

Structural Transformation and Growth in India Economy

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ABSTRACT

This paper examines growth and structural transformation in Indian economy to validate the Kuznets-Chenery-Syrquin variant of structural transformation hypothesis in India. There have been a number of studies in support of services-led growth in India while there are few studies to argue in favour of secondary sector governing Indian economic growth process. In recent years, there is a renewed interest in identifying whether there have been any structural breaks in growth process. A recent study on structural change in the Indian Economy by Manmohan Agarwal and Sunandan Gosh (2015) has validated the issue of structural break in India's economic growth (Kotwal, Ramaswami and Wadhwa, 2011) and arrived at an inference that there are no statistically significant structural breaks in India's GDP growth rate. The present study is organized into five sections. The first section comprehends the different strand points on the issue of structural changes in growth process that India has been experiencing over the years. The second section reviews the recent studies on structural changes in Indian economy. The third section details the data used and methodology followed in the study to validate the stylized propositions on structural changes in Indian economy. The fourth section presents findings of the present study. The final section summarizes the findings and draws an inference on structural transformation in Indian economy.

SECTION I:

STRUCTURAL TRANSFORMATION AND ECONOMIC GROWTH: COMPETING HYPOTHESES

The existing literature on structural changes in an economy can be traced back to the works of Clark (1940) and Fisher (1935, 1939) on structural changes in an economy, for the first time, in three-sector framework of primary-secondary-tertiary sectors. According to Clark and Fisher, demand for non-food items and services would increase as economy develops over time. It means that the share of agriculture would decline with the rise in non-agricultural income in an economy during the course of development. Thus, they predicted that economy would become more service-oriented during the process of development due to higher income elasticities of demand for services. This is known as *Clark-Fisher hypothesis*. This hypothesis was generally studied through the analysis of discrete changes in sectoral value added in an economy.

Following Clark-Fisher's studies on structural change during the course of development, Kuznets (1966) sketched out statistically the process of modern economic growth on the basis of the development experiences of developed nations. He also attributed the decline of agriculture to the unique feature of modern economic growth through structural transformation. The modern economic growth was characterized by means of structural changes in terms of value added and

work force as agriculture declines relative to non-agriculture consisting of manufacturing and services. In a comparative analysis of cross-country and historical records, Chenery (1960) established uniform pattern of trade and industrialization across countries over time. Subsequently, Deutsch and Syrquin (1986) validated the Kuznets-Chenery variant of structural transformation in cross-country and time series analysis. According to them, structural transformation is identified with some stylized facts: (i) the increase in use of non-primary intermediate inputs relative to total gross output; (ii) the increase in use of purchased modern industrial intermediate inputs in agricultural sector during the process of development; and (iii) the increase in use of intermediate services in industrial sector with the level of income. In their study, Chenery and Syrquin (1986) have inferred that during the course of structural transformation, there is a clear shift from primary activities to manufacturing but at higher income levels the share of services in total output and factor-use increases with the process of *deindustrialization*. The foregoing discussion on structural transformation has brought out clearly that structural change is an integral of modern economic growth, which narrows down the asymmetry of production and organization between the sectors of the economy and ultimately eliminates the economic dualism. Besides, there is also a tendency for deindustrialization of modern intermediate inputs in the form of intermediate services with the increase in income level. Francois and Reinert (1996) has postulated the deindustrialization hypothesis that ratio of commercial services to manufacturing in terms of value added (and intermediate demand) rises with the per capita income levels. However, growth accounting framework that Chenery and Syrquin (1986) proposed, may be used as conceptual framework to analyze the sectoral contribution to growth.

SECTION II: STRUCTURAL CHANGE AND GROWTH IN INDIAN ECONOMY

Structural change and growth in Indian economy have been much analyzed to assess the growth pattern of Indian economy since Independence. The Five Year Plans were also prepared with priorities based on the structural changes and growth of the economy. The changes in structure and growth of Indian economy are being seen as the outcome of the planning process then and now as the results of economic reforms since 1991. A number of studies were made to assess the growth performance of Indian economy under planning regime. But, in the phase of economic reforms, there have been a few studies on structural transformation in Indian Economy.

Indian economy has witnessed different phases of growth through structural transformation over time. The patterns of growth and structure have been largely attributed to a number of crises at different points in time which are partly domestic and largely external. Major crises during the course of Indian economic growth are borne out of external factors like aid cut during the sixties and oil price hikes during seventies and after. Domestic factors like devaluation, droughts, nationalization of coal mining and commercial banks, shift away from fixed exchange rate system, shift in import substitution strategy towards neutral trade strategy of efficient import substitution through export promotion along with opening up of stock market during the eighties have all played their part in shaping the growth trajectory of Indian Economy since Independence. By the turn of nineties, the crises of oil price hike and unmanageable short term borrowings and external

pressure to opening up economy have worsened the economic crises to rationalize economic reforms as means of bailing out Indian economy from the crises of fiscal and balance of payments.

Nevertheless, Indian economy has been growing in terms of size and structure. The structural transformation that Indian economy has been experienced is somewhat different from the Kuznets pattern of structural transformation that is agriculture-industry-services. Studies on structural changes in Indian economy have characterized the structural transformation of Indian economy as one of agriculture-services bypassing industry. This pattern of structural transformation in Indian economy has been verified and dubbed as services-driven growth since the turn of nineties. This structural shift in economic growth towards services is seen as structural break in growth of Indian economy (Kotwal, Ramaswami and Wadhwa, 2011). Subsequently, a recent study by Manmohan Agarwal and Sunandan Gosh (2015) has claimed to have no empirical support for structural breaks in growth of Indian economy. The present study has examined the structural breaks in growth of Indian economy using growth accounting framework of cyclical.

SECTION III:

DATA AND METHODOLOGY

The present study has made a modest attempt to explore the India's economic growth process within the framework of growth cyclical. Anandaraj (1992, 1996) had demonstrated the application of growth cyclical method to identify whether there have been perceptible structural breaks in economic growth process. The present study has made use of growth cyclical method to discern the patterns of cyclical movements in overall economic growth and sectoral growth. The cyclical movements in growth are estimated by detrending the variables under study using semi logarithmic function and then smoothening with three year moving average. This methodology has the ability to identify structural breaks in growth of Indian Economy. Major sectors of the economy are taken for the analysis of structural breaks in economic growth. Based on the patterns of growth cyclical, the study period that is 26 years from 1991-92 to 2016-17, is divided into growth episodes. The data that is used for the present study, is taken from statistical appendix of the latest Economic Survey 2016-17. The study has taken major sectors of the economy namely (i) Primary Sector (PS), (ii) Secondary Sector (SS), (iii) Tertiary Sector (TS), (iv) Transport and Communication Sector (TCS), (v) Banking and Financial Sector (BFS) and (vi) Community Services Sector (CSS) along with gross value added (GVA) at constant prices (2011-12). The observed growth episodes are evaluated for the influences of policy shocks and accordingly the patterns of growth of different sectors are delineated. While doing so, the services-led growth is validated with testing Francois-Reiner hypothesis of deindustrialization. The sectoral contribution to growth is also studied using growth accounting framework proposed by Chenery and Syrquin (1986).

SECTION IV:

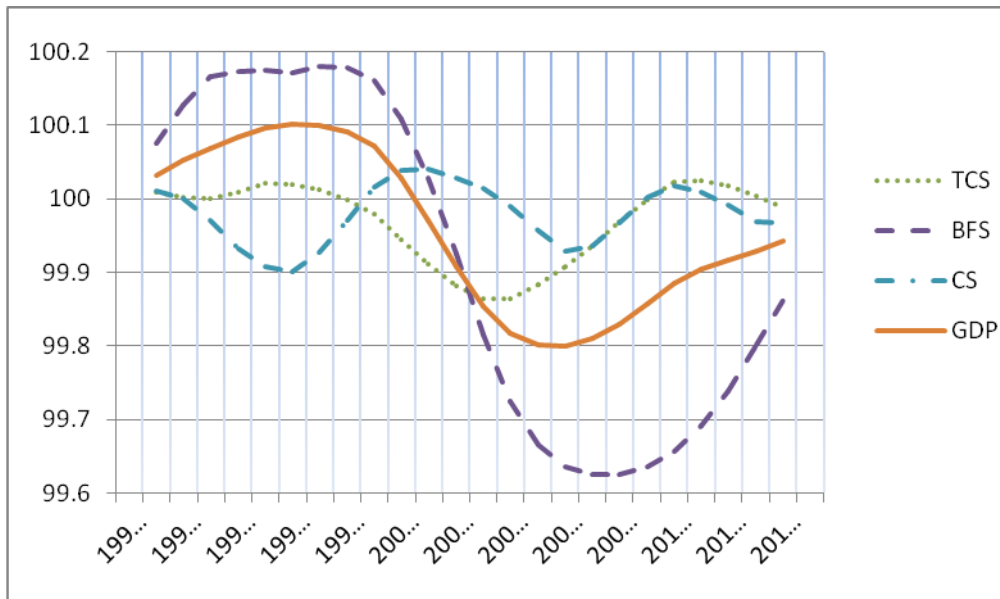
GROWTH CYCLICALITY AND STRUCTURAL TRANSFORMATION IN INDIAN ECONOMY

This section presents the results of growth cyclical and examines the possible structural breaks in growth pattern of Indian economy. As discussed in the preceding section, the cyclical method is followed to discern the cyclical movements in growth of overall gross value added (hence forth GDP) and gross value added of major sectors of the economy. Growth Pattern I presents that the services sector gross value added by sub sectors are related with overall gross value added (GDP).

This growth pattern would help us to find whether the economic growth is driven by services by which Francois-Reinert hypothesis of deindustrialization may be validated.

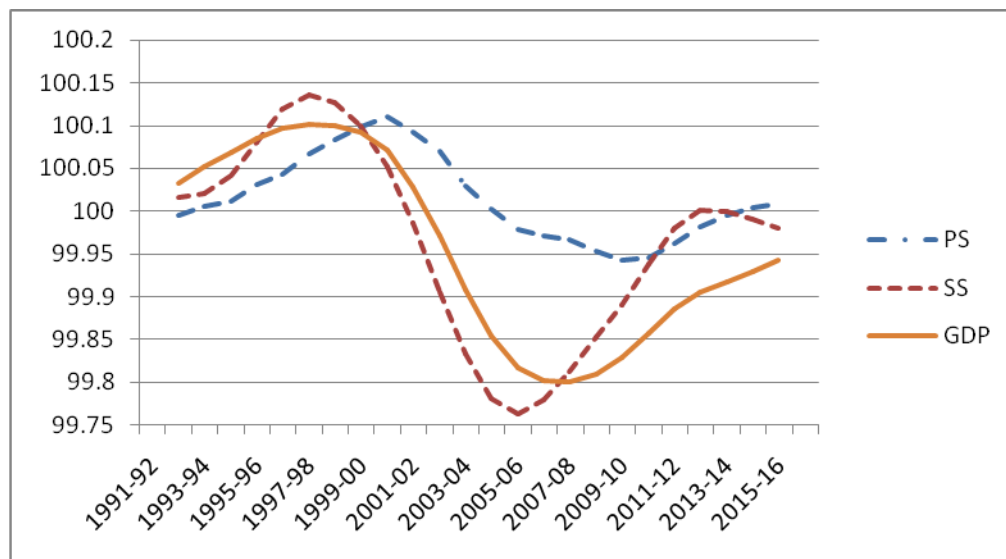
CYCLICAL MOVEMENTS IN GROWTH PATTERN I

Cyclical Movements in Growth Pattern II



It is observed that cyclical movements in growth of sub sectors of services sector follow the cyclical movement in overall economic growth and more precisely the transport and communication sector appears to have a lead among the subsectors of services sector. It means that the services sector growth is driven by growth of commodity sectors of the economy. This observation does not find an empirical support for the claim of services-led growth in Indian economy. Again, this finding is validated by examining the growth cyclical movements of commodity sectors vis-à-vis overall GDP. The Growth Pattern II depicts the cyclical movements in growth of overall economy and those of commodity sectors (Primary sector and Secondary Sector).

CYCLICAL MOVEMENTS IN GROWTH PATTERN II



It is found that overall economic growth continues to be driven by secondary sector. It is clear that the decline in economic growth during the period after 1999-2000 is preceded by the fall in growth of secondary sector one year ahead. The recovery in growth of secondary sector in the year 2006-07 is seen clearly to lift the growth of overall economy despite the world financial crises in the year 2007-08. However, the secondary sector is to lose its grip over the overall growth of the Indian economy only during the period after 2013-14 as seen from the growth pattern II that secondary sector growth begins to drop but the overall GDP continues to grow due to a steady growth of banking and financial sector since 2009-10.

Based on the cyclical movements in growth by sectors under study, the study period is divided into different growth episodes namely (i) Information Technology growth episode (period after 2005-06), (ii) Financial growth episode (period after 2009-10) and Make in India growth episode (period after 2014-15). Accordingly, growth rates were computed to discern the pattern of growth among major sectors of the economy during the growth episodes as identified from the analysis of growth cyclicity.

The growth pattern and sectoral contribution of growth using Chenery and Syrquin method are presented in the Table.

TABLE : Growth, Structure and Sectoral Contribution to Growth

GROWTH PATTERNS	PS	SS	TS	TCS	BFS	CS	GDP
RELATIVE AVERAGE SHARES							
Economic Reform 1 st Phase	34.52	25.87	39.61	12.86	13.73	13.02	95.18
IT Boom (period after 2005-06)	22.18	28.64	49.18	17.64	18.86	12.68	99.60
FS Boom (period after 2009-10)	20.51	28.63	50.86	18.20	20.02	12.64	100.00
Make in India (Period after 2014-15)	18.73	28.26	53.01	18.89	21.66	12.46	100.00
GROWTH EPISODES							
Economic Reform 1 st Phase	3.03	6.38	7.25	8.43	7.18	6.14	5.97
IT Boom (period after 2005-06)	3.53	7.45	8.85	8.94	10.28	6.77	7.42

FS Boom (period after2009-10)	3.46	6.63	8.37	8.42	9.47	6.65	6.93
Make in India (Period after 2014-15)	2.64	6.95	8.66	8.69	8.77	8.42	7.01
SECTORAL CONTRIBUTION TO GROWTH (PER CENT)							
Economic Reform 1 st Phase	18.81	29.64	51.55	19.48	17.71	14.36	100.00
IT Boom (period after 2005-06)	10.50	29.34	60.16	21.69	26.66	11.81	100.00
FS Boom (period after2009-10)	10.20	27.63	62.17	22.31	27.61	12.25	100.00
Make in India (Period after 2014-15)	7.01	27.88	65.11	23.27	26.96	14.88	100.00

Note: PS, SS, TS, TCS, BFS and CS refer to Primary Sector, Secondary Sector, Tertiary Sector, Transport & Communication Sector, Banking & Financial Sector and Community Services Sector. It is seen from the above table that information & communication boom as seen through transport and communication sector has lifted the overall economic growth from 5.97 per cent to 7.42 per cent while the financial boom has witnessed a drop in growth momentum vindicating growth of

paper trading rather than growth of commodity sector wherein real economic growth lies. The Make in India program has not made a discernible positive impact on economic growth.

The delineated growth episodes is further subjected to the analysis of structural changes to find out whether there has been any structural change in growth of Indian economy. It is observed that there have been structural changes in growth of Indian economy after the IT boom and financial boom. Among the sectors of the economy, primary sector has been experiencing somewhat stagnation in growth but has begun to register a decline in growth during Make in India phase after 2014-15. The secondary sector and transport & communication services sector have witnessed more or less same pattern of growth during the different growth episodes. However, growth of banking and financial sector though registered a magnitude of higher order during the period after 2005-06, has been tapering but with an edge over the growth rates of other sectors of the economy. One interesting finding is that secondary sector continues to determine the direction of overall economic growth, further substantiated by growth of transport and communication sector. Among the growth drivers, banking and financial sector alone has marked a decline during the Make in India growth episode after 2014-15.

The analysis of sectoral shares has brought hitherto unnoticed a fact that shifting of base in an effort to capturing the structural changes in commodity composition, has proved the structural transformation that Indian economy has been experiencing over time as can be seen through falling short of centum in aggregation of sectoral shares in per cent based on new base during the earlier periods prior to the year of new base. It is learnt that every ten years there seem to be structural changes in Indian economy to the magnitude of 5 per cent in terms of aggregate relative shares. This part of the structural changes is not often considered in the analysis of growth performance. Following Chenery and Syrquin (1986), an attempt is made here to factor structural changes into measurement of growth performance. The contribution of different sectors to growth performance would bring forth the extent of structural transformation that is underway in course of time to determine the overall growth in terms of direction and magnitude.

A cursory look at the sectoral contribution to growth shows that there has been a steady decline in primary sector contribution to growth from 18.81 per cent during the first phase of economic reform (1991-92 to 2003-04) to 7.01 during the growth episodes of IT boom and Finance

boom. It means that the drastic fall in primary sector contribution to growth lends credible support for the structural transformation in Indian economy. There has been a decline of 2 per cent in contribution of secondary sector to growth during the period after 2009-10 but contribution of tertiary sector to growth has registered a phenomenal increase of 15 per cent during the period under study. The steady rise in contribution of tertiary sector growth has been largely due to banking & financial sector (10 per cent increase) and transport & communication sector (4 per cent increase). The magnitude of increase in contribution of banking & financial sector to growth relative to commodity sector contribution casts a serious doubt on the veracity of income generation through possible money creation and stock trading. Banking & finance sector boom not in commensurate with commodity sector growth may be seen to exaggerate the growth of economy. Apart from the magnitude of growth pattern, it is found that structural changes in economy has been a dynamic phenomena in response to policy shocks and the cumulative effects of structural changes has manifested as structural transformation in Indian economy from agrarian economy to industrial economy onto IT services hub.

SECTION V:

CONCLUDING OBSERVATIONS

The study has analyzed the growth patterns among major sectors of the Indian economy during the economic reform period. The analysis of growth cyclicity has brought out clearly the existence of feedback between structural changes and growth. This study has made a modest attempt at comprehending the contribution of structural changes to economic growth which the earlier studies had not dealt. Moreover, this study finds banking & financial sector growth and its contribution as some extent of exaggeration on account of measuring value added through money creation and stock trading. Nevertheless, the growth of banking & financial sector cannot be undermined but for its desirability in view of sustainable growth.

In a nutshell, the study has observed that Indian economy has undergone structural breaks with continuity in its growth process as against the earlier claim of no structural breaks in GDP growth since 1991. More importantly, the study finds that the Indian economy has been responding to policy shocks and hence structural breaks move in tandem with policy interventions.

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