Journal of Applied Sciences

ISSN 1812-5654

science alert

ANSInet
an open access publisher
http://ansinet.com

Journal of Applied Sciences 8 (21): 3871-3878, 2008
ISSN 1812-5654

Trading Partners and Iranian Manufactured Exports

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Abstract: This study is devoted to examine the performance of Iranian Manufactured exports in terms of their destination over the 1980-2006 period. Using time series techniques, an export demand model is applied and the income and price elasticities of demand for Iranian manufactured exports by country of destination are estimated. As after 1979, Iranian trading partners were diversified in the direction of more inter-LDCs. The applied export demand model is then simulated by the Newton technique. As it is assumed that trade flows respond to changes in relative prices and exchange rate, the magnitude of the response will then be investigated through a historical simulation. The empirical results demonstrate that trading partner's income, real effective exchange rate along with commodity price do affect the Iran's manufactured export demand. The findings of the historical simulation also suggest that, the size of changes in the endogenous variables is relatively smaller under the first Scenario, whereas the second policy Scenario causes exports to rise significantly. The estimation outcomes also emphasize the sensitivity of exports to a devaluation of domestic currency especially to LDCs'.

Key words: Trading partners, demand elasticities, simulation analysis, exports

INTRODUCTION

A basic issue in applied economics is the role of exports in the process of growth. From a demand-side perspective, it is argued that sustained demand growth cannot be maintained in small domestic markets, since any economic impulse based on the expansion of domestic demand is bound to be exhausted quickly. Export markets, in contrast, are almost limitless and hence do not involve growth restrictions on the demand side. Hence, exports can be a catalyst for income growth, as a component of aggregate demand (Agosin, 1999). However, the role in the literature is distinguished between the manufactured and primary export categories when referring to their impact on the country's economic performance. As according to the Prebish-Singer thesis, export diversification from primary into manufactures may be useful if there is a general trend toward declining terms of trade for primary products (Athukorola, 2000). Besides, primary exports are subject to extreme price and volume fluctuations (Dawe, 1996). Furthermore, primary products tend to offer no sustainable potential for knowledge spillovers and an increase in primary exports can draw resources away from the externality-generating manufacturing sector (Herzer and Nowak-Lehman, 2006; Siliverstovs and Herzer, 2007).

In this respect, the estimation of income and price elasticities of exports (and also imports) has been a traditional area of research in international economics. It attracted substantial amount of literature, because of its implications for trade policy and balance of payment questions. The trend toward disaggregating trade elasticity measures into their component parts has accelerated over the last three decades. However; there is some debate in the growth-openness studies as to what extent trade with LDCs or DCs is beneficial for growth. The main argument is that, LDCs benefit from the large knowledge stock of their more developed trading partners.

As it has been pointed out in the literature, a country's economic growth is positively influenced by growth in its trading partners (although a number of economists are skeptical about it). This occurs through the impact of innovation and technological spillovers from trading partner countries (Grossman and Helpman, 1989; Rivera-Batiz and Romer, 1991). In addition faster growth in partner countries can contribute to a larger market for a country's exports, leading in the short run to an increase in the utilization of available resources and in the longer run to an increase in investment in the exported goods sectors to satisfy higher future demand (Vamvakidis, 2002). Similarly, this could further produce incentives for local research and development. Trade especially with DCs, expand the number of possible buyers and thus, the potential for economic profits associated with innovation, brand recognition, patent registrations and any improvements over competing firm's products. In addition

this will force the producer to react to a new environment and innovate in the process. These innovations might take the form of necessary adjustments to packaging and transportation methods due to local climates and infrastructure, product adjustments made to entice consumers with different tastes, innovations in the production process that comply with foreign sanitary regulations, etc. (Kali *et al*., 2007).

Recent empirical researches have also found that the economic conditions in the trading partners of a country have important implications for domestic growth. This issue which has less been explored in growth-openness literature, attracted more attention in recent years. Clemens and Williamson (2004) included growth of trading partners in their study, covering the 1869-1999 years for 35 countries. Their estimate turned to be insignificant in both economic and statistical terms. The focus of the work by Arora and Vamvakidis (2005) is how much economic condition in trading partners matter for growth. Their results suggest that a country's growth is positively associated with the growth rate and relative income of its trading partners. Additionally, a country's productivity growth is shown to depend not only on its domestic R&D investment but also on the R&D investment of its trading partners. Trade expansion induced by greater market access appears to cause a quantitatively large acceleration in the growth rates of developing countries (Evenson and Singh, 1998; Romalis, 2007). Similarly, the effects of having a greater number of rich trading partners could be different from those of having a greater number of poor trading partners (see Schneider, 2005, for an empirical analysis of a similar argument).

To date the vast majority of the researches on the estimation of income and price elasticities in international trade have been directed toward relatively advanced economies such as the Japan or the United States. Since a limited number of studies aimed at developing countries, especially on the issue of the role of trading partners in domestic growth, a country case study approach focusing on Iran is intended in this study. In view of the considerable growth of Iran's manufactured exports over the last three decades, the dramatic changes in her trading partners which occurred after 1979 revolution could possess implications for the economic growth of the country. The purpose of this study is to estimate elasticities of Iranian manufactured exports in terms of her trading partners, i.e., individual countries, as well as in terms of group of countries. The reason for selecting this category of exports is based on empirical findings of Atrkar Roshan (2007), in which Iran's industrial goods was found to have relatively higher price and income elasticity compared to other export categories. Taking into account of the estimation results of this section, it is then intended to simulate parameter estimates identified from the export demand model to show the response of the model to changes in policy variables, arising from a shock to key variables. The purposes is firstly, to test the reliability of the export demand model for predicting the changes of the dependent variables and secondly, to quantify the fluctuations in exogenous policy variables.

THE MODEL AND DATA

From an econometric point of view, the elasticity approach which is one of the most successful areas of empirical economics is based on estimating the export (and import) demand functions. To investigate the effects of a real devaluation on the trade balance of a country, the 'elasticity is also an appropriate approach. In most studies, export/import volumes are regressed on world/domestic real income, relative export/import price and effective exchange rates. The underlying framework is the imperfect substitutes model of the trade literature, as it was discussed in Goldstein and Khan (1985) in detail. They argued that, if domestic and foreign goods were perfect substitutes, then we should observe either of the goods having market share of unity and each country acts as an importer or exporter of a traded goods but not both.

Equations relating trade flows to relative prices and importer income have been derived and estimated since the 1950s, with generally good statistical fit and sensible economic interpretation. The basic structure and theoretical motivation of export demand equations are covered in Goldstein and Khan (1985) who provide a thorough review of published empirical findings; whilst Hooper *et al*. (1998) and Marquez (2002) present updated estimates and discuss recent methodological advances (see also Atrkar Roshan, 2007, for a review of literature).

In order to assess the effects of exchange rate on export flows, following a number of economists e.g., Bahmani-Oskooee (1986), an exchange rate variable is added in log-linear form. Since each variable is defined in logarithmic terms, the estimated coefficients are the elasticities of exports with respect to the corresponding variables. Thus, following Bahmani-Oskooee (1986), the model is specified in log-linear terms as:

$$\ln X_t = a + b\ln YW_t + c\ln (PX/PXW)_t + d\ln E_t + v_t \qquad (1)$$

where, X is the quantity of Iran's manufactured exports in terms of each trading partner, YW is the weighted average of real GNP of the country's trading partners, PX is the unit value of Iranian manufactured exports, PXW is the unit value of competitors exports and E is the real effective exchange rate. The model dominated the

empirical literature for more than a quarter century, because of the empirical success of this specification and the data limitations prevailing in LDCs. It is worth noting that, various previous studies use a static framework. The use of static models in trade econometrics is consistent with the formulation of Marshall-Lerner stability condition, which did not involve any dynamics.

In this study, the time series technique is applied, since evidence of significant parametric variations across countries suggest that aggregate cross country analyses may be highly misleading. The Iranian annual data from 1980 to 2006 is employed and all the data are in constant 1990 prices. The data for Iran's real effective exchange rate and figures for the income of trading partners were obtained from the IMF, International Financial Statistics (various issues). The export weights that is, the share of each trading partner in the country's total exports for which a time series is constructed using data from the Iranian Foreign Trade Statistics and CBI (Central Bank of Iran) Economic Report and Balance Sheet. Unlike a number of studies which used the average share of trading partner for 5 years, the share of Iran's trading partner has been used for 20 years in this study. This is because, trading partners were more often changed and the set of the most important partners remained relatively unstable after 1980 in the case of Iran.

On the basis of Eq. 1, manufactured export demand is estimated in terms of trading partners, namely Germany and Italy as the two most important destinations of Iranian manufactured exports amongst developed countries (which is named Eq. 1.1 and 1.2 in Table 3). The external demand is also estimated for the same export category in terms of United Arab Emirates, (herein UAE) and Turkey (namely Eq. 1.3 and 1.4, respectively), as the two significant destinations of Iran's trading partners amongst developing countries. This is followed by the estimation of demand for manufactured exports to developed and less developed countries (herein DCs and LDCs, respectively) that is called Eq. 1.5 and 1.6 in Table 2 and 3.

The period under consideration in this research contains a range of different episodes for Iran; such as a sharp collapse of oil price during 1986-1988 and 1997, the commencement of the Iraqi invasion to Iran in 1980 and also the trade embargos in 1982, 1987 and 1996. In order to capture the data break and examine the effects of these sudden changes on dependent variables, three dummy variables are constructed and introduced in the model, which takes the value of 1 for the specified period and zero otherwise. D1: for the collapse of the oil price, resulting in a sharp reduction from 1986 to 1988 and also 1997 years. D2: for the trade embargo imposed by the US, European countries and Japan in 1982 and by the US government (alone) in 1987 and 1996 years. D3: for the aftermath of revolution and the first year of the Iraqi invasion to Iran in 1980. Finally, the estimation is carried out by Ordinary Least-Squares (OLS) method.

TESTING FOR UNIT ROOTS IN THE DATA

Primarily, the stationarity of the series is tested by using the Augmented Dickey-Fuller (ADF) test procedure. Tests are performed both in level and first difference forms. The ADF test statistics which are presented in Table 1 suggest that the unit root null can not be rejected at 5% significance level for all the variables in the analysis. In contrast to level forms, the unit root null is strongly rejected at 5% significance for the first difference forms. In other words, all variables appear to be integrated of order 1.

The next step is to test for cointegration that is applied in the sense of Engle and Grange (1987), which tells us whether the long-run behavior of export demand is adequately specified. Table 2 reports the residual-based

Table 1: Augmented Dickey-Fuller (ADF) test results

	Test statistics			
Variables	Test statistics (Level form)	Order of integration	Test statistics (First difference)	Order of integration
LIX	-0.90	I(1)	-6.56*	I(0)
LII	-0.97	I(1)	-6.90*	I(0)
LGI	-0.95	I(1)	-3.53*	I(0)
LGX	-2.01	I(1)	-4.17*	I(0)
LTX	-2.30	I(1)	-3.62**	I(0)
LTI	-1.30	I(1)	-6.03*	I(0)
LE	-1.85	I(1)	-3.69*	I(0)
LM	-1.27	I(1)	-4.43*	I(0)
LUI	-0.12	I(1)	-3.41**	I(0)
LUX	1.82	I(1)	-3.55**	I(0)
LXDC	-1.38	I(1)	-4.17*	I(0)
LIDC	0.19	I(1)	4.73*	I(0)
LXLDC	-1.73	I(1)	-4.52*	I(0)
LILDC	-0.92	I(1)	-5.61*	I(0)

Variables are defined as follow: the volume of real manufactured exports to Germany, Italy, UAE, Turkey, DCs an LDCs are LGX, LIX, LUX, LTX, LXDCs and LXLDCs, respectively. The real GDP for Germany Italy, UAE, Turkey, DCs an LDCs are shown as LGI, LII, LUI, LTI, LIDCs and LILDCs). Real effective exchange rate (LE) and relative price of manufactured exports LM. Critical values are based on Mackinnon (1991). Sufficient lags were included to eliminate serial correlation, *, **Significant at 1, 5 and % level, respectively

Table 2: Cointegration tests

	ADF tests		
Eq. No.	Test statistics	R2	D-W
1.1	5.09**	0.67	1.85
1.2	-5.50*	0.58	2.02
1.3	-5.12*	0.50	1.81
1.4	4.99**	0.53	1.91
1.5	-5.00**	0.71	2.09
1.6	-4.66**	0.60	2.05

Critical values are based on Engle and Yoo (1987). Sufficient lags were included to eliminate serial correlation *, **Significant at 1, 5 and % level, respectively

ADF test results for cointegration. The simulated critical values reported in Engle and Yoo (1987) is used, which also takes into account the number of variables for the $Z(t_\alpha)$statistic at a 1, 5 and 10% significance level (Table 2). As regards involved equations, results appear to support stationarity of residuals most at 1 and 5% level of significance and it can be concluded that the relevant variables are cointegrated.

RESULTS AND DISCUSSION

After estimating the equations, the results of diagnostic tests make strength the validity of the empirical findings. The Lagrange Multiplier (LM) test denotes that the computed χ^2 is smaller than the critical value at the 5% level of significance. Ramsey RESET test indicates that there is no misspecification in the equations. The result which is reported below the Table 3 also demonstrate that, normality was achieved in all cases.

The empirical findings provide further evidence among the literature that with expected coefficient signs, all three variables including trading partner's income, real effective exchange rate along with commodity price do affect the export demand. The findings reported in Table 3 also demonstrate that, the income elasticities are larger than one in all equations. This indicates that, trading partners' income positively affects Iranian export demand. Consequently, growth in Iran's partner countries will translate into growth at least at the same magnitude of the exports and trade can be used as an important factor for the economic growth of the country. However, a key outcome is the difference in the size of the income elasticity for the estimated equations, which is higher for DCs. These results are in line with the findings of Arora and Vamvakidis (2005), who concluded that developing countries benefit from trading with manufactured countries, which have higher relative incomes. Similarly, the Kali *et al*. (2007) results present evidence supporting the argument that trade relations established with rich countries are more beneficial for growth than those established with poor countries.

In line with literature, the estimation results demonstrate that, relative prices and real effective exchange rate with expected signs are two significant determinants of the demand for exports. However, while relative prices have a predictable and systematic impact on trade, price elasticities tend to be low, in fact, they are well below unity. Not surprisingly, the estimation in terms of group of countries confirm what the country specific results showed, namely, that relative prices and real exchange rate play a significant role in affecting export flows. Accordingly, the developing countries demand for manufactured exports respond to relative prices and exchange rate as predicted by theory. Such figures are also in agreement with Bahmani-Oskooee (1986), Reinhart (1995) and Senhadji and Montenegro (1999) who found evidence that relative prices play a significant role in the determination of trade flows. Thus, one can say for the

Table 3: Demand for Iranian manufactured exports (1980-2006)

Eq. No.	1.1	1.1+	1.2	1.2+	1.3	1.3+	1.4	1.5	1.5+	1.6	1.6+
	Dependent variables										
	Manufactured exports to										
Independent vars.	Italy		Germany		Turkey		UAE	LDCs		DCs	
Constant	-21.20	-21.61	-7.29	-7.29	-26.85	-26.08	-10.56	-10.07	-10.24	-11.06	-11.16
	(-5.78*)	(-6.03*)	(-3.45*)	(-3.55*)	(-5.82*)	(-5.96*)	(-2.56*)	(-2.61*)	(-2.67*)	(-4.19*)	(-4.36*)
Relative price	-0.27	-0.26	-0.65	-0.65	-0.88	-0.87	-0.65	-0.89	-0.82	-0.26	-0.26
	(-1.73***)	(-1.78***)	(-1.88***)	(-2.01***)	(-1.88***)	(-1.90***)	(-2.60*)	(-2.83*)	(-2.70*)	(-1.87***)	(-1.89***)
Income	6.41	6.42	2.81	2.81	7.19	6.96	3.95	3.85	3.89	4.12	4.14
	(8.20*)	(8.40*)	(7.64*)	(8.16*)	(7.98*)	(8.65*)	(4.25*)	(5.36*)	(5.45*)	(7.44*)	(7.74*)
Real effect. exch. rate	-0.60	-0.54	-0.35	-0.35	-1.49	-1.40	-0.72	-0.69	-0.67	-0.53	-0.54
	(-3.15*)	(-3.01*)	(-1.61)	(-1.70***)	(-3.57*)	(-3.62*)	(-2.67*)	(-1.91***)	(-1.87***)	(-3.41*)	(-3.51*)
D1	0.12	-	0.47	0.47	0.08	0.02	0.78	0.62	0.54	0.35	0.33
	(0.22)		(2.13**)	(2.24**)	(0.15)	(0.04)	(2.50*)	(1.48)	(1.33)	(1.56)	(1.57)
D2	-0.33	-	-0.06	-	0.41		0.98	0.44	-	-0.08	-
	(-0.60)		(-0.02)		(0.61)		(1.75***)	(0.90)		(-0.29)	
D3	-0.78	-0.76	-0.09	-0.10	-2.02	-2.22	-5.12	-1.19	-0.98	-0.88	-0.87
	(-2.47*)	(-2.97*)	(-0.20)	(-0.27)	(-2.31*)	(-2.77*)	(-8.62*)	(-1.51)	(-1.30)	(-2.63*)	(-2.67*)
R2	0.88	0.89	0.88	0.89	0.90	0.90	0.89	0.83	0.83	0.88	0.88
D-W	2.18	2.21	1.92	1.93	2.00	1.98	1.98	1.91	1.88	2.14	2.15

Figures in parenthesis are t-statistics. DW is the test statistic for the first order autocorrelation in the error term, +Indicates that the equation is a re-estimate of the preceding one, with non-significant variables dropped, Further diagnostic tests: For Eq. 1.1; Ramsey Reset (specification) = 0.32, Jarque-Bera (normality) = 2.71, ARCH (LM) test = 0.09, For Eq. 1.2; Ramsey Reset (specification) = 1.59, Jarque-Bera (normality) = 0.95, ARCH (LM) test = 0.01, For Eq. 1.3; Ramsey Reset = 2.72, Jarque-Bera (normality) = 2.39, ARCH (LM) test = 0.08, For Eq 1.4.; Ramsey Reset = 2.51, Jarque-Bera 0.25, ARCH (LM) test = 0.51, For Eq. 1.5.; Ramsey Reset = 1.06, Jarque-Bera = 2.63, ARCH (LM) test = 0.08, For Eq. 1.6; Ramsey Reset, 0.01, Jarque-Bera = 0.72, ARCH (LM) test = 0.67, Note that, a, Jarque-Bera (normality) is a test statistic for investigation of whether the series is normally distributed. b, Lagrange multiplier test for residual serial correlation. c, Ramsey Reset test is a regression specification error test, *, **, ***Significant at 1, 5 and 10% level, respectively

findings of estimated price and income elasticities, along with real exchange rate for Iranian manufactured exports is that, DCs' lower price elasticity for Iran's exports suggests the appropriateness of a different strategy from that for the LDCs. These findings accompanied with the changes in Iran's trading partners towards further LDCs after 1979, emphasize the importance of both price and exchange rate factors in increasing exports. Hence, an important question would be whether changes in exchange rates and variations in product prices affect the export flows differently.

SIMULATION ANALYSIS AND SCENARIOS

The estimated model in the last section indicates the partial effect of exogenous variables, as a shift in export demand arising from an exogenous shock has an effect on endogenous variables. Accordingly, to investigate how the model as a whole behaves in response to different shocks, more importantly, to test the reliability of the export demand model for predicting the changes of the dependent variables, it is of interest to carry out a simulation analysis. The historical simulation is utilized by deploying the estimated results of the model obtained from the last section. The relative price and real exchange rate is assumed as the control and exogenous variables in this model. As the impact of changes in the exogenous policy variable depends upon the behavioral shocks within the model, an exogenous shock may create a shift in export demand.

On the other hand, over the last three decades the Iranian non-oil and manufactured exports suffered from uncompetitiveness in the world market. As one of the main reasons for the poor performance of Iran's manufacturing exports after 1979, was the lack of international competitiveness, in terms of both price and quality of the goods produced by Import substitution industries. As Shatz and Tarr (2000) argued, the experience of LDCs shows that protection to defend an overvalued exchange rate will significantly retard the growth of the country. Because, the vast majority of developing countries have downward price and wage rigidities and that with an external trade deficit they require some form of nominal exchange rate adjustment to restore external equilibrium. An argument in favor of fighting these problems can then be conducted by devaluation or relative price changes induced by e.g., export subsidies. It is worth noting that, subsidies may be given directly and indirectly. Many countries subsidize their exports indirectly, e.g., low interest rates on export credit, preferential tax treatment for profits from exports and output subsidies to export industries (typically in the form of wage subsidies and investment incentives). Accordingly, two scenarios are selected to conduct an analytical experiment. Scenario one is chosen to identify the impact of commodity price changes on export demand namely; a 25% price reduction on export demand. Scenario two discovers the effect of a 10% devaluation of domestic currency on demand. As, taking into account of the significance of exchange rate in export demand and the key role of this variable in increasing exports, it is of interest to investigate the impact of highly possible fluctuations in the real exchange rate. On the other hand, Iran experienced an average annual inflation rate of more than 20% over the last two decades. The experience of 1993 unification and devaluation indicates that a high devaluation with its adverse effects might suddenly generate a great shock to the Iranian economy. It is assumed that a moderate devaluation would increase export competitiveness in the world market and improves trade balances.

The method employed to solve the model is the Newton technique (which is available in the TSP computer programmes). Given the new set of values, the model is solved iteratively each time generating a new set of values. Thus, the system iterates until convergence of the successive values is achieved within some denoted tolerance level (Murinde, 1993). Using TSP software and the results of the estimates from the last section, the historical simulated (baseline) and the shocked values of the dependent variables is obtained. In this respect, three common measures of predictive accuracy according to Pindyck and Rubinfeld (1991) are used to evaluate ex-post and ex-anti forecasts. These are including RMSE (Root Mean Square Error), MAE (Mean Absolute Error) and TIC (Thil's Inequality Coefficient). The quantitative measures which are most often used to find out how closely individual variables track their corresponding data series are, RMSE and MAE. The RMSE is a measure of the deviation of the simulated variable from its actual time path and the size of this deviation is evaluated by comparing it with the mean of the relevant dependent variable. Besides, a value of TIC greater than one is interpreted to mean that the simulation is less correct than the simple simulation of no change.

The results that are shown numerically for each endogenous variable in Table 4 reveal that, the model is

Table 4: Results of the simulation test for the model

	Statistics			
Endogenous variables	Mean	Root mean square error (RMSE)	Mean absolute error (MAE)	Theil's inequality coefficient (TIC)
LXDCs	430.411	54.771	-1.898	0.233
LXLDCs	709.200	70.211	-1.944	0.171

Note that, mean actual values are presented as index

appropriate for attempting to evaluate different policy scenarios. The value of RMSE and MAE is small relative to the average actual value of the dependent variables, whilst the TIC is much less than one. Moreover, the relevant illustrated Figures have emphasized the reliability of the simulation results further and indicate that, the model tracks the actual movements of the endogenous variables over the period well.

THE IMPACTS OF POLICY SIMULATION SCENARIOS

In the next step, the impact of the ex-post policy experiments on the dependent variables is examined. This can be performed by comparing the shocked values of each variable in each scenario to its historical (baseline) solution and conclude the changes and possible average growth rates of dependent variables. The index of the Percentage Deviation from the Control Solution (PDCS) for each dependent variable that is reported in Table 5, is defined as:

$$PDCS = 100 \cdot \left[(Y_t^{sc} - Y_t^{s}) / Y_t^{s} \right]$$

Y^{sc} = Shocked value of an endogenous variable
Y^{s} = Baseline solution of the variable

The effect of a 25% price reduction on export demand (Scenario one) is now analyzed. Referring to Table 5, the simulation results clearly show that the performance of this policy Scenario has no serious effect on demand for manufactured exports. As it is shown in Fig. 1, all variables follow the same path tracking the control solutions. The results indicate that, there is a very small average annual rise of about 0.44 and 0.98% in manufactured exports to DCs and LDCs. So, differences in the results for both cases are not substantial. Overall, referring to Table 5 and Fig. 1, the differences between the simulation results are not significant. Thus, the impact of these experiments on such variables irrespective of the destination of exports appears to be negligible and is only slightly affected by changes in relative price. Given the likely effectiveness of price reduction upon its export demand these results suggest that even with a 25% price fall, the outcome is not significant increase in export demand and the impact of these experiments on such variables appears to be small partly due to large and lengthy overvaluation of domestic currency after 1980 in Iran. Therefore, as Reinhart (1995) suggested for many LDCs, large relative price swings, such as those produced by devaluation, might be required to have an appreciable impact on export demand. Besides, as Goldfajn and Valdes

Table 5: The annual average growth rate of endogenous variables (%)

Endogenous variables	Scenario one	Scenario two
LXDCs	0.44	13.97
LXLDCs	0.98	15.80

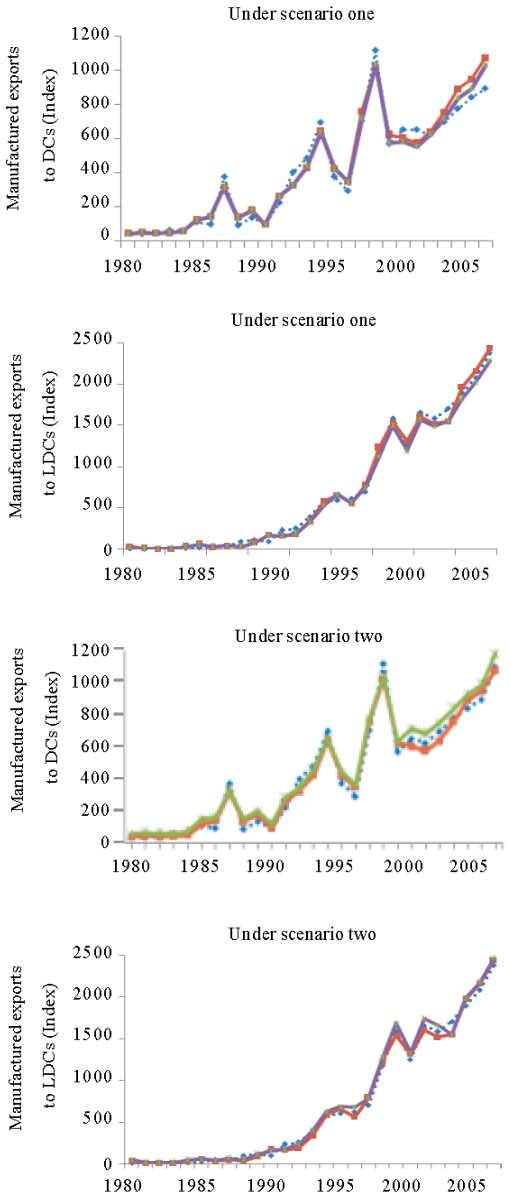

Fig. 1: The effects of various policy Scenarios

(1999) (who investigated the probability of whether a significant real appreciation will require a nominal devaluation) findings demonstrate; indeed in the last 35 years policy makers in most countries preferred to correct large real appreciations through nominal devaluation.

Hence, the focus is on the effect of a nominal devaluation of domestic currency on export demand. The simulation results reported in Table 5 indicate that, DCs respond to the shock of the real exchange rate variable and is affected by an increase of about 14% annually in manufactured exports to this group. Whilst, this scenario results in an immediate increase of about 16% per annum in exports to LDCs. Corresponding Figures show clearly that, the shocked values for variables track closely the baseline solution. The performance of this policy suggests that the economy will be able to increase significantly manufacturing exports if devaluation is perused. In fact, the experiences of many countries have shown that defending the exchange rate has no medium-run benefits, since falling reserves will force devaluation eventually. It is better that the devaluation be accomplished without further debilitating losses in reserves and lost productivity due to import controls (Shatz and Tarr, 2000). This is especially acute for manufactured exports, which are subject to further impair in these situations.

CONCLUSION

In this study the demand elasticities of Iranian manufactured exports in terms of her major trading partners over the 1980 to 2006 years was estimated. A historical simulation was then carried out to perform some policy experiments and evaluate alternative policies, by using the estimation results of the applied model. The results demonstrate that the income elasticities are larger than one, indicating that trading partners' income positively affects Iranian export demand. Consequently, growth in Iran's partner countries will translate into growth of the same magnitude of the exports. The estimation outcome also reveals that external demand for Iran's manufactured exports varies according to its trading partners' level of development. The results also show that the real exchange rate and the export prices are two powerful determinants of the export demand. Finally, the result of the shocks to the key policy variables in the form of various scenarios demonstrate the significance of exchange rate in export growth, as the real exchange rate may be regarded as the key mechanism for transiting the effects of the external shocks such as the oil price variation. Additionally, it implies that, attempts such as devaluation of domestic currency can be beneficial for increasing competitiveness to assist in achieving export expansion.

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