*Services-led Growth in India: Sustainable?*

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**Introduction:**

India’s economic development has seen an unconventional growth pattern, particularly in the services sector, which has become the dominant force in the country's GDP. Unlike traditional models of development where economies transition from agriculture to manufacturing and then to services, India jumped directly to a services-led economy. Over the past 60 years, the agricultural sector's contribution to GDP fell from 56% to 22%, while the services sector surged from 28% to 54%. The central question of this paper revolves around whether this pattern of services-led growth is sustainable in the long term.

This study investigates the relationship between the services sector and several independent variables: employment in services, labor force participation rate (LFPR), services exports, services imports, industry value-added, and agriculture value-added. These factors will provide insights into the sustainability of the services sector's growth. The study uses services value-added as the indicator of services sector growth, modeling it against these six independent factors through multiple linear regression, Granger causality, co-integration, and vector error correction models (VECM).

**Literature Review:**

Previous research confirms India’s services-led growth but offers varying perspectives on its nature and sustainability. The IT and professional services sectors have been the primary drivers of this growth, creating significant forward and backward linkages with other industries. However, there is a growing concern about the sector's ability to generate employment proportional to its economic contribution. In times of global crises like the 2008 financial crisis and the COVID-19 pandemic, the services sector showed resilience, though the pandemic dealt a severe blow to the services industry, particularly in contact-intensive sub-sectors. This research aims to synthesize existing studies into a comprehensive analysis to assess the sustainability of services-led growth.

**Methodology:**

Data for this study were obtained from the World Bank DataBank, spanning 1991-2020. The dependent variable, services value-added, represents the services sector’s growth, while the independent variables include employment in services, LFPR, services exports, services imports, industry value-added, and agriculture value-added. The analysis was performed using Gretl software, applying a multivariate regression model to assess the statistical significance of each independent variable on services value-added.

The initial regression analysis revealed multicollinearity among the independent variables, which was addressed through log transformation. Even though some multicollinearity remained, it did not affect the overall analysis, as the focus was on the statistical significance of the relationships rather than the exact magnitude.

**Findings and Discussion:**

1. **Employment in Services**: The regression analysis confirmed that employment in services has a positive and statistically significant impact on the services sector's growth. A 1% increase in employment in services results in a $3 increase in services value-added. This indicates that while the services sector is growing, it is not generating employment proportional to its output, reflecting a trend of high productivity and specialization in professional services. This is consistent with the economic theory that high-skilled, capital-intensive sectors contribute more to GDP than to employment.
2. **LFPR (Labor Force Participation Rate)**: LFPR also showed a positive and significant relationship with services value-added. A 1% increase in LFPR leads to a $1.23 increase in services value-added, indicating that a higher proportion of the working-age population contributes to services sector growth. This finding suggests that policies aimed at increasing LFPR could sustain services sector growth, especially in challenging times like the COVID-19 pandemic.
3. **Industry Value-Added**: The relationship between industry value-added and services value-added is positive and significant, with a $1 increase in industry value-added resulting in a $0.50 increase in services value-added. This reflects the close linkage between industrial and services activities in India, where the growth of the manufacturing sector is often supported by services such as finance, telecommunications, and IT. However, the long-term sustainability of this relationship is questionable given the rise of automation and artificial intelligence, which could replace many service-oriented roles in the manufacturing sector.
4. **Agriculture Value-Added**: Surprisingly, agriculture value-added demonstrated a long-term co-integrated relationship with services value-added. This suggests that, in the long run, the services sector can support the primary agricultural sector by providing complementary services such as logistics, finance, and technology. This finding challenges the conventional view that agriculture and services operate independently in India.
5. **Services Exports and Imports**: Neither services exports nor services imports showed a significant long-term relationship with services value-added. This suggests that the growth of India's services sector is primarily driven by domestic demand rather than international trade. Despite India’s growing role in global services exports, particularly in IT and business process outsourcing (BPO), the services sector's domestic contributions far outweigh its export-driven growth.

**Granger Causality and Co-integration:**

Granger causality tests confirmed that there is a bi-directional causal relationship between services value-added and several independent variables, including employment in services, LFPR, industry value-added, and agriculture value-added. This means that changes in these independent variables lead to changes in services value-added and vice versa. However, the short-run relationships revealed by Granger causality were further examined through co-integration models to determine whether these relationships hold in the long term.

Co-integration analysis found that only employment in services and agriculture value-added have a long-term equilibrium relationship with services value-added. This suggests that while the other variables influence services sector growth in the short run, employment in services and agriculture value-added are the key drivers of long-term sustainability.

**Conclusion:**

The study concludes that employment in services, LFPR, and industry value-added are crucial drivers of services sector growth in the short run, while agriculture value-added plays a significant role in the long-term sustainability of the services sector. The positive relationship between services sector growth and employment highlights the sector’s potential to absorb labor from other sectors, particularly agriculture. However, the limited ability of the services sector to generate proportional employment remains a concern.

Policy recommendations include investing in education and training to increase employment in high-skill services sub-sectors like IT and finance. Additionally, promoting labor-intensive services could help bridge the employment gap. There is also a need for policies that strengthen the linkages between agriculture, industry, and services to ensure inclusive and sustainable growth.

The study's limitations include the presence of multicollinearity and structural breaks in the time series data. However, these issues did not significantly affect the analysis or the conclusions drawn. Future research could explore the impact of technological advancements on the services sector and its implications for employment and sustainability.

**Policy Implications:**

1. **Education and Training**: To sustain services sector growth, India must invest in skill development and higher education, particularly in fields like IT, finance, and professional services. This will help increase employment in high-productivity sub-sectors.
2. **Labor-Intensive Services**: Promoting labor-intensive services such as healthcare, tourism, and retail could absorb more of the workforce, particularly low-skilled workers, and help bridge the employment gap between the services sector’s output and its job creation.
3. **Technology and Automation**: Policymakers should carefully manage the adoption of automation and artificial intelligence in the services sector. While technology can enhance productivity, it also poses a threat to job creation in some service-oriented roles.
4. **Strengthening Intersectoral Linkages**: Strengthening the linkages between agriculture, industry, and services will be essential for inclusive growth. Policies should focus on integrating services with agriculture through technology and logistics, helping to boost productivity in the primary sector.