REVIEW OF LITERATURE

The review of literature helps in formulation of scope of study and in identification of research gaps. We have reviewed a large number of national and international studies (more than 70) related to the research topic. The studies mainly highlight the adverse impact of export instability especially in case of developing countries. Very few comprehensive studies have been conducted on instability of exports in India; commodity wise as well as destination wise. Hence the present study will fill the gaps in research and will provide crucial insight on the research topic.

This chapter has been divided into four sections. Section I reviews various studies on nature and extent of export instability in India and other countries. Section II consists of studies relating to the relationship between export instability and economic growth. The section III reviews studies on sources or causes of export instability in different countries of the world. Section IV covers the studies based on relationship between export diversification and economic growth. A brief review of the related studies is presented in the chronological order as below:

Section-I

According to the traditional theory, export instability exists in LDCs because they are usually exporters of primary products which are traded in a very volatile world market. The fluctuations in export earnings seem to have adverse effects on growth in many ways. Askari and Weil (1974) examined stability of export earnings in the context of 70 LDC’s over the period 1954 to 1968. Further, time period of the study was sub-divided into two periods i.e. period I (1954 to1959) and period II (1960 to 1967) to examine the structural changes in exports market. They also divided total exports into major /minor and manufactured/ non-manufactured exports. The study tried to test whether less developed countries (LDCs) having large percentage of exports of primary products suffer from high degree of export instability or not. Moreover, export earnings instability of all countries increased somewhat from period I to period II. They concluded that instability appears to be a larger problem for the exporters of manufactured than non-manufactured products.
In the end study concluded that the results do not indicate that LDC’s with high dependence on primary products suffer greater instability.

**Murray (1978)** examined the instability of export prices and volume and the relative importance of supply and demand fluctuations to determine instability. The study has also compared the export instability of developed and underdeveloped countries. He used two measures of instability; MacBean Index (MBI) and Log Trend Index (LTI) on a large number of countries over the period 1952 to 1971. The whole period was divided into two sub-periods, 1952-61 and 1962-71. The study shows that price and quantity instability had generally been greater in less developed countries (LDCs) as compared to developed countries (DCs). As far as the relationship of earning instability with quantity and price concerned, the analysis found that quantity fluctuations have strong involvement in export earnings instability as compared to prices fluctuations in DCs instead of LDCs. On the other hand, the analysis of supply fluctuations and demand fluctuations on export earning instability shows that the supply side fluctuations have been found to be the major cause of export earnings instability rather than demand fluctuations in case of underdeveloped countries.

The study by **Kaur (1990)** has examined the performance and instability of India’s exports during 1970-71 to 1989-90. The study is based on major categories of exports like tea, jute, cashew, engineering goods, marine products, leather, cotton and chemical products. The study finds a decline in India’s share in world exports. The share of traditional exports has declined while that of non-traditional exports has increased over time. Indian exports also experienced high fluctuations during whole of the study period. Fluctuations were relatively higher in case of non-traditional exports. The study also examined the geographical pattern of India’s exports to major markets. UK, USA, USSR and other develop countries were more stable markets in comparison with the other countries. The study recommended export promotion policy in line with other socio-economic policies being followed in the country and international trade environment.

**Chand and Tiwari (1991)** studied growth and instability of agricultural exports and imports in India. They used value of exports and imports in terms of US dollar for the period 1970 to 1988. All the products in the category of agricultural
exports have positive growth rates except pulses, sugar & honey and forest product. Among the items of agricultural imports, pulses and sugar & honey show rate of growth which exceeded 50 per cent per annum during the period of study. The value of export instability was found to be low in contrast to import instability for most of the agricultural commodities. Broadly, growth rates of agricultural exports and imports were lower as compared to the merchandise exports and imports. The agricultural commodities namely; fish & fishery products, coffee, tea and cocoa had shown good performance than remaining agricultural export commodities.

It is usually held that export instability will have adverse impact on economic growth in developing countries in short term as well as long term. This type of orthodox thinking has generated export pessimism in many developing countries. But the empirical evidence in this context has been found to be inconclusive. Love (1992) examined the short run impact of export instability on income instability in twenty developing countries. These countries were heavily dependent on primary product exports i.e. non-oil products. “He used Granger/Sims reduced form approach to examine whether export instability generates short-run instability in domestic income or not. The results of the study for 20 trade dependent countries strongly support the argument that export instability induced short-run macroeconomic instability. Therefore, results of the study indicated that export instability caused short-run income instability”. The study also argued that export instability affects the government sector revenue.

Since independence Pakistan economy is facing serious balance of payments problems. This is because of slow growth of exports in contrast to rising import dependence of the country. Wasim (1998) examined the growth and instability in Pakistan exports in terms of values, quantity and unit values. The study has used time series data for the period 1970 to 1994. The instability index of exports has been measured with the help of exponential time trend. Commodity–wise growth rates of exports in terms of value are higher than the growth rate of quantity and unit values. The results of export instability suggest that exports of some of the major exports (readymade garments and hosiery, synthetic textile, fish & fish preparations, rice, raw cotton, cotton waste, leather, cotton yarn, cotton cloths, carpets and rugs, sports goods and surgical instruments) are more unstable than these of minor export
categories (raw wool, cotton threat, petroleum products, footwear and quar and products) because of volatility in world prices and policy changes. Unit values of exports are more stable than their exported quantities (except footwear and guar products). The results suggested that there is a need to explore new areas of comparative advantage and increase the variety of exports as well as new rapidly growing markets.

In order to evolve a strategy for promoting agricultural exports, it is imperative to examine the performance of agricultural commodities exports in the past. Therefore, Chand et al. (2001) studied the growth performance and instability of the India’s agricultural commodities exports during the period 1962 to 1994. They also did the comparative analysis of growth and instability of agricultural exports for the decades i.e. 1970-79 and 1980-90. Exponential trend was used to compute growth rates and instability index in the study. The growth rates of the agricultural exports were observed to be positive except for sugar and honey for the period 1962-94. In the decade wise analysis of the study shows that all the agricultural commodities have positive growth rates during 1970-79. While in the second period of 1980-90, sugar & honey, oilseeds, textile fiber, fixed vegetable oil and forest products recorded negative growth rates. It was also observed that the overall growth rate of agricultural sector declined in the decade of 1980-90 as compared to 1970-79. Export instability analysis shows that the exports of cereal & cereal preparations, sugar & honey, oil seeds, textile fiber and forest products have high export instability during the period under study. On the other hand the study also shows that the exports of cereal & cereal preparations exports and sugar & honey have higher export instability during the periods (both periods). The share of agriculture sector export in total merchandise export continuously showed a declining trend. The study suggested that agricultural policy measures (i.e. appropriate storage and processing facilities) could generate exportable surpluses in traditional commodities as well as non-traditional Commodities. The share of agricultural goods in world agricultural trade can be increased through quality improvement, packaging and value addition in export commodities.
**Krishnamoorthy and Reddy (2002)** also examined the relationship between the export (import) growth and export (import) instability by using foreign trade data in terms of rupees as well as dollars. Export instability was measured in terms of two indices LTI and ETI. The period of study was 1980 to 2001-02, which was further divided into two periods; pre liberalization period (*i.e.* 1980-81 to 1990-91) and post liberalization (*i.e.* 1991-92 to 2001-02) period. The study found inverse relationship between growth (imports and exports) and instability in the both periods (*i.e.* pre-liberalization period and post-liberalization period). The reason for this inverse relationship is lower growth in exports and imports which might be due to the high fluctuations in exports and imports. They also used Granger causality analysis to test long period relationship between export instability and growth for the period 1949-50 to 2001-02. Causality analysis shows non-significant causal relationship between export growth and export instability.

Trade liberalization in 1991 removed most of the quantitative restrictions on agriculture exports and imports, but as a result of which it was feared that agriculture will face unfair competition from cheap imports. The share of agricultural exports also declined in the total export. **Malhotra and Meenu (2006)** analyzed growth, structure and instability of agricultural exports and imports in India. The study used time series data on agricultural exports and imports for the period from 1980-81 to 2003-04. The time period was further divided into two periods 1980-81 to 1990-91(pre liberalization period) and 1991-92 to 2003-04 (post liberalization period) respectively. The instability indices for exports and imports of selected agricultural commodities were measured with the help of coefficient of variation and trend estimation (both linear and exponential). The study has observed that agricultural exports growth has been faster as compared to imports. This indicate trade surplus in case of agricultural trade throughout the period of study. Total agricultural export instability has increased in post liberalization period as per the measure of coefficient of variation and ETI, while total imports instability has also increased as per all the measures used in the study. The study suggested that government should provide appropriate facilities in the form of storage, infrastructure, better variety of seeds, packaging & branding and quality testing centers for matching Indian products with international quality standards.
Section-II

Less developed countries (LDCs) mainly export primary products. Therefore, economic growth of LDCs suffers from the deleterious effects of the export instability. In this context Glezakos (1973) conducted the study to determine the effects of export instability on economic growth for a sample of 18 developed countries and 50 less developed countries. The study also evaluated the relative importance of the export price and export quantity in the context of instability effects on economic growth. Export instability was measured with the help of linear trend during the period 1953 to 1966. The study found that export instability indices of the LDCs were higher than DCs. The study shows that export instability has significant negative effect on the real per capita income growth rate of the LDCs. Therefore, export instability is harmful mainly to the economic growth of the LDCs. Moreover, instability in export volume was higher than instability in export prices in case of developed and LDCs countries. The study also concluded that instability in prices were responsible for this negative effect rather than volumes instability in case of LDCs.

There is a lot of debate on the issue that whether developing countries experience more fluctuations in exports than developed countries and how such fluctuations affect growth of developing countries. Rangarajan and Sundararajan (1976) tried to develop a model for measuring the impact of export fluctuations on GNP and investment. The model has been estimated for 11 developing countries and 2 developed countries. The study shows higher export income multipliers and export investment multipliers for developing countries than developed countries. Instability of exports significantly affects income growth but the impact is not in same direction for all the countries. The negative impact of export instability on income growth was found only in case of five countries.

Moran (1983) analysed the impact of export earnings instability on economic growth by using ordinary least square method (OLS). He used several measures of export instability on cross-sectional data for 30 developing countries for the time period 1954-1975. The study concluded that export fluctuations had non-significant impact on economic growth for less developing countries (LDCs) in long time period.
Export instability has negative impact on economic growth. Because of export earnings instability, developing countries face occasional difficulties in importing goods for production (i.e. intermediate goods and capital goods). Ozler and Harrigan (1988) examined export instability index and its impact on GNP growth in the context of twenty-six developing countries. They used annual data for the period 1963 to 1982. There are various methods to measure export instability index, but the study measured export instability index by using a model of ARCH (Autoregressive Conditional Heteroscedasticity). The study found negative effect of real export instability on the growth of developing countries. This appeared to be through reduced ex-post efficiency of investment instead of the level of investment. The study shows that the negative effect of instability on growth is large enough to be a source of concern for policymakers.

Brempong (1991) analysed the effects of export instability on economic growth by using a sample of 34 African countries. The time period of the study was 1960 to 1986. The study has incorporated export growth and export instability as independent variables in the traditional neo classical growth equation. The study found significant adverse impact of export instability on economic growth in these countries. Moreover, the results of the study suggested that the negative effect of export instability on economic growth do not depend on the measure of export instability. The main reason for adverse effect of export instability is the lack of capital resources in these countries, which could otherwise mitigate the adverse impact of fluctuating export income. These African countries also had excessive controls in their foreign exchange and capital market, which should be liberalized to remove the ill effects of short-term export instability. Export instability also implies government revenue instability which adversely affects the implementation of development plans and completion of development projects.

Fosu (1992) used a sample of 35 African LDCs, 30 Sub-Saharan LDCs and 38 Non-African countries to analyse the impact of export income fluctuations on economic growth. The study took the time period from 1970 to 1986. African LDCs mainly export primary products which were found to have high export instability. An augmented production function has been used in the study to detect the impact of export instability on economic growth. The results of study show negative but non-
significant impact of export instability on economic growth for African LDCs and even weaker relationship for the sub-Saharan African. However, the impact of export instability for non-African LDCs has been observed to be negative and significant on economic growth.

Hallaq (1994) explored the impact of export instability on economic growth in Jordan. He used time series data covering the period from 1970 to 1991. The empirical analysis of the study shows significant negative effect of export instability on real per capita income growth of the country. It also revealed that export quantity instability had negative but non-significant impact on income and export growth rates, while price instability had significantly negative impact on income and export growth rates. The empirical results of the study suggested that government of Jordan should spend scare resources to build foreign exchange reserves to smooth instability of exports in short run period. He also suggested that export instability can be reduced through diversification of exports commodities and export markets in the long run period.

Dawe (1996) study analysed the effects of export instability on investment and economic growth for the period 1965 to 1985. He used a sample of eighty five countries. He has used two measures of export instability. The study show negative impact of export instability on the growth of 85 countries, while export instability and investment were positively related to each other. Thus, the study indicated that higher instability in exports tended to increase savings and therefore investment.

Ghirmay et al. (1999) examined “the long run relationship between export instability, income terms of trade instability, investment and economic growth for 14 developing countries. They used co-integration analysis and the multivariate error correlation model. The study shows that in long run period, income terms of trade instability has negative impact on output in all the developing countries (except Korea). The relationship between export instability and output was found to be mixed. The relationship between export instability and output has been found to be positive in six countries and negative in seven countries. The causality analysis shows that export instability and income terms of trade instability play a causal role in the process of economic development.”
The general problem about the studies related to export instability and economic growth is that they used cross sectional data which find only average associations and do not give wider information regarding particular countries. But the study conducted by Sinha (1999) used annual data to show the impact of export instability on investment as well as on economic growth with the help of regression analysis. Annual data series data was different for periods according to the availability of data for different countries; for Sri Lanka (from 1950 to 1997), Japan (from 1955 to 1996), Philippines (from 1948 to 1997), Korea (from 1953 to 1997), Thailand (from 1951 to 1997), India (from 1950 to 1994), Myanmar (from 1950 to 1997), Malaysia (from 1955 to 1997) and Pakistan (from 1960 to 1997). In this analysis, Japan is a developed country and remaining countries are developing countries. The empirical results vary for different countries. For Philippines, Japan, Sri Lanka and Malaysia had shown adverse impact, whereas remaining countries had shown positive impact of export instability on economic growth. The rate of growth of investment is positively associated with the rate of growth of GDP in case of all the mentioned countries in the study.

Many countries are unable to fully satisfy imports demand due to limited foreign exchange earnings from export. Afxentiou and Serletis (2000) analysed the causal relationship between output growth and variability in growth of export and import. They used a sample of fifty developing destinations for the period from 1970 to 1993. “The study did not support the hypothesis of export growth led GNP growth in a Granger causality sense except for two oil-exporting countries (Indonesia and Oman). When instability was introduced in the causality analysis, anticipated export growth volatility was found to be associated with GNP growth only in case of Indonesia; unanticipated export growth instability was found to be causally related to GNP growth in case of South Africa. While for both (anticipated and unanticipated), export growth instability was marginally more evident in case of six countries (South Africa, Oman, Zimbabwe, Indonesia, Argentina, and El Salvador). As far as the causality from import growth to GNP growth was concerned, only in case of Pakistan the causality was running from import growth to GNP growth. In case of import growth instability analysis, anticipated import growth volatility was found to lead GNP growth in case of Indonesia, whereas
anticipated and unanticipated import growth volatility lead to GNP growth in case of Pakistan, South Africa, Tanzania, and Venezuela.”

Investment instability and import instability adversely influence economic growth instead of export instability in case of African countries. **Fosu (2001)** examined the role of import instability (MI), investment or capital instability (KI) and export instability (XI) on the growth process by using data for 1968 to 1986 in case of 33 SSA (Sub-Saharan African) countries. The study highlights the adverse impact of import instability on economic growth of African countries. Though KI i.e. capital instability also has negative implications for economic growth but MI has been found to be the most significant factor. The effect of XI on economic growth was found to be insignificant. The study suggested that a stable inflow of imports helps to promote economic growth in SSA.

Excessive fluctuations in foreign exchange earnings could become a bottleneck for development of a developing country like Pakistan. Export instability creates shortage of funds for importing essentials and machinery for development. The investment decisions and entrepreneur’s expectations for future planning are affected by export instability. **Chaudhary and Qaisrani (2002)** examined the impact of instability of export income on investment in the economy. They have used various econometric models for the period 1972 to 1994 to identify relationships among various variables. Rate of growth of imports capacity, export instability and rate of increase in foreign exchange reserves have been identified as the determinants of growth of capital formation (Gross Fixed Capital Formation) in the study. Regression results of the study show that excessive reserves of foreign exchange and import capacity enhanced capital formation in Pakistan. Export instability has non-significant effect on growth of capital formation or domestic investment in Pakistan. The study suggested that efforts must be directed to maintain significant level of reserves as it was found that the international reserves are important which affect different economic activities.

Pakistan's economy suffers from resource gap (saving-investment), government budget deficit and trade imbalance. **Wasim (2003)** examined the association between growth and instability of Pakistan exports. He used time series data for the period 1973-74 to 2000-01. The overall period of study has been divided
into three periods; period I (i.e. from 1973-74 to 1986-87) and period II (i.e. from 1987-88 to 2000-2001) and period III (overall period) in order to clearly bring out the trend in different periods. The study revealed that manufactured goods exports captured highest growth rate followed by semi-manufactured and primary commodities during period III (overall period). “Dependence on international trade and foreign capital inflows is critical to sustain and enhance economic growth due to scarcity of domestic resources. The export instability has been found to be higher for semi-manufactured and primary commodities compared to manufactured goods in period III. The empirical analysis shows that export instability increased in period II as compared to period I. Study has found positive and statistically significant association between export growth and export instability in Pakistan”.

Mahadevaiah et al. (2005) analysed Indian cotton exports during the period 1981-82 to 1990-91 i.e. pre-reforms and 1991-92 to 1998-99 i.e. post-reforms period. There were eight major importing countries for Indian cotton, viz. “Bangladesh, China, Germany, Japan, Korea, Indonesia, the UK and all other countries grouped under other category”. The change in India’s cotton exports with respect to different countries was analysed with the help of transitional probability matrix, a technique commonly used in such analysis. The study shows that China which is most stable market of India’s export has increased its import share from the pre-reform period to the post-reform period. The value of transition probabilities was near to zero for Japan and Korea, while for remaining countries “Bangladesh, Germany, Indonesia and the UK the values were found to be zero in both the periods, indicating instability in India’s exports to these countries. The sharp decline in the export of raw cotton from India reflects our inability to retain the share in the traditional markets and explore new markets.”

The impact of export instability on economic growth has been widely debated in the literature. Some of the empirical studies show negative impact of export instability on economic growth; some of the studies show positive impact on growth. Kaushik and Klein (2007) analysed the impact of exports, export instability, imports and terms of trade on economic growth in India. They used Johansen’s maximum likelihood cointegration and multivariate error-correction model (ECM) during the period 1951 to 2005. The study used longer sample period
than the previous studies in this area because they believe that longer period provide sharper results. The study provides estimates of long run structure and short run dynamics. The empirical results of the study show positive and statistically significant long-run relationship between export instability, exports, imports, terms of trade and economic growth. Empirical results of the study show that export instability has non-significant adverse effect on growth of income in short-run whereas positive and significant effect on growth of income in long-run. The study suggested that India should diversify in the products in which they have a comparative advantage.

India has a lot of potential to increase production and exports of tomato and its products. Although after liberalization period exports of tomato have registered an impressive growth, but imports of tomato have also got momentum and net exports turned out to be negative. Kumar and Rai (2007) discussed mainly four aspects of tomato export in India; production and export performance of tomato exports, impact of trade liberalization, destination of exports and finally the determinants of tomato exports in India for the period 1960’s to 2004’s in order to see the performance of tomato exports. Although the shares of tomato paste, juice of tomato and peeled tomato have remained very small but still tomato has been the major contributor of India’s exports. The export competitiveness of the tomato exports has been estimated with the help of Revealed Comparative Advantage (RCA) and Revealed Systematic Comparative Advantage (RSCA). This analysis has found lack of competitiveness of tomato exports during the study period. Further, in order to detect the impact of WTO on tomato exports, the study period was divided into two period; pre-WTO period (from 1985 to 1994) and post-WTO period (from 1995 to 2004). Growth rate of tomato and its products was lower during the post WTO period, while export instability has declined in post WTO period. The destination of exports depends upon various factors like difference in comparative advantage, geographical and political proximities and degree of trade barriers. The study considered four factors affecting the demand for tomato products in India; volume of international trade, exchange rate, domestic production, ratio of international export price. These factors explained around 98 percent of the total variations in tomato exports India. All the considered determinants have been found to be significant except exchange rate.
Several cross-section data based studies have been available in the literature to find the association between exports instability and economic growth. But only some of the studies used time series data. Among these studies Sinha (2007) also analysed the impact of instability of exports earnings in two Asian countries namely; Philippines and Thailand. For this purpose, he has used quarterly data covering the first quarter of 1960 to the third quarter of 2005 and applied GARCH or ARCH (Autoregressive Conditional Heteroscedasticity) model. The results showed that two countries namely Philippines and Thailand were greatly dependent on exports in order to attain economic growth.

The relationship between exports and economic growth including the direction of causality has been a subject of much debate in the literature over past decades. Kaushik and Klein (2008) investigated “the relationship between export growth, export instability and gross fixed capital formation (investment) and economic growth in India. They used econometric techniques of Johansen’s co-integration analysis and vector error-correction model during the period 1971-2005”. The empirical results of co-integrating analysis show that all the variables have positive effect on GDP in the long-run. Moreover, the results show that export instability and investment have significant adverse effect on short-run stability and positive significant effect on long-run growth of income. The study supports the export-led growth hypothesis in the long run. The empirical evidence based on VECM indicated that real exports led growth in real GDP. Thus, the study supports unidirectional causality from exports to economic growth.

Borumand et al. (2009) tried to observe the impact of exports instability on investment and economic growth in the context of Iran. They adopted neoclassic growth model for the period 1971 to 2004. The previous studies had not attempted to utilize the dynamic methods of assessment and the time series techniques and ARCH (Autoregressive Conditional Heteroscedasticity) model. The study shows negative effect of long run exports instability on investment and economic growth in Iran, while in the short-term it observed very minor influence. The study suggested that trade policies which are adopted in Iran should not cause export instability.
Huge fluctuations in the export earnings of primary products may have negative impact on the growth of the developing countries. Baker and Subramaniam (2010) examined the impact of export instability on Malaysia’s economic growth. The study used time series data covering the period from 1990 to 2008. They found the impact of labour, capital formation, export growth and export instability on economic growth. Export instability was estimated through the measure proposed by Cuddy and Della Valle (1978) in the study. Unit root analysis found that all the variables are stationary at first difference. The study shows that capital formation and export growth have highly positive significant impact on economic growth, while export volatility has highly significant but negative impact on economic growth of Malaysia. Therefore an increase in export instability depresses the economic growth. The study concluded that export instability can cause economic instability with detrimental effects on economic planning and performance.

Gholamreza et al. (2010) mainly studied the interaction between export instability and economic growth in 22 East Asia and Pacific countries. They used panel data for the period of 1990 to 2006 and find the long run association between growth and its determinants. Apart from the impact of export instability, the impact of other variables namely; POP (total labour force), CAP (real gross capital formation) and EXP (real exports) has also been examined in the study. Cointegration analysis shows long run association between variables. “The results of panel random effect model show negative relationship between growth and export instability of the countries indicating that export instability is harmful for selected country’s economic growth. On the other hand, gross fixed capital and labour force and exports have positive impact on economic growth of countries.”

Fluctuations in exports imply lack of ability to import capital goods or other essential materials from other countries for meeting the requirements of domestic economy. Bilquees and Mukhtar (2011) analyzed the causal relationship among export instability, income terms of trade instability and economic growth in the context of India for the period 1960 to 2008 by using cointegration test and the vector error correction model (VECM). Basically four economic variables were included in the study namely, import instability (MI), economic growth (Y), export...
instability (XI) and investment (INV). “The results of the study show the existence of long run relationship among economic growth, real investment, export instability and income terms of trade instability in India. In the short run, both the economic growth and real investment cause each other while uni-directional causality was running from exports instability and income terms of trade instability to economic growth. A uni-directional causality also running from exports instability and income terms of trade instability to real investment”. Export instability and income terms of trade instability has been found to be independent of each other, however both these variables cause economic growth and investment in India. The study recommended diversification of Indian exports from traditional to non-traditional categories for sustained economic growth and export promotion, investment needs to be promoted. This will also help in investigating the adverse impact of fluctuations in export earnings.

Indian spices exports have been growing steadily in volume and value during the last fifty years, but these exports also face the major problem of export earnings instability. Rao (2011) examined the growth and instability of India’s spices exports in terms of volume as well as value during the period from 1960 to 2010. The time period of the study was divided into two sub-periods i.e. pre-reforms Period (1960-1991) and post-reforms Period (1991-2010). The study analysed the structural break in the growth and instability of Indian spices trade in post reforms period and identified the future growth prospects and challenges. The study found higher growth rates of spices exports during the post-reforms period, while export instability was observed to be higher in pre-reforms period in the study. The study observed that Indian spices exports during the last five decades witnessed rapid growth in terms of value than volume, but at the same time instability is higher in export value as compared to export volume. The export prices over the years is a major factor responsible for growth as well as instability of Indian spices exports. The study found higher growth and lower instability in the post economic reforms period for both export volume and export value of Indian spices.

Rashid et al. (2012) examined the effects of export instability on economic growth for SAARC region countries (Pakistan, India, Sri-Lanka and Nepal) by using neoclassical aggregate production. They used Augmented Dickey Fuller (ADF)
approach to test stationarity and Johansson Cointegration econometric to test long run relationship for all variables on time series data covering the period from 1975 - 2004 for Nepal, from 1972 - 2008 for Sri-Lanka and from 1972 - 2009 for Pakistan and India. They concluded that export instability had significant negative impact on economic growth for all selected SAARC region countries. The study found harmful effects of export instability on economic growth of countries while the magnitude was higher in case of Sri Lanka. The study has found significantly positive effects of exports and investment on economic growth for all countries except the Nepal. In case of Nepal, the exports had negative but non-significant impact on their economic growth. The most important policy implications suggested by the study for these countries are that “they should diversify their exports horizontally, liberalize their foreign exchange markets and capital accounts to control the problem of instability in exports of SAARC regions.”

**Aidam and Anaman (2014)** studied the effect of the export instability on Gross Fixed Capital Formation (Investment) in Ghana. They used econometric techniques of autoregressive distributed lag (ARDL) during the period 1981 to 2011. The study shows negative relationship between total investment and export earnings instability both in the short-run as well as long-run period. It also found that other factors namely; real GDP growth, merchandise trade balance, real interest rate and gross domestic savings ratio have significant influence on Ghana’s investment both in the short-run and long-run periods. The study observed that Ghana’s rapid economic growth rate over the last decade has been partly due to the high rate of domestic and foreign direct investment inflows into the economy.

**Alam (2014)** studied the impact of export earning instability on economic growth in Ethiopia by using Cobb-Douglas production function. He used time series data during the period 1974-75 to 2007-08. The empirical results found negatively significant impact of export instability on economic growth in long run, while negative but non-significant impact in short run period. Therefore, the study shows that export earning instability has adverse impact on economic growth in the long run. The study suggested that diversification of export commodities and quality improvements of traditional export products for reducing export earning instability and promoting growth of export.
Section-III

The problem of export instability experienced by many countries is largely associated to the concentration on a narrow range of products for export by these countries. Massell (1963) examined the relationship between export instability and commodity concentration of exports by using a sample of 36 countries for the period 1950 to 1958. Commodity concentration variable was considered as the main explanatory variable, while geographical concentration of exports and ratio of primary product exports to total exports were considered as other explanatory variables in the study. The results of the empirical analysis show significant but weak relationship between export earnings instability and commodity concentration of exports, while results of the study improved marginally with the introduction of the variable of primary products export ratio. The regression results show that much of the inter-country variation in export earnings instability has not been explained by independent variables in the study.

Instability of a country’s export earnings is always undesirable more so for a developing country like Pakistan. Stern (1969) analysed the changes in the structure of Pakistan’s foreign trade and its effects on stability of export receipts. The study has measured Gini Hirschman coefficient of concentration for exports as well as imports. Although the commodity concentration of exports and imports has declined during the study period 1957-58 to 1967-68, but still commodity concentration of imports was much lower than the commodity concentration of exports throughout the study period. The study finds positive relationship between commodity concentration of exports and instability of export earnings, the decline in commodity concentration has reduced the instability of export receipts. The geographical concentration of exports and imports has also been calculated and the study finds higher geographical concentration of imports than exports largely due to the effects of tied-aid policy followed by aid giving countries.

The export fluctuations in LDC’s generate domestic fluctuations which complicate the task of development planning and reduce the efficiency with which investment resources are used. Massell (1970) studied the relationship between export instability and country's economic structure by taking a sample of 55 countries for the period 1950 to 1966. These countries were sub-divided into two
categories viz., developed countries (DCs) and less developed countries (LDCs). There were 36 less developed countries and 19 developed countries in the sample. The study analyzed inter-country export instability in terms of nine structural variables with the help of regression analysis. These variables are commodity concentration, geographic concentration, food ratio, raw material ratio, domestic consumption ratio, the export market share coefficient, per capita income and the value of merchandise exports. The results of study show that commodity concentration and food exports ratio to total exports have significant effects on inter-country levels of instability.

Naya (1973) the study found highest fluctuations in export earnings for the Asian countries group followed by other LDCs group. Lowest fluctuations in export income were found in case of developed countries. Export instability index was measured through exponential trend line. She also examined the impact of primary products exports ratio, food and raw material exports ratio, commodity concentration, geographical concentration, inter-regional trade and size of exports on export instability of 17 Asian less developed countries for 1960s. Regression analysis shows that among the above sources of instability in the study; only two variables namely size of export has negative and inter regional trade has highly positive significant impact on export instability. Other variables were not significant in the study.

Kingston (1976) studied the connection between export concentration and various aspects of the export performance. The study used a sample of 31 developing countries over the period 1954 to 1967. He used three measures of export instability; first two indices were based on exponential trend and third export instability index was based on simple linear trend, while geographical concentration was measured through Hirschman coefficient. The study used simple correlation analysis to investigate the relationship between geographical concentration and export earnings instability. It found statistically non-significant relationship between geographic concentration of exports and fluctuations of export receipts. These results do not appear to be sensitive to the measure of export instability. Therefore, the study concluded that geographical diversification of export receipts is not able to reduce export instability.
The commodity concentration and geographic concentration are important factors that contribute to export earnings instability in developing countries. In this context, Love (1979) examined the relationship between the concentration and export instability for each country in a sample of 52 developing countries for the period 1961-1974. Commodity concentration and geographical concentration has been measured with the help of Gini Hirschman coefficient. The results indicate that out of 52 counties, 46 countries in the sample indicated that the major product and the major market contributed disproportionately to instability of total export earnings. Therefore, it argued that product diversification and market diversification of exports will tend to produce greater stability in total export earnings.

The reason for the absence of positive association between export earnings instability and commodity concentration can be the wide dispersion in instability of the proceeds of individual commodities. The study conducted by Macbean and Nguyen (1980) used mathematical analysis of commodity concentration and export earning instability in developing countries during the period 1964 to 1974. They reviewed various empirical studies in which some of the studies indicated non-significant relationship between commodity concentration and export instability. However, some of the empirical studies show significant relationship between commodity concentration and export instability. The analysis revealed weak or not clear relationship between the export instability and commodity concentration. Export diversification of commodities is likely to increase the stability of country’s total export earnings when the share of commodities whose exports are stable increases. The study concluded that the cross-country association between export instability and commodity concentration has been observed to be weak.

Kannan (1983) examined exports and imports instability in the context of India. The time period was divided into two sub periods 1956-57 to 1965-66 and 1966-67 to 1979-80. The value of export instability has been observed to be higher in the second period instead of first period. This increase in instability was due to the increase in unit values of exports. The impact of commodity concentration, geographical concentration and fluctuation in wholesale prices on exports instability was found to be non-significant.
It is generally advocated that commodity diversification of export sector is essential for reducing instability of LDCs export earnings. Love (1983) examined the relationship between concentration, diversification and export earnings instability in the context of 24 developing countries. The exports of countries were categorized into traditional and non-traditional exports and time period was also divided into period I (i.e. from 1959 to 1968) and period II (i.e. from 1969 to 1978). All the countries in the sample were heavily dependent on proceeds from traditional exports in the period I. This dependence was lower for all the countries in the period II. Further the study indicated that diversification had taken place in case of non-traditional exports. However, manufactured export instability has been found to be greater as compared to primary products instability. In the end, the study concluded that no country in the sample proves the conventional argument that diversification leads to greater stability.

Export earnings constitute a major source of financing development expenditures in LDCs. The wide fluctuation in export revenue adversely affects the process of economic growth. Aslam (1985) examined export instability, growth and sources of export instability in Pakistan over the period 1960 to 1980. Instability analysis revealed that primary commodities exports group is unstable as compared to manufactured commodities exports group. The study shows that increase in the share of manufactured exports tends to decline the level of export instability. The rank correlation between export instability and growth rates was found to be non-significant. Among the sources of export instability; geographical concentration and the share of raw materials in total exports was negatively significant and share of food exports was found to be positively significant, while commodity concentration was non-significant during the study period.

The study argued that commodity concentration is a major factor in export instability of developing countries for short run period. Love (1986) examined the association between commodity concentration and export earnings instability. He used time series data during the period 1960 to 1979 for a sample of 24 developing countries. Apart from commodity concentration two more determinants of export instability; ratio of raw material in total exports and ratio of agriculture exports in total exports were considered in the study. The relationship between export
instability and commodity concentration was found to be positive and statistically significant in sixteen countries out of 24 countries, while for remaining eight countries it was non-significant. The ratio of raw materials in total exports was positively associated with export instability, while ratio of agriculture in total exports has been found to be negatively associated with export instability.

Apart from commodity concentration and geographical concentration, export instability is also caused by domestic supply, domestic demand and foreign demand fluctuations. Wong (1986) examined the sources of export instability in LDCs. Export instability was measured by coefficient of variation. Sources of export instability were examined for a sample of 50 LDCs during 1957 to 1972. These countries were divided into subgroups based on the commodity exports of countries (food exports ratio) and nature of foreign markets (degree of dependence on developed country markets). The study finds that some of the LDCs experienced greater export instability because of greater variation in the share of their export commodity in world trade and in the share of their exports in major foreign markets. Domestic demand and supply fluctuations were the significant factors for countries which have very high food exports ratio.

The major cause of export earnings instability is commodity concentration and geographic concentration in LDCs. Tegene (1990) also studied the relationship between export instability and commodity concentration of exports of 29 African countries. The study used regression analysis over the period 1960 to 1982. It was found that primary commodity dependence is a major contributor to export earnings instability in developing countries. The empirical results of study show weak or no positive correlation between commodity concentration and export instability. According to the author, the relationship between export instability and commodity concentration could be dependent upon the particular procedure followed to measure the value of indices. Apart from commodity concentration, he has also considered the other determinants of export earning instability in these countries like the relative importance of a country's major commodity, the relative effectiveness of various commodity agreements, internal supply conditions and world-demand conditions. The study suggested that commodities which are diversified should have
stable trend during the period under study otherwise these commodities lead to instability.

**Bhat and Veerarraju (1995)** used exponential trend to measure the export instability in India to explain the fluctuations in exports. The association between export instability and economic growth has been measured with the help of Spearman’s rank correlation for the period 1950-51 to 1991-92. The whole period was further divided into sub-periods of 1950-59, 1960-69, 1970-79 and 1980-92. The study also identified the factors influencing export instability by using multiple regression analysis. The factors namely; real gross national income, inflation rate, exchange rate, share of Indian exports in world exports, share of selected primary exports in total exports and political instability are the cause of export instability. The study found positive and significant association between export instability and economic growth during 1960-69 and 1980-92 because of devaluation and liberalization during the period. Rank correlation between two variables has been found to be negative in 1970-79 because of political instability. The overall period of the study shows negative and statistically significant correlation between variables due to drastic changes in policies in India such as changes from socialistic pattern of society to liberalized economy. The study suggested that long run consistent export policies were required to promote economic growth. Exchange rate and share of selected primary export to total exports had positive impact on the export instability. In the end study concluded that depreciation of currency and diversification from exports of primary products to industrial goods was unable to reduce export instability.

**Tariq and Najeeb (1995)** determined the causes of export earning instability in Pakistan. They used time series data covering the period from 1969-70 to 1990-91. In LDCs, the main causes of export instability were commodity concentration, geographic concentration, primary products exports, quality of exports and raw material exports ratio. The empirical analysis of the study shows that commodity concentration contributed a large proportion of the instability in total export earnings. Therefore, the relationship between export instability and commodity concentration has been found to be statistically significant. The policy to diversify exports would help to reduce the fluctuations of exports earnings. The study also
found that the geographic concentration and instability of exports in Pakistan were not correlated. Primary products ratio and raw material ratio do cause export instability in Less Developed Countries (LDCs). The quality of exports has been found to be positively related to export instability. The food ratio was found to be negatively and significantly related to export instability, which showed the encouragement of food exports to reduce the instability. Pakistan economy is a low income country where even small fluctuations in exports earning can have a lasting impact. Moreover, the study suggests that Pakistan needs to diversify their exports.

Wide fluctuations in the prices of a few commodities can lead to sharp variations in total export earnings because of lack of commodity diversification. On the other hand if exported commodities were more diversified, then price variations will be in different directions for various exportable, thereby canceling each other and resulting in more stable total export earnings. *Asheghian and Saidi (1999)* studied the relationship between commodity concentration and export earning instability in case of Venezuela on 21 years quarterly time series data set (86 observations). Apart from commodity concentration the impact of petroleum export instability, exchange rate index and price variability on export instability has also been observed in the study by using regression analysis. In the empirical analysis, raw materials and agriculture exports were excluded from the analysis because their contribution was not significant. Therefore, study estimates export instability for petroleum products only. The petroleum export earnings instability index also has positive and highly significant relationship to total export earnings. The study found that exchange-rate instability index has positive but non-significant relationship with export earnings instability. Finally, the inflation instability index has been found positive and significant relationship with total export earnings instability. The study suggested that Venezuela should diversify their exports in order to reduce the impact of unpredictable export fluctuations.

*Sileshi (2003)* examined export earnings instability and its causes in Ethiopia. The study used regression analysis on time series data covering the period 1960-61 to 2001-02. The results of regression analysis show strong positive association between commodity concentration and export instability. Coffee export instability had contributed much to the total export earning instability in the
analysis. Thus, the fluctuations in export earnings resulted not only from high export concentration (as defined by the Gini coefficient) but also from concentration on the export of primary products. Therefore the study suggested that diversification of export commodities could reduce instability in export revenue. The study has also examined the causal relationship between short run export instability and income. The results indicate that causality running from export instability to income. This evidence strongly supported the view that export instability induced short-run macro-economic instability. The inherent problem was dependence on coffee export and the declining world prices of coffee resulting in export earnings instability. Rise in the share of other agricultural commodities instead of coffee can reduce commodity concentration of exports. The poor performance of exports in Ethiopia has largely been associated with the deteriorating terms of trade, export earnings instability and domestic policies. The study suggested that government should make deliberate efforts to diversify export items to manufactured commodities so as to bring a sector wise shift in the structure of production and trade.

Marine products are an important category of primary exports from India. It accounted for about four percent of export earnings during the study period conducted by Salim and Ojha (2004). He analysed geographic concentration and commodity diversification of exports in case of India’s marine products during i.e. pre liberalization period (from 1979 to 1990) and post liberalization period (from 1991 to 2002) in value and quantity terms. The concentration index has been measured with the help of Gini Hirschmann coefficient. The study shows that commodity concentration and geographical concentration has declined in terms of value as well as quantity during the post liberalization period. The value of commodity concentration declined from 65.68 per cent to 57.46 per cent in terms of quantity and from 82.70 per cent to 71.04 per cent in terms of value. The value of geographical concentration of exports has also declined during the post liberalization period. Geographical concentration has fallen from 55.01 per cent to 43.35 per cent in terms of quantity and 66.76 per cent to 53.11 per cent in terms of value during the post liberalization period. Therefore, the study shows considerable improvement in the commodity diversification as well as reduction in geographic concentration in post liberalization period as compared to pre liberalization period.
The fluctuations in export earnings may create problems in balance of payment, national income, investment and can have adverse impact on the growth of LDCs. Devcota (2004) studied the causes and consequences of export instability in the context of Nepal. The study considered commodity concentration index, geographic concentration index, instability of agricultural sector GDP and instability of non-agricultural sector GDP as the causes of export instability for the period 1975 to 1998. Export instability has been measured with the help of exponential trend, while commodity and geographical concentration are measured with the help of Gini Hirschman coefficient. The fluctuating prices of primary product slow down the process of economic development in poor countries. The study shows that commodity as well as geographical concentration of exports and instability of non agricultural GDP is the reasonable causes of export instability in Nepal. The study also considered some other causes of export instability i.e. absence of specialization in exports of products, insufficient tax administration, faulty trade policies and lack of exportable quality.

Diversification of export commodities (through horizontal and vertical export diversification) contributes to increase the growth in developing nations. For this context, Herzer and Felicitas (2006) analyzed the association between diversification of exports and growth in developing countries by using data for the period 1962 to 2001. “The study examined the hypothesis that export diversification is linked to economic growth via externalities of learning-by-doing and learning-by-exporting fostered by competition in world markets. Diversified industrial exports with higher technological content generate stronger growth effects for developing countries. The study concluded that export diversification on the basis of natural resources can play an important role in the growth process of developing countries which were basically dependent upon agricultural and mining exports. The study emphasized that vertical export diversification in Chile mainly reflect the rapid expansion of some resource based industries with low or medium levels of technology such as food, wood and forestry products.”

The causes of instabilities in production and exports of seafood assume massive importance in the economic scenario of India during the past four decades. Sarada et al. (2006) examined the sources of instability of Indian seafood exports.
They used time series data for the period 1981-82 to 2003-04. The study considered commodity concentration, geographical concentration, instability in fisheries GDP, instability in non-fisheries GDP and shrimp production as the sources of export instability in India’s seafood. They used unit root test, cointegration test and VECM techniques. Commodity concentration and geographical concentration has been measured through Gini-Hirschman coefficient and instability through exponential trend in the study. All the variables were stationary at first difference. Geographical concentration, instability of fisheries GDP, instability index of non-fisheries GDP and shrimp production have positive effect on seafood export instability, while commodity concentration has negative effect on seafood export instability in long run. On the contrary, in short run period, above mentioned sources of instability did not show any significant impact on the instability in India’s seafood exports except shrimp production.

Export diversification can help to stabilize export earnings, which ultimately led to higher economic growth. In developing countries diversification of exports helps them to overcome the problem of export instability or the negative impact of adverse terms of trade. Hesse (2008) analyzed the association between export concentration and GDP per capita growth in developing countries during the period from 1961 to 2000. He used a simple augmented Solow growth model in the study which includes various determinants of growth like investment, population, initial income, schooling, export concentration and openness. Dynamic panel results of the study found significantly negative impact of population growth and export concentration on GDP per capita, while investment and openness have been found to have significantly positive impact on GDP per capita growth. Initial income and schooling have non-significant impact on GDP per capita. The study concluded that export concentration had strong damaging effect on the economic growth performance of developing countries in the past few decades. Export diversification is contributing to higher per capita income growth.

Export revenues are a major determinant of balance of payment positions, external indebtedness, fiscal balance, savings and investment levels in SSA (Sub Saharan Africa) countries. Therefore, changes in export earning instability and the degree of commodity dependence are expected to have some significant impact on
economic growth outcomes. **Ocran and Biekpe (2008)** examined the impact of instability of primary exports and the level of commodity dependence on economic growth in the context of Sub Saharan Africa (SSA). They used a sample of 31 SSA countries covering the period of decade from 1996 to 2005. The data was used to construct a balanced panel of 310 observations with each of the 31 countries having 10 observations in each. The regression analysis shows negative relationship between export instability and economic growth in Sub Saharan African countries. High commodity dependence has negative impact on economic growth, while medium and low commodity dependence has non-significant effect on economic growth. Therefore, apart from instability, the level of commodity dependence has an impact on economic growth. Thus, the issue of high level of dependence on a narrow range of primary commodities has to be addressed. The study suggested the need for export diversification and development policies aiming at export-led growth in service sector and manufacturing sector.

Several studies have been attempted to identify the reasons of agricultural export instability in China’s. In general, these include domestic supply as well as demand, exchange rate, worldwide markets and trade policies. **Xin and Liu (2008)** investigated the impact of geographic concentration on agricultural export instability as well as product-wise export instability. They used multiple-region variance decomposition approach on the period 1992 to 2000. “The results suggest that China’s export concentration on the Japanese market substantially lowers China’s agricultural export instability while export concentration on the Hong Kong, South Korea, ASEAN, the US and Russian Federation markets increases China’s export instability. China’s exports to the EU also had lower agricultural export instability. As a whole, geographic concentration on Asian markets was not a major source of China’s agricultural export instability. Further, decomposition results suggest that the impacts of geographic concentration on product-wise agricultural export instability was different during the study period.”

Yemen economy has a serious problem of export instability because of the narrow and weak export base, which is dominated by oil exports. Oil exports of Yemen dominated more than 90 per cent of total commodity export earnings. **Hanom (2009)** analysed export instability and its sources in the context of Yemen.
He has used multiple regression analysis to detect the impact of various factors on export instability during 1990 to 2007. Commodity concentration, geographical concentration, oil products exports instability and agricultural GDP were considered as sources of export instability (independent variables) in the study. Commodity concentration and geographical concentration were measured with the help of Gini-Hirschman coefficient, while export instability was based on exponential trend index in the study. The commodity structure of Yemen exports shows that export earnings of the economy depend heavily on the price movements of oil and the fluctuation of oil output and thus export quantities. The study found positive and significant effect of commodity concentration on export earning instability. At the same time it found non-significant impact of geographical concentration on export instability in Yemen. Oil export earning instability was found to be highly significant factor explaining export earning instability in Yemen, which confirmed the urgent need to expand the export base away from oil exports.

Trade dependency is unavoidable for a small and open economy like Malaysia. Hamid (2010) investigated the impact of commodity concentration of exports and pattern of trade on export instability in Malaysia. A change in the pattern of trade and export instability has been shown in the study for the period 1970 to 2003. Commodity and geographical concentration index was measured with the help of Gini-Hirschman coefficient. In this analysis, export instability was taken as a dependent variable, while commodity concentration, geographic concentration and share of primary exports were taken as independent variables. The results of the study show that commodity concentration had significant impact on export earning instability. The study suggested that Malaysia should maintain productivity growth and diversify its industrial base so as to capture the world demand. Malaysia will have to promote FDI and intra regional trade by adopting appropriate policies.

Malaysia’s export earnings of animal and vegetables oil and fats sector had fluctuated in the past. The major component of this sector, palm oil, is also highly unstable. Palm oil is an export oriented commodity, it plays an important role in the earnings of the country and together with oil and fats and this sector contributed 8 per cent in total export earnings. Abdullah (2011) examined palm oil export instability and its sources in Malaysia by using model called Generalized
Autoregressive Conditional Heteroscedasticity (GARCH) model. The study shows that palm oil export earnings were unstable for the study period 1995-2009. They found the significance of the factors affecting palm oil export instability through regression analysis. The determinants of palm oil export earnings instability included in the study are price of crude palm oil and soya bean oil, exchange rate, palm oil export volume, production, and GDP of China, India, Malaysia, Pakistan, USA. The study shows that prices of crude palm oil and soya bean have found to be the most significant positive factor affecting exports of palm oil, while export volume, CPO (crude palm oil) production were also positive and significant factors. Exchange rate was less significant determinant. Among the GDP of major trading partners of Malaysia, GDP of China and USA show negative impact, while India and Pakistan show positive impact on palm oil export instability during the period of study.

Ababa (2012) examined the determinants of commodity concentration of exports and direction of trade in Ethiopia during the period 1980 to 2010. The study used six different measures of commodity concentration. These six measures are Concentration Ratio (CR 2), Concentration Ratio (CR 4), Hirschman-Herfindhal (HH) Index, Hannah & Kay Index (HK 2.5), Hannah & Kay index (HK 0.5) and Entropy index (ENT). These measures of commodity concentration have shown similar results during the study period. The empirical results show decline in the value of commodity concentration as per all the measures. The study has taken four determinants of commodity concentration namely; “GDP (real gross domestic product), REER (real effective exchange rate), EDU (government expenditure on education) and INVGDP (domestic credit to the private sector as a ratio of GDP). The lagged value of output, change in real effective exchange rate, change in education spending and lagged value of investment to GDP ratio have been found to be negatively significant determinants of commodity concentration. The significant shift in direction of trade in Ethiopia mainly from the west to the east has been observed in the study.” As far as the direction of trade is concerned; the analysis shows diversification of export from the developed to the developing world of Africa and Asia which ultimately confirms a growing South-South trade. Similarly, a significant shift on the import side has been observed in the past few years. The study suggested export diversification could be enhanced through encouragement of
exchange rate and investment policy, which could promote growth and human capital.

India’s Seafood export is a major foreign exchange earner. The rising demand for seafood in the international market shows increasing importance of aquaculture. India is expected to become the largest producer of aquaculture products in the coming years. Jeyanthi and Gopal (2012) estimated the growth and instability in Indian frozen scampi export. The study calculated compound growth rates, market concentration and instability indices by using time series data over the period 1995 to 2009. The study observed that quantity as well as value of frozen scampi export increased by 67.22 per cent and 117 per cent respectively over the period. The study found that more than 80 per cent of the scampi exports from India are to major markets namely; Belgium, Canada, Germany, Japan, Netherlands, UAE, USA and UK. They measured concentration index by using Hirschman Market Concentration Index (HMCI) for market concentration and export instability using absolute difference method and Coppock’s instability index (CII). Results of the study show low and negative growth of Indian scampi export in terms of quantity, value and unit value during the period. The study has observed high market concentration with high instability in scampi export from India. The study revealed that India’s scampi export was concentrated mainly to those countries, which are either less desirable (low growth & high risk) or least desirable (low growth & low risk). Instability in quantity has largely influenced the scampi export. Hence, the study suggested that there is a need to increase scampi production and ensure steady supply of raw material to the seafood processing industry.

Section-IV

Export diversification and export composition are taken as important determinants in order to detect the impact of exports growth and economic growth after controlling the impacts of some variables such as lagged growth, infrastructure, investment and exports. Aditya and Roy (2007) also examined export-growth relationship with diversification of exports and nature of export composition. The study used cross sectional data for a sample of sixty five countries for the period from 1965 to 2005. The study used the GMM (Generalized Method of Moments) dynamic panel estimation as well as the commodity concentration index as a
measure of export diversification. The study has found non-linear relationship between export diversification and GDP per capita. Furthermore, the study found that high levels of export diversification had positive impact on economic growth. However, the impact of export composition on economic growth has been found to be non-significant.

Many Asian countries like China, Korea, Taiwan etc. have performed exceptionally well in the export sectors by adopting new technology, products and hence by diversification of their export basket. Agosin (2007) study highlights the significant role played by export diversification in export volume growth as well as per capita GDP growth in emerging economies during the period 1980 to 2003. The study gives empirical evidence of stylized facts of growth in the economies which have made significant efforts in catching up the new technologies, new products and activities in their production and export structures. Exports promote economic growth through the static and dynamic benefits of exports. The study also emphasis the role of externalities caused by export promotion and diversification in economic growth. The study shows that economies tend to converge in terms of income with export promotion and diversification.

In economic literature we don’t find many empirical studies on the relationship between agricultural export diversification and economic growth. Francis et al. (2007) studied “the causal relationship between agricultural export diversification and economic growth by using cointegration analysis and error-correction models. They used a sample of eight selected Caribbean countries namely Barbados, Belize, Costa Rica, Dominican Republic, Guyana, Haiti, Jamaica, and Trinidad and Tobago for the period 1961 to 2000.” The study finds short run as well as long run causality between agricultural export diversification and economic growth in case of Belize, while only short run causality in case of Barbados and long run causality between the two variables in case of Costa Rica, Haiti and Jamaica. No bi-directional causality has been found in short run as well as long run for any of these countries. Thus overall the study suggests agricultural export led growth in case of some Caribbean countries.

Arip et al. (2010) examined the relationship between export diversification and economic growth in Malaysia during the period 1980 to 2007. “The econometric
techniques of cointegration and Granger causality tests were used to examine the long-run relationship and dynamic interactions between export diversification and economic growth. The results show the presence of a unique cointegrating vector among variables”. At the same time the study concluded that export diversification plays an essential positive contribution in increasing economic growth. The causality analysis of the study found long-run causalities running from Degree of Diversification (DSD), Employment (EMP) and Capital Expenditure (CAP) to Gross Domestic Product (GDP) and from Gross Domestic Product (GDP), Gross Domestic Product to DSD and Capital Expenditure (CAP) to Employment (EMP). The study suggested that in the long-run period, export diversification could stabilize export earnings and consequently promote economic growth of Malaysia.

The East Asian economies have continuously promoted their exports by diversifying in the production and trade of manufactured goods. Ferdous (2011) explored the determinants of export diversification over the period 2000 and 2008. The determinants of export specialization in East Asian countries were taken as tariff rates, exchange rates, Gross Domestic Products and trade intensity. The study used Hirschman-Herfindahl index to measure export specialization/concentration, which takes values from 0 to 1. The value of concentration index shows that higher value stand for greater concentration/specialization and lower value stands for greater diversification. The results of regression analysis found that all the determinants have significant impact on specialization. Exchange rates, trade intensity and tariff rates had significant negative impact, while GDP had positive impact on specialization of exports.

Matadeen (2011) empirically examined the relationship between export diversification and economic growth in Mauritius during the period 1980 to 2008. He used Johansen cointegration analysis and the Vector Error Correction Model (VECM) in the study. The study shows that export diversification has positive impact on economic growth in the long run period, whereas negative relationship has been found between the export concentration and the economic growth. The study concluded that export diversification lead to economic growth by providing the appropriate incentives, promoting entrepreneurship and discoveries, dealing with
market and information failures and providing a competitive business and regulatory environment.

The issues regarding whether countries should pursue diversification or specialization in export production have generated much discussion in the theoretical literature and in policy circles. Naude and Rossouw (2011) analysed the degree and impact of export diversification and specialization on GDP per capita in South Africa. They used time series data of exports over the period 1962 to 2000. The authors used three methods of measuring export diversification namely; the HI (Herfindahl index), the NHI (normalized-Hirschmann index) and the absolute deviation of the country’s share of total world exports. The study also used Computable General Equilibrium (CGE) model. The study found U-shape relationship between per capita income and export concentration in South Africa over time. Granger causality test results show causality running from export diversification to GDP per capita. Results from CGE model found that export diversification resulted into higher GDP per capita and employment.

Alaya (2012) examined export diversification in Middle East and North Africa (MENA). He has used panel data of twelve MENA countries over the period 1984-2009. The study found inverted-U shape relationship between economic development and export diversification. The study shows that natural resources endowments explain export concentration in this region. On the other hand, openness and accumulation of physical capital (foreign as well as domestic) lead to more export diversification. Openness promotes export diversification by lowering transaction costs and improving the competitiveness of domestic firms. Therefore, the decline in trade barriers may allow more firms to enter foreign markets with a positive impact on export diversification.

Fotros et al. (2013) studied the role of export diversification in economic growth in the context of 23 selected developing countries. The export diversification was calculated with the help of export diversification index (DSD), which was based on comparative advantage of export during the period 2000 to 2009. “They examined the relationship between GDP per capita, physical capital, labor and export diversification index for the 23 developing countries by using generalized method of moments (GMM) that is an estimator for dynamic panel method. The
study found positive and significant effect of export diversification on the economic growth of selected countries. The increase in export diversification and export promotion based on comparative advantage will reduce the share of primary commodities in total export basket of the country. This ultimately reduces the fluctuations in export revenues that will lead to higher economic growth.”

Olaleye et al. (2013) studied the relationship between export diversification and economic growth in Nigeria. They used time series data during the period 1983 to 2012. They used unit root test to detect stationary of the series, Johansen co-integration test to detect the long-run relationship between variables and Granger causality test to know the direction of causality. In this study the variables namely; oil exports, manufacturing exports and agricultural exports shares of total exports of Nigeria are taken as independent variables and per capita income as the dependent variable. The study shows that all the variables are stationary at first difference. Johansen co-integration test confirms the existence of a long-run relationship between the variables. Granger causality test found uni-directional causality running from oil exports to per capita income and from manufacturing share to per capita income, while agricultural exports share of total export revealed bi-directional causality during the period under study.