511	0.1235	0.1194

Table 7: Model Two - Estimates of Marshall - Lerner condition
(Excluding Variable A)

Period	Export Elasticity ε_m	Import Elasticity ε_x	Marshall - Lerner Condition
1966 - 89	1.6	-1.4	$\|1.6\| + \|-1.4\| > 1$
1974 - 89	1.39	-1.7	$\|1.39\| + \|-1.7\| > 1$
1978 - 89	1.18	-2.39	$\|1.18\| + \|-2.39\| > 1$

Table 8: Model Two - Estimates of Marshall - Lerner condition
(Including Variable A)

Period	Export Elasticity ε_m	Import Elasticity ε_x	Marshall - Lerner Condition
1966 - 89	1.6	-1.105	$\|1.6\| + \|-1.05\| > 1$
1974 - 89	1.39	-1.86	$\|1.39\| + \|-1.86\| > 1$
1978 - 89	1.18	-2.66	$\|1.18\| + \|-2.66\| > 1$

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