



FOREIGN TRADE IN SERVICES: A RELATIONAL ANALYSIS BETWEEN INDIA AND THE WORLD IN POST-MILLENNIUM PERIOD

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Abstract: The business of export-import of services has gained considerable prominence in the global economy, contributing significantly to countries' economic growth and development. India is among a limited group of rising economies that are among the traders of services globally. India's strength in the service industry is gaining prominence throughout the world. Maintaining services exports is crucial for maintaining India's high growth rate as well as for making up for a persistent merchandise trade imbalance and preserving external sector stability.

This research paper presents a relational analysis of the world's and India's export and import of services. The study aims to investigate the interconnectedness and patterns of trade in services between India and the rest of the world, providing insights into the dynamics of global services trade and India's role within it.

This research paper aims to investigate and compare the growth rates of the world's exports of services and India's exports of services from 2007 to 2022. The study utilizes data from reliable sources and employs statistical analysis to assess the relative performance of these two entities in the global services market. The study utilizes quantitative data obtained from reputable international trade sources to evaluate the growth patterns, identify key contributing factors, and highlight any significant divergences between the global trend and India's performance. It sheds light on India's position as a major player in the sector. The findings of this study provide insights into the dynamics of the services sector in India and its positioning within the global trade landscape.

The findings of this study contribute to a deeper understanding of the relational aspects of services trade between India and the world. The outcomes of this study have practical implications for policymakers, businesses, and researchers, providing insights into strategies to foster stronger trade relationships, enhance market access, and promote competitiveness in the services sector. Ultimately, a comprehensive understanding

of the relational analysis of India's export and import of services can inform policy decisions and contribute to the sustainable growth of India's services trade in the global economy.

Keywords: Global services trade, India's services sector, Relational analysis, Exports, Imports

Introduction:

Export-import of services plays a pivotal role in today's global economy, shaping the landscape of international trade. While the traditional focus has often been on the exchange of goods, services have gained increasing importance, contributing significantly to economic growth and development. Export of services refers to the provision of intangible services across borders, where a service provider based in one country delivers services to a recipient in another country. These services can span a wide range of sectors, including financial, telecommunications, transportation, tourism, information technology, and professional services. The export of services allows countries to capitalize on their specialized skills, expertise, and competitive advantages, enabling them to participate in the global market and generate revenue streams.

On the other hand, import of services involves the acquisition of foreign services by domestic consumers or businesses. It allows countries to access services that may not be readily available or competitively priced domestically. By importing services, countries can bridge gaps in their domestic capabilities, meet specific demands, and enhance the efficiency and productivity of their industries.

The trade in services is characterized by its intangible nature, which distinguishes it from the trade in goods. Unlike goods, services cannot be physically seen, touched, or stored. They are often consumed at the time of production, making them perishable and challenging to measure. As a result, measuring and tracking the export and import of services require specialized methodologies, including balance of payments frameworks and statistical surveys.

In recent years, the export and import of services have experienced significant growth, driven by various factors. Technological advancements, particularly in information and communication technologies, have facilitated the delivery of services across borders, overcoming geographical barriers. Additionally, the liberalization of trade policies, the rise of global value chains, and the increasing mobility of skilled labour have contributed to the expansion of service exports and imports.

India, as one of the world's fastest-growing economies, has emerged as a key player in the global trade in services. With its abundant pool of skilled professionals, India has established itself as a leading provider of IT and business process outsourcing services. Furthermore, sectors such as healthcare, education, finance, and tourism have also witnessed significant growth in India's service exports. Understanding the patterns and interdependencies between India's service trade and the global market is essential for formulating effective trade policies, promoting economic growth, and harnessing the potential benefits of international trade.

In conclusion, the export-import dynamics of services are crucial for understanding the evolving landscape of international trade. The growth and interdependencies in service trade have reshaped the global economy, offering opportunities for countries to leverage their strengths and participate in the global market. As services continue to gain prominence, policymakers, businesses, and researchers must delve deeper into the intricacies of service trade to maximize its potential and foster sustainable economic development.

Components of Trade of Services

Trade in services encompasses the international exchange of intangible products and activities, representing a vital component of global economic interactions. This note aims to provide a plagiarism-free overview of trade in services and its components, highlighting the various categories that constitute this dynamic sector.

Trade in services comprises a diverse range of sectors, each contributing unique services to the global market. These sectors can be broadly classified into four main components:

1. **Commercial Services:** Commercial services involve transactions between businesses and consumers, encompassing sectors such as transportation, communication, construction, insurance, finance, and professional services. These services facilitate economic activities and support the smooth functioning of industries and markets. Examples include shipping and logistics services, telecommunications and information services, engineering and architectural services, and financial and legal services.
2. **Tourism and Travel Services:** Tourism and travel services comprise activities related to travel, accommodation, and recreational experiences. This component includes services provided by hotels, restaurants, travel agencies, tour operators, airlines, and cultural and recreational establishments. Tourism and travel services play a significant role in generating foreign exchange earnings, fostering cultural exchange, and stimulating economic growth in many countries.
3. **Government Services:** Government services encompass services provided by the public sector, including defense, public administration, education, health, and social services. These services are typically non-market in nature and are often consumed domestically. However, there are instances where governments provide services to foreign entities, such as educational institutions attracting international students or defense-related services provided to other nations.
4. **Other Services:** This component includes a wide range of services that do not fall directly into the aforementioned categories. It comprises services such as computer and information services, research and development, royalties and license fees, audio-visual services, and other business services. This diverse set of services supports innovation, intellectual property rights, creative industries, and technological advancements.

Trade of Services in India:

The export of services has emerged as a vital source of foreign exchange earnings for India. The country's skilled workforce, particularly in sectors such as information technology, business process outsourcing, and software development, has made India a preferred global destination for outsourcing services. This has contributed to a substantial inflow of foreign exchange, bolstering the country's balance of payments and providing much-needed stability to the economy.

Furthermore, the export of services has also played a crucial role in job creation and employment generation in India. As the service sector has grown, it has absorbed a significant portion of the country's workforce, offering diverse employment opportunities across various skill levels. This has not only improved livelihoods but also contributed to poverty reduction and socioeconomic development.

In addition to economic benefits, the import of services has had a transformative impact on the Indian economy. By accessing foreign services, India has been able to augment its domestic capabilities, bridge skill gaps, and enhance the competitiveness of its industries. For instance, the import of advanced technology and expertise in sectors like telecommunications, finance, and healthcare has facilitated innovation and productivity growth, boosting overall economic performance.

Review of Literature

- Mukherjee A. (2016) lists a number of challenges that the service industries must overcome and suggests policy approaches that, if put into practise, will promote trade, investment, and inclusive growth as well as strengthen India's position as a worldwide leader in the services sector.
- A variety of factors, including general economic development, communications infrastructure, access to foreign technology are important factors in the growth of export of services from various parts of the world. (Eichengreen, B. and Gupta, P. 2013).
- India adopted the export-led growth strategy in the 1990s as part of its structural adjustment programme, which also included liberalisation, privatisation, and an open economy policy, after East Asian nations had found success with it. According to empirical evidence, India has had effective export-led growth (Nataraj et al., 2001; Sahoo and Dash, 2012).
- According to Dash and Parida (2011), higher growth in the trade of services is related to India's service sector-led boom since the 1990s.
- Since the mid-1990s, service exports from 20 emerging nations have increased by more than 15% yearly, including not just Brazil, India, the Russian Federation, and China but also Cambodia, Ghana, Morocco, and Nigeria. Before the financial crisis, between 1990 and 2007, the average increase of service exports was roughly 8.7% in high-income nations, 10.0 in low-income countries, and 13.0 in lower-middle-income countries. From 11% in 1990 to 21% in 2008, emerging nations' percentage of global service exports increased. Developing nations export a variety of services, including high-value, skill-intensive services like computer and information services and other business services, as well as more conventional services like transport and travel (or tourist) services. (Goswami, A. G., Mattoo, A., & Saez, S. 2011).

Analysis and Interpretation

Variable Description –

The main variables of the study at India and World level are –

- (a) Export of Services (BoP, current US\$)
- (b) Import of Services (BoP, current US\$)

The collected data is as follows:

(a) Export of Services (BoP, current US\$)

Year	Service exports (BoP, current US\$) - World	Service exports (BoP, current US\$) - India
2007	36,53,75,43,75,202	86,55,24,59,544
2008	41,15,75,50,34,026	1,06,05,42,39,105
2009	36,84,18,19,89,578	92,88,94,86,182
2010	40,25,34,51,79,334	1,17,06,83,11,674
2011	45,37,72,77,63,835	1,38,52,79,15,665
2012	46,74,31,97,59,943	1,45,52,45,96,558
2013	49,62,78,99,83,901	1,49,16,36,31,866
2014	52,76,26,04,60,317	1,57,19,61,38,164
2015	50,52,78,44,66,562	1,56,27,81,73,576
2016	51,26,89,41,47,849	1,61,81,87,82,928
2017	55,74,54,46,03,782	1,85,29,40,14,277
2018	61,11,04,01,03,428	2,04,95,55,78,854
2019	62,80,63,35,69,444	2,14,76,15,39,671
2020	52,24,36,43,14,678	2,03,14,51,51,682
2021	61,93,18,57,74,250	2,40,65,54,57,528

(Source: World Development Indicators database of the World Bank)

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(b) Import of Services (BoP, current US\$)

Year	Service imports (BoP, current US\$) World	Service imports (BoP, current US\$) - India
2007	34,76,42,07,85,659	70,17,48,52,290
2008	39,34,13,84,79,011	55,56,28,61,740
2009	35,35,73,05,02,010	53,03,01,41,320
2010	38,73,35,14,22,797	78,91,29,71,414
2011	43,08,97,70,06,645	77,75,81,39,080
2012	44,58,98,45,89,984	79,91,96,18,509
2013	47,25,86,84,47,012	78,72,22,20,355
2014	51,10,65,60,05,891	81,11,85,89,091
2015	48,67,84,59,52,180	82,64,30,96,048
2016	49,03,18,23,31,441	95,92,24,39,917
2017	53,14,61,77,33,979	1,09,37,11,41,905
2018	57,78,44,98,22,132	1,24,18,16,14,507
2019	59,38,12,42,17,035	1,30,53,52,00,230
2020	49,47,00,32,21,603	1,16,03,74,57,856
2021	56,66,04,91,27,233	1,37,97,40,01,271

(Source: World Development Indicators database of the World Bank)

Statistical Tools

In the present study, we have used Correlation coefficient to find out the relationship between the selected two variables of the World and India.

Correlation is a statistical concept that measures the degree to which two variables are related or associated with each other. It focuses on the relationship between variables and helps assess how changes in one variable correspond to changes in another. Correlation does not imply causation, meaning that even though two variables may be correlated, it does not necessarily mean that changes in one variable cause changes in the other.

The correlation between two variables is typically expressed as a correlation coefficient, denoted by the symbol "r." The correlation coefficient ranges between -1 and +1, representing the strength and direction of the relationship. A correlation coefficient of +1 indicates a perfect positive correlation, where an increase in one variable is associated with an exact increase in the other, following a linear pattern. Conversely, a correlation coefficient of -1 represents a perfect negative correlation, where an increase in one variable is associated with an exact decrease in the other.

A correlation coefficient close to 0 suggests a weak or no linear relationship between the variables. In such cases, the variables may be unrelated or related through a non-linear pattern that cannot be captured by a simple linear correlation.

The correlation coefficient is calculated using the covariance between the two variables divided by the product of their standard deviations. Mathematically, it can be represented as:

$$r = (\Sigma [(X_i - \bar{X})(Y_i - \bar{Y})]) / \sqrt{[(\Sigma (X_i - \bar{X})^2) * (\Sigma (Y_i - \bar{Y})^2)]}$$

Where:

- X_i and Y_i are the individual values of the two variables.
- \bar{X} and \bar{Y} are the means (average) of the X and Y variables, respectively.
- Σ represents the sum of the values.

The formula involves calculating the differences between each value and its corresponding mean, multiplying these differences together, and summing them up. Then, the product of the standard deviations of X and Y is obtained by summing the squared differences between each value and its corresponding mean.

Once this value is calculated, the resulting correlation coefficient "r" ranges between -1 and +1. A value of +1 indicates a perfect positive correlation, -1 represents a perfect negative correlation, and 0 implies no linear correlation between the variables.

Correlation measures only the strength and direction of the linear relationship between variables. It does not provide information about any underlying causal mechanism. Therefore, caution must be exercised when interpreting correlations to avoid making erroneous assumptions about cause and effect.

To calculate the correlation coefficient, the covariance between the two variables is divided by the product of their standard deviations. This normalization process ensures that the correlation coefficient remains within the range of -1 to +1, regardless of the scales or units of the variables.

Overall, correlation is a valuable statistical measure that helps researchers and analysts understand and quantify the relationship between variables. It aids in identifying patterns, making predictions, and guiding decision-making processes.

Methodology

We applied the Karl Pearson's coefficient of correlation between the chosen variables, i.e.

- ❖ Export of Services (BoP, current US\$) of the World and India
- ❖ Import of Services (BoP, current US\$) of the World and India

(a) Export of Services (BoP, current US\$) of the World and India

The value of "r" indicates the degree of correlation between the variables:

- If "r" is close to +1, it suggests a strong positive correlation. This means that as one variable increases, the other variable tends to increase as well in a linear fashion.
- If "r" is close to -1, it indicates a strong negative correlation. In this case, as one variable increases, the other variable tends to decrease linearly.

- If "r" is close to 0, it implies a weak or no linear correlation between the variables. In other words, the variables are not strongly associated with each other through a linear pattern.

The "r" value, also known as the correlation coefficient, between Exports of services of the World and India is =

$$r = 0.961273633$$

which suggests a strong positive correlation. This means that as one variable increases, the other variable tends to increase as well in a linear fashion.

A correlation coefficient (r) value of 0.96 suggests a very strong positive correlation between the variables. The positive sign indicates that as one variable increases, the other variable tends to increase as well, following a linear pattern.

With a correlation coefficient of 0.96, it indicates a close to perfect positive correlation. This means that the two variables are strongly associated, and as the export of services of the World increases, the export of services of India also tends to increase, with very little variation, and vice-versa. The relationship between the variables is highly predictable and consistent.

The t-statistic of calculated r was:

$$t = 12.5761073$$

The possibility of discovering a correlation coefficient (or a more extreme value) by chance in correlation analysis is represented by the p-value (also known as the probability value), presuming that there isn't a true correlation in the population. It aids in determining the correlation's statistical significance.

In order to determine if an observed correlation is statistically significant or if it may have happened by chance, the p-value is frequently utilised. Typically, it is measured against a specified level of significance (commonly indicated by the symbol), such 0.05 (5%) or 0.01 (1%).

It is considered statistically significant if the p-value is less than or equal to the selected significance threshold (for example, $p = 0.05$), indicating that the observed association is unlikely to have happened by chance alone. One can come to the conclusion that there is evidence of a significant correlation between the variables by rejecting the null hypothesis (which says no connection) and accepting the alternative hypothesis.

Conversely, the observed correlation is regarded as statistically nonsignificant if the p-value exceeds the significance level. In this situation, one fails to disprove the null hypothesis and comes to the conclusion that there is insufficient data to prove the existence of a population-wide association. It is crucial to understand that a nonsignificant p-value does not necessarily imply the lack of a connection; rather, it only suggests that the observed association may reasonably be the result of random variability.

In this study, we have taken 5% level of significance.

The calculated p-value in this case is

In this case, with a p-value of 0.0000, which is much smaller than 0.05, we can conclude that the observed correlation is unlikely to have occurred by chance alone.

The interpretation of this result is that there is strong evidence to reject the null hypothesis of no statistically significant correlation in favour of the alternative hypothesis that a meaningful and statistically significant correlation exists between the chosen variables. The correlation between the exports of services of the World and India is high and the relationship is statistically significant. It provides statistical support for the presence of a significant relationship, suggesting that the observed correlation is likely not due to random chance or sampling variability.

(b) Import of Services (BoP, current US\$) of the World and India

The "r" value, also known as the correlation coefficient, between Exports of services of the World and India is =

$$r = 0.886977583$$

A correlation coefficient (r) value of 0.886977583 suggests a strong positive correlation between the variables. The positive sign indicates that as one variable increases, the other variable tends to increase as well in a linear fashion.

With an r value of 0.886977583, it indicates a strong positive correlation. This means that the variables are positively associated, and as one variable increases, the other variable tends to increase as well. The relationship between the variables is consistent, and there is a clear pattern of movement in the same direction.

The t-statistic of calculated r was:

$$t = 6.924982074$$

The observed p-value in this case is:

$$p\text{-value} = 0.0000$$

The p-value of 0.0000 indicates a very small probability of observing a correlation coefficient as extreme as or more extreme than the one obtained, assuming that there is no true correlation in the population. This small p-value suggests strong evidence against the null hypothesis and supports the presence of a significant correlation between the variables.

In hypothesis testing, the p-value is compared to a predetermined significance level (such as 0.05) to determine statistical significance. In this case, with a p-value of 0.0000, which is much smaller than 0.05, we can conclude that the observed correlation is unlikely to have occurred by chance alone.

Interpreting this result, we can say that there is strong evidence to reject the null hypothesis of no statistically significant correlation in favour of the alternative hypothesis that a meaningful and statistically significant

correlation exists between the import of services of India and the World. The small p-value indicates that the observed correlation is unlikely to be a result of random chance or sampling variability.

Conclusion

As there is statistically-significant correlation between the exports and imports of the World and India and from the data collected, it is also evident that trade of services is increasing in India. In view of the above interpretation, we make the following suggestions and recommendations to strengthen India's services trade sector:

1. Strengthening bilateral and multilateral trade agreements should be a priority to enhance trade relationships and remove barriers to services trade.
2. Addressing regulatory obstacles that impede the smooth flow of services trade is crucial. Simplifying procedures and harmonizing regulatory frameworks can facilitate cross-border service provision.
3. Improving market access for Indian service providers in foreign markets is essential. Negotiating better market access provisions and removing discriminatory practices can create more opportunities for India's services exports.
4. Focus on skill development and upskilling initiatives to enhance India's competitiveness in service sectors with export potential. Investing in relevant education and training programs, fostering collaboration between industry and academia, and supporting entrepreneurship can contribute to a skilled workforce.
5. Promote innovation and technological advancements to maintain a competitive advantage. Support research and development, incentivize technology adoption, and invest in digital infrastructure to facilitate the growth of digitally-enabled services.
6. Provide targeted support to micro, small, and medium-sized enterprises (MSMEs) in accessing international markets. Financial assistance, capacity-building programs, and market intelligence can assist MSMEs in services trade.
7. Establish robust data collection and analysis mechanisms to strengthen research and policy formulation in services trade. Improve data quality, standardize data collection methods, and conduct regular studies to monitor and evaluate performance.
8. Develop sector-specific strategies to capitalize on India's competitive advantages in different service sectors. Implement targeted policies, promote infrastructure development, and encourage export promotion initiatives.
9. Foster collaboration and knowledge-sharing between industry, academia, and government stakeholders. Create platforms for networking, knowledge exchange, and sector-specific conferences to promote collaboration and sharing of best practices.
10. Monitor global services trade trends to identify emerging opportunities, evolving market demands, and potential areas for India to expand services exports and improve competitiveness.

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