

## GROWTH DRIVERS FOR INDIA AND CHINA: A COMPARISON

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***Abstract:** The study attempts to discuss the major growth drivers of India and China; for this a comprehensive analysis is made by taking socio economic variables for both countries for 30 years. The results show that in India tertiary sector variables are influencing growth while industry related variables are retarding growth. On the other hand, in case of China variables related to physical infrastructure affect economic growth positively whereas variables related to demographics are negatively affecting economic growth along with weak social infrastructure.*

***Key Words:** Reforms, Growth Drivers, Sustained economic growth, Growth retarders, Growth Enhancers*

***JEL Classification:** O1, O2, O4*

### INTRODUCTION

China and India, the two surplus labour countries, were noted for their strength and might in the past but the recent history of these countries is replete with colonization and feudal incompetence personifying these countries with the economic stagnation during 18<sup>th</sup> to mid 19<sup>th</sup> century. These countries, considered as economic laggards, were engrossed in their problems like poverty, unemployment, impoverishment, lack of self sustainability etc. and were designated to play the peripheral roles in the global economy. At the time of independence, both countries shared similar structural problems with high unemployment, poverty and inequality prevailing in the economy, but with dawn of the twenty first century, the policy makers in these countries started realizing that the foundation of credible national security and quality of life is based on the well being of their population. Thus, there was a change in the attitude of policymakers with a shift towards industrial and service sectors in comparison to the agriculture sector to ensure employment and reduction of poverty and inequality. The rise of these countries from peripheral status created by decades of imperialist controls is the result of gradual market reforms and global integration undertaken by them. The ever increasing demand matched with supply of goods

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and services has resulted in China becoming a global supplier of manufactured goods and India becoming the world's BPO. China and India termed as 'twin engines of economic growth' (term coined by Jim O Neill from Goldman Sachs in 2005) are also amongst BRICS nations. Acknowledging the remarkable performance of China and India, in its Super Cycle Report the Standard Chartered Bank predicted that the world economy would reach \$308 trillion by 2030 and China and India would be \$73 trillion economy and \$30 trillion economies respectively. (ET News Service, 2011).

Main highlights of economic reform in these countries is given in the table below and their impact on GDP per capita can be analysed from the graph which follows the table:

**Table 1**  
**Timeline of economic reforms in India**

<i>S. No.</i>	<i>Time period</i>	<i>Main features</i>
1	1980- 1990	Export incentives, Relaxation in industrial controls, Expansion in the open general license list etc.
2	1990 onwards	<ul style="list-style-type: none"> <li>• Macroeconomic reforms like reduction in food and fertilizer subsidies, reduction in public expenditure, taxation reforms etc.</li> <li>• Sector specific reforms like abolishment of import licensing, opening up of SEZs, deregulation of domestic industry, initiation of public enterprise reform, reduction in reserved industries, banking sector reforms like strengthening of capital base, introduction of prudent norms.</li> </ul>
3	2000 onwards	Opening up of insurance sector, continued disinvestment in public sector enterprises, reforms in infrastructure sector, allowing of FDI in retail, pension reform etc.

*Source:* Authors' preparations

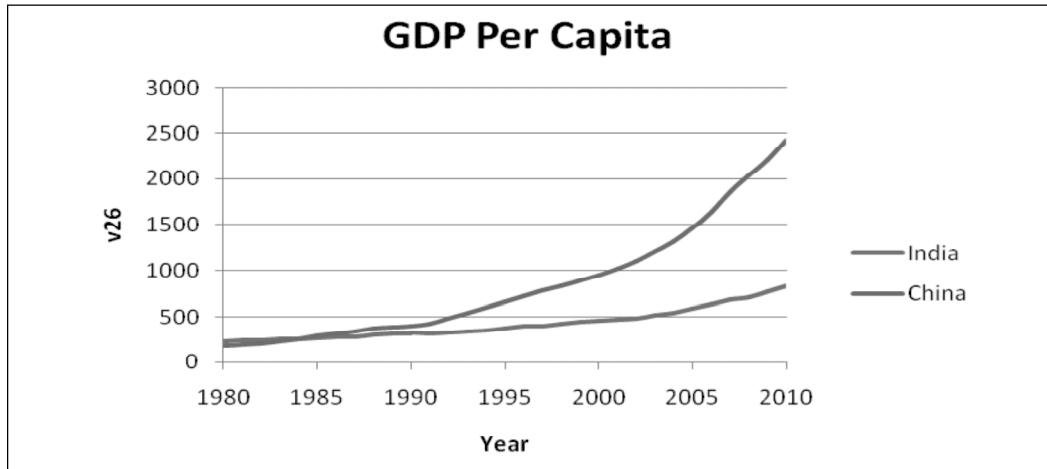
**Table 2**  
**Timeline of economic reforms in China**

<i>S. No.</i>	<i>Time period</i>	<i>Main features</i>
1	1980 onwards	Household responsibility system in agriculture, open door policy towards FDI, township and village enterprises reform setting up of export promotion zones, price reforms etc.
2	1994 onwards	Fiscal reforms, banking reforms were strengthened, education reforms, legal system reforms etc.

*Source:* Authors' preparations

The graph shows that GDP per capita has increased in both the countries from 1980 but the increase in China's GDP is more sharp and it can be concluded that the sequencing of economic reforms is very important if the desired results are to be achieved; China has gained on this account as it started its reforms with

Graph 1: GDP per capita: China and India compared



agriculture and slowly progressed towards industry. On the other hand, India opened its economy simultaneously in many sectors and as a result the smooth structural transformation was disturbed. In this regard Srinivasan (2004) discusses the issue of sustainability of economic reform in China and India as in case of former growth is based upon high saving and investment and in case of later growth is based upon tertiary sector and there is a dearth of infrastructure.

## REVIEW OF LITERATURE

The reform process, growth and development models adopted in India and China which led to their transition from *vagrant states to world's BPO and factory respectively* have successfully drawn attention of economists the world over. Rosen (1990) describes that while in China reforms were initiated along the lines that ideology follows practice, Indian economic reforms were initiated in the emergency and till date are constrained with the same reasons. On the other hand, Huang, Khanna (2003) and Rai (2006) discuss that although both countries have followed different approaches for development and China is ahead of India but later is much better in key areas like home grown entrepreneurship, innovativeness, quality of software services etc. Similarly, Chow (2004) and Prasad, Rajan (2006) draw attention toward important lessons from China's reforms like importance of unbalanced growth, private ownership, interconnectivity of reforms but simultaneously stress upon reforms in fiscal sector, banking sector, legal system so that economic growth can be sustained and the fruits can be well transformed into economic welfare of the society. Also, Prasad (2007) analyses the potential shocks to the Chinese economy in the form of collapse of external demand, reversal of foreign inflows, loss in banking system, social insecurity etc while Jahangir (2007) asserted that China's

growth strategy has relied on high savings, high investment and high external demand which are viewed as unsustainable growth drivers as there can be overcapacity, deflation and exposure of economy to international forces.

Kumar U and Subramaniam A (2011) stress that with the growth of macroeconomic sector during 2000-2009, inequality amongst Indian states increased and low evidence was found for demographic dividend to affect economic dynamism in the country. While Tyers, Golley and Bain (2006) in their study projected that with decline in China's labor force and India's growing population India is set to become fastest growing economy in the world. Analysing another aspect of growth, Wu (2008) stated that Economic Growth in China and India has not led to catch-up effects in the relatively poor regions in these countries as postulated by the new growth theories thus putting a question mark over the inclusiveness and balanced aspects of the economic growth. Similarly, Holscher (2010) stressed that improvement in public services could reduce rigidities in income distribution which would enhance economic growth. While discussing sustainable economic development, Beretta and Lenti (2012) stressed upon bilateral trade as an important and sustainable driver of economic growth between China and India and right exploitation of comparative advantage of each country would benefit the other with the help of trade. Also Kalyanaran GK (2008) analyzed that China's growth is fuelled by input of huge resources while that of India's growth is fuelled by efficiency and productivity which is more sustainable in the long run.

Regarding future policy implications, Li Y and Zhang B (2008) stressed that emerging economies trying to emulate China and India's growth with manufacturing and service sectors as growth engines, should utilise comparative and absolute advantage. In addition, Garnaut (1996) identified key policy decisions for sustained rapid growth in China and India such as price, macroeconomic and output stability, which need to overcome the weak legal system and policy indecisiveness respectively in both the countries. Also for China and India, focus should shift towards balanced growth as lopsided development based on investment, manufacturing and service potential could lose its effectiveness. Thus sectoral balancing and structural balancing is required through reforms.

From above reviews, it is clear that there is enough literature on economic reforms, development process and its impact on agriculture, industry, infrastructure and services in economies of India and China but most studies do not focus on sustainability of reforms. In order to assess sustainability of economic growth and development, the focus should be on the fact that in these economies the share of natural capital (combined value of forests, energy, minerals, crop land, pasture land, protected areas and non-timber forests) surpass the value of physical capital (Barbier, 1998), as well as on the contemporary issues with which these economies are struggling (i.e. effective utilisation of democratic dividend, ensuring transparent

corporate governance, reinstating business ethics etc.) regarding which very less literature is available. Also the studies have focussed upon one or the other aspects of development and comprehensive studies including all the variables of socio economic development are very less.

Against this background, the study attempts to find out growth drivers of India and China. The objectives of the study are to:

- 1 analyse the growth influencers in India as well as China.
- 2 compare the retarders of economic growth in India and China so that suitable policy measures are adopted to address them.

The present study is divided into four sections including the present one: Section II is devoted to database and methodology; Section III comparatively analyses the drivers of growth and the last Section IV summarises the discussion with policy implications for both countries.

## **Section II: Database and Methodology**

In the context of present study, secondary data has been culled from the World Development Indicators, World Economic Outlook, Research Series of Goldman Sachs, HSBC etc. As the economic reforms in China were initiated in 1980 and mild liberalization in India also started in 1980s as well as keeping in mind the availability of the data the time period for the study is 30 years i.e. from 1980-2010 . 57 variables representing different aspects of socioeconomic development of both economies were selected. These include:

- Agriculture sector
- Industry variables
- Tertiary sector variables
- Demographic
- Infrastructure
  1. Physical
  2. Social
- Macroeconomic
- External sector

The detailed variables taken against above mentioned broad sectors and labelled in the study from V1-V57 are:

V1: Agricultural Machinery, Tractors per sq. km of arable land

V2: Agricultural Land as Per cent of land area

- V3: Agricultural Exports as % of GDP
- V4: Agricultural Imports as % of GDP
- V5: Agricultural Value Added as % of GDP
- V6: Number of Physicians as per 1000 people
- V7: Primary School Enrolment (% gross)
- V8: Secondary School Enrolment (% gross)
- V9: Tertiary School Enrolment (% gross)
- V10: Road Sector Energy Consumption as % of total energy consumption
- V11: Rail Passengers carried in million
- V12: Air Traffic Freight in million ton km
- V13: Telephone Lines per 100 people
- V14: Population Growth Rate (%)
- V15: Infant Mortality Rate per 1000
- V16: Labour participation rate (%)
- V17: Industry value added as % of GDP
- V18: Manufactured Imports (% of GDP)
- V19: Manufactured Exports (% of GDP)
- V20: FDI Inflows (% of GDP)
- V21: Service value added (% of GDP)
- V22: Trade (% of GDP)
- V23: GCF (% GDP)
- V24: Current Account Balance as % of GDP
- V25: Short term debt as % of total external debt
- V26: GDP per capita constant
- V27: Gross Domestic Savings as % of GDP
- V28: Rural Population (%)
- V29: Urban Population (%)
- V30: Poverty Gap at \$1.25
- V31: Gross National Expenditure as % of GDP

- V32: Inflation at constant prices
- V33: Broad Money as % of GDP
- V34: Worker Remittances (%)
- V35: External Debt Stock as % of GNI
- V36: Total Debt Stock
- V37: Claims on central Government (% GDP)
- V38: Household final consumption expenditure (% annual growth)
- V39: Life Expectancy at birth, total in years
- V40: Net ODA (% of GNI)
- V41: Real Interest Rate (%)
- V42: Lending rate (%)
- V43: Electric Power consumption KWH
- V44: CO<sub>2</sub> Emissions (PPP)
- V45: Stocks Traded, total value as % GDP
- V46: Improved Sanitation Facilities as percentage of population with access
- V47: Improved Water Access as percentage of population with access
- V48: Incidence of Tuberculosis per 100000 people
- V49: Legal Rights Index
- V50: Time to Export as in Number of days
- V51: Unemployment (%)
- V52: Health Expenditure as % of GDP
- V53: R&D Expenditure (%)
- V54: Internet Users per 1000
- V55: Mobile Cellular Subscriptions per 1000
- V56: Tax Revenue as % of GDP
- V57: Portfolio Equity Inflows as % of GDP

It is pertinent to mention here that as the data for variables describing the importance of corporate governance, business ethics and social viability of development projects was available only from 1991 onwards, the information for earlier time periods has been extrapolated.

In order to analyse the growth drivers in both the countries, technique of factor analysis was used. Factor analysis assumes that the inter-correlation between the variables occur because a few basic properties (factors) are shared in common by the different variables in different degrees. In Factor Analysis, a given set of 'n' variables are grouped into 'p' number of groups called 'Factors' which are less in number than the set of original variables and reduces the redundancy between the original variables. In factor analysis each of the variables  $y_1, y_2, \dots, y_p$  is represented as a linear combination of a few random variables  $f_1, f_2, \dots, f_m$  ( $m < p$ ) called factors. The coefficients of the factors are called loadings (Rencher, 2003); these are values which explain how closely the variables are related to the factors so obtained.

The methodology of Factor Analysis undertaken in the present study is given as under:

$$\underline{X} = \underline{L} \underline{F} + \underline{\mu} \quad (1)$$

Where  $\underline{X}$  is the vectors of all the original variables

$$X' = [X_1, X_2, X_3, \dots, X_n]$$

$\underline{F}$  is the vector of 'Factors' derived

$$F' = [F_1, F_2, F_3, \dots, F_p]$$

$\underline{U}$  is the vector of error terms

$$U' = [E_1, E_2, E_3, \dots, E_n]$$

$\underline{L}$  is the Factor Loading Coefficient Matrix

$$\underline{L} = \begin{pmatrix} a_{11} & a_{12} & \dots & 1_{1p} \\ a_{21} & a_{22} & \dots & a_{2p} \\ \dots & \dots & \dots & \dots \\ a_{n1} & a_{n2} & \dots & a_{np} \end{pmatrix} \quad (2)$$

The coefficient (factor loading) belongs to the  $i^{\text{th}}$  variable and  $j^{\text{th}}$  factor shows the extent to which variable  $X_i$  is associated with  $F_j$  Factor. A salient loading is the one which is significantly high to assume that a relationship exists between the variable and the factor. (Gorsuch, 1974). The purpose of communalities in factor analysis attempts to explain the proportion of variance in the original variable which can be explained by the derived common factors. Thus the communality for  $X_i$  variable  $(c_i)^2$  is the square of factor loadings of  $X_i$  original variables under the derived p factor and is calculated as :

$$(a_{i1})^2 + (a_{i2})^2 + (a_{i3})^2 + \dots + (a_{in})^2 = (c_i)^2$$



In order to have a better explanation of the variables, the factor loadings were rotated using Kaiser's- Varimax Criterion for Rotation (Kaiser, 1958).SPSS 17 was applied and the interpretation of results is as under

### **Section III: Results and Discussion**

The results of factor analysis shows that for both countries, six factors were derived. In case of India, it was observed that the six factors together accounted for 92.69 per cent of total variance with first factor accounting for 63 per cent of variation, factor two having 14 per cent variance, factor three having 6 per cent, factor four having 4 per cent variance and factor five and six accounting for 2 and 1 per cent of total variance respectively. The communality values varied from 0.714-0.998 i.e. 71% to 99% suggesting that six factors derived were significant to account for most of variation in the original variation in the original variables. The first factor included 38 of the original variables (those having Factor loadings  $\geq 0.5$ ) and these were:

- Tertiary School Enrolment (% gross)
- Workers Remittances (%)
- Rail Passengers carried in million
- Gross Domestic savings (5 of GDP)
- Trade (% of GDP)
- Gross capital formation (% of GDP)
- Net ODA (% of GNI)
- CO2 emissions in PPP
- Poverty Gap at \$1.25
- Improved Sanitation Facilities (5 of population with access)
- Services Value added (% of GDP)
- Infant mortality rate per 1000
- Labor participation rate (%)
- Urban population (%)
- Real Interest rate (%)
- Gross national expenditure (% of GDP)

Perusal of the table further shows that it is a bipolar factor i.e. these factor has two dimensions i.e. some variables like v9, v34, v11, v27, v1,.....have positive loadings and can be termed as "growth enhancers" as they are said to positively effect economic growth and therefore government should emphasise on them.

In order to analyse the individual variables responsible for affecting the economic growth, factor loadings were taken. It was also found that variables

affected economic growth positively and negatively i.e. the bipolar factors were also there. In case of India, 38 variables had significant factor loadings ( $>0.5$ ) and out of these 11 variables have negative factor loadings. The variables which affect growth positively i.e. high positive factor loadings have been termed as 'Growth enhancers.'

In case of India, the results of the factor analysis showed that the variable which affected growth the most was Tertiary school enrolment with factor loading 0.958 which symbolises policy initiatives taken for attainment of good higher education level in India have started bearing positive results. The variable with second highest factor loading is Workers' Remittances and the variable is associated with a very high degree of stability as a source of foreign capital flows. The third variable affecting growth positively is Number of Rail Passengers in millions highlighting the importance of Indian railways as the largest profit making public enterprise.

The next variable with high factor loading is Gross Domestic Savings as the saving rate is more than 35 per cent in India; sustainability of Indian economic growth in future depends a lot on this factor. The other highly contributing variables for growth are macroeconomic variables like Gross Capital formation, Trade (per cent of GDP), external sector variables like Service Value added, Net ODA etc. The policy shift like 'look east policy' and look beyond west policy has helped India to explore many new potential markets in South East Asia and Africa apart from its conventional trading partners in America and Europe resulting in increase in the volume of international trade. Agricultural Machinery in terms of number of Tractors, Improved sanitation facilities, Number of mobile cellular subscriptions, Current Account Balance, External Debt Stock, Number of Physicians, Air Traffic Freight, Secondary School Enrolment, Rural Population as percentage of total population are some other high loading variables affecting and enhancing growth in a positive way. The existence of a large number of positive growth drivers from macroeconomic, external, service and infrastructure industries indicate that Indian growth trajectory has strong fundamentals which could enhance sustainability of economic growth.

On the other hand, variables like Agriculture value added, Industry value added and value of stocks traded, Infant mortality rate, labour participation rate and percentage of urban population are some variables with high factor loadings but with negative sign showing that these variables could retard the momentum of economic growth in India. These drivers are termed as 'Growth Retarders' in this study. The growth model of India exhibits transition from agrarian economy to service sector and industry related variables coming out to be growth retarders suggest that Indian economy still lacks proper industrial base required for sustained economic development. Also, volatile nature of Indian stock market and uncertainty related with FIIs is still a big fear for the think tanks and policy makers. India still

lags behind in infrastructure development which is a foundation for industrial development; thus highlighting the need for second generation economic reforms with focus on development of industry. These are areas for improvement if the economic growth is to be sustained.

**Table 3**  
**Total Variance explained India**

Components	Number of variables included	Initial Eigen Values		
		Total	% of variance	Cumulative %
1	38	36.127	63.381	63.81
2	14	8.455	14.834	78.215
3	3	3.501	6.141	84.356
4	2	2.400	4.211	88.567
5	2	1.265	2.219	90.786
6	0	1.087	1.907	92.693

Source: Authors' Calculations

**Table 4**  
**Factor Analysis results**  
**Rotated Component Matrix**

	Component					
	1	2	3	4	5	6
v9	.958	.066	.092	-.105	.203	-.011
v34	.955	.225	-.037	-.024	.080	.076
v11	.948	.178	.118	-.094	.196	.062
v27	.946	.215	.075	-.074	.179	.113
v1	.936	.297	-.072	-.066	.115	.108
v17	-.931	-.242	.231	.070	-.080	-.061
v5	-.926	-.300	.104	-.068	-.075	-.147
v22	.923	.318	-.167	.037	.041	.033
v23	.914	.215	.029	-.200	.088	.240
v45	-.913	-.335	.093	.039	-.077	-.180
v40	.909	.384	-.086	.029	.078	.099
v44	.892	.415	.033	.003	.093	.126
v30	.886	.436	-.070	.053	.076	.089
v29	-.886	-.436	.070	-.053	-.076	-.089
v15	-.879	-.401	.138	.027	-.072	-.180
v46	.878	.268	-.124	-.088	-.140	-.069
v31	-.877	-.437	.012	-.138	-.065	-.079
v55	.875	-.026	.255	-.119	.368	.020
v8	.874	.377	.130	.056	.180	.140
v21	.870	.151	.208	-.253	-.177	.162

contd. table 4

	<i>Component</i>					
	1	2	3	4	5	6
v35	.870	.262	-.204	-.266	-.071	-.013
v24	.869	.085	.105	-.018	.151	.386
v16	-.865	-.465	.116	-.072	-.050	-.096
v7	.865	.200	.202	-.010	.269	.263
v6	.853	.402	-.178	.054	.003	.093
v41	-.851	-.236	.229	-.185	.040	-.139
v12	.840	-.009	.443	.038	.151	.180
v28	.836	.208	.027	.098	.177	.389
v43	-.833	-.125	.462	.052	-.138	-.031
v14	.790	.341	-.486	-.062	-.037	.024
v56	.779	-.064	.446	-.110	.390	-.038
v47	.711	.675	-.097	-.090	.100	.078
v54	.706	.652	-.205	-.081	.038	.060
v3	-.660	-.572	.022	-.322	-.106	.221
v32	.636	-.403	.350	-.437	-.008	.215
v18	.636	.141	.187	.178	.138	.632
v2	-.574	.066	.002	.415	-.280	-.404
v38	-.490	-.387	.438	-.124	-.117	-.468
v39	.485	-.071	.065	-.272	.211	.409
v51	.266	.917	-.260	.009	.014	.008
v53	.428	.886	-.126	-.041	.044	-.004
v49	.480	.859	-.111	-.048	.062	.054
v57	.506	.832	-.042	-.088	.016	.160
v52	.263	.821	.074	-.077	.113	-.025
v48	.575	.796	-.115	-.065	.074	.062
v36	-.333	.761	.238	.415	-.080	-.105
v50	.620	.757	-.004	-.092	.090	.112
v20	.151	.741	-.304	.379	-.066	-.120
v37	.027	.728	-.238	.376	-.241	.276
v10	.074	.632	.394	.525	.142	.072
v25	.054	.192	-.851	-.139	-.066	-.015
c26	.547	-.349	.665	-.065	.113	.220
v33	-.369	.071	.620	-.325	.372	-.063
v19	.113	-.002	.061	.869	-.070	.093
v4	-.557	.223	-.181	.647	-.212	-.187
v42	-.167	-.199	-.182	.252	-.719	-.180
v58	.555	-.069	.067	.087	.691	.033

*Source:* Authors' Calculations

In case of China, from the empirical analysis it was observed that the six factors together accounted for 94 per cent of total variance with first factor accounting for 72 per cent of variation, factor two having 8 per cent variance, factor three having 6 per cent, factor four having 2.8 per cent variance and factor five and six accounting for 2.5 and 2.2 per cent of total variance respectively. The communality values

varied from 0.541-0.999 suggesting that six factors derived were significant to account for most of variation in the original variation in the original variables. Majority of variables were included in factor 1 like:

- 1 Mobile Cellular Subscriptions per 1000
- 2 Tax Revenue (% of GDP)
- 3 Air Traffic Freight in million ton km
- 4 Tertiary School Enrolment (% Gross)
- 5 Electric Power Consumption (KWH)
- 6 GDP per capita
- 7 Internet users per 1000
- 8 Rail Passengers carried in million
- 9 Agricultural Machinery, Tractors per sq km of arable land
- 10 Telephone Lines per 100 people
- 11 R&D expenditure (%)
- 12 Workers Remittances (%)
- 13 Time to export, number of days
- 14 Gross Domestic savings (% of GDP)
- 15 Industry value added (% of GDP)
- 16 Portfolio equity inflows (% of GDP)
- 17 Value of stocks traded (% of GDP)
- 18 Infant mortality rate per 1000
- 19 Population growth rate (%)
- 20 Labor participation rate (%)
- 21 Poverty gap at \$ 1.25
- 22 External Debt Stock (% of GNI)

Out of the growth enhancer variables included in factor I, the most important variable which has affected economic growth is Number of mobile cellular subscriptions with highest factor loading of 0.989. The variable with second highest factor loading of 0.973 is Tax revenue highlighting the efficiency of tax collection mechanism in China.

The next high contributing variables are those related to infrastructure like Air Traffic Freight with factor loading 0.967, Tertiary school enrolment (0.964), Electric Power Consumption (0.956), Number of Internet Users (0.955), Telephone Lines (0.884), Secondary School Enrolment (0.844), Road energy consumption (0.820), Number of railway passengers (0.922). These results highlight the fact that China's development model is largely based upon infrastructure and the sector has

contributed towards economic growth to a very large extent. The other variables which have played a significant role in economic growth are, Workers remittances, Time taken to export, Value of stocks traded, Gross Domestic Savings, Portfolio equities, Life expectancy etc.

Therefore, a substantive share in the development of China's economy is accrued to the amount of workers remittances which is a very reliable and stable source of foreign capital investment, business competitiveness, savings as the sole highest contributor towards capital formation. Thus the main drivers of Chinese economic growth are indicators of physical infrastructure- a quite distinct feature from Indian economic growth. On the other hand, growth retarder variables like Infant mortality rate, labour participation rate, percentage of rural population, population growth rate, poverty gap ratio, agriculture value added, Net ODA are having negative impact over economic growth in China.

The results indicate that the issue of declining working population which has been raised time and again has started showing its effects on growth. Also another important lagged areas of China's development model is unequal spread of fruits of economic growth especially over the rural areas is brought into light in this study as well. This indicates that emphasis has to be given on these areas so that they can be improved and can contribute passively towards growth. The main challenges for China are present in these areas as the working population in China is projected to decline over the next thirty year time period (Wilson, 2003).

Rural regions have been neglected and the gap between urban and rural has widened up which stresses the need for balanced regional development. Also, as highlighted in the study, social investments in terms of health and education are also very important for a country's all around development but here physical infrastructure have been set up at the cost of social investments which needs to be improved through more investment on health sector.

**Table 5**  
**Total Variance explained China**

<i>Factors</i>	<i>Number of Variables included</i>	<i>Initial Eigen Values</i>		
		<i>Total</i>	<i>% of variance</i>	<i>Cumulative %</i>
1	34	41.040	72.00	72.00
2	23	4.582	8.038	80.038
3	5	3.921	6.879	86.917
4	2	1.623	2.847	89.764
5	0	1.474	2.587	92.351
6	0	1.284	2.252	94.603

*Source:* Authors' Calculations

**Table 6**  
**Factor Analysis results for China**  
**Rotated Component Matrix**

	<i>Component</i>					
	1	2	3	4	5	6
v55	.989	.049	.080	.049	.052	.001
v56	.973	.103	.079	.055	.112	-.025
v12	.967	.207	.120	.003	.026	.000
v9	.964	.198	.128	-.029	-.061	.039
v16	-.961	-.185	-.135	.082	.081	-.007
v43	.956	.255	.124	.037	.042	-.017
v54	.955	-.017	.011	.122	.162	-.023
v26	.944	.295	.124	-.001	.017	.002
v11	.922	.356	.044	.084	-.030	.032
v1	.888	-.122	-.042	.145	.236	-.034
v13	.884	.266	.227	-.147	-.168	.043
v53	.876	.385	.244	-.121	-.091	-.001
v34	.871	.139	.328	-.177	-.156	.047
v50	.846	-.141	.188	-.229	-.368	.056
v8	.844	.325	.375	-.136	-.063	.027
v45	.840	.314	.038	.030	.204	-.090
v27	.836	.402	.170	.201	.115	-.083
v15	-.826	-.536	-.083	.092	.099	-.061
v10	.820	.509	.162	-.048	-.003	.024
v57	.819	.334	.209	-.334	-.112	.086
v28	-.805	-.566	-.135	.058	.066	-.061
v29	.805	.566	.135	-.058	-.066	.061
v25	.780	.074	-.348	-.045	-.167	-.242
v14	-.780	-.415	-.379	.178	.139	.071
v39	.769	.626	.079	-.025	-.060	.061
v33	.754	.589	.166	-.156	-.112	.096
v30	-.750	-.532	.142	.089	.250	-.101
v22	.746	.482	.268	.057	-.185	.056
v23	.724	.335	.033	.501	-.096	-.098
v5	-.720	-.632	-.195	.015	.147	-.091
v21	.700	.663	.004	-.047	-.129	.156
v40	-.689	.152	-.412	.493	.147	.053
v24	.672	.030	.429	-.207	.387	.005
v31	-.648	-.330	-.283	.279	-.350	.030
v48	.056	.911	.176	.033	.258	-.041
v35	-.180	.894	-.104	.286	.024	.198
v2	.245	.879	-.289	.130	-.102	.188
v3	-.556	-.815	-.080	.068	.075	.028
v6	.002	.814	-.105	-.001	.099	-.055
v47	.493	.809	.252	-.055	.107	-.026

*contd. table 4*

	<i>Component</i>					
	1	2	3	4	5	6
v46	.501	.804	.251	-.056	.106	-.025
v20	.240	.792	.336	.235	-.127	-.167
v44	-.587	-.791	-.021	.037	.106	-.084
v4	-.454	-.785	.313	-.056	.180	.076
v36	-.465	.779	.018	-.068	-.010	.213
v52	.530	.768	.297	-.157	-.035	.004
v32	.183	.765	-.403	.364	-.128	.176
v49	.561	.744	.191	.027	.229	-.054
v19	.244	.068	.881	-.056	.265	.197
v17	.399	.175	.768	.104	-.129	-.191
v18	-.465	-.360	.710	-.017	.243	.190
v51	.641	-.003	.708	-.115	-.008	.195
v7	-.508	-.168	-.674	.193	.050	.377
v41	-.067	-.066	-.026	-.840	.190	.118
v42	-.517	.288	-.315	.606	.127	-.070
v37	-.033	.016	.138	-.150	.442	.250
v38	-.119	-.221	-.043	.141	-.173	-.801

Source of table 4: Authors' Calculations

Demographics are set to play an important role in development and transition of an economy but according to the results of the present analysis the demographic indicators are having a negative impact which goes along with the projections made in 2003 by Goldman Sachs regarding greying of population in BRICS nations especially India and China. (Wilson, 2003) But the pace of this process is more steeper in China as the country is witnessing a change in its demographic dividend.

## SUMMARY AND CONCLUSION

The latest World Economic Outlook by IMF has predicted India is likely to grow 6.5 per cent in 2016-17, higher than 6.3 per cent for China (The Hindu Businessline, 2015). This narrowing up of GDP gap is set to occur basically because of China's gradual deceleration and India's stronger acceleration of growth. Underlying this narrowing growth difference are FDI and Exports that are drivers of or correlated with GDP growth and productivity. The difference between China and India's FDI-GDP ratio has been on a declining trend, from about 3.5 per cent of GDP in 1990 to a little over two per cent of GDP in 2013, suggesting slow but steady progress in attracting technology and risk capital, with a milder decline in China's attractiveness (The Hindu, 2015).

Sustained economic growth in India thus requires substantive reforms to be undertaken over the next few decades. Both India and China have undergone reforms and their different experiences reveal about how to sequence reforms and



how to stimulate growth with their help. Therefore, whereas India has witnessed service sector led growth, China moved on the path of development on basis of its strong physical infrastructure. Both economies have made remarkable progress in past three decades; China's economic performance has been a bit balanced than India's but the health of Chinese financial sector is not very good. Whereas rebalancing is the biggest problem associated with Chinese economic growth, India needs to build up a strong infrastructural base. China's future growth will hit the demographic barrier as declining workforce will create a shortage of skilled and unskilled labour whereas India still has the opportunity to exploit the working population as the stage of declining working population has not reached in India.

### **Policy measures for China**

From the above analysis it is clear that China has a strong infrastructure base which serves as the driver of economic growth but social investments have been neglected which should be re emphasised.

- 1 This would imply an extension of public goods like healthcare, education, housing towards common public.
- 2 China needs to move towards higher-value-added economic activities and boost Private Consumption which is again a long term growth driver.
- 3 Improvement in social security and promotion of fiscal transfers towards households should be done as tax revenue is a major driver of growth and thus the benefits should be equally distributed.
- 4 Therefore, fiscal policy can be used to boost domestic demand- a more sustainable variable of economic growth.

### **Policy measures for India**

- 1 The above analysis shows that tertiary sector is a major contributor towards economic growth whereas industry sector still comes out to be laggard in terms of drivers of growth in India. Structural measures are needed to help boost private investment as India will continue to have strong support from favourable demographic trends.
- 2 Increase in investment in growth oriented projects and continued improvements like those related to infrastructure, which would help to generate productive capacity are required.
- 3 Strong legal systems, efficacy of regulatory environments, incentivising innovations and a framework for protecting intellectual property rights is the need of hour if sustainable economic development is to be attained.
- 4 Efficient macroeconomic policy is needed to tackle problems like inflation which is becoming a serious hurdle in the way of economic development.

- 5 Improvement of social security and social infrastructure like health and education is required if India has to keep up the pace with the globalized world.

China has installed a much better and comprehensive rule based system than India but its judicial infrastructure is quite weak. The over politicized administration and lengthy decision making process, corruption, corporate scams and the governance deficit puts India on the backfoot in this case. Demographic Dividend is an economic potential, thus it is very important to reap it efficiently so that the benefits of the economic growth can be sustained for future generations. The success or failure of each country to maintain their rapid growth into the future will have a tremendous impact not only on their own economies but on the world economy as a whole.

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