

**INDIA'S EXPORT PRICE FUNCTION**



## Introduction

This paper intends to examine the macro-level factors determining India's export prices in the seventies and the eighties and the policy implications thereof of the results. Theory says, that under perfect competition, prices are determined by demand and supply factors. But perfect competition or near perfect competition itself is a misnomer and the export prices of non-fuel exporting developing countries are mainly determined by the demand for their exports with the supply factor being pushed to the background as can be seen in the Indian case. Keeping this fact in mind, an attempt has been made here to arrive at an export price function for India and empirically test it for the seventies and the eighties.

## The Model

The export price function for the Indian economy is given in log-linear form as follows:

$$\log X_p = a + \log GDP_i + \log DSR + e$$

where,

$X_p$  = export unit value index in dollar terms

$GDP_i$  = Index of the GDP of Industrial countries in real terms.

$DSR$  = Index of India's debt service ratio taken as a lag, by one year.

$e$  = an error term.

The  $GDP_i$  variable was taken, as the demand by the industrial countries, the major takers in our export basket, was considered as an important variable determining India's export prices. Besides, some studies relating to terms of trade like the one by da Costa G.C. (1) had also shown that  $GDP_i$  was a very important factor in India's terms of trade from the export side. The  $DSR$  was considered by us as some of our studies (2) have revealed the importance of this variable. Besides, the studies by Singer and Sarkar, Raffer and Chichilinsky (3) have shown the importance of the debt servicing burden, especially in the eighties, as one of the factors leading to adverse terms of trade. Three other variables which were considered while working out the regressions, but not included in the model are the following:

- a) The Real Effective Exchange Rate (REER) (4).
- b) The ratio of manufactures in total exports, and
- c) The unit value index of exports by competing developing countries ( $X_{pa}$ ), represented by the Unit value index of the Asian developing countries (also in dollar terms).

These variables were also considered as there is the general feeling among economists that the former two variables are important factors in the export price function, though we were not really taken away by this belief. Besides our earlier studies and the studies of Singer (5),

had shown that shift to manufactures does not automatically improve the terms of trade of developing countries. The Xpa variable was considered, as it was felt that the price of exports by competitors have an influence on the movement of export prices of India

### The Results

The results of the regression are given below.

$$R^2 = .96647$$

$$\text{Adjusted } R^2 = .96200$$

$$\text{Std.Err} = .02850$$

### Variables

|            | B       | Se B   | Beta   | T      | SigT  |
|------------|---------|--------|--------|--------|-------|
| LGDPi      | 2.05866 | .11294 | .87569 | 18.228 | .0000 |
| DSR        | .37117  | .05616 | .31748 | -6.609 | .0000 |
| (constant) | -1.3359 | .26319 |        | -5.076 | .0001 |

D-W test = 1.60011

### Analysis of Variance

|               | DF | Sum of squares | Mean square |
|---------------|----|----------------|-------------|
| Regression    | 2  | .35135         | .17567      |
| Residual      | 15 | .01219         | .00081      |
| F = 216.21033 |    | Sig F = 0.0    |             |

The results are very satisfactory as indicated by the  $R^2$ , B, Beta coefficients, etc. There was no multicollinearity, and the regressors had the right sign, with the Gdpi variable, being very important and the DSR variable also being significant. The D-W test was fulfilled and the possibility of autocorrelation was ruled out.

The results of the separate exercises, which included the NEER and the Ratio of Manufactures variables, revealed that the former was not at all significant, having failed to satisfy even the tolerance test under the step regression method; the latter variable though significant, led to much multicollinearity with the GDPi variable and was relatively less significant than the Gdpi variable and when taken separately with the exclusion of the GDPi variable was a very poor fit. The Xpa variable, though significant, was highly collinear with the GDPi variable and to some extent with the DSR variable. This is as expected, as one should expect the export prices of other developing countries of Asia also to be closely related with GDPi and also to the DSR variable (as the debt service ratio indicator is broadly the same for other Asian developing countries).

### Policy Implications

The results of this study show that the GDPi variable is a very important variable

determining the export prices of India. This highlights the importance of the demand factor for exports of underdeveloped countries strengthening our earlier argument and also the argument by Singer and others, that shift to manufactures may not help much in improving the terms of trade of underdeveloped countries. Instead, the demand factor has to be tackled first. While diversification of trade by commodities may be of some help, long-term solutions lie in greater south-south trade and opening up the markets by the developed countries for the exports of underdeveloped countries by removing the barriers like Multi-Fibre Agreement (MFA) and the Common Agricultural Policy (CAP), etc earnestly and immediately, unlike the gradual removal of these barriers as suggested by Dunkel. While the slow growth of the world economy is by itself one of the factors for sluggish demand for the exports of South by North, nevertheless in the true spirit of liberalization, which India is practicing now, the advanced countries should be convinced upon in international forums like the GATT, of the need for them to follow a truly liberal regime to make liberalization policies of the underdeveloped countries a success! On the part of India greater trade with suitable trading partners from south should be furthered, as suggested by Prasad (6).

The results also indicate the role of the debt servicing burden in negatively affecting India's export prices. This was, in fact, found to be true and very significant in the case of many other underdeveloped countries by Singer and Sarkar (7). This highlights the need to reconsider our present policy of recklessly increasing our debt burden, as Aid is also not Aid in the true sense of the term as was revealed in the study of Prasad (8).

The results also show that prices of the competing developing countries have a significant impact on the prices of India's exports. (Though this variable is not included in the regression equation, its effects were captured by the other two variables, as explained earlier). Thus competition among countries of South have made the prices of India and other developing countries to remain low or relatively lower. This lowering of prices has helped some developing countries, especially the NICs (Newly Industrialized countries) to expand their export volume. But this is not the case with all developing countries. A better alternative is to increase South-South trade which can help in solving the fall or low rise in prices of exports of developing countries. Prasad's study (9) has shown that gainful South-South trade can take place between India and Malaysia and India and Republic of Korea. Many such possibilities exist, which has to be explored by making country-specific and commodity-specific studies.

The results also show that shift to manufactures is not the solution to tackle adverse terms of trade of developing countries and movements in exchange rates also cannot do the magic. While many studies have been highlighting the importance of the Real Effective Exchange Rate, on export prices and export volumes (10), this study shows that the REER is not a significant variable. This variance in results is mainly because the other studies have considered only REER along with a time variable, while in our study we have included the most relevant variables. Singer (11) has stated that some studies have shown that the impact of the exchange rate tends to be delayed by anything between one and three years. To check the findings of these studies, an attempt was also made to include the lags

of the REER variable for one to three years separately, in the Indian case. But in each case, the minimum tolerance test was not satisfied and the  $R^2$  with each successive lag, taken separately, but along with the other two independent variables, namely, GDPi and DSR, became less and less.

The study shows that the solution for the low or falling export prices of developing countries possibly lies in tackling the twin factors of creating greater demand and being competitive compared to competitors (or reducing competition among competitors of south). These can be achieved either by creation of greater demand by the industrial countries by the growth of these countries as is piously hoped by our finance minister (in one of his numerous statements in September 1992) or by bargaining for immediate removal of barriers for our exports by the industrial countries in the Gatt negotiations (unlike the gradualist policy of Dunkel) as a return for our sincere effort in abiding word-by-word by the dictates of the prime structural reformers of the World, or by following ardently the policy of greater South-South co-operation for which much lip service has been paid so far, or by a lucky combination of all these methods. One should however note that from an individual country's point of view, lower prices as apart of an export drive policy can be beneficial for that country, provided the rise in quantum of exports more than compensates the fall in prices of exports. But this policy can have an adverse effect on its competitors, who may fail to increase the quantum of their exports, though they are forced to fall in line with the prices of the lowest bidders.

Finally, one interesting question is the extent of the responsiveness of export prices to debt coming from the private sector and the public sector. This would be an interesting piece of research, in the light of the present policy towards greater privatization. This issue, and also the extension of this study to sector and sub-sector levels will be reserved for another paper.

### Notes

1. da costa G.C. (1988): "India's Trade Balance: 1970-71 to 1984-85 Analysis and Policy Implications", Artha Vijnana, sept, V 30, N 3, pp. 221-240.
2. Prasad Ashok Chandra. H. (1992a): "Aid and Trade with North and Middle East OECs: The Real Long-Term Issues in the context of India's Balance of Payments Problem" ISID Discussion Paper, June-July.
3. See:
  - a) Singer H. W. and Sarkar P. (1988): "Debt Pressure and the Transfer Burden of the Third World countries 1980-86" Asian Journal of Economics and Social Studies, Vol 7, No. 4, 1988, pp. 255-267.
  - b) Raffer Kunibert: "The Effects of Oil Prices on Peripheral Net Importers. A Crude Estimate with Special Reference to LDACs" in The Least Developed and the Oil-Rich Arab Countries, Conference volume ed. by Raffer Kunibert and Salih Mohammed, Macmillan, London and Basingstoke (forthcoming).
  - c) Chichilnisky Graciela (1985): "Oil Prices and the Developing countries: The Evidence of the Last Decade" Intereconomics, November/December, pp. 288- 295.
4. The REER data is taken from Pradhan Gopinath (1991): "Incentives for Exports in India: An Evaluation ", Draft paper, National Institute of Public Finance and Policy, New Delhi, July.
5. Sarkar. P. and Singer. H. W. (1991): " Manufactured Exports of Developing Countries and their Terms of Trade since 1965", World Development, Vol 19, No. 4, pp. 333-340.
6. Prasad Ashok Chandra. H. (1992b): "Bilateral Terms of Trade of the Selected Countries from South With their Trading Partners from North and South", Report Prepared for the ECDC division, UNCTAD, Geneva.
7. Sarkar. P. and Singer. H. W. (1988): "Debt Pressure and the Transfer Burden of the Third World Countries 1980-86", Asian Journal of Economics and Social Studies, Vol. 7, No. 4, pp. 255-267.
8. Prasad Ashok Chandra. H. (1992a):op. cit.
9. Prasad Ashok Chandra. H. (1992b):op. cit.
10. See for example, Pradhan Gopinath (1991):op. cit.
11. Singer. H. W. (1991): "Terms of Trade - New Wine And New Bottles?", (mimeo).