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Growth and Instability of Indian Exports to USA: An Empirical Analysis

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Abstract: ***One of the major factors that have considerably undermined the attempts towards economic development of many underdeveloped countries is the instability in their export earnings resulting from price, value and volume fluctuations. Over several decades there have been debates on the export import performance and export import instability. USA has always been the significant trading partner of India. This paper aims to find out the growth rate and instability of Indian exports to USA and also desires to find out the relationship between growth rate and export instability. Eleven commodities were identified to calculate the growth rate and instability index. Compound growth rate is used to calculate growth rate. To estimate the export instability, Coefficient of variation (CV) and Cuddy Della Valle Instability index (CDVI) were used to estimate the variation in the export of and to measure the instability, This study has covered the time period of twenty years i.e., from 2000-01 to 2019-20.***
Keywords: Export Value, Export instability, compound growth rate and Cuddy Della Valle Instability index, United States of America

I. INTRODUCTION

Export instability is defined as short-term (year to year) fluctuations of export proceeds around the trend. One the most imperative and unquestioning concerns following the trade policy reforms is, sustaining export growth with least variability. High export growth accompanied by low level of instability for any commodity is desirable for sustained expansion of exports. Due to geographic concentration, export earnings instability also tends to be higher, because the countries rely on a few export markets for the export of their goods and services. This type of concentration can leads to higher instability because the demand for exports depends on the economic condition of a few countries. As such, any fluctuation in demand in these countries will have a pronounced effect on export earnings. This implies that the more diversified the export market, the lower will be the instability. The theoretical literature suggests that export earnings instability in developing countries is driven by changes in demand and supply factors, (Massell, 1970). Shifts in export supply are usually associated with fluctuations in output or domestic demand for the exported good or service. However, fluctuations in supply are more severe for some goods than for others. For example, agricultural exports are thought to be more affected by the variability of the weather, crop diseases etc. (Naya, 1973) than raw material or manufacture exports.

It is also argued that LDCs face a higher degree of instability in export earnings, which in turn affects their level and efficiency of investment (McBean and Nuguyen, 1980). But export instability is important for its effects on the level of living, internal economic stability, the rate of economic growth and on the distributions of income and wealth. It is also significant because of its effects on internal and external policies of many countries.

Increased fluctuations in export proceeds seem to be arising out of two factors i.e., variations in prices and quantities. Variations in prices and quantities traded do not arise randomly but reflect underlying changes in demand and supply, movements in the demand schedule (supply unchanged) result in prices and quantity in the same direction. Shifts in supply schedule will result (demand unchanged) in price and quantity variations in the opposite direction (Athukorala and Huynh, 1987).

It is argued that LDCs face a higher degree of instability in export earnings, which in turn, affects their efforts at economic development. India is among the developing countries, whose economic development programme is largely dependent on availability of foreign exchange. Therefore, instability in export earnings is expected to hamper the process of economic development (Sharan, 1984). Moreover, instability in exports earnings adds to the uncertainties of planning and the crisis that arise often calls for drastic actions that adversely affect important development projects. Export instability is important because of its effects on the level of living, on internal economic stability, on the rate of economic growth and on the distribution of income and wealth. It is also important because of its effects on the internal and external policies of many countries (Coppock, 1962). In this paper we are making an effort to find the relationship between growth rate and instability.

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II. OBJECTIVES OF THE STUDY

A. The objective of the study is to study the growth and instability of export earnings from the selected commodities exported to USA.

B. To analysis the relationship between the growth rate and export instability.

III. DATA AND METHODOLOGY

The present study is based upon the time series secondary data collected from various published and unpublished sources of Government Agencies. The data for value and volume for principal export and product aggregates for India, NAFTA and the world have been gathered from various issues of Economic Surveys, Government of India, Ministry of finance, New Delhi, Handbook of Statistics on Indian Economy, Reserve Bank of India, Mumbai, various issues of Monthly Statistics of Foreign trade of India, Director General of Commercial Intelligence and Statistics (DGCIS), Calcutta, various issues of International trade Statistics Yearbook UNCTAD. Apart from it the information published in newspaper was also used and the internet services have been also explored. The unit values are calculated by dividing export earnings by the corresponding quantity for each year. The export earnings are taken in the rupees.

A. Period of Analysis

To estimate the growth, instability of export earnings and its impact, the study broadly covers the period of twenty years from 2000-01 to 2019-20. To make analysis of growth and instability by commodity structure and trading partners, the selection of a commodity and trading partner's classification scheme, which is uniform over the time period under study is required as the first step. The classification scheme most widely used for this purpose is the harmonized system of classification at six digit level (HS).

B. Methodology and Techniques of Analysis

1) Estimation of Growth Rates

The compound growth rates indexes are calculated by using the following type of function:

$$Y\ i = a\ (bi)t$$

$$\text{Log } Y = \log a + t \log (bi)$$

Where,

Yi = export value of ith item,

t = time variable.

Annual compound growth rate (r) was computed as:

$$r = [\text{antilog } (bi) - 1]^* 100.$$

2) Estimation of Instability: Instability in export is expected to hamper the process of economic development. The degree of instability in production, export quantity and export value was measured so as to find out the fluctuation in export of eggs during last 20 years. To study the export instability, Coefficient of variation (CV) and Cuddy Della Valle Instability index (CDVI) were used to estimate the variation in the export of eggs. Coefficient of Variation

Coefficient of variation

$$\text{Coefficient of variation (C.V.)} = \frac{\sigma}{\bar{x}} \times 100$$

Where, σ= Standard deviation X = Arithmetic mean The simple coefficient of variation (CV) often contains the trend component and thus over estimates the level of instability in time series data characterized by long term trends. To overcome this problem, the instability index given by Cuddy-Della Valle (1978) which corrects the coefficient of variation was used.

Cuddy Della Valle instability index

$$\text{Instability Index} = CV\sqrt{1 - R^2}$$

Where,

CV= Simple estimates of coefficient of variation in per cent and

R2 = Coefficient of determination

IV. REVIEW OF LITERATURE

Anjani Kumar and Rajni Jain (2013) have studied the trends in growth and instability in Indian agriculture at the district level. Large variations were observed in the productivity of crop sector within the state and for the country as a whole. The data analysis emphasised the important role of modern inputs in increasing the productivity of crop sector such as fertilisers, rainfall, irrigation, human resource and transportation.

Pichad et al. (2014) have studied the growth and instability in area, production and productivity of Chickpea in Amravati district. Compound Annual Growth Rate and Coefficient of Variation were used for the analysis. The results revealed that compound growth rates for area, production and productivity for period II were found positive and significant. The coefficient of variation indicated that instability in Chickpea area exhibited less variation than production and productivity at overall period whereas; production witnessed highest instability as compared to area and productivity at overall period.

Ayalew and Sekar (2016) have studied the trends and regional disparity of maize production in India. Compound Annual Growth Rate, Cuddy Della Valle Index and decomposition analysis were used to examine the data ranging from 1980 to 1981 and 2011 to 2012. The study found an increase in the area and production of maize during the period. Such increase was possible due to increase in yield. The study found that maize performed better in Andhra Pradesh, Bihar, Gujarat, MP, Rajasthan and Uttar Pradesh as increase in yield is coupled with decline in instability due to the adoption of modern varieties of maize.

Harshita Tewari etal (2017 have analysed the growth and instability in area, production and productivity of wheat in Uttar Pradesh. Cuddy Della Valle Index and Decomposition analysis were done for the period 1990-91 to 2013-14. The highest productivity was found in western region and lowest in Bundelkhand region. Also, there was high instability in production and productivity as compared to area under wheat and yield effect was found to be the dominant in the growth of production.

Sanjay etal (2018) in their study assessed the trends, growth and instability in area, production and yield of cotton in Haryana using semi-log linear function, compounded annual growth rate and Cuddy Della Valle Index. The study revealed a positive significant ($P<0.01$) trends with low annual growth rates of area of harvest (2.00%), production (3.99%) and yield (1.66%). Instability was high and also inclined at an annual rate of 30.96% in area, 25.76% in production and 28.04% productivity in the same order. The study, therefore, recommended the development and spread of innovations at an affordable price to farmers. Effective disease and pest control measures should be developed to check the perennial pest infestation of cotton in the state.

P. A. Gade etal (2020) in their study estimated the growth rate and instability in area, production and yield compound growth rate. They used Cuddy-Della Valle Instability Index. Analysis showed compound growth rate of area of chilli in India was negative and significant, whereas production and yield was positive and significant. Also observed that, area consist lower instability rate, whereas the production as well as yield shows higher instability rate.

V. INSTABILITY INDEX FOR INDIA'S EXPORTS TO THE USA

The USA has remained India's one of the major trading partner thus large number of exports are directed towards USA from India. It exhibited the heavy dependence of India upon this market for the supply of foreign exchange. Table 1.1 tabulates the USA's instability index and growth rates for some selected commodities.

Table 1.1 shows the export instability and growth rates in the USA exports from India. Growth rates and Instability indices have been calculated for eleven products namely, fish and crustaceans, molluscs and other aquatic invertebrates (03), organic chemicals (29), Articles of leather, saddler and harness (42), Carpets and other textile floor coverings (57), Articles of apparel and clothing accessories knitted or crocheted (61), Articles of apparel and clothing accessories not knitted or crocheted (62), other made up textile articles; sets; worn clothing and worn textile articles; rags (63), Natural or cultured pearls, precious or semiprecious stones (71), Iron and Steel (72), Articles of iron or steel (73) and Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof (84).

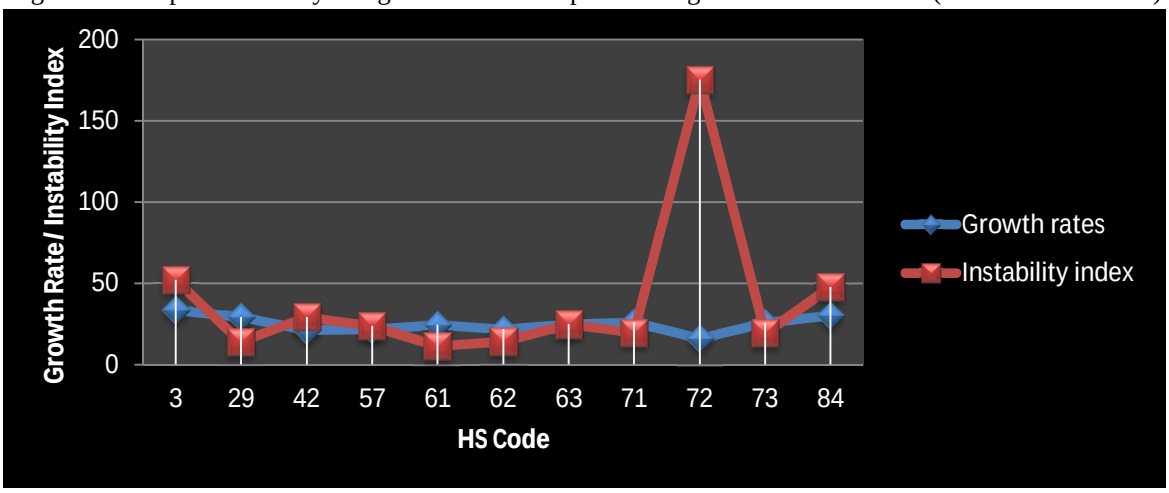
Table 1.1: Export instability and growth rates of export earnings from India to USA: (2000-01 to 2019-20)

HS Code	Growth rates	Instability index
3	33.2	51.70
29	29	13.62
42	21.1	28.86
57	21.4	23.45
61	24.3	11.45
62	21.5	14.08

63	24.6	24.65
71	25.8	19.57
72	16.1	175.23
73	25.4	19.19
84	30.1	47.68

Source: computed on the basis of data from https://tradestat.commerce.gov.in

Figure: 1.1: Export instability and growth rates of export earnings from India to USA: (2000-01 to 2019-20)



Source: Table 1.1

Organic chemicals, Articles of apparel and clothing accessories knitted or crocheted and Articles of apparel and clothing accessories not knitted or crocheted have low instability and higher growth rate. Iron and steel has low growth rate and higher instability index. Fish and crustaceans, molluscs and other aquatic invertebrates and Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof are the commodities with high rate of Instability index. export items like Articles of leather, saddler and harness, Carpets and other textile floor coverings and other made up textile articles; sets; worn clothing and worn textile articles; rags, Natural or cultured pearls, precious or semiprecious stones and Articles of iron or steel are having medium instability index. As far as growth rates are concerned for all export items it ranged from 21.1 per cent to 33.2 per cent.

In view of the high growth these are obviously products which have a bright future in the Indian export basket, and therefore should be promoted. However, the dangers from high instability are such that unrestricted capacity creation should not be allowed unless due care is taken to ensure that the substitute markets exists or are developed. The commodities having high growth rate and low instability are clearly the star performers for the future, and are the products which should be vigorously encouraged. In a number of cases, enhanced subsidies are not required, but impediments to capacity creation and production increases need to be removed. These steps should be taken up on a priority basis, so that the opportunities are not lost by the demand shift to alternative supply sources. A word of prudence needs to be added however, since these are the products of the future, great care needs to be taken that the 'importers' are convinced about the quality and dependability of supply from India. Therefore, strict quality control and schedule maintenance must be imposed on the Indian suppliers of these products. Non-reputed and 'fly-by-night' operators should be kept out to the extent possible. By and large these are the ideal products for production in the EPZs and EOUs.

VI. CONCLUSION

The products having low growth and low Instability, the low levels of instability of these products imply, that they constitute a fairly high priority class of products in the 'importers' import basket. The issue then hinges on the low growth rates. There is need, therefore, to examine these products more carefully in order to identify the causes of low growth. The cause can be on the supply side, i.e., the constraints in production. And if, however, the cause is on the demand side then it may arise for two reasons: first, there may be a gradual saturation; second, India may be considered only as a 'secondary' supplier by the 'importers'. If it is the former, then there is little to be done, and in such a situation capacity expansion over and beyond replacement investment should be discouraged.

If the cause is second, then however, an increased 'marketing' effort, both through official channels and through private promotion, may pay rich dividends. Low Growth high Instability, these would a priori seem to be total losers whose export should be actively depressed. They are the products, which either have very low priority in the international markets, or for which India are considered to be only an incidental source.

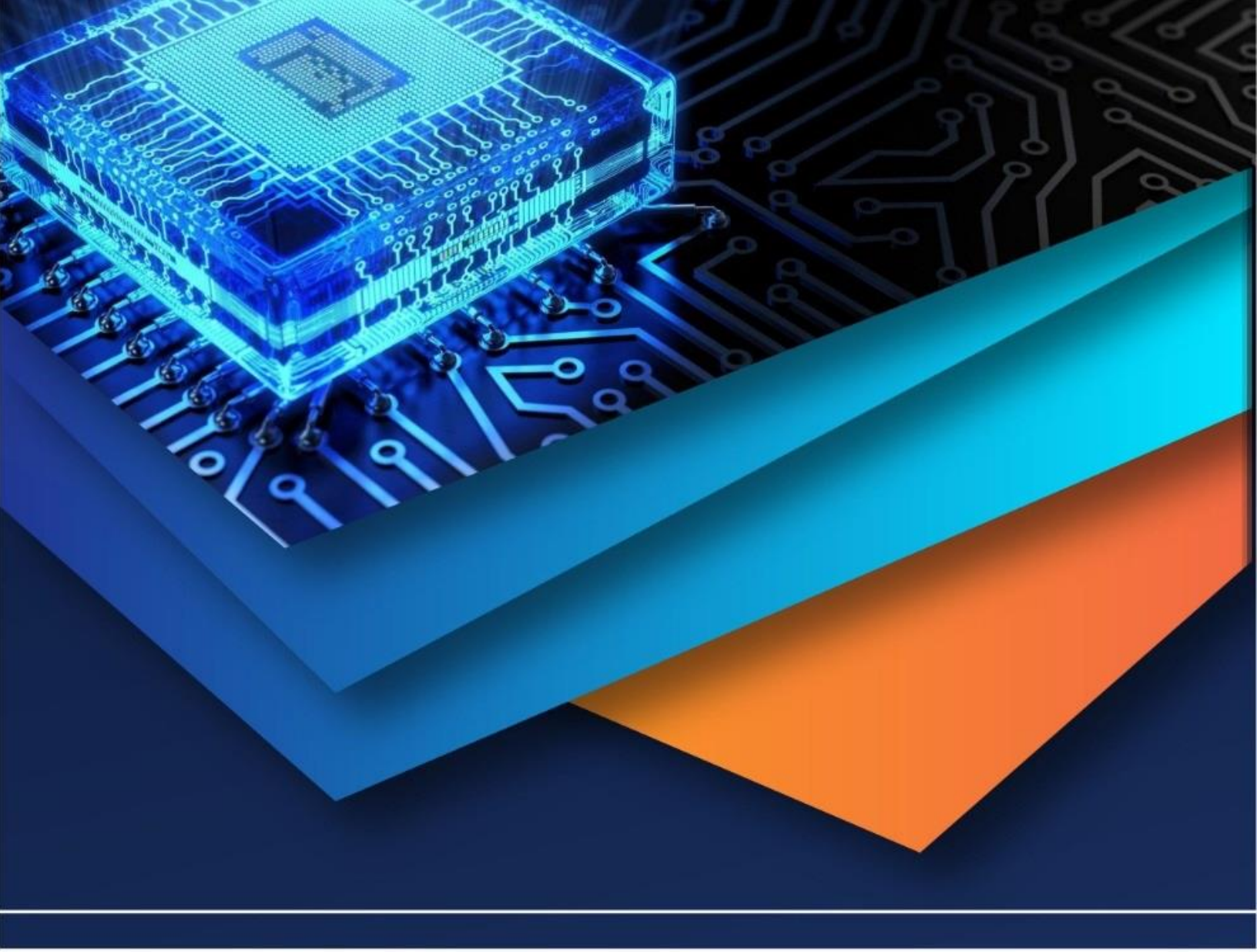
In the case of the commodities having higher instability and higher growth, the rate higher instability more or less offsets the benefits of high growth rate. If instability of these export items can be looked into and measures taken to reduce them then these items can become the star performer of the future. The products having low growth rate and high instability should be discouraged.

In our analysis of Indo-USA trade we found that Export instability has affected economic growth in India, there is a need to reduce reliance on the exports of a few primary commodities like Articles of iron or steel which have low growth rate and high instability index. Exports should be diversified by increasing the share of non-traditional exports.

VII. REFRENCES

[1] Athukorala, P., Huynh, F. C. H., 1987. Export Instability and Growth: Problems and Prospects for the Developing Economies. Croom Helm, London, Wolfeboro, NH.
[2] Birhanu Ayalew, Sekar (2016). "Trends and regional disparity of maize production in India", Journal of Development and Agricultural Economics. 2016; 8(9):193-199.
[3] Chand, Ramesh and S.C Tewari (1998), "Removal of Instability of Indian Exports and Imports of Agricultural commodities," Indian Journal of Agriculture Economics, 46(2): 159-165.
[4] Cuddy, J.D.A. and Della Valle, P.A. (1978). "Measuring the Instability of Time Series Data". Oxford Bulletin of Economics and Statistics, 40, 1, pp. 79-84.
[5] Coppock, J.D. 1977. International Trade Instability, Farnborough: Saxon House.
[6] Economic Survey, (2010-11): Ministry of Finance, Government of India, New Delhi.
[7] Economic Survey, (2014-15): Ministry of Finance, Government of India, New Delhi.
[8] Economic Survey, (2019-20): Ministry of Finance, Government of India, New Delhi.
[9] Kumar, Anjani, Jain, Rajni (2013). "Growth and Instability in Agricultural Productivity: A District Level Analysis," Agricultural Economics Research Review, Agricultural Economics Research Association (India), vol. 0(Conference), 2013, 1-12.
[10] https://tradestat.commerce.gov.in/
[11] Pichad SP, Wagh HJ, Kadam MM. (2014). " Growth in area, production and productivity of chickpea in Amravati district", International Research Journal of Agricultural Eco. & Stat. 2014; 5(2):289-292.
[12] MacBean, I. and Nguyen, D. (1980). "Commonity Concentration and Export Earnings Instability: A Mathematical Analysis",. The Economic Journal, 90(358), 354-62.
[13] Massell, B. (1970). "Export Instability and Economic Structure", The American Economic Review, 60(4), 618-630.
[14] Naya, S. (1973). "Fluctuations in Export Earnings and Economic Patterns of Asian Countries", Economic Development and Cultural Change, 21(4), 629-41.

LOW INSTABILITY	MEDIUM INSTABILITY	HIGH INSTABILITY
BETWEEN 0-15	GREATER THAN 15 AND LESS THAN 30	GREATER THAN 30



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