Chapter-V

RESULTS AND DISCUSSION

In this chapter, the results of CECA is analyzed and discussed in a detailed manner. The “Gravity” analysis which is the highlight of this study is taken first and the rest of the analysis will follow. To test the efficacy of Comprehensive Economic Cooperation between the countries of the study, the “Gravity” analysis was put into use. The results were obtained for different country groups, which are presented in a logical manner.

5.1 Comprehensive Economic Cooperation between India and Singapore

This study analyzes the trade flow between India and Singapore. Table 5.1 shows that India`s export to Singapore has drastically increased during the study period. India`s total export to Singapore stands at $ 977.47 million in 1996-97 has increased to $ 16857.71 million in 2011-12. In simple term India and Singapore trade has increased by more than sixteen folds.

The analysis of India and Singapore trade shows an interesting feature. The first half of the study period, India`s export to Singapore depicts a gradual increase in the volume of trade. After the implementation of CECA between India and Singapore, it was found that the value of India`s export shows a significant increase. In simple term India`s export which was $ 4000.61 million in 2004-05 has drastically increased to 16857.71 million in 2011-12. A four folds increase between
India and Singapore trade. This shows that CECA have influenced the trade between India and Singapore.

### 5.1.1 India and Singapore’s GDP and Population

The “Gravity” analysis requires the use of both the country’s Gross Domestic Product and Population. In case of India the GDP has increased from $399.8 billion in 1997 to $1872.9 billion in 2012 an increase of more than four folds in the study period. On the other hand Singapore’s GDP has increased from $92.6 billion in 1997 to $245 billion in 2012 an increase of more than two and half folds in the study period.

In terms of Population, India exhibits that, it is a giant country compared to Singapore. Over the study period Indian Population has increased from 946 million in 1997 to 1202 million in 2012 an increase of 27 percent over the study period.

Singapore compared to India has a very less Population. The total Population of Singapore has increased from 3.7 million in 1997 to 5.2 million in 2012 an increase of 40 percent over the study period.

### 5.1.2 Analysis of India and Singapore Pooled model

The Analysis of India and Singapore pooled gravity model has been given in second column in the Table 5.3. The result shows that the coefficient of India’s GDP is 2.91 and it is significant at five percent level. Which indicates that an increase in India’s GDP increases the trade with Singapore.
Further the study on Singapore`s GDP reveals that if the GDP of Singapore increases the trade with India shows a declining trend. In simple term if Singapore GDP increases, it is doing more trade with other countries. This is because the co-efficient of Singapore GDP is showing a negative sign with a ten percent level of significance.

Regarding the Population variable, the co-efficient of both the countries show a negative sign, which shows that as the Population increases for both countries, India and Singapore tend to do more trade with the rest of the World than between them.

The distance variable in the study shows a positive co-efficient of 0.51 and it is statistically significant at ten percent level. From this, it can be believed that the distance factor do not hinder the trade between India and Singapore. However, the author is of the view that, it is not helping the trade either at a great level.

The R² value of the equation is 0.96 which indicates that the overall performance of the model is really good. The co-efficient of determination (R²) for the model suggest that ninety six percent variations in the dependent variable are being explained by the explanatory variables.

5.1.3 Analysis of India and Singapore Fixed model

The Analysis of India and Singapore Fixed model has been given in third column in the Table 5.3. The result shows that the co-efficient of India`s GDP is
4.40, which indicates that an increase in India’s GDP increases the trade with Singapore. And Singapore co-efficient is significant at one percent level.

The study on Singapore’s GDP reveals that if the GDP of Singapore increases the trade with India shows a declining trend. In simple term if Singapore GDP increases, it is doing more trade with other countries. This is because the co-efficient of Singapore GDP is showing a negative sign with a ten percent level of significance.

Regarding the Population variable, the co-efficient of both the countries shows a negative sign, which shows that as the Population increases for both countries. India and Singapore tend to do more trade with the rest of the World than between them.

The $R^2$ value of the equation is 0.95 which indicates that the overall performance of the model is really good. The co-efficient of determination ($R^2$) for the model suggest that ninety five percent variations in the dependent variable are being explained by the explanatory variables.

5.2 Comprehensive Economic Cooperation between India and Malaysia

This study analyzes the trade flow between India and Malaysia. Table 5.4 shows that India’s export to Malaysia has drastically increased during the study period. India’s total export to Malaysia stood at $ 531.14 million in 1996-97 has increased to $ 3980.36 million in 2011-12. In simple term India and Malaysia trade has increased by more than seven folds.
The analysis of India and Malaysia trade shows an interesting feature. The study period from 1996-97 to 2009-10, India’s export to Malaysia depicts a gradual increase in the volume of trade. After the implementation of CECA between India and Malaysia in the year 2011, it was found that the value of India’s export shows a significant increase. In simple term India’s export which was $2835.41 million in 2009-10 has increased to 3980.36 million in 2011-12. The trade has increased more than one and half folds increase between India and Malaysia. From this the author believes that the implementation of CECA has influenced trade between India and Malaysia.

5.2.1 India and Malaysia`s GDP and Population

In case of India the GDP has increased from $399.8 billion in 1997 to $1872.9 billion in 2012 an increase of more than four folds in the study period. On the other hand Malaysia`s GDP has increased from $100.8 billion in 1997 to $287.9 billion in 2012 an increase of more than two and half folds in the study period. In terms of Population, India exhibits that, it is a giant country compared to Malaysia. Over the study period Indian Population has increased from 946 million in 1997 to 1202 million in 2012 an increase of 27 percent over the study period.

Malaysia compared to India has a very less Population. The total Population of Malaysia has increased from 21.3 million in 1997 to 28.8 million in 2012 an increase of 35 percent over the study period.
5.2.2 Analysis of India and Malaysia Pooled model

The Analysis of India and Malaysia pooled model has been given in second column in the Table 5.6. The result shows that if the GDP of India increases the trade with Malaysia shows a declining trend. In simple term, if India’s GDP increases it is doing more trade with other countries. This is because the co-efficient of India’s GDP is showing a negative sign with ten percent level of significance.

The study exposes that the co-efficient of Malaysia`s GDP is 1.96 percent which indicates that an increase in Malaysia’s GDP increases the trade with India. And Malaysia co-efficient is significant at one percent level.

Regarding the Population variable, the co-efficient of both countries shows a positive sign which indicates that as the Population increases for both countries India and Malaysia tent to do more trade.

The distance variable in the study shows a negative co-efficient of 0.12 and it is statistically significant at ten percent level. From this, it can be believed that the distance factor do hinder the trade between India and Malaysia. However, the author is of the view that it does not help the trade at a greater level.

The $R^2$ value of the equation is 0.97 which indicates that the overall performance of the model is really good. The co-efficient of determination ($R^2$) for the model suggest that ninety seven percent in the dependent variable are being explained by the explanatory variables.
5.2.3 Analysis of India and Malaysia Fixed model

The Analysis of India and Malaysia Fixed model has been given in third column in the Table 5.6. The result shows that if the GDP of India increases the trade with Malaysia shows a declining trend. In simple term if India`s GDP increases, it is doing more trade with other countries. This is because the co-efficient of India`s GDP is showing a negative sign with ten percent of significance.

The study reveals that the co-efficient of Malaysia`s GDP is 1.69 which indicates that an increase in Malaysia`s GDP increases the trade with India. And Malaysia co-efficient is significant at one percent level.

Regarding the Population variable, the co-efficient of both countries shows a positive sign which shows that as the Population increases for both countries. India and Malaysia tent to do more trade.

The $R^2$ value of the equation is 0.97 which indicates that the overall performance of the model is really good. The co-efficient of determination ($R^2$) for the model suggest that ninety seven percent in the dependent variable are being explained by the explanatory variables.

5.3 Direction of Trade

In this Paragraph the direction of trade is discussed. The author has made a selective grouping of countries and which is presented in the Table 5.7and 5.8.
5.3.1 Direction of India`s Exports

Direction of trade analysis is show in the Table 5.7. The percentage share of India`sc exports to European Union (EU) countries has declined from 27.49 percent in 1990-91 to a level of 17.24 percent in 2001-12. However, in terms of value India`sc exports to EU has increased considerably. It should be noted that India`sc exports to other countries has increase over time, so the percentage share of India`sc exports to EU has declined.

With regard to North America, the percentage share of India`sc exports has declined. This declined is very similar to India`sc trade with EU. In case of countries in Asia Oceania too very similar trend exist like EU and North America. It can be concluded that the percentage share of India`sc exports to the groupings like European Union, North America and Asia Oceania has declined. This shall be due to the fact that India`sc exports share has increased to other Economic groupings.

An analysis is made on the exports share of India to Organization of Petroleum Exporting Countries (OPEC) and South Asian Association for Regional Cooperation (SAARC), it was surprising to understand that for both these groupings. India`sc export share has been increasing consistently over the entire study period. This shows that India`sc exports is flowing more towards the OPEC and SAARC countries.

This study mainly deals with India`sc Economic relationship with Singapore and Malaysia. In terms of value of India`sc exports to Singapore, this has increased
from $379.4 million in 1990-91 to a level of $16,702.9 million in 2011-12 with some fluctuations in the intervening period. In terms of percentage share, India`s exports to Singapore has increased from 2 percent in 1990-91 to 5.48 percent in 2011-12. In case of Malaysia the value of India`s exports has increased from $151 million in 1990-91 to a level of $3983 million in 2011-12. In terms of percentage share, India`s exports to Malaysia has increased from 0.83 percent in 1990-91 to 1.3 percent in 2001-12. From this it can be concluded that India`s share of exports for both Singapore and Malaysia has been increasing over time.

If an overall picture is taken, India`s exports to EU, North America and Asian Oceania has been showing a declining trend in terms of percentage. However, in terms of value India`s exports is increasing.

For the countries like Singapore and Malaysia and grouping like OPEC and SAARC, India`s exports depicts a different picture. Both in terms of value and percentage India`s exports increases over time for the above countries and grouping. This shows that the direction of India`s exports has been slowly moving from a point European Orientation to a point of South Asia and East Asia.

5.3.2 Direction of India`s Imports

In the case of Direction of India`s imports analysis shows in the Table 5.8. The percentage share of India`s imports from European Union (EU) countries has declined from 29.35 percent in 1990-91 to a level of 11.70 percent in 2001-12. However, in terms of value India`s imports from EU has increased considerably. It
should be noted that India`s imports from other countries has increase over time, so the percentage share of India`s imports from EU has declined.

With regard to North America, the percentage share of India`s imports has declined. This declined is very similar to India`s trade with EU. In case of countries in Asia Oceania too very similar trend exist like EU and North America.

It can be concluded that the percentage share of India`s imports from the groupings like European Union, North America and Asia Oceania has declined. This shall be due to the fact that India`s imports share has increased from other Economic groupings.

An analysis is made on the imports share of India from Organization of Petroleum Exporting Countries (OPEC) and South Asian Association for Regional Cooperation (SAARC). It was surprising to understand that for both these groupings, India`s import share has been increasing consistently for OPEC over the entire study period. In case of India`s imports share for SAARC, there is a net decline in terms of percentage. However, in terms of monetary value, India`s imports from SAARC countries has been increasing consistently over the study period. From this it can be concluded that except for OPEC, for all groupings like EU, North America, Asian Oceania and SAARC India`s imports show a secular decline in the study period.

This study mainly deals with India`s Economic relationship with Singapore and Malaysia. In terms of value of India`s imports from Singapore, this has increased from $ 795.7 million in 1990-91 to a level of $ 8474.8 million in 2011-12.
with some fluctuations in the intervening period. In terms of percentage share, India`s imports from Singapore has decreased from 3.30 percent in 1990-91 to 1.73 percent in 2011-12.

In case of Malaysia the value of India`s imports has increased from $ 554.8 million in 1990-91 to a level of $ 9552.9 million in 2011-12. In terms of percentage share, India`s imports from Malaysia has decreased from 2.30 percent in 1990-91 to 1.95 percent in 2001-12. From this it can be concluded that India`s share of imports for both Singapore and Malaysia has been decreasing over time.

If an overall picture is taken, India`s imports from EU, North America and Asian Oceania has been showing a declining trend in terms of percentage. However, in terms of value India`s imports is increasing.

For the countries like Singapore and Malaysia and grouping like OPEC and SAARC, India`s imports depicts a different picture. Both in terms of value for the above countries India`s imports increases and in terms of percentage India`s imports decreases over time for the above countries and grouping.

This shows that the direction of India`s imports has been slowly moving from a point European Orientation, SAARC, Singapore and Malaysia to a point of OPEC grouping.

5.4 Trade Intensity Indices between India and Singapore

In this Study, the trends of export intensities and import intensities of both India and Singapore are shown in Tables 5.11. The author has estimated that there are 96 listed items traded between India and Singapore. However, most of listed
items are not frequently traded between India and Singapore. It was found that only few items were frequently traded between India and Singapore. These items were selected and given in Table 5.9 and 5.10. The researcher has selected and identified most widely exported and imported items between India and Singapore. However, the author has calculated the Intensity Indices using the value of all the 99 items traded between India and Singapore. The intensity index was calculated based on the data table given in the Table 5.11.

The Intensity Index was calculated based on the Table 5.11 and the results were given in Table 5.12. In the study period the India`s Export Intensity Index with Singapore has increased from 113.92 in 2001 to 218.21 in 2012. However, the index shows a lot of fluctuations during the study period. It has been observed that after the implementation of CECA in 2005, the index which was at 283.92 in 2005 has decreased to 193.68 in 2009. It can be noted that initial euphoria CECA can be seen in the same year itself as the Intensity Index reaches its zenith, in the study period. However, the Intensity Index declined slightly and maintains at 218.21 during 2012. Though there is fluctuation, the Intensity Index remains at a comfortably high during the entire study period.

In the case of India`s Import Intensity Index with Singapore which is presented in Table 4.10 depicts a different picture. The index was 133.4 in 2001 gradually decrease to 100.49 in 2005. After the implementation of CECA in 2005 the Intensity Index gradually increases for the next two years. It can be concluded that, because of CECA tariff concessions the Import Intensity Index with Singapore
has increased. However in last three years of the study period there is a continuous
decline in the Import Intensity Index with Singapore.

In the context of Singapore Export Intensity Index to India, the pattern of the
Index is very similar to India’s Import Intensity Index. Generally speaking the
overall Intensity Index has drastically reduced from 273.32 in 2001 to a level of
133.27 in 2001. Even though the Intensity Index has decreased, it is not below
critical level of 100. It is noted that after 2005 there is a marginal increase in the
Intensity Index which is the result of CECA.

It can be stated that Singapore Import Intensity Index has maintained its
level throughout the study period. The index has increased over time from 131.82 in
2001 to 207.33 in 2012 with some marginal fluctuations. This shows that Singapore
continuous Import from India, irrespective of Economic fluctuations which it has to
endure.

5.5 Trade Intensity Indices between India and Malaysia

The trends of export intensities and import intensities of both India and
Malaysia are shown in Tables 5.16. The author has estimated that there are 97
listed items traded between India and Malaysia. However, most of listed items are
not frequently traded between India and Malaysia. It was found that only few items
were frequently traded between India and Malaysia. These items were selected and
given in Table 5.13 and 5.14. The researcher has selected and identified most widely
exported and imported items between India and Malaysia. However, the author has
calculated the Intensity Indices using the value of all the 97 items traded between India and Malaysia. The intensity index was calculated based on the data table given in the Table 5.15.

The Intensity Index was calculated based on the Table 5.13 and the results were given in Table 5.16. In the study period the India`s Export Intensity Index with Malaysia has decreased from 153.91 in 2001 to 118.01 in 2012. However, the index shows a lot of fluctuations during the study period. Though there is fluctuation, the Intensity Index remains at a comfortably high during the entire study period.

In the case of India`s Import Intensity Index with Malaysia which is presented in Table 5.14 depicts a different picture. The index was 156.99 in 2001, it has reached to a level of 203.93 in 2007, because of decline in Malaysia economy the Index started to decline and has reached to a level of 167.04 in 2012.

In the context of Malaysia Export Intensity Index to India, the pattern of the Index is very similar to India`s Import Intensity Index. The Index which was 220.67 in 2001 has declined to 141.98 in 2010. After this the Index shows a attractive increase of 153.75 in 2012. This may be due to the concession given in CECA.

It can be stated that Malaysia Import Intensity Index has maintained its level throughout the study period.

5.6 Trade reciprocity indices between India and Singapore

In this the trade reciprocity is analyzed between India and Singapore. The Reciprocity Index is shown in Table 5.17. The overall Reciprocity Index has
marginally declined from 0.95 in 1996 to 0.78 in 2011. This can be interpreted like this, when India`s export to Singapore is not properly and equally compensated by Singapore export to India, because of this the index is showing the value of less ‘one’. In certain years like 1997 and 2002 the Reciprocity Index show a value of ‘one’ and greater than ‘one’ which indicates that Singapore is exporting more to India than imports.

5.7 Trade reciprocity indices between India and Malaysia

In this the trade reciprocity is analyzed between India and Malaysia. The Reciprocity Index is shown in Table 5.18. The overall Reciprocity Index has maintained from 1.11 in 1996 to 1.12 in 2011. This can be interpreted like this, when India`s export to Malaysia is properly and equally compensated by Malaysia export to India, because of this the index is showing the value of greater than ‘one’. In this study period the Reciprocity Index show a value of greater than ‘one’ which indicates that Malaysia is exporting more to India than India`s export to Malaysia.