SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS

In the process of economic development, international trade is the major driver of global growth and prosperity. The classical and neo-classical economists attached so much importance to international trade that they regarded it as “an engine of growth”. Moreover, the relationship between trade and economic development has received greater attention during past few decades. Exports play a vital role in foreign trade as well as in economic development. Exports may lead to greater capacity utilization, economies of scale, incentives for technological improvement and efficient management due to competitive pressure of other countries. Growth of exports of a country stimulates domestic production and employment thus; exports also contribute to an improvement in a nation’s welfare. Exports are particularly important for developing economies where traded goods sectors have an important share in gross domestic product (GDP).

The instability of exports of developing countries has always been a major issue. Developing countries, in fact, insist on identifying export instability as an important obstacle to development, though most of the inquiries conducted in the last thirty years about the causes and consequences of such instability seem to have produced controversial results. Exports instability is important because of its effects on internal stability, on the rate of economic growth and on the distribution in income and wealth. Economists have expressed concern about export instability, because it affects the less developed countries (LDCs) more than the developed ones. It is commonly thought that fluctuations in LDC export earnings generate domestic instability (with a consequent welfare loss), complicate the task of development planning, and reduce the efficiency with which investment resources are used (Massell, 1970).

In general, export instability can be defined as year to year fluctuations in export earnings. Mathematically, “It can be expressed as the difference between actual value of export and estimated value of export” (Devkota, 2004). “Export instability is an average of the unexpected or unpredictable changes in export revenue over a given period of time” (Glezakos, 1973). Export instability is usually
measured as the short-term or yearly fluctuations of export proceeds around the growth trend of exports. Thus, in measuring instability, the variation net of the growth trend of exports is considered. To construct an export instability index, it is necessary first to eliminate the trend. Otherwise, a country whose exports are growing rapidly even at constant rate will score high on instability scale (Naya, 1973 and Massell, 1970). As per The United Nations Secretariat, 1952, “Instability index is the absolute difference in the value of export from year to year, expressing this difference as a percentage of larger of the two annual values” (Devcota, 2004).

The debate has also centered on whether export instability has a positive or negative influence on growth. This issue has important development policy implications for countries. If export instability is found to have an adverse effect then there may be a need to build up exchange reserves in order to smooth out fluctuations in export earnings in the short-run. Whereas in long-run strategic efforts are needed for increasing the diversity of exports through appropriate policy initiatives (Brempong, 1991).

**Objectives of Study:**

The present study entitled as “Sources of Instability, Diversification of Exports and Economic Growth in India” has the following objectives:

1) To study the pattern of growth and structure of India’s exports during the study period (commodity-wise as well as destination-wise)

2) To analyse the category-wise and sub category-wise instability of India’s exports

3) To measure commodity concentration of India’s exports

4) To analyse the instability of exports to major markets *i.e.* geographical instability

5) To measure geographical concentration of India’s exports

6) To analyse the causes/sources of export instability

7) To examine the association between export instability and economic growth.
Plan of Study:

This study consists of twelve chapters. Chapter I deals with introduction of the study. Chapter II presents a detailed review of literature related to the study topic. Chapter III consists of the description of data sources and various analytical tools/techniques used for analysis. Chapter IV studies the growth pattern and structural changes of India’s total exports and its categories/sub categories. Chapter V analyses the commodity concentration/diversification of India’s exports. Chapter VI studies the direction of India’s exports. Chapter VII analyses the geographical concentration/diversification of India’s exports. Chapter VIII examined the export instability of India’s exports, category wise and sub-category wise. Chapter IX deals with geographical export instability analysis. Chapter X studies the various sources of export instability in India. Chapter XI examined the relationship, if any between export instability and economic growth with the help of causality analysis. Chapter XII consists of summaries the findings of the study and brings out the conclusions and policy implications.

Database:

The study is based on secondary data and conducts a detailed analysis of India’s exports based on commodity wise and destination wise classification of exports. The study has examined the pattern of growth, structure, concentration and instability of India’s exports (both commodity wise and geographical). Besides, the study also examined the sources or causes of export instability and relationship between export instability and economic growth. The data has been taken from Directorate General of Commercial Intelligence and Statistics (DGCIS) published by Reserve Bank of India in Handbook of Statistics on Indian Economy (2012-13) for the period 1987-88 to 2012-13. The data for total exports and also for its categories/sub categories were collected at current prices. The data were deflated by using common base year i.e. 1999-00, for studying growth structure of India’s exports.

The pattern of growth of India’s total exports and its categories/sub categories (commodity wise and destination wise) was examined for the period of 1987-88 to 2012-13 (at current as well as constant prices). The structure of India’s exports was also analysed for the above mentioned study period. The analysis of
commodity wise export instability was used to measure export fluctuations for over all period of study (i.e.1987-88 to 2012-13) as well as for the sub periods i.e. period I (i.e. 1987-88 to 1999-00) and period II (i.e. 2000-01 to 2012-13). Geographical export instability of selected commodities to principal countries (i.e. exports of seventeen major commodities to eleven principal countries) has also been analysed for the period 1990-91 to 2012-13. Commodity concentration of exports was studied for the period 1987-88 to 2012-13 (category wise and sub category wise) and geographical concentration of selected commodities to principal countries India’s exports for the period 1990-91 to 2012-13. Various significant causes/sources of export instability were examined for the period 1987-88 to 2012-13. The analysis of causality between export instability and economic growth has been analysed for the long time span i.e. 1971-72 to 2012-13.

Methodology:

Depending upon the nature of analysis in the study, a variety of statistical/ econometric tools & techniques were used in the study. Thus, data has been analysed by calculating growth rates, percentage shares, regression equations, various indices (instability and concentration) etc. with the help of appropriate method. The methodology used for various types of analysis is explained below:

a) In order to study the growth pattern of Indian exports (commodity wise and destination wise), the compound growth rates have been calculated for the period 1987-88 to 2012-13 and decade wise i.e.1991-92 to 2000-01 and 2001-02 to 2010-11 at current as well as constant prices with the base year 1999-00. The growth rates have been calculated by fitting the exponential function. In case of commodity wise exports, Unit Value Indices (UVI) with base year 1999-00 were used for deflation. As we have non- availability of Unit Value Indices (UVI) with common base year of 1999-00 for whole time series, so base year was shifted by using base shifting method of index number.

b) For analyzing the structure of India’s exports, shares of various commodities i.e. categories/ sub categories and destination wise exports was calculated in the form of percentages. The analysis of structural changes in India’s export sector has been conducted at current as well as constant prices.
In order to find out the extent of export instability, nine different measures of instability have been used in the analysis. These different indices of instability are used to measure export fluctuations for over all period of study \textit{(i.e. 1987-88 to 2012-13)} as well as for the sub periods \textit{i.e.} period I \textit{(i.e. 1987-88 to 1999-00)} and period II \textit{(i.e. 2000-01 to 2012-13)}. In literature we have found a large number of measures of export instability given by different economists such as:

- Export Earning Instability Index (EEII\textsubscript{1}) is given by Coppock (1962) as measured through log variance.
- Export Earning Instability Index (EEII\textsubscript{2}) is given by Massell (1964) as trend corrected index, which refers to average annual change in export commodity.
- Export Earning Instability Index (EEII\textsubscript{3}) as defined by Kingston (1973).
- Export Earning Instability Index (EEII\textsubscript{4}) measured by Glezakos (1973) as arithmetic mean of the absolute values of the yearly changes in a time series, duly corrected for the trend and expressed as a percentage of the average of all observations.
- Export Earning Instability Index (EEII\textsubscript{5}) as given by Cubby and Della Valle (1979).
- Export Earning Instability Index (EEII\textsubscript{6}) as measured by Ray (1983) with the help of standard deviations of the natural log of the ratio of successive values.
- Export Earning Instability Index (EEII\textsubscript{7}) as given by Glezakos (1984) which measured instability through log linear trend.
- Export Earning Instability Index (EEII\textsubscript{8}) is defined as a linear trend based measure. Export instability can be measured with the help of Normalized Standard Error.
- Export Earning Instability Index (EEII\textsubscript{9}) is based on exponential trend measure. The calculation of export instability through exponential trend is similar to the measure based on linear trend.

Most of the measures are based on trend corrected variations (EEII\textsubscript{2}, EEII\textsubscript{3}, EEII\textsubscript{4}, EEII\textsubscript{7}, EEII\textsubscript{8}, EEII\textsubscript{9}) and some of them measure the variability (EEII\textsubscript{1}, EEII\textsubscript{5}, EEII\textsubscript{6}). We have used all these measures in order to have broader idea regarding the extent of export instability in India. However, export instability index based on exponential trend is considered the best measure of instability. In
the instability indices analysis EEII₁ and EEII₆ tend to have very low values at constant as well as current prices as compared to other export instability indices. Various measures sometimes give results in different directions. In order to have a comparative picture of pattern of instability of various categories and sub categories of exports, they are classified into four groups by using range method. These groups are very high instability group, high instability group, medium instability group and low instability group.

d) In the analysis of commodity concentration, the present study uses five concentration measures for commodity wise as well as destination wise data. All these concentration measures are based on the shares of individual commodities/category or destination in India’s total exports for every year of the study period. In the commodity wise concentration analysis, we have conducted analysis for 11 major-categories and 43 sub-categories of India’s exports. In the analysis of geographical concentration of India’s exports data is available for 50 countries along with various country groupings. In case of exports of selected commodities to principal countries (17 major commodities), data is available for 11 major export markets for each commodities and for the time period 1990-91 to 2012-13.

e) The measures of concentration can be broadly divided into three groups. The first group comprises of discrete measures of concentration. In such kind of concentration measures, only a few commodities’ or destinations’ shares have been taken for the analysis. Within discrete measures, the first measure is concentration ratio. The measure ranges from zero to one. If the value of CR is close zero it means that the largest category/destination of exports let’s say, Y is earning a small share in the total export earnings. In other words, the value of concentration closes to zero showing low concentration. If CR is close to unity, this means that the largest category/destination of exports let’s say, X is responsible for almost entire export earnings. In the category wise analysis, CR (2), CR (4) and CR (8) has been measured. For sub-category wise analysis CR (4), CR (8) or CR (16) has been measured. In destination wise analysis of exports, CR (2), CR (4) and CR (8) have been measured. In case of analysis of exports of selected commodities to principal countries, concentration ratio has
been measured by CR (2) and CR (4). There is no rule for the determination of the value of k, so the number of categories included in the Concentration ratio is rather an arbitrary decision. These ratios are widely used because of their simplicity and limited data requirements. In the concentration analysis, second group includes summary measures like Hirschman- Herfindhal index (HH), Rosenbluth-Hall-Tideman (RHT) and Entropy (H) measure. Third group of concentration measure has collective features of both discrete as well as summary measures i.e. Comprehensive Concentration Index (CCI).

f) Multiple regression analysis has been applied to find out the significant sources of export instability in India. For this purpose, we have developed a model in which $I_{TE}$ is considered as total export earning instability in India is dependent variable, $I_{PX}$ is instability index of primary exports, $I_{CX}$ is instability index of chemical and related products exports, $I_{EX}$ is instability index of engineering exports, $I_{TX}$ is instability index of textile& textile products exports, $I_{PEX}$ is instability index of petroleum products exports, $CC_X$ is commodity concentration index of exports, $GC_X$ is geographical concentration index of exports are independent variables. In this analysis of sources of export instability in India, yearly export instability index has been calculated as absolute percentage deviation of actual value of total commodity exports earning from the estimated values of the same commodities exports by using exponential trend line.

g) Further, an attempt was made to measure the relationship between exports, export instability and economic growth by using various techniques including multiple regression, co-integration analysis and causality analysis. Both Johansen cointegration and Granger causality analysis require long term data and for that purpose the period 1970-71 to 2012-13 has been selected. In order to study the impact of exports, export instability, gross capital formation on economic growth, multiple regression analysis has been used for different time periods. The regression analysis has been conducted for very long time period 1970-71 to 2012-13 and also for the time period 1987-88 to 2012-13.

h) In order to know the causal relationship between variables, there are mainly three steps. The first step is to test for stationarity of the series with the help of unit root tests. The second step is to test for cointegration only if the considered variables are non-stationary in their levels and stationary in first difference. Once
the cointegration has been established amongst the variables, the third step is to formulate the causal relationship between export instability and economic growth (Kaushik and Klein, 2007).

Findings:
Chapter wise findings of the study have been summarized as below:

Chapter-IV: Growth and Structural Changes in India’s Exports

- At current prices, compound growth rate of India’s exports was found to be 19.09 per cent during the study period 1987-88 to 2012-13. Whereas, India’s exports have grown at the rate 18.97 per cent in the decade of 1991-92 to 2000-01 and at the rate of 19.56 per cent in the decade of 2001-02 to 2010-11.

- The export categories which experienced very high growth i.e. more than 20 per cent include cotton, sugar & molasses, meat & meat preparations, basic chemical, pharmaceuticals & cosmetics, plastic & linoleum products, rubber, glass, paints, enamels products, manufactures of metals, machinery & instruments, transport equipment, electronic goods, manmade yarn fabrics, madeups etc, manmade staple fiber, petroleum products and other exports.

- The export categories which experienced 10 to 20 per cent growth rate include coffee, rice, tobacco, spices, oil meals, fruits, processed fruits, marine, iron ore, leather & manufactures, rubber, glass, paints, enamels and products, woolen yarn, fabrics madeups etc, readymade garments, coir & coir products and gems & jewellery. While 0 to 10 per cent growth rate was experienced by commodities including tea, wheat, mica, natural silk yarn, fabrics, madeups, etc inc. silk waste, jute & jute products and handicrafts. Therefore, the analysis shows that high growth export categories are basically manufactured goods, engineering goods and petroleum products. The low growth export categories include some traditional exports like tea, jute, handicraft and some primary products. Most of the medium export growth category also includes many traditional exports, primary exports and gems & jewellery.
The current structure of India’s exports shows that two major export categories with more than 10 per cent share in total exports are gems & jewellery and petroleum exports. Other major export categories with export shares of 2 per cent to 5 per cent are rice, plastic & linoleum products, iron & steel, manufacture of metals, electronic goods, other engineering goods, cotton yarn, fabrics, madeups etc, readymade garments and other exports.

The export categories whose shares in total exports have increased during the study period are categorized as leading exports. Similarly the export categories whose export shares have declined during the study period are categorized as lagging exports. Leading exports group comprises of basic chemical, pharmaceuticals & cosmetics, rubber, glass, paints, enamels products, manufactures of metals, machinery & instruments, transport equipment, electronic goods, other ores & minerals, other engineering goods, petroleum products and other exports. Lagging export group comprises of tea, coffee, rice, cashew, spices, oil meals, processed fruits, marine, iron ore, leather manufactures, cotton yarn, fabrics, madeups etc, readymade garments, jute & jute manufactures, carpets, gems & jewellery and handicraft exports.

Chapter V: Commodity Concentration/Diversification of India’s Exports

In this chapter, five concentration measures have been used and all these are based on the shares of individual commodities/category in India’s total exports for every year of the study period. The comparison of concentration values indicates that the discrete concentration measures CR(2) and CR(4) and CR(8) for category wise exports and CR(4), CR(8), CR(16) for sub-category wise exports, give high concentration figures as compared to the summary and CCI measures. CCI, which has the combination of features of both summary and discrete measures, gives values which are between the values of discrete and summary measures. Of all the concentration measures, H gives the lower values for all the years of study period. The RHT, HH and
H measures provide similar movements for concentration values and these values are very close to each other in magnitude.

- Concentration analysis concludes that export sector is dominated by a few categories like manufactured goods, chemical & related products, engineering products, gems and jewellery and few sub categories basic chemicals, pharmaceuticals & cosmetics, readymade garments, leather and manufactures, iron ore, petroleum products, cotton yarn, fabrics, madeups etc.

- The results of concentration ratio show that in category wise analysis of exports, category concentration has declined during study period (at constant as well at current prices). On the other hand sub category wise analysis of exports shows that commodity concentration has increased during study period. Therefore, the above analysis clearly reflects that Indian export sector has failed to diversify sufficiently despite liberal trade policies.

**Chapter VI: Direction of India’s Exports**

In this chapter geographical direction of India’s aggregate exports sector has been analysed. The analysis on structural changes in the direction of exports of selected commodities to principal markets has also been discussed. Direction of exports can be studied by measuring percentage shares of various countries/group of countries in India’s exports at aggregate level. India’s trade partners can be broadly divided into five groups: OECD (Organization for Economic Co-operation and Development), OPEC (Organization of the Petroleum Exporting Countries), EE (Eastern Europe), Developing countries and other/unspecified countries.

- India’s exports to OECD countries have grown at the rate of 18.69 percent during the period from 1991-92 to 2000-01, which declined to 14.71 per cent during the period of 2001-02 to 2010-11, while they have grown at the rate of 16.24 per cent during 1987-88 to 2012-13.

- India’s exports to OPEC countries have grown at the rate of 24.16 per cent during the decade of 1991-92 to 2000-01, which increased to 28.15 per cent during the decade of 2001-02 to 2010-11, while it has grown at the rate of 25.37 per cent during 1987-88 to 2012-13.
• Exports to Eastern European countries group have grown at the rate of 2.17 per cent during the decade of 1991-92 to 2000-01, which increased to 4.47 per cent during the decade of 2001-02 to 2010-11. The compound growth rate of exports to Eastern Europe was found to be 6.15 per cent for the overall study period.

• Exports to developing countries have grown at the rate of 25.36 per cent during the period from 1991-92 to 2000-01, which declined to 23.63 per cent during 2001-02 to 2010-11, while it has grown at the rate of 23.92 per cent during the whole study period. India’s Exports to Other/unspecified countries have grown at negative growth rate of -8.10 per cent during the first decade of 1991-92 to 2000-01, which became positive i.e. 9.95 per cent during the second decade of 2001-02 to 2010-11. These exports have grown at the rate of 16.55 per cent during 1987-88 to 2012-13.

• The OECD (Organization for Economic Co-operation and Development) group has always accounted for a major portion of India's exports. However, the share of this group has decreased from 59 per cent in 1987-88 to 34 per cent in 2012-13. The share of OPEC (Organization of Petroleum Exporting Countries) has rapidly increased from 6 per cent in 1987-88 to 21 per cent in 2012-13, while the share of Eastern Europe has decreased from 17 to 1 per cent for the respective years. The share of developing nations has continuously increased from 14 per cent in 1987-88 to 42 per cent in 2012-13. Other/unspecified countries share of exports has almost remained lower as compared to other groups i.e. 4 per cent in 1987-88 and 2 per cent in 2012-13.

Chapter VII: Geographical Concentration/Diversification of India’s Exports

In this chapter a detailed analysis of direction of India’s exports has been made. In order to study, whether or not geographical structure of India’s exports has diversified over time, various concentration measures have been used by taking shares of 50 countries for 26 years in India’s exports.
• The geographical concentration analysis shows that USA is in top 2 countries in terms of shares in total exports of India for all the 26 years of the study period, whereas UAE is for 12 years and Japan is for 5 years. Russia, Hong Kong and UK are among top 2 export destination for 4 years, 3 years and 2 years of the study period respectively. CR (4) which shows top four export destinations of India includes USA and UAE for 26 years and 15 years of study period. The exports to Germany, Japan and U.K are in top four destinations for 11 years, 10 years and 9 years. The export shares of U.K, Hong Kong, other Asian developing countries and UAE are in top eight countries for 23 years, 24 years, 23 years and 22 years respectively. Remaining countries (i.e. Belgium, Germany, Japan, Russia, Other Eastern Europe, China, Singapore, Latin American and other/ unspecifed countries) are in below 17 years under CR (8).

In this chapter we have also calculated geographical concentration of seventeen major categories of India’s exports for which data was available.

• The analysis shows that the values of concentration indices have fluctuated during the period under study. Still, on the basis of initial period of study and recent period of study we can say that the geographical concentration has increased in case of rice, tobacco, spices, iron ore, gems & jewellery, chemical & allied products, cotton yarn and readymade garments exports.

• On the contrary geographical concentration has declined in case of tea, coffee, cashew, oil meals and jute products exports, while Marine products, leather & leather manufactures, engineering products and carpet exports did not experience much change in concentration values during the study period.

• As country-wise data is available only for top ten countries and the remaining ones are clubbed as other countries category. This ‘other countries’ category sometimes accounted for very high share of total exports. This category’s share was more than 50 per cent for rice, spices, chemical & allied products, engineering products, cotton yarn and jute products and more than 25 per cent for tea, coffee, cashew, oil meals, marine products, leather products, readymade garment and carpets exports. However this can be taken
as an indication of geographical diversification of India’s exports of these categories.

Chapter VIII: Export Instability in India: Category Wise and Sub-Category Wise Analysis

This chapter gives a detailed analysis of instability of India’s exports for 11 major categories and 43 sub- categories (at current and constant prices).

- The findings of the study show that at current prices, petroleum products exports of India fall under the group of very high export instability. Engineering goods, handicrafts, chemical & related products, other manufactured exports and other exports have high export instability, while ores & minerals category has medium export instability. Leather & leather manufacture, textile & textile products and gems & jewellery products have low instability during the period of study.

- Group-wise classification of export instability at constant prices shows that handicrafts and petroleum products exports of India fall under very high export instability. High export instability is found in case of other manufactured goods while ores & minerals category and others has medium export instability. Low export instability was observed in case of agriculture and allied products, leather & leather manufactures, chemical & related products, engineering goods, textile & textile products during the period from 1987-88 to 2012-13.

- Sub-category wise export instability at current prices shows that wheat, cotton, sugar & molasses and petroleum products have very high instability over the period of study. Only other agriculture and allied products, iron ore and handicrafts have high export instability, while rice, tobacco, oil meals, fruits, processed fruits, basic chemicals, pharmaceuticals & cosmetics, plastic and linoleum products, manufacture of metals, machinery & instruments, electronic goods, other electronic goods, gems & jewellery, other manufactured exports and other exports fall under medium export instability category. Tea, coffee, cashew, spices, marine, mica, others agricultural and allied products, leather & manufactures, rubber, glass, paints, enamels & products, residual chemical and allied products, cotton yarn, fabrics, makeups etc, natural silk yarn, fabrics, makeups etc inc. silk waste, manmade yarn, fabrics, makeups etc., readymade
garments, jute & jute products, coir & coir manufactures and carpets sub-categories have lower export instability during the study period.

- Sub-category wise export instability in India at constant prices shows that wheat, cotton and sugar & molasses and handicraft have very high value of export instability, while manmade staple fiber products and woolen yarn, fabrics, madeups etc. products come under high instability category. Rice, fruits, other agricultural products, iron ore, mica, other ores & minerals, electronic goods, natural silk yarn, fabrics, madeups etc inc. silk waste, jute & jute manufactures, coir & coir manufactures, other exports have medium export instability, while remaining commodities namely; tea, coffee, tobacco, cashew, spices, oil meals, processed fruits, marine, meat & meat preparations, leather and manufactures, basic chemicals, pharmaceuticals & cosmetics, plastic and linoleum products, plastic and linoleum products, rubber, glass, paints, enamels and products, residual chemicals and allied products, manufacture of metals, machinery & instruments, others engineering goods, manmade yarn, fabrics, madeups etc., readymade garments, carpets, gems & jewellery and other manufactured goods categories have low instability under study.

- The relationship between exports instability and exports growth (CAGR) has also been analysed in this chapter by using Karl Pearson coefficient of correlation during the period 1987-88 to 2012-13. For this purpose linear export instability (EEII$_8^8$) and exponential export instability (EEII$_9^9$) are being used. The positive and significant correlation between export instability indices and export growth rates for various export categories shows that instability is being caused by higher growth of certain categories. This type of instability does not have negative implication for export sector growth and overall growth of an economy. However, the relationship between export instability and export growth rates at constant prices has been found to be non significant for both the measures of instability. This is primarily due to the fact that instability is higher at current prices than at constant prices. Hence, instability is more caused by price fluctuations rather than volume fluctuations.
Chapter IX: Geographical Export Instability Analysis

In this chapter, we have analysed instability of India’s exports to its trading partners i.e. geographical instability of India’s exports for the period 1987-88 to 2012-13.

- Broadly, the value of instability is higher in case of Eastern Europe, Developing Countries and OPEC, while lower export instability is experienced in case of exports to OECD and others category countries during the study period.
- Among OECD countries, higher value of instability has been found for other OECD countries and North American counties, while lower geographical export instability has been observed in case of Asia & Oceania countries and EU counties.
- Among OPEC, higher value of instability has been observed in case of Iraq, Saudi Arabia and Kuwait, while instability is lower in case of UAE, Iran and Indonesia.
- In case of Eastern Europe, geographical instability of exports is higher in case of Romania followed by Russia and other Eastern Europe countries.
- In case of exports to developing countries, the value of geographical export instability is found to be higher in case of Latin American countries followed by Asian and African countries.

We have also calculated instability indices for seventeen major export categories for the period 1990-91 to 2012-13.

- Geographical export instability of India’s tea exports is higher in case of Iraq, Iran and Kazakhstan countries, while export instability is lower in case of USA, Germany and Japan. Higher value of export instability of Coffee products exports of India has been found in case of USA, Spain and Netherland; whereas value of export instability is relatively lower in case of Italy, Russia and others countries.
- For rice exports higher value of instability has been found in case Bangladesh, South Africa and other countries, while instability is relatively lower in case of Saudi Arabia, Kuwait and UK. The value of export
instability for tobacco is higher in case of Belgium, USA and Saudi Arabia; while India’s tobacco exports to UAE, Russia and other countries have shown relatively lower value of instability.

- Spices exports of India to Singapore, Saudi Arabia and other countries have higher value of instability, whereas instability is relatively lower in case of UK, Japan and Sri Lanka. Cashew export shows higher instability in case of France, Italy and Canada, while lower values of instability have been found in case of UAE, Japan and Netherlands.

- Oil meals export instability has been found to be higher in case of Vietnam, Bangladesh and Russia. India’s exports of oil meals show relatively lower export instability in the context of Sri Lanka, Korea and Japan. India’s marine products exports to Chinese Taipei, China and Vietnam show higher value of instability, while it shows relatively lower instability for Spain, UK and Italy.

- Iron ore exports instability has been observed to be higher in case of Chile, South Africa and Pakistan. While India’s iron ore exports to Japan, Korea and Chinese Taipei have shown relatively lower value of instability. Higher value of instability of India’s leather & manufacture exports has been observed in case of Russia Hong Kong and Spain, while lower value of instability in case of UK, Netherlands and France during the period 1990-91 to 2012-13.

- Gems & jewellery exports instability has been found to be higher in case of Singapore, Israel and other countries. India’s exports of gems & jewellery exports to Hong Kong, Japan and USA show relatively lower export instability. Chemical & allied products exports instability has been found to be higher in the case of Germany, Bangladesh and Italy, whereas India’s chemical & allied products exports to UK, Hong Kong and other countries have relatively lower values of instability.

- Higher values of engineering export instability has been observed in case of Italy, Germany and Hong Kong, whereas it shows relatively lower values of instability of India’s engineering goods exports to UK, China and other/rest of the countries. Geographical export instability of cotton yarn, fabrics, madeups etc has been higher in case of Hong Kong, Bangladesh and
Mauritius, while lower value of instability has been found in case of Germany, UAE and other countries.

- India’s readymade garments exports instability has been observed to be higher in the context of Russia, Canada and Italy during the period under study. Lower value of instability has been found in the context of UK, Netherlands and Germany for readymade garments. The value of export instability is higher in case of Italy, Turkey and Egypt. While geographical export instability of India’s jute & jute products shows relatively lower values of export instability in case of UK, Australia and Germany. Higher export instability has been found in case of Saudi Arabia, Japan and UK for carpets exports, while it show lower export instability in the context of Belgium, Germany and Australia.

**Chapter X: Sources of Export Instability in India**

In order to identify the important sources of export instability in India, multiple regression analysis has been used during the period 1987-88 to 2012-13.

- The causes of export instability are estimated by taking total export earning instability as dependent variable and instability index of primary exports, instability index of chemical and related products exports, instability index of engineering exports, instability index of textile& textile products exports, instability index of petroleum products exports, commodity concentration index of exports, geographical concentration index of exports as independent variables in the model.

- Export instability of textile & textile products and export instability of petroleum products have significant and negative relationship with total export instability of India. This indicates that as value of these variables increases, total export instability falls, thus reflecting that it has put downward pressure on total instability. Commodity concentration has negative but non-significant relationship with India’s export instability. On the other hand, export instability of primary products, chemical products and engineering products have significant and positive relationship with total export instability. Therefore, it clearly shows that as export instability of
these variables increases, overall export instability also increases and vice-versa.

- Thus, the analysis of sources of export instability shows that primary products export instability, chemical and related products export instability, engineering goods export instability and geographical concentration are the main sources of export instability out of seven sources considered in the present study for the period 1987-88 to 2012-13. The commodity concentration of India’s exports is high throughout the study period and has not changed much, as a result of which this variable is not statistically significant.

Chapter XI: Exports Instability and Economic Growth in India: A Causality Analysis

The present chapter makes an effort to identify the causal relationship between exports, export instability and economic growth.

- In order to study the impact of exports, export instability, gross capital formation on economic growth, multiple regression analysis has been used for different time periods. The regression analysis has been conducted for very long time period 1970-71 to 2012-13 and also for the time period 1987-88 to 2012-13. The analysis for the time span of 1987-88 to 2012-13 was conducted as this was the time span when export liberalization and fast export growth happened in India. Export liberalization started in mid-80s in India while further impetus was given to liberalization after 1991. Another reason was variation in results with the change in selected time period.

- The test of stationarity shows that all the variables (i.e. economic growth, exports, export instability and investment) are non stationary at the levels but stationarity at the first difference. The results of cointegration analysis show the absence of long run relationship between variables. Thus, it does not support long run relationship between export instability and economic growth. Similarly, Granger causality analysis also does not support any causal relationship between export instability and economic growth. However, the analysis does support growth led export hypothesis in India.
Multiple regression analysis for the longer time span of 1970-71 to 2012-13 does not show significant relationship between export instability and economic growth. But when we restrict our time span to 1987-88 to 2012-13, which was the time period when export liberalization and fast export growth happened in India, results do indicate significant negative impact of export instability on economic growth. Other techniques could not be applied for shorter time span due to statistical limitations.

**Policy Implications:**

Some of the useful policy implications which could be drawn from findings of the study are:

- Exports play a very important role in economic growth in a developing country like India. Hence there is a need to give further impetus to exports growth in India.
- Results clearly show lack of diversification of India’s exports basket. This is mainly due to lack luster growth of Indian manufacturing sector especially in the last decade. Hence there is a need to take forward the reforms process so that manufacturing sector grows and becomes globally competitive.
- There is a need to adopt commodity based export promotion strategy, which involves incentives for exportable output, so that produced products can be sold in the foreign market at competitive prices.
- Geographical concentration of India’s exports has declined and south-south trade has become more important. This is a healthy development, but the opportunities of trade within the developing world can be optimally utilized only if India diversifies its export basket and produce quality products at competitive prices.
- India’s export sector is quite volatile as shown by the instability analysis. The major export categories fall in the group of high or medium instability. Though instability is caused by demand as well as supply side factors but it is important to control the supply side factors so as to have sustained growth of major exports.
- Geographically India is on the path of diversification of its export market which will reduce the instability of its export earnings as well. There is a
further need to strengthen the export sector so that it can compete in the international market with other competitors especially China and other Asian countries.

- The analysis of sources of export instability clearly highlights the contribution of dependence on a few export categories as the cause of export instability. The lack of diversification of export sectors both commodity wise and category-wise is also responsible for high export instability. All these factors need to be taken care of for sustained and stable growth of India’s exports.

- In order to reduce negative impact of export fluctuations, India should specialize in those products in which it has comparative advantage. Therefore efforts should be made to pursue policies, which aim at promoting export oriented measures so that India secures rapid and sustained growth in export sectors.

- Exports and economic growth relationship analysis in Indian context shows that Indian exports have not grown enough to support export led growth hypothesis in Indian context. For this slow growth of Indian economy especially the manufacturing sector is responsible. Thus there is a need for wide spread reforms so as to stimulate more growth and exports in India.

**Limitations of the study**

The present study has certain limitations, which are as follows:

1. Study is based on secondary data and even at sub-category level data is quite aggregative which might have affected the statistical analysis of the study.
2. Comparable data is available from 1987-88 onwards and hence study could not been extended backward for category and sub category wise analysis.
3. Commodity wise data on direction of trade is available for only a limited number of countries.