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JEL : F1, F14, F17
Keywords: Trade elasticities, Competitiveness, Forecasting

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EXPORT COMPETITIVENESS OF TEXTILE COMMODITIES: A PANEL DATA APPROACH

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(PLEASE CONSIDER THE PAPER FOR YOUNG ECONOMIST AWARD 2014)

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Abstract

Paper assesses the export competitiveness of top fifteen textile products (different for each export destination) at 6 digit level of HS classification exported by India to top seven textile export destinations by using both price and income export elasticities. The export elasticities are estimated using dynamic panel data approach for each country separately. Commodity specific elasticities are further estimated to forecast the exports of commodities exported to respective export destinations. The resulting estimates can be used in designing destination specific export promotion policies for India

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1. INTRODUCTION

The textile industry which has been the backbone of many newly industrialized nations cannot be ignored and it becomes all the more imperative to study this sector in India because it is the second largest occupation in India after agriculture. With time, textile policy scenario made remarkable transitions from protectionist regime to propagating free market ideas. Till 1995, the Multi Fiber agreement on textiles and clothing (MFA) served as a memorandum guiding textile and clothing trade. The MFA excluded textiles from the GATT principles by enabling the countries to impose bilateral quota restrictions on imports of textiles and clothing (Hashim, 2005). Such controlled policy was based on the argument of protecting the traditional handloom industry from competition.

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However, exponents of liberalization chided at such controlled policies as it led to the reduction in the textile industry's contact with the world market, both as a buyer of cheap and quality inputs, and as a seller of yarn, cloth and apparel (Roy, 1998). With ATC (Agreement on Textiles and Clothing) coming to fore in 1995, the textile industry embarked on a liberalized regime where all the laws acting as barriers to trade were repealed and competition became the order of the day. The textile sector in present context needs to be competitive not only in terms of exports but also have to equip itself so that the imports from the rest of the world do not impinge on the domestic producers' share in their home market. Thus, the industry has to become globally competitive.

The importance of trade elasticities in designing trade related policies cannot be subsided. Besides being useful in studying international linkages and trade policies, these elasticities are becoming increasingly important because of their role in the development of the policies to deal with the existing debt crisis (Marquez & McNeilly, 1988). The best example of the role played by the trade elasticities in translating economic analysis into policy recommendation is the classic Marshall-Lerner condition which states that, for depreciation of the domestic currency to reduce the external deficit, the sum of export and import price elasticities (in absolute terms) must be greater than one (Hooper, Johnson and Marquez 2000). Trade elasticities are also critical as far as the study of competitiveness of commodities (of any sector) is concerned. As this paper focuses on textile industry it is pertinent to evaluate how competitive the products of the Indian textile industry are in the world market. The most effective way to evaluate the same is by estimating the trade elasticities. The trade elasticities are of two kinds: price demand and income demand trade elasticities. The price trade elasticity is nothing but the ratio of the percentage change in the quantity exported or imported of a commodity given a percentage change in the price of that commodity. On the other hand, the income trade elasticity is the percentage change in the quantity exported or imported given a percentage change in the income of the consumer.

There are plethora of studies which have tried to work out the trade elasticities for various countries and commodities in different sectors at different level of disaggregation. Hauk Jr. (2012) used the three stage least square panel data approach and tried to create a new dataset on sectoral level import and export elasticities in the U.S between years 1978 and 2001. Paper also provided a dataset listing trade elasticities for a broad range of sectors at the North American industry classification system 4-digit, and 6-digit and the Harmonized tariff system 6-digit, and

10 digit levels of industry classification. Kang (2012) used first difference and second difference GMM estimator and examined the income elasticities for the categories of goods traded between china and Korea. They also found that inclusion of new variety terms evidently reduces the magnitude of income elasticities of the goods in most categories, which they found was consistent with the implication from the new trade theory. Tokarick (2010) instead of using conventional econometric models to estimate trade elasticities used the general equilibrium model which uses GDP function approach to estimate elasticities. The paper reported empirical estimates of import demand and export supply elasticities for a large number of low, middle, and upper income countries. Hooper et al. (2000) used Johansen Co-integration technique to estimate long-run elasticities and Error correction method to estimate short-run elasticities. The purpose of the paper was to estimate and test the stability of income and price elasticities derived from conventional equations relating the foreign trade of G-7 countries to their respective income and relative prices.

Kee et al. (2008) by using semi flexible translog GDP function approach systematically estimated import elasticities for a broad group of countries of countries at a much disaggregated level of product detail. Marquez and McNeilly (1988) in their paper estimated income and price elasticities of non-oil exports of non-OPEC developing countries to the major industrial countries using unrestricted dynamic panel data approach. The paper relaxed three restrictions viz. the use of multilateral trade flows aggregated across both countries and commodities, omission of price effects and reliance on ordinary least square estimation and found that income elasticity for exports of Non-OPEC developing countries varies from 1.4 to 1.9, a relatively narrow range of variation when compared to previous studies. Bobic (2010) Used Arellano Bond method (dynamic panel data approach) and estimated price and income elasticities of Croatian trade flows using disaggregated data by industries for the period 2000 – 2007.The results indicated that the sensitivity of both exports and imports to prices is relatively low, while income effects are stronger. Imbs and Mejean (2010) Adopted econometric methodology of Feenstra (1994) to estimate structurally the substitution elasticity for more than 30 countries. Their weighted averages were used to get price and income trade elasticities. Their results implied constrained import elasticities ranging from 0.5 to 2.7. Export elasticities displayed less dispersion and ranged in absolute value from 0.9 to 2.25.

Among Indian Studies, most pertinent is the study by Mehta and Mathur (2004) where authors used panel data approach to estimate price and income elasticities for top 20 commodity codes exported to USA at 6-digit level of disaggregation. They also developed framework for forecasting of Indian annual exports at regular intervals, which would be carried out for principal trading partners and their principal commodities using time series forecasting technique.

However, considering the volume of literature available in relation to usage of trade elasticities in empirical research in the domain of international trade policy, the availability of studies pertaining to a particular industrial sector remains scanty. India's textile industry was one of the front-runners as far as total exports are concerned and still remains one of the top five sectors in terms of trade surplus. Conducting a competitiveness study for this sector exclusively will be relevant not only in terms of assessment of competitiveness of this sector but also in terms of devising destination specific textile sector export promotion policies customized for different regions of the world keeping in mind their different tastes and policy environments.

This paper attempts to estimate the export price and export income elasticities of seven export destinations namely Italy, Spain, USA, UK, Germany, China and France in order to assess the export competitiveness of top textile commodities exported to these countries. The top seven export destinations were selected based on the list of top export destinations of textile exports by India mentioned in the ministry of textiles note on textiles & clothing exports of India published in current year. The top fifteen commodities for each country were selected based on the Mode criterion i.e. the number of the times the commodity has appeared in the list of top 15 commodities for last 6 years i.e. from 2007 till 2012, from around 700 textile commodities traded at 6-digit level of HS classification using Ministry of Commerce Export-import database. Along with assessing the competitiveness of these commodities the forecasting of exports for these commodities till the year 2015 is also attempted.

2. METHODOLOGY

The methodology used for generating the elasticities is the dynamic panel data approach. Within broad category of dynamic panel data, Arellano Bond method has been used to estimate the price and income elasticities for separate panels constructed for each export destination for top 15 textile products over the period of 12 years (2001-2012).

$$Log\ V_{it}^{X} = b_{i0} + b_{i1} Log V_{it-1}^{X} + b_{i2} Log p_{it}^{X} + b_{i3} Log I_{it}^{X} + e_{it} \quad (1)$$

The double log specification has been used to estimate the elasticities. In equation one, V_{it}^{X} is the value of exports for commodity 'i' at time period't' and V_{it-1}^{X} is lagged value of exports. p_{it}^{X} is the price of the commodity which is exported whereas I_{it}^{X} is the commodity specific income variable. b_{i2} is the coefficient for price export elasticity whereas, b_{i3} is the coefficient for income export elasticity. The present analysis requires the estimation of price and income export elasticities for top fifteen commodities exported to top 7 textile export destinations. The selected commodities are at 6- digit level of HS Classification. The sample considered for this analysis is given in Annexure 1. The data was collected for 12 years i.e. from 2001 till 2012 for each commodity. Then separate panels were constructed for each country for analysis in order to estimate trade elasticities. Each panel thus consists of 180 observations.

The forecasts have been made for value of exports for each commodity separately till 2015. For forecasting the value of exports a three-stage procedure has been followed. Firstly, the income data has been extrapolated using time series forecasting methodology. Time series ARMA modeling technique has been used to extrapolate the data for commodity specific income in each panel. Secondly, the commodity specific income elasticities are estimated using ordinary least square method for each commodity category within a panel (see table 5.1). Finally, the growth rate of commodity specific income for each commodity is calculated for the extrapolated years. Growth rate is then multiplied with the elasticities to obtain the percentage change in the value of exports for each commodity separately. The percentage changes are then used to get the value of exports for each commodity exported to each country separately for the period 2013 to 2015.

3. VARIABLES AND DATA DESCRIPTION

Primarily, the analysis consists of three main variables. Price (in $), value of commodities exported or (in $) and finally the proxy for the income of the importing nation at 6-digit level of disaggregation. Another variable which has been constructed is the ratio of the price at which India exports a particular commodity to a particular export destination and the average price at which the same commodity is imported by the same export destination by countries other than India. This relative price ratio is a factor depicting the competitiveness of India's export price to a particular country say USA, vis-à-vis, the price which prevails in rest of the countries apart

from India. The price data was derived from two sources viz. UN COMTRADE and Ministry of commerce export import database. The price figures for the commodities traded are not directly available. Both these datasets only report the value and the quantity of the commodity traded. The price figures are thus derived by dividing value of export of a particular commodity by its quantity exported. Data on value of commodities exported was directly available from both the sources for commodities at 6-digit level of disaggregation. Since income data of importing nations is not available at commodity level a proxy for same was derived. The variable which is strongly correlated with income is expenditure. For computing export income elasticities for products exported to respective countries by India, the total import demand (value of imports) of these commodities by the respective importing nations, from the whole world, has been used as the proxy for income. The price ratio which is nothing but the proxy of the price variable is the ratio of actual price at which the commodities are traded and its competitive price. The actual price as mentioned is computed by dividing the value of the commodity traded by its quantity. For the denominator the value of a particular commodity imported by a particular export destination is netted out of value of products imported from India. The similar procedure has been done for quantities as well. After getting both values and quantity data netted out for Indian case, both are divided to get the competitive price.

4. EMPIRICAL RESULTS

In order to see whether the results are in line with our expectations, regressions were run for each panel constructed for each country separately. The predicted sign for price export elasticity is negative whereas for income export elasticity the sign is positive. The cases where the signs may be the other way round are the Giffen good case where the sign for price elasticity would be positive and the inferior good case where the sign for income export elasticity would be negative. As mentioned before the Arellano Bond method has been used to estimate the elasticities. Following are the results for both price and income elasticities for each export destination. The above elasticity results are average elasticity results for all the fifteen commodities taken together which are exported by India to different export destinations. The idea behind generating these elasticities for a particular set of commodities is to test how susceptible is the set of top commodities exported to different export destinations, to price and income shocks. The only way to understand this is to estimate the elasticities first and then see whether the elasticities are more

than unity or not. If the elasticity is more than unity then it implies that the set of commodities that are exported to a particular nation are not competitive enough in terms of price or income or both. The reasoning behind this argument is that if the price or income changes by one percent then the resulting change in the value of exports would be more than one percent which indicates that the commodities are vulnerable towards price and income changes.

Table 4.1: PRICE AND INCOME EXPORT ELASTICITY RESULTS

EXPORT TRADE ELASTICTIES FOR DIFFERENT EXPORT DESTINATIONS							
Country	**USA**	**UK**	**GERMANY**	**FRANCE**	**SPAIN**	**ITALY**	**CHINA**
Price Export Elasticities	-0.173*** (0.045)	- 0.167** (0.082)	- 0.234* (0.1314)	- 0.471*** (0.1006)	- 0.199* (0.105)	- 0.608*** (0.183)	0.543** (0.231)
Income Export Elasticities	0.559*** (0.1736)	0.445*** (0.149)	0.769*** (0.1794)	0.512*** (0.1082)	0.428*** (0.0966)	1.402*** (0.174)	0.943*** (0.228)
Number of Observations	180	180	180	180	180	180	180
Wald Test Statistic	595.83***	446.84***	248.91***	748.45***	1014.96***	38.64***	106.41***
****P<0.01, **P<0.05, *P<0.1* (Standard errors in *parentheses)*							

The price elasticity results displayed in table 4.1 vary from 0.167 to 0.608 in absolute terms. However, the income elasticity results vary from 0.428 to 1.402.The signs of the price elasticity coefficients are as predicted barring Chinese case. Similarly, the signs of income elasticity coefficients are as predicted and are significant at one percent level. The price elasticity coefficients for all export destinations are less than unity which implies that the sets of commodities which are exported to each export destination are price competitive. The price elasticity is highest in case of Italy where the set of commodities mostly includes Articles of Apparel and clothing accessories both knitted and crocheted and not knitted and crocheted ones. Also the income export elasticity is highest in case of Italy followed by China. This clearly implies that the set of products which are exported to Italy are not income competitive and are relatively less price competitive compared to other nations. The lowest price elasticity has been recorded in the case United Kingdom which implies the set of products which are exported to

UK has strong demand and thus is not vulnerable to any price shocks. The set of products exported to UK also includes mostly Articles of Apparel and clothing accessories both knitted and crocheted. Thus, the exports to Italy and UK are more or less similar as they fall under the category of articles knitted and crocheted. But the response to exports is starkly different when the cases of UK and Italy are compared. The products exported to UK fare well in terms price and income changes while the case of Italy has not been that strong. India has also performed well in case of USA as the price elasticity is merely 0.173 which is next best after UK followed by Spain where price elasticity for Indian exports is approximately 0.2 in absolute terms. The products exported to china mostly include cotton yarn and man-made fibers. The price elasticity for goods exported to china is positive which suggests that the raw products which are exported to china are of Giffen good nature. However, the income elasticity is positive which implies that the goods exported to china are not inferior.

5. FORECASTING

From chart 1 to chart 7 the forecasting results of different commodities exported to respective export destinations are displayed. In chart 1 where forecasting results of Italy are presented, the results are quite mixed in terms of performance. Commodities with HS Code[2] 610910, 610831, 620520, 510710, 610510, 630532 and 611120 show a decelerating growth rate in the year 2013. Commodity code 510710, which is yarn of combed wool containing more than or equal to 85% of wool, show a sharp decline in its value of exports in 2013 and value of exports in fact turn negative which mean that we may end up importing this particular product in 2013. But after that there are signs of recovery as the value of exports sharply rise at a significant growth rate. For commodities 620630 and 610721 India show a precipitous increase in their value of exports to Italy. For rest of the commodities the performance is not consistent as it wavers with time. In case of Spain the performance of the commodities is more or less stable barring few cases like 620640 which is Blouses, shirts etc. of man-made fibers where the value of exports again turns out to be negative in 2014 whereas for commodity code 621420, 630532 the value of exports almost touches the zero line in 2014 and 2013 respectively shown in chart 2. Commodities 620342,620443, 610442 and 620520 also show a dip in their performance in the year 2015.however, the fall is not as swift as the ones mentioned above. This raises concerns about

[2] For detailed description of commodity codes refer to Annexure 1.

the performances of our top products in the future as we need to work on the competitiveness of these products so that these commodities fare well in terms of generating export surplus. India in case of USA which has always been India's one of the major trading partners, has been a mixed bag of performances in terms of value of exports for the forecasted period shown in chart 3. On the one hand commodities like 630260, 620442, and 610510 have shown a sharp rise in the value of exports after 2013, there is a set of commodities on the other hand which includes 611120 and 610910 whose performance has been anticlimactic in terms of their growth rates.

In case of United Kingdom there have been some commendable performances by India in terms of value of exports of textile products for the forecasted period which includes commodity codes viz. 620442, 611120, and 620443 shown in chart 4. For these commodities there has been a consistent increase in their value of exports and thus these commodities are the front runners in terms of generating export surplus. On the other hand there have been few commodities whose performance graph has been like a 'U' shaped curve. This implies that there has been a decelerating performance in the middle years but soon after that there has been a substantial recovery. These commodities include 620640, 620462, 610510 and 630532. The products exported to Germany mostly include cotton products and textile yarn. For the forecasted period the products 610910, 620442 and 610510 have a performance graph in an inverted 'U' shape shown in chart 5. This simply implies the exports picking up in 2013 and 2014 but falling immediately after that. For The product '550320' (Staple fibers of polyester not carded/combed) the value of export turned negative immediately in 2013 and there has been no sign of recovery in further years. In Chinese case, the Indian products have performed exceptionally well as products like 620442, 620342, 520513, 520514, 550410 and 620520 have the performance graph which is upward sloping for all the years considered for forecasting which has been shown in chart 6. However, commodities like 620333 and 610910 have performance graphs which are alarming as they are almost on the verge of becoming a redundant set which do not contribute anything in terms of export earnings. France has been the case where almost all the commodities show an upward trend in terms of value of exports for the forecasted period. Commodities viz. 610910, 620442, 611120, 610510, 621490, 620640, 620443 and 620452 have had outstanding growth for the forecasted period which is shown in chart 7. Commodities 630532 and 611020 have the graph for their value of exports which is 'U' shaped and inverted 'U' shaped respectively.

TABLE- 5.1: COMMODITY SPECIFIC INCOME EXPORT ELASTICITIES

USA		UK		FRANCE		GERMANY		CHINA		ITALY		SPAIN	
C. CODE	**ELASTICITY**	**C. CODE**	**ELASTICITY**	**C. CODE**	**ELASTICITY**	**C. CODE**	**ELASTICITY**	**C. CODE**	**ELASTICITY**	**C. CODE**	**ELASTICITY**	**C. CODE**	**ELASTICITY**
610910	**2.213*** (0.4280)** N= 12 R Sq: 0.94	610910	**1.788*** (0.4034) N=12 R-Sq: 0.68**	610910	**2.134*** (0.1887) N=12 R-Sq: 0.94**	610910	**1.664*** (0.3104) N=12 R-Sq: 0.77**	520100	**2.577*** (0.6087) N=12 R-Sq: 0.71**	610910	**1.501*** (0.0882) N=12 R-Sq: 0.97**	620630	**1.225*** (0.1940) N=12 R-Sq: 0.83**
630260	**2.791*** (0.3926)** N= 12 R Sq: 0.85	620442	**1.192*** (0.1134) N=12 R-Sq: 0.95**	620630	**0.991*** (0.2560) N=12 R-Sq: 0.97**	620630	**1.297*** (0.1559) N=12 R-Sq: 0.94**	520511	**0.839*** (0.1236) N=12 R-Sq: 0.92**	610831	**1.630*** (0.1605) N=12 R-sq: 0.95**	620442	**1.137*** (0.0986) N=12 R-Sq: 0.94**
620640	**1.967*** (0.6599)** N=12 R Sq: 0.49	620630	**1.342*** (0.1316) N=12 R-Sq: 0.92**	620442	**1.211*** (0.1376) N=12 R-Sq: 0.95**	611120	**1.170*** (0.3220) N=12 R-Sq: 0.72**	520512	**0.736*** (0.2023) N=12 R-Sq: 0.78**	620630	**0.969** (0.4026) N=12 R-Sq: 0.69**	610910	**1.810*** (0.0593) N=12 R-Sq: 0.99**
630231	**3.326*** (0.4976)** N=12 R-Sq: 0.83	611120	**2.004*** (0.2126) N=12 R-Sq: 0.90**	620520	**0.579*** (0.1472) N=12 R-Sq: 0.68**	550320	**7.180*** (1.217) N=12 R-Sq: 0.80**	520514	**1.410*** (0.2006) N=12 R-Sq: 0.86**	610721	**1.254*** (0.1585) N=12 R-Sq: 0.92**	620520	**0.885*** (0.1312) N=12 R-Sq: 0.84**
620630	**0.790*** (0.2373)** N=12 R-Sq: 0.55	620520	**0.928*** (0.2198) N=12 R-Sq: 0.67**	611120	**1.715*** (0.2177) N=12 R-Sq: 0.87**	620520	**0.942*** (0.1104) N=12 R-Sq: 0.91**	550410	**2.620** (1.184) N=12 R-Sq: 0.69**	620442	**0.627** (0.1867) N=12 R-Sq: 0.71**	621490	**1.358*** (0.0921) N=12 R-Sq: 0.96**
620520	**1.132*** (0.3102)** N=12 R-sq: 0.59	630620	**3.091* (1.632) N=12 R. Sq: 0.13**	610510	**0.477** (0.1872) N=12 R-Sq: 0.59**	531010	**0.917* (0.1936) N=12 R-Sq: 0.81**	610910	**2.964*** (0.3947) N=12 R-Sq: 0.88**	510710	**2.468** (0.2186) N=12 R-Sq: 0.73**	610442	**1.073*** (0.1244) N=12 R-Sq: 0.90**
570110	**0.772** (0.2599)** N=12 R-Sq: 0.58	620443	**1.257*** (0.2069) N=12 R-Sq: 0.85**	621490	**0.720*** (0.1589) N=12 R-Sq: 0.93**	610610	**1.096*** (0.1252) N=12 R-Sq: 0.89**	620630	-0.541 (1.011) N=12 R-Sq: 0.56	620520	**0.580* (0.3038) N=12 R-Sq: 0.37**	620640	**1.070*** (0.1813) N=12 R-Sq: 0.89**
620442	**1.092*** (0.1140) N=12 R-Sq: 0.91**	620640	**2.201*** (0.7310) N=12 R-Sq: 0.64**	630492	**0.704* (0.2481) N=12 R-Sq: 0.55**	620640	1.819 (1.173) N=12 R-Sq: 0.48	520524	**1.231*** (0.4829) N=12 R-Sq: 0.43**	510529	-2.008 (1.6204) N=12 R-Sq: 0.62	630492	**1.017*** (0.1220) N=12 R-Sq: 0.88**

610510	**1.230*** (0.1941) N=12 R-sq: 0.82**	620462	**1.054*** (0.2953) N=12 R-Sq: 0.66**	620342	**1.243*** (0.2547) N=12 R-Sq: 0.87**	630260	**4.476*** (1.304) N=12 R-Sq: 0.65**	620333	**1.388** (0.6259) N=12 R-Sq: 0.47**	520811	0.547 (0. 3762) N=12 R-Sq: 0.21	620342	**0.830** (0.3245) N=12 R-Sq: 0.85**
570310	**1.878* (0.8320) N=12 R-sq: 0.44**	620342	**1.990*** (0.4928) N=12 R-Sq: 0.86**	620920	**1.143** (0.4047) N=12 R-Sq: 0.75**	520811	**0.8212*** (0.2202) N=12 R-Sq: 0.26**	620442	**2.905*** (0.4670) N=12 R-Sq: 0.87**	620342	**2.344*** (0.6269) N=12 R-Sq: 0.75**	621420	**2.150*** (0.7686) N=12 R-Sq: 0.55**
620462	2.760 (2.436) N=12 R-Sq: 0.12	610510	**0.892* (0.4154) N=12 R-Sq: 0.34**	630532	**3.135* (1.459) N=12 R-Sq: 0.91**	620442	**1.018*** (0.1184) N=12 R-Sq: 0.89**	620342	**1.909*** (0.6811) N=12 R-Sq: 0.82**	630532	**6.214** (1.947) N=12 R-Sq: 0.82**	620443	**0.956*** (0.1399) N=12 R-Sq: 0.85**
620342	**4.237** (1.393) N=12 R-Sq: 0.51**	630532	**8.026*** (1.5803) N=12 R-Sq: 0.77**	620640	**0.624** (0.2894) N=12 R-Sq: 0.41**	570110	-1.107 (0.3224) N=12 R-Sq: 0.57	520513	**1.842*** (0.5314) N=12 R-Sq: 0.60**	611120	**1.652*** (0.1243) N=12 R-Sq: 0.95**	630532	**5.507*** (0.8799) N=12 R-Sq: 0.83**
570500	**0.947** (0.3760) N=12 R-Sq: 0.64**	**540710**	**1.102* (0.5411) N=12 R-Sq: 0.81**	620452	**1.467*** (0.2571) N=12 R-Sq: 0.79**	611020	**0.793** (0.3359) N=12 R-Sq: 0.39**	620520	**3.288*** (1.245) N=12 R-Sq: 0.67**	520548	0.826 (0.9886) N=12 R-Sq: 0.16	621142	**1.520*** (0.5932) N=12 R-Sq: 0.59**
610821	**11.17** (4.738) N=12 R-Sq: 0.64**	620920	0.499 (0.8060) N=12 R-Sq: 0.50	620443	**0.506*** (0.1143) N=12 R-Sq: 0.68**	620342	**2.060*** (0.3951) N=12 R-Sq: 0.80**	550330	1.471 (1.499) N=12 R-Sq: 0.57	621490	**0.899*** (0.1292) N=12 R-Sq:0.93**	540233	0.146 (1.033) N=12 0.27
611120	**4.995*** (0.6247) N=12 R-Sq: 0.87**	610831	**0.922** (0.4984) N=12 R-Sq: 0.38**	611020	**0.735*** (0.2302) N=12 R-Sq: 0.56**	610510	**0.776*** (0.1915) N=12 R-Sq: 0.64**	611120	**1.800*** (0.3971) N=12 R-Sq: 0.74**	610510	**0.666*** (0.1767) N=12 R-Sq: 0.74**	610510	**0.734*** (0.1731) N=12 R-Sq: 0.87**

****P<0.01, **P<0.05, *P<0.1*

(Figures in the bold are the elasticities which have correct predicted sign and are significant at different levels)

The projections made for all the commodities for different export destinations have been more or less heterogeneous. As shown in forecasts that no matter how well the commodities have performed in the past in terms of export earnings but there is a risk that the performance of many such commodities may dwindle down in the future. Thus, it is important to start thinking of some strategy to make these commodities competitive and make sure the commodities which are currently relatively competitive also remain the same in terms of their performance in the future.

6. CONCLUSION

Competitiveness has been the buzz word of today's era and it is important in this current globalized environment to be competitive given there is tremendous competition from rest of the world in every sector. The aim of the whole exercise conducted above was to first try and assess the trade competitiveness of top fifteen textile products exported to different countries and see how competitive our top products have been in the past. This has been done by using the Arellano Bond method for each panel of export destination. The average elasticities as mentioned previously sort of corroborate the argument that Indian textile products are price and income competitive barring the products which are exported to Italy which have recorded the income elasticity of more than unity. However, the variation in the price elasticities across nations has been more when compared to income elasticities. A product can be called as price competitive if the unit cost of its production is much low in comparison to its counterparts and thus has a low price without compromising on the quality of the same. After getting the average elasticities the next step was to forecast the exports for the whole sample of commodities using commodity specific income elasticities. The whole idea behind conducting this forecasting exercise was to make sure in advance that the commodities which may lag behind in terms of value of exports are focused upon and are made competitive with right policy interventions. It is also important to understand that each export destination has its own peculiar characteristics and if one policy gets implemented across all export destinations, which doesn't take into consideration the country specific needs, we are in a fix. There will be no way to understand why one commodity is performing so well in one country and not so well in a different national context. The bottom-line is that having a standard textile export policy for the whole sector will not serve the purpose and we need to customize our policies with respect to each export destination as we have clearly seen the response to almost similar articles exported to UK and Italy is so different. Thus, it is important to draft country specific or export destination specific

textile policies rather than having a blanket policy for the whole sector. This analysis marks a beginning of such kind of a work where each country has been separately considered. Also this analysis is pertaining only to one sector which is also important as standard trade policies devised for the entire trade sector will have no meaning. Once the results are obtained it is important to understand the reason behind the lackluster performance of few commodities. The commodities with a performance graph having downward sloping or 'u' shaped curves are the ones which have to be checked for the reasons of their not so consistent performances. This analysis can further be linked with the technical efficiency analysis to fathom out the reasons of lack of competitiveness. There can be a clear case of lack of efficiency and productivity in production of these commodities which has to be checked.

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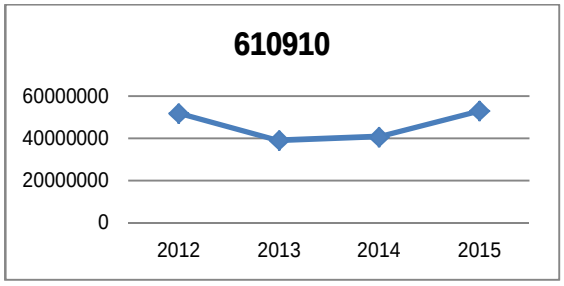
ANNEXURE 1: COUNTRIES AND COMMODITIES CONSIDERED FOR ANALYSIS

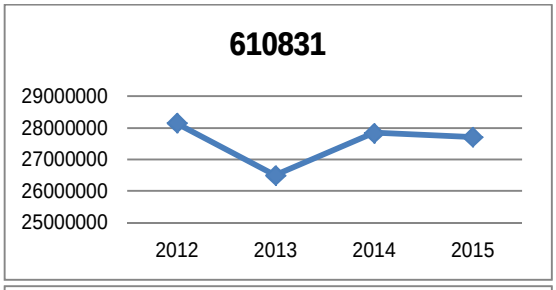
S. NO.	COMMODITY CODE	COMMODITY DETAILS
USA		
1	610910	T-SHIRTS, SINGLETS, OTHER VESTS, KNITTED OR CROCHETED, OF COTTON
2	630260	TOILET LINEN, KITCHEN LINEN, OF TERRY TOWELLING, OF COTTON
3	620640	BLOUSES,SHIRTS ETC OF MAN-MADE FIBRES
4	630231	OTHER BED LINEN OF COTTON
5	620630	BLOUSES,SHIRTS & SHIRTS-BLOUSES OF COTTON
6	620520	MEN'S OR BOYS' SHIRTS, OF COTTON
7	570110	CARPETS & OTHER TEXTILE FLOOR COVERINGS OF WOOL OR FINE ANIMAL HAIR, KNOTTED
8	620442	DRESSES OF COTTON
9	610510	MEN'S/BOYS' SHIRTS OF COTTON
10	570310	CARPETS AND OTHER TEXTILE FLOOR COVERINGS OF WOOL/FINE ANIMAL HAIR TUFTD,W/N MADE UP
11	620462	TROUSERS,BIB AND BRACE OVERALLS, BREECHES AND SHORTS OF COTTON
12	620342	TROUSERS BIB & BRACE OVERALLS BREECHES & SHORTS OF COTTON FOR MEN'S & BOYS'
13	570500	OTHER CARPETS AND OTHER TEXTILE FLOOR COVERINGS, WHETHER OR NOT MADE UP
14	610821	BRIEFS AND PANTIES OF COTTON
15	611120	BABIES'GARMENTS ETC OF COTTON
UNITED KINGDOM		
1	610910	T-SHIRTS, SINGLETS, OTHER VESTS, KNITTED OR CROCHETED, OF COTTON
2	620442	DRESSES OF COTTON
3	620630	BLOUSES,SHIRTS & SHIRTS-BLOUSES OF COTTON
4	611120	BABIES'GARMENTS ETC OF COTTON
5	620520	MEN'S OR BOYS' SHIRTS, OF COTTON
6	630260	TOILET LINEN, KITCHEN LINEN, OF TERRY TOWELLING, OF COTTON
7	620443	DRESSES OF SYNTHETIC FIBRES
8	620640	BLOUSES,SHIRTS ETC OF MAN-MADE FIBRES
9	620462	TROUSERS,BIB AND BRACE OVERALLS, BREECHES AND SHORTS OF COTTON
10	620342	TROUSERS BIB & BRACE OVERALLS BREECHES & SHORTS OF COTTON FOR MEN'S & BOYS'
11	610510	MEN'S/BOYS' SHIRTS OF COTTON
12	630532	FLEXIBLE INTERMEDIATE BULK CONTAINERS OF MAN MADE TEXTILE MATERIALS
13	540710	WOVN FBRCS OBTND FROM HIGH TENACITY YRN OFNYLON OR OTHR POLYAMIDES,OR OF POLYESTERS
14	620920	BABIES' GRMNTS & CLOTHNG ACCSSRS OF COTTON
15	610831	NIGHTDRESSES AND PYJAMAS OF COTTON
FRANCE		
1	610910	T-SHIRTS, SINGLETS, OTHER VESTS, KNITTED OR CROCHETED, OF COTTON
2	620630	BLOUSES,SHIRTS & SHIRTS-BLOUSES OF COTTON
3	620442	DRESSES OF COTTON
4	620520	MEN'S OR BOYS' SHIRTS, OF COTTON
5	611120	BABIES'GARMENTS ETC OF COTTON
6	610510	MEN'S/BOYS' SHIRTS OF COTTON
7	621490	SHWLS,SCRVS ETC OF OTHER TXTL MATERIALS
8	630492	OTHR FRNSHNG ARTCLS OF COTN,NT KNTD/CRCHTD
9	620342	TROUSERS BIB & BRACE OVERALLS BREECHES & SHORTS OF COTTON FOR MEN'S & BOYS'
10	620920	BABIES' GRMNTS & CLOTHNG ACCSSRS OF COTTON

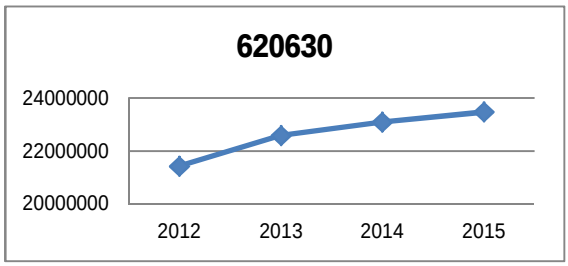
11	630532	FLEXIBLE INTERMEDIATE BULK CONTAINERS OF MAN MADE TEXTILE MATERIALS
12	620640	BLOUSES,SHIRTS ETC OF MAN-MADE FIBRES
13	620452	SKIRTS AND DIVIDED SKIRTS OF COTTON
14	620443	DRESSES OF SYNTHETIC FIBRES
15	611020	JERSEYS ETC OF COTTON
GERMANY		
1	610910	T-SHIRTS, SINGLETS, OTHER VESTS, KNITTED OR CROCHETED, OF COTTON
2	620630	BLOUSES,SHIRTS & SHIRTS-BLOUSES OF COTTON
3	611120	BABIES'GARMENTS ETC OF COTTON
4	550320	STAPLE FIBRES OF POLYESTER NT CRD/CMBD
5	620520	MEN'S OR BOYS' SHIRTS, OF COTTON
6	531010	UNBLECHD WOVEN FABRICS OF JUTE/OTHER TEXTILE BAST FIBRES
7	610610	BLOUSE ETC OF COTTON
8	620640	BLOUSES,SHIRTS ETC OF MAN-MADE FIBRES
9	630260	TOILET LINEN, KITCHEN LINEN, OF TERRY TOWELLING, OF COTTON
10	520811	COTN FABRCS CONTNG>=85% BY WT OF COTN, UNBLEACHED PLAIN WEAVE WEIGING <=100 G/M2
11	620442	DRESSES OF COTTON
12	570110	CARPETS & OTHER TEXTILE FLOOR COVERINGS OF WOOL OR FINE ANIMAL HAIR, KNOTTED
13	611020	JERSEYS ETC OF COTTON
14	620342	TROUSERS BIB & BRACE OVERALLS BREECHES & SHORTS OF COTTON FOR MEN'S & BOYS'
15	610510	MEN'S/BOYS' SHIRTS OF COTTON
CHINA		
1	520100	COTTON, NOT CARDED OR COMBED
2	520511	SNGL YRN OF UNCMBD FBRS MEASURNG 714.29 DCTX/MORE(NT EXCDNG 14 MTRC NO)
3	520512	SNGL YRN OF UNCMBD FBRS MEASURING= 232.56 DCTX(> 14 BUT <=43 MTRC NO)
4	520514	SNGL YRN OF UNCMBD FBRS MEASURNG=125 DCTX(>50 BUT <=80 MTRC NO)
5	550410	VISCOSE RAYON STAPLE FIBRES NT CRD/COMBD
6	610910	T-SHIRTS, SINGLETS, OTHER VESTS, KNITTED OR CROCHETED, OF COTTON
7	620630	BLOUSES,SHIRTS & SHIRTS-BLOUSES OF COTTON
8	520524	SNGL YRN OF CMBD FBRS MEASURNG=125 DCTX(>52 BUT <=80 MTRC NO)
9	620333	JACKTS & BLAZERS OF SYNTHETIC FIBRES
10	620442	DRESSES OF COTTON
11	620342	TROUSERS BIB & BRACE OVERALLS BREECHES & SHORTS OF COTTON FOR MEN'S & BOYS'
12	520513	SNGL YRN OF UNCMBD FBRS MEASURNG=192.31 DCTX(>43 BUT <=52 MTRC NO)
13	620520	MEN'S OR BOYS' SHIRTS, OF COTTON
14	550330	STAPLE FIBRS OF ACRLC/MODACRLC NT CRD/CMBD
15	611120	BABIES'GARMENTS ETC OF COTTON
ITALY		
1	610910	T-SHIRTS, SINGLETS, OTHER VESTS, KNITTED OR CROCHETED, OF COTTON
2	610831	NIGHTDRESSES AND PYJAMAS OF COTTON
3	620630	BLOUSES,SHIRTS & SHIRTS-BLOUSES OF COTTON
4	610721	NIGHTSHIRTS & PYJAMAS OF COTTON
5	620442	DRESSES OF COTTON
6	510710	YARN OF COMBED WOOL CONTNG>=85% WOOL BY WTNOT PUT UP FOR RETAIL SALE
7	620520	MEN'S OR BOYS' SHIRTS, OF COTTON
8	510529	WOOL TOPS AND OTHER COMBED WOOL
9	520811	COTN FABRCS CONTNG>=85% BY WT OF COTN, UNBLEACHED PLAIN WEAVE WEIGING

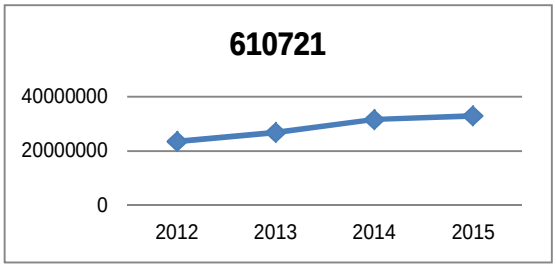
		<=100 G/M2
10	620342	TROUSERS BIB & BRACE OVERALLS BREECHES & SHORTS OF COTTON FOR MEN'S & BOYS'
11	630532	FLEXIBLE INTERMEDIATE BULK CONTAINERS OF MAN MADE TEXTILE MATERIALS
12	611120	BABIES'GARMENTS ETC OF COTTON
13	520548	MLTPL (FOLDD)/CABLD YRN OF COMBD FBRS MSRNG PER SNGL YRN 120 MTRC NO.
14	621490	SHWLS,SCRVS ETC OF OTHER TXTL MATERIALS
15	610510	MEN'S/BOYS' SHIRTS OF COTTON
SPAIN		
1	620630	BLOUSES,SHIRTS & SHIRTS-BLOUSES OF COTTON
2	620442	DRESSES OF COTTON
3	610910	T-SHIRTS, SINGLETS, OTHER VESTS, KNITTED OR CROCHETED, OF COTTON
4	620520	MEN'S OR BOYS' SHIRTS, OF COTTON
5	621490	SHWLS,SCRVS ETC OF OTHER TXTL MATERIALS
6	610442	DRESSES OF COTTON
7	620640	BLOUSES,SHIRTS ETC OF MAN-MADE FIBRES
8	630492	OTHR FRNSHNG ARTCLS OF COTN,NT KNTD/CRCHTD
9	620342	TROUSERS BIB & BRACE OVERALLS BREECHES & SHORTS OF COTTON FOR MEN'S & BOYS'
10	621420	SHWLS,SCARVES ETC OF WOOL/FINE ANML HAIR
11	620443	DRESSES OF SYNTHETIC FIBRES
12	630532	FLEXIBLE INTERMEDIATE BULK CONTAINERS OF MAN MADE TEXTILE MATERIALS
13	621142	OTHR GRMNTS OF COTTON FR WOMEN'S OR GIRLS'
14	540233	TEXTURED YARN OF POLYESTERS
15	610510	MEN'S/BOYS' SHIRTS OF COTTON

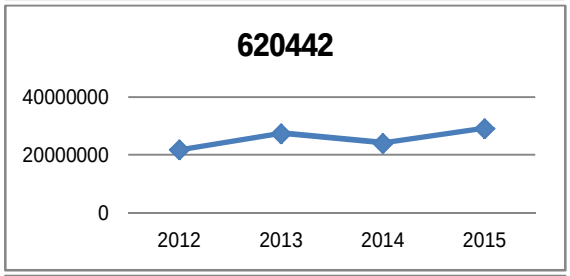
CHART 1: FORECASTING RESULTS FOR VALUE OF EXPORTS: ITALY

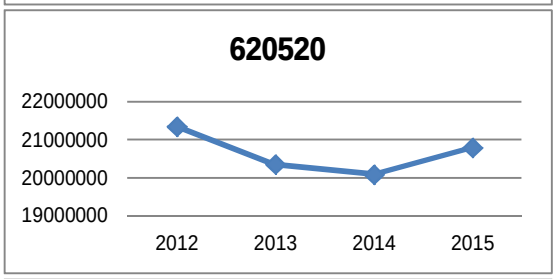


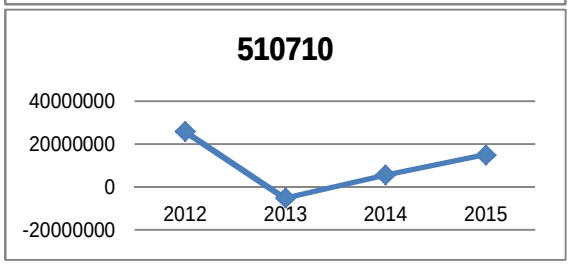


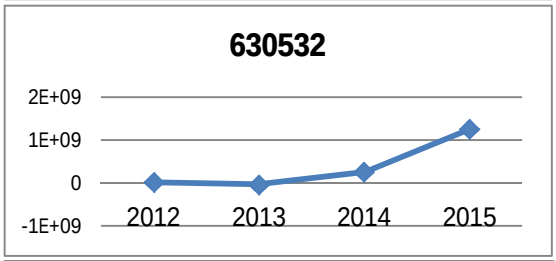


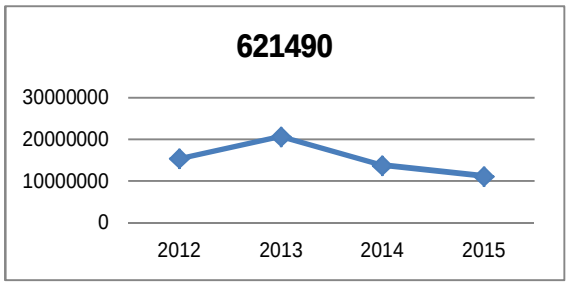


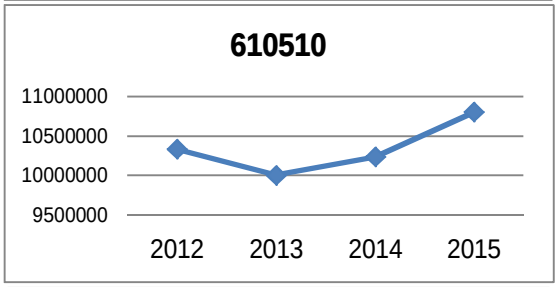


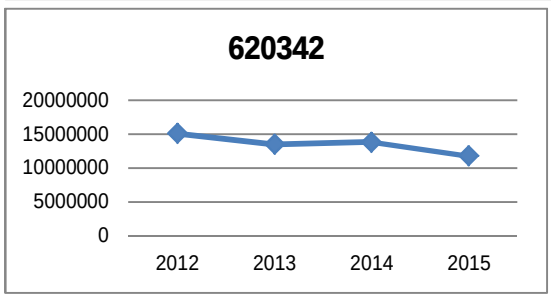












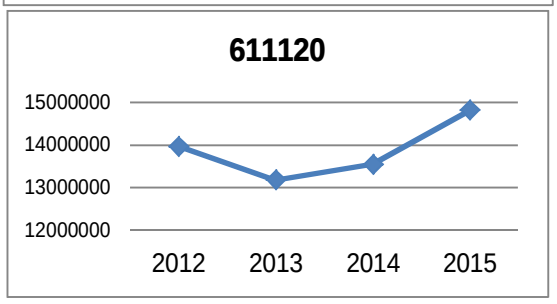
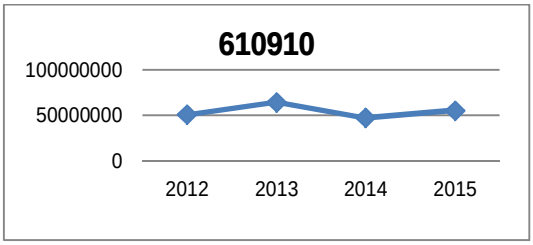
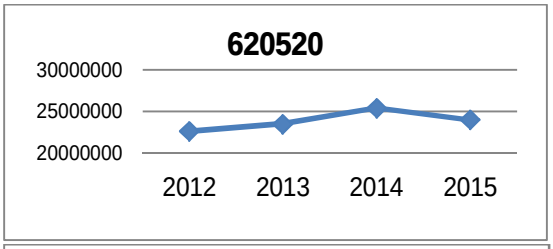
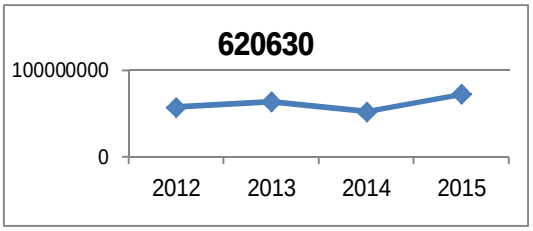
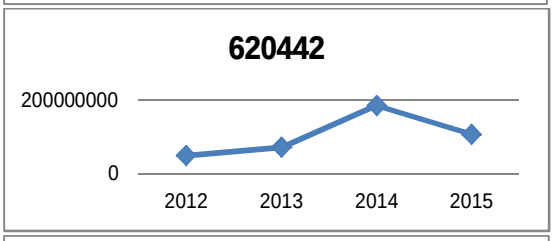


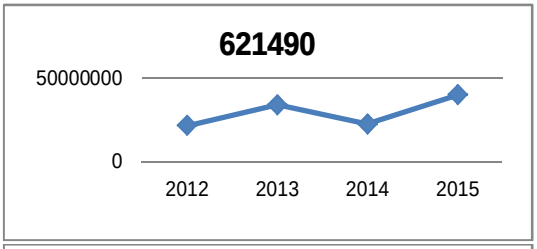
CHART 2: FORECASTING RESULTS FOR VALUE OF EXPORTS: SPAIN

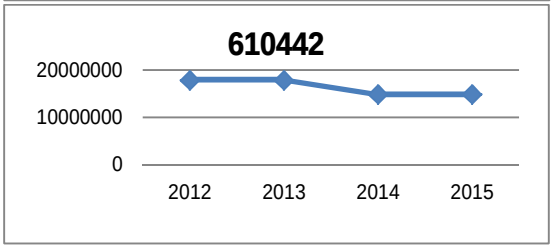


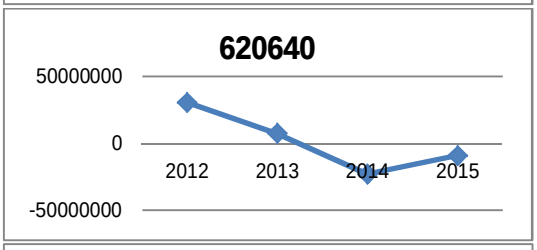


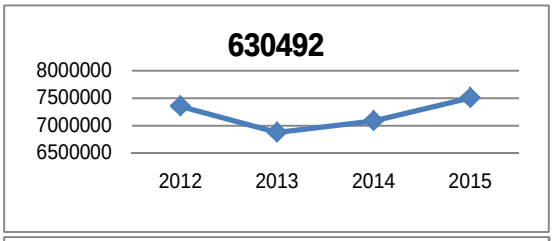


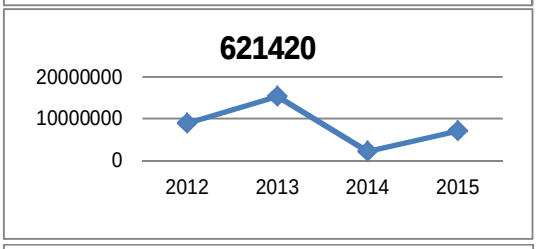


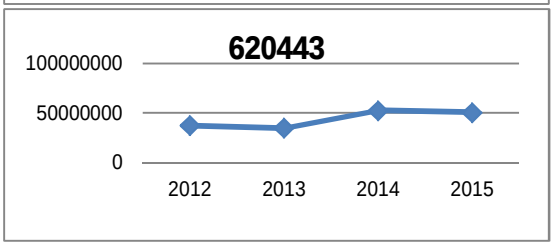


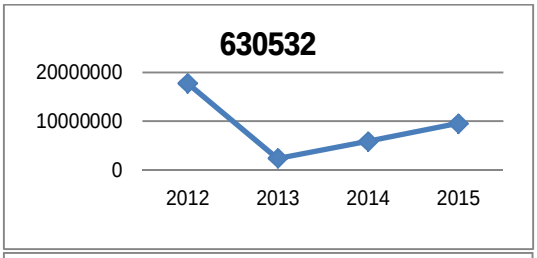


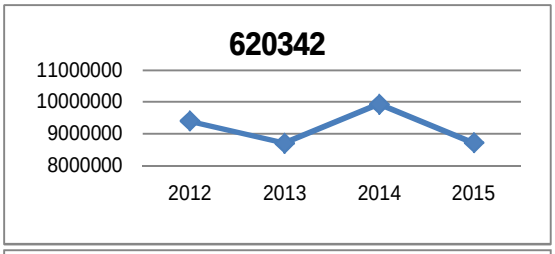


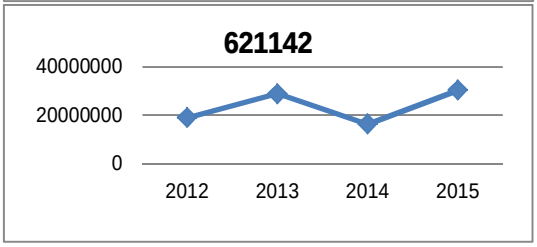












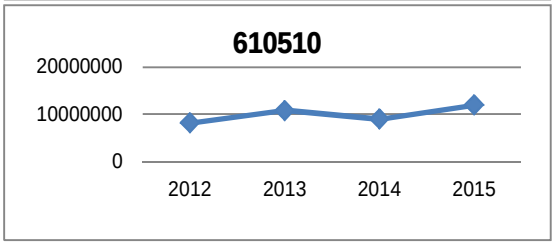
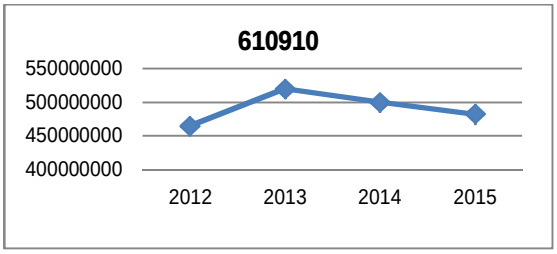
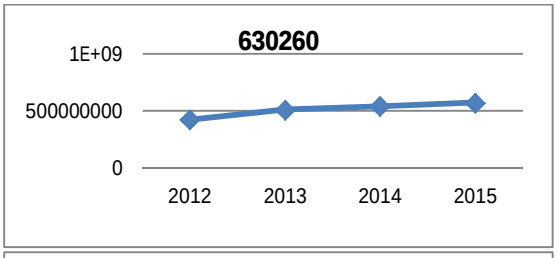
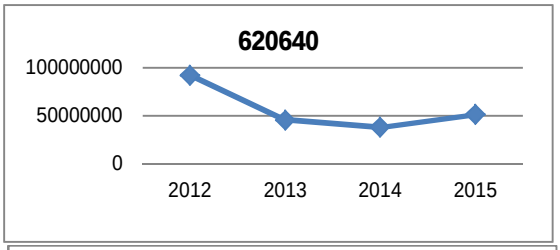
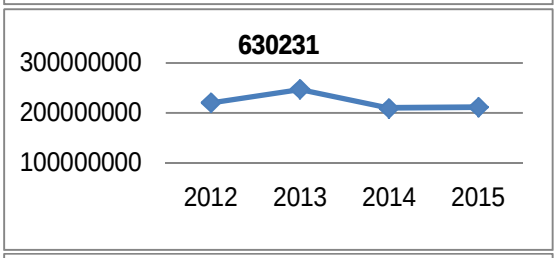


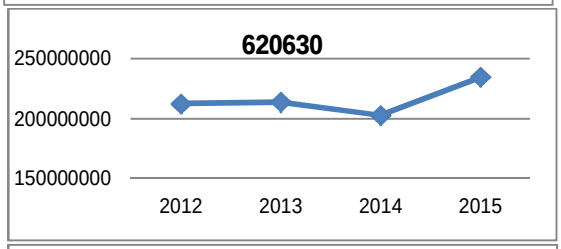
CHART 3: FORECASTING RESULTS FOR VALUE OF EXPORTS: USA

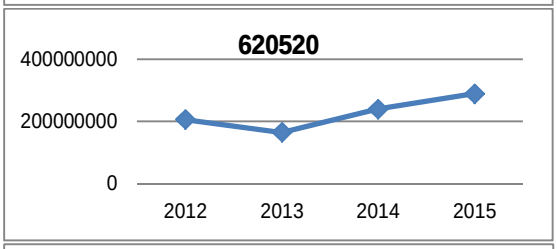


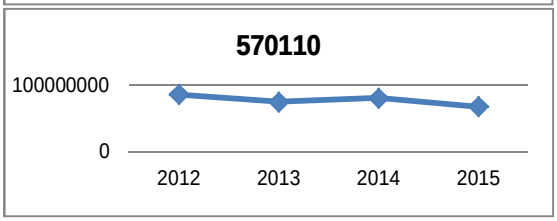


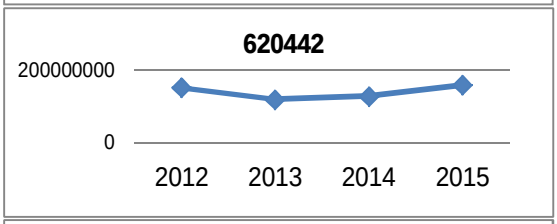


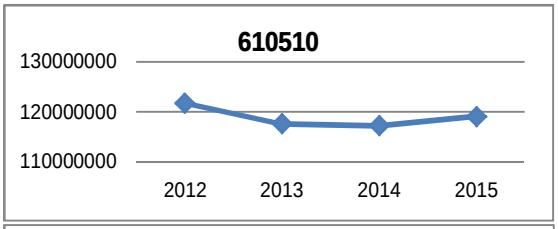


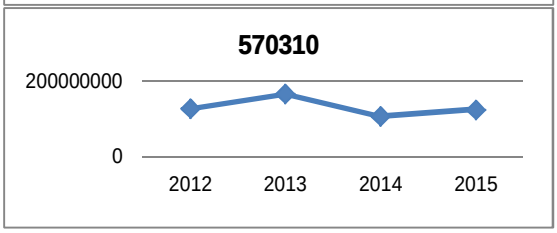


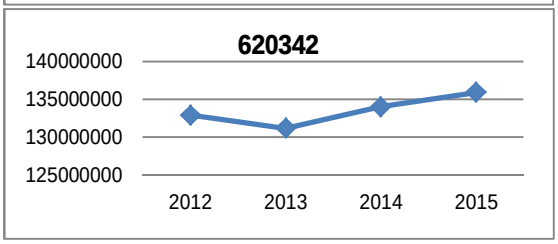


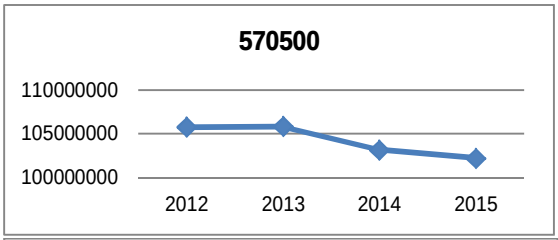


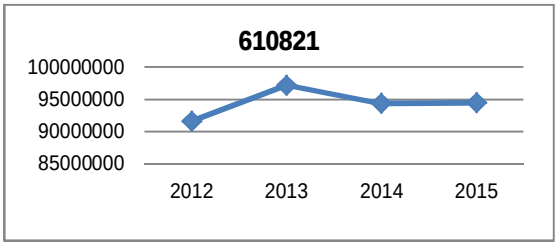












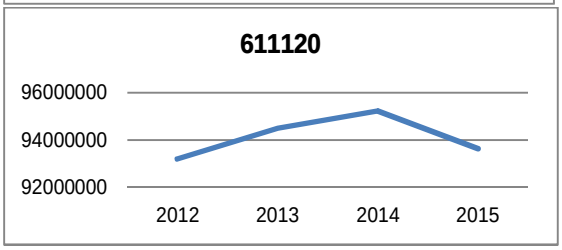
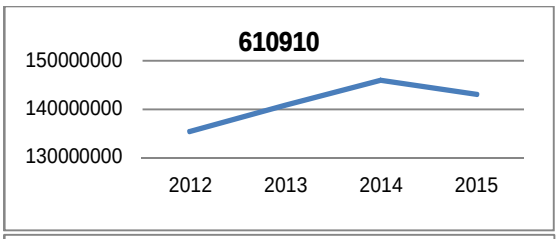
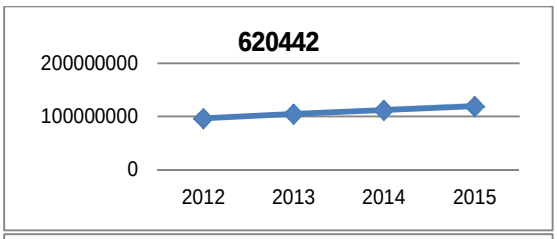
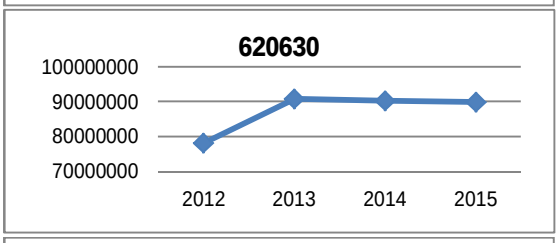
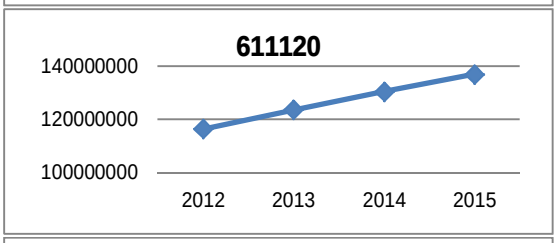


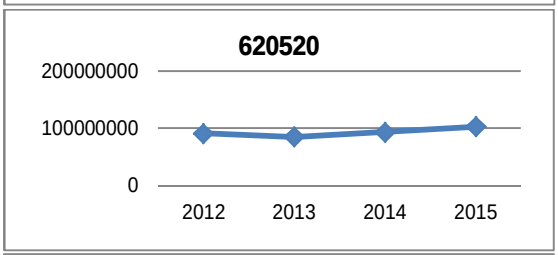
CHART 4: FORECASTING RESULTS FOR VALUE OF EXPORTS: UNITED KINGDOM

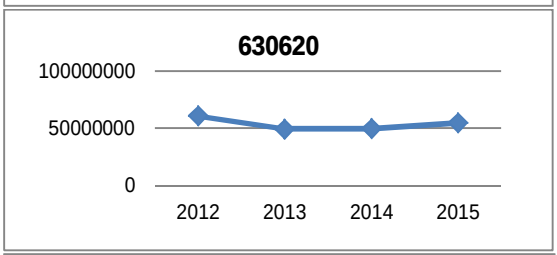


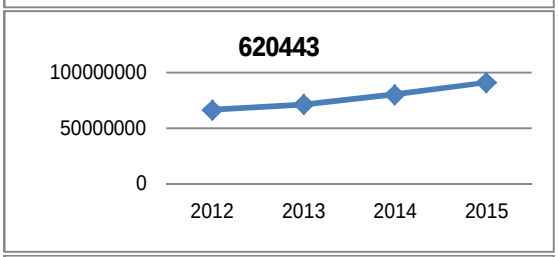


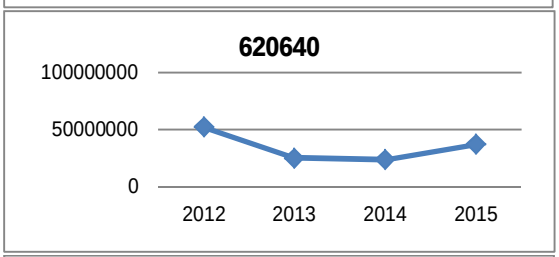


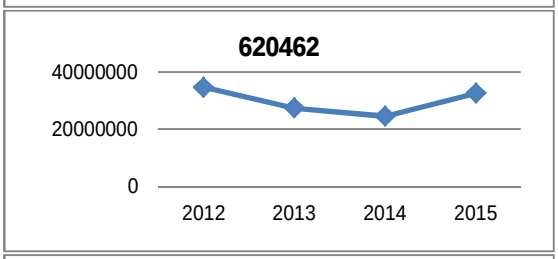


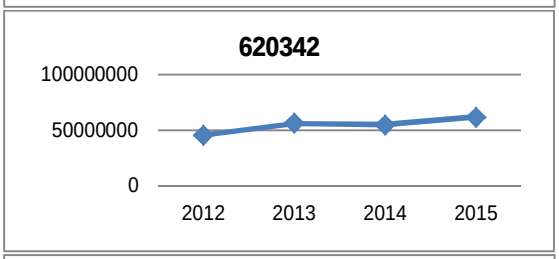


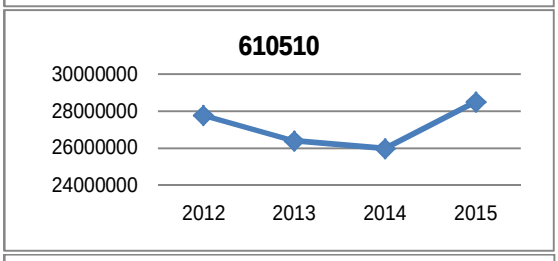


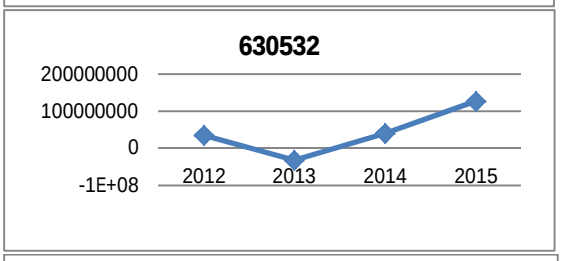


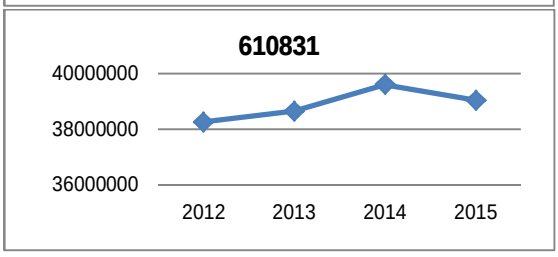












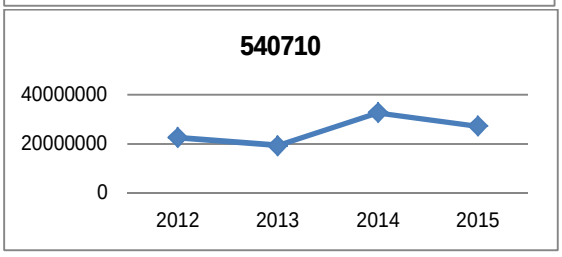
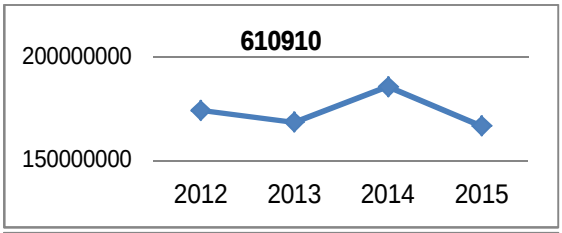
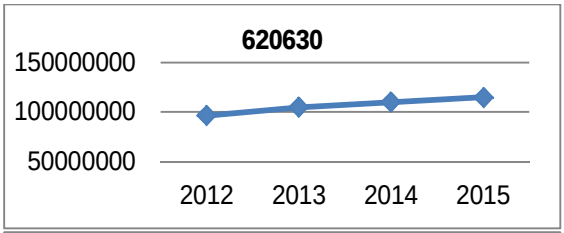
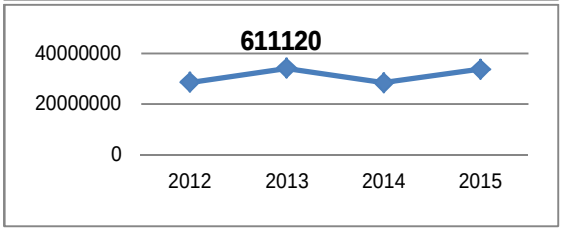
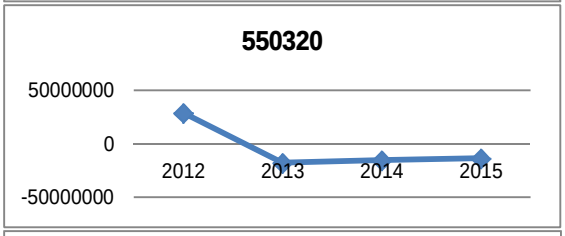


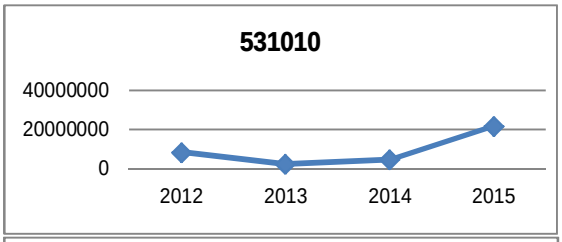
CHART 5: FORECASTING RESULTS FOR VALUE OF EXPORTS: GERMANY

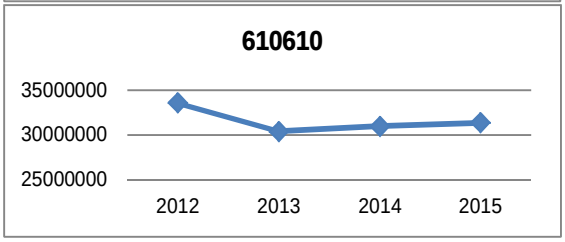


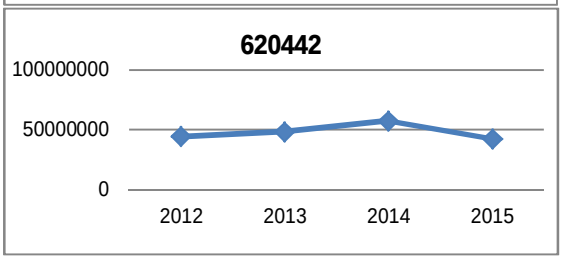


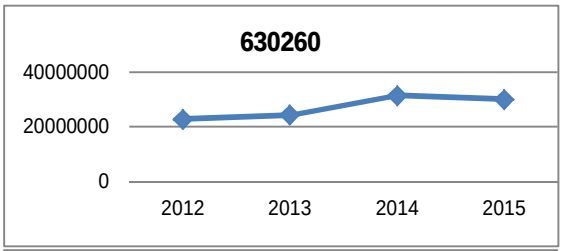


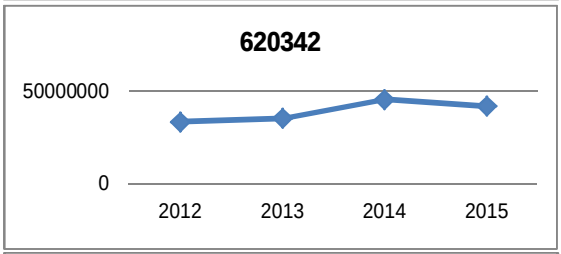


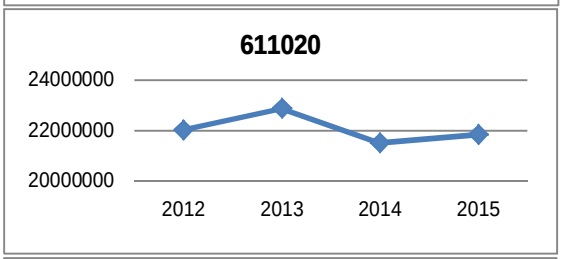


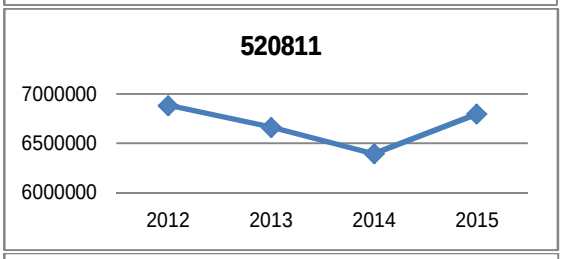


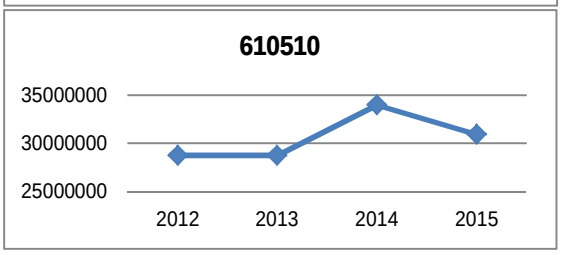












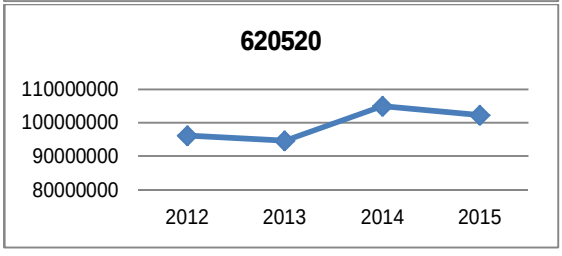
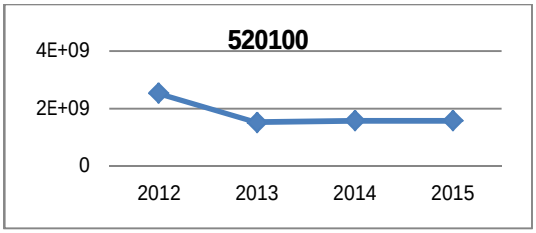
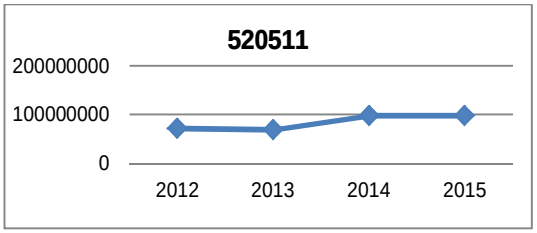
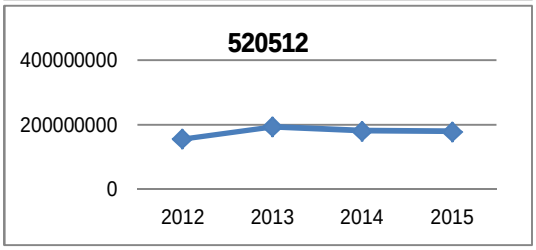
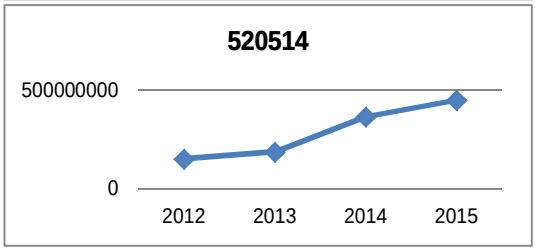


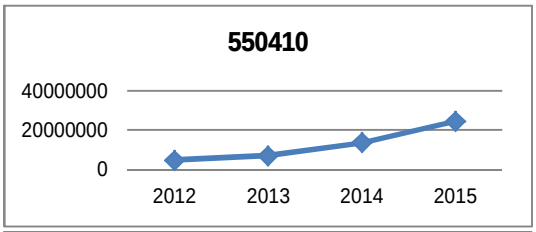
CHART 6: FORECASTING RESULTS FOR VALUE OF EXPORTS: CHINA

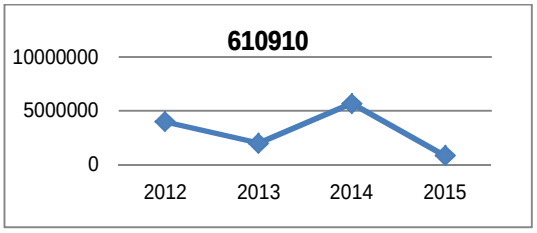


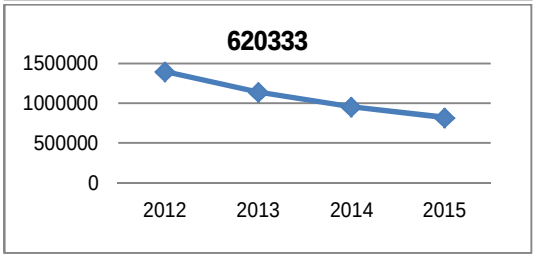


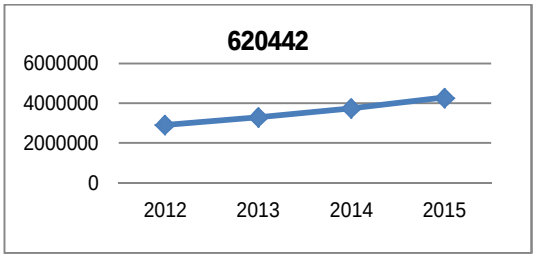


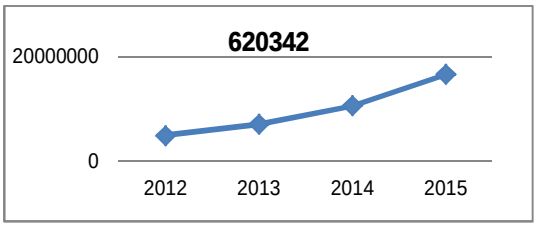


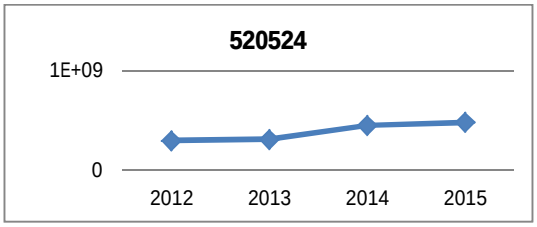


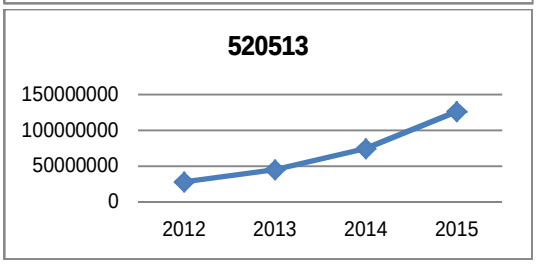


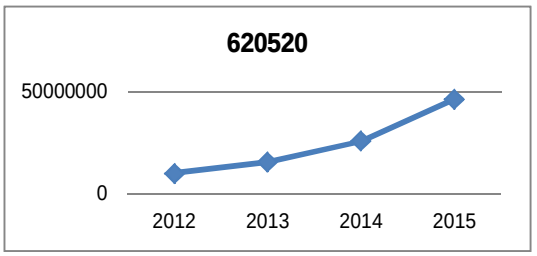












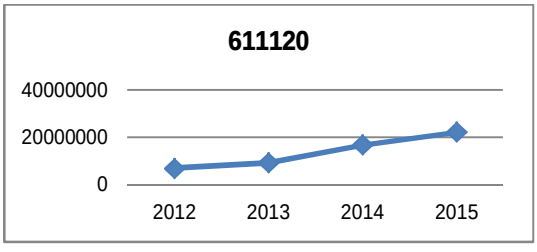
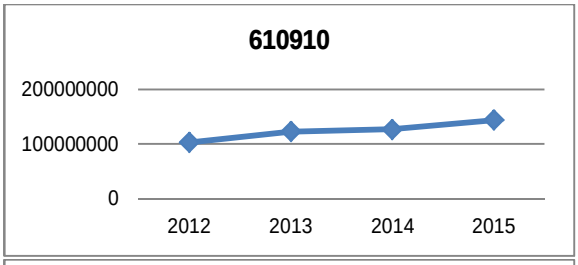
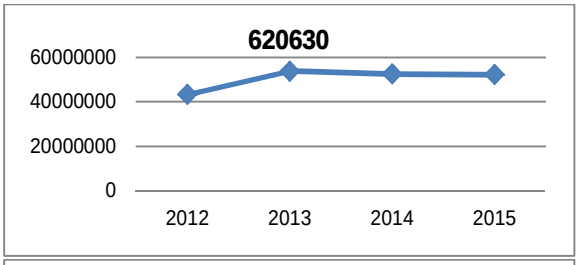
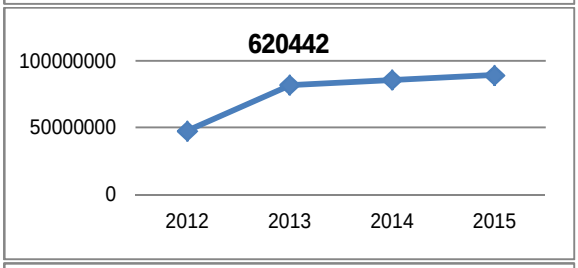
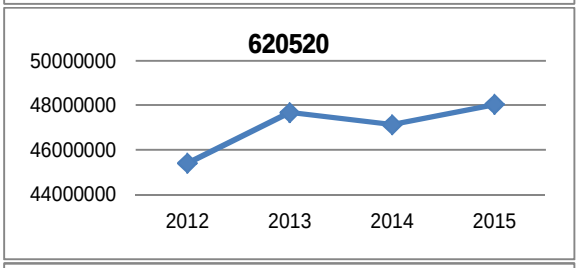


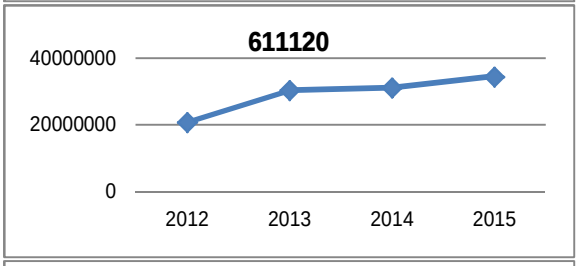
CHART 6: FORECASTING RESULTS FOR VALUE OF EXPORTS: FRANCE

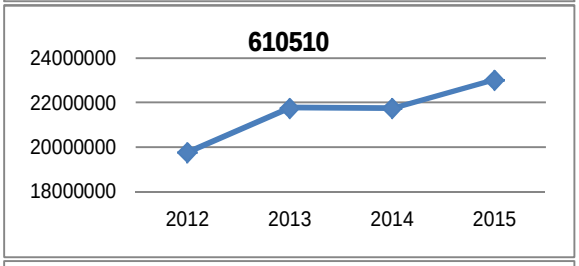


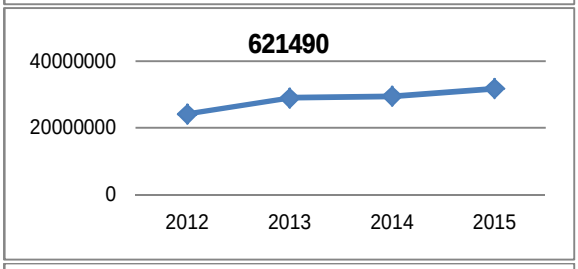


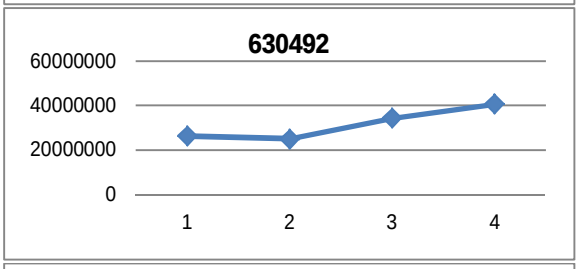


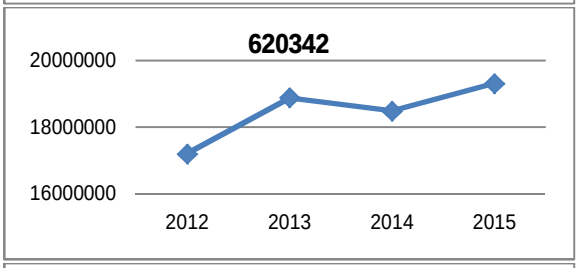


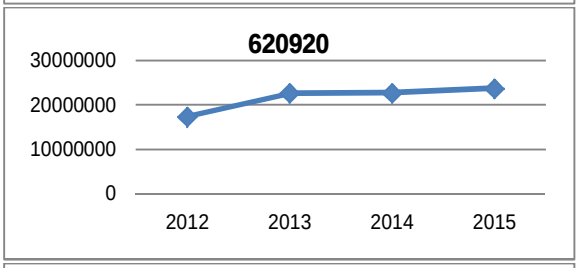


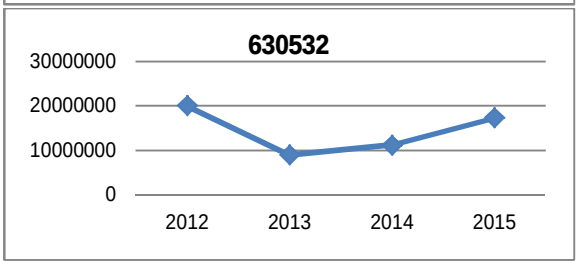


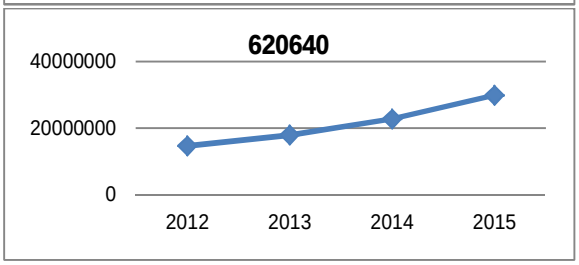


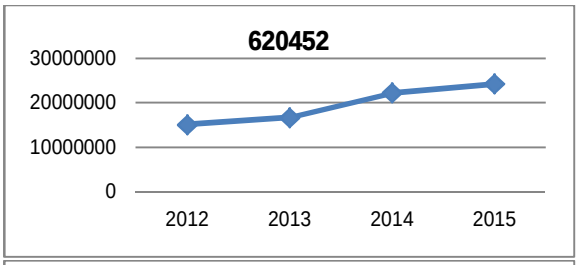








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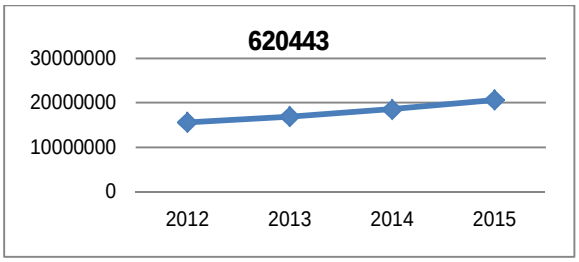
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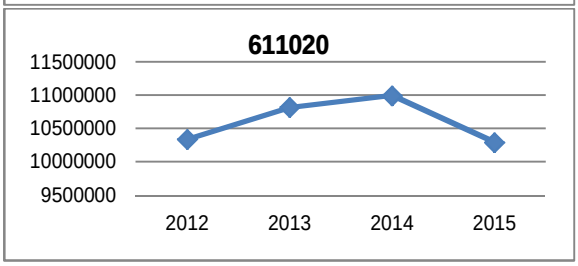
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