

Research Paper



INCREASING PRODUCTIVITY: A MINDFUL PATH TO GROWTH & EMPLOYMENT

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ABSTRACT

India is set to become the largest contributor to the global workforce with a staggering 962 million out of 3.5 billion global working age population by 2030. 52 percent population in the country is still dependent on agriculture for livelihood, jobs in manufacturing sector is almost stagnant and there is a jobless growth in service sector. Moreover, the skewed sectoral distribution of labor has led to a situation of low unemployment and high poverty situation in India. The crux of the problem which the papers tries to address is that the low levels of productivity has led to a cut down on the entire size of national income leading to low per capita income in the country. This paper tries to establish a link between productivity and per capita income and thus it gives a fresh perspective on growth and development strategies.

KEYWORDS: livelihood, jobs, productivity, demand, output

INTRODUCTION

Governments all around the world are struggling with slowdown and battling out job losses after the financial slowdown of 2008. The immediate response to any slowdown is to increase the output in the economy by investing in the right areas. In developing countries, these areas should particularly be those which are labor receiving or labor intensive. India is endowed with huge labor force and therefore also has to meet its growing employment demand.

Policy makers usually focus on short run problems. Given the technology, in the short run employment can be increased by essentially boosting the demand and output. Changing the output and increasing the scale of production initiates an entire circuit of changes in the economy that lead to increased production and therefore employment. However, this is not enough as for creating employment that can be sustained in the long run. Increasing employment in short run by increasing output must be bridged to the long run employment generating strategies. The answer to the central question of finding quality jobs in the long run is productivity¹. Productivity is the core focus of this paper. The intuitive ideabehind focusing on productivity is that it boosts the production and output levels in an economy.

LABOR SUPPLY

India presently comprises 17.5 per cent of the world population. Today, the working age population of 757 million people comprises more than 60 per cent of the total population. A population that is bigger than the size of whole of United States, Indonesia and Brazil². The important question at this juncture is that what determines a huge working age population or the labor supply in the country? And how have these factors been evolving over the years? Apart from sociological and economic factors, age and gender are the two important factors that determine the labor supply. The age structure in India changed as the baby boom occurred which reached the working age within a period of 15-25 years. In 1990, the percentage share of child population to the total population was 36.8 per cent with 311 million children. This proportion decreased to 30.5 per cent with an absolute increase in children population to 374 million in 2010. This large cohort of children has joined the labor force in past twenty years, as a result of which we see an increase in working age population from 482 million to a staggering 757 million, an increase of 2.28 per cent annually.



	Population (in millions)			Percentage share of population		
	1990	2000	2010	1990	2000	2010
Child dependency (0-14 years)	311.34	364.77	374.59	36.80	35.50	30.58
Working age population (15-64 years)	482.77	595.11	757.36	57.05	57.80	61.84
Old age dependency (65 and above years)	51.75	70.37	92.66	6.10	6.90	7.59
Total	845.86	1,030.24	1,224.62	100.00	100.00	100.00

Source: *Employment-unemployment report (2009-10), NSSO*

The working age cohort is India's biggest asset in the contemporary times. Cross-country evidence suggests that productivity is an increasing function of age, with the age group 40-49 being the most productive because of work experience (Feyrer 2007). Currently, India has approximately 138 million people in the most productive age group, which is 11.25 per cent of the entire population³. While the most productive cohort will shrink in China, United States and Korea, India will be adding almost half of its labor force in this cohort⁴.

The present structure shows that India has a very young population. India's working age population has increased from 57 per cent in 1990 to almost 62 per cent in 2010. This is expected to increase approximately to 68 per

cent by 2030. The percentage of child dependents and old age dependents are only 30.5 and 7.8 per cent of the total population. The advantage of such a low level of old dependency ratio⁵ in the country is that the productive capacity per capita of the economy would expand. This is evident in India itself, Aiyar and Mody (2011) document that the high growth states (Tamil Nadu, Karnataka and Gujarat) in the period 1991-01 had a dependency ratio that was 8.7 percentage points lower than that of the low growth states (Bihar, Madhya Pradesh, and Uttar Pradesh) and an average annual growth rate that was 4.3 percentage points higher. The following table shows the old age dependency ratios of three emerging BRIC nations – Brazil, India and China.⁶

Brazil	India	China
10.6	7.8	11.5

Source: *World Bank – Dependency Ratios*

The growth rate of working age to non-working age population is very crucial as it accelerates or decelerates the productive capacity of an economy depending upon the ratio

of dependents over economically active population. The demographic situation of India is similar to that of East Asian countries in 1965-1990 as is clear from the table below.

Countries	Time period	Working age population growth (%)	Old age dependency growth (%)
East Asian	1965-1990	2.39	0.25
India	1991-2011	2.38	0.97
Difference	20 years	0.01	0.72

Source: *United Nations (2009) & Indian Census 1991 to 2011*

The labor force participation rate (LFPR)⁷ of a country is also a reflection of the history and culture prevalent in the society. In 2011, there were 757 million people in the working age cohort (15-59) – 48 per cent of them or 364 million females and 52 per cent was the share of male population. However, this gender distribution in the working age population did not get reflected in the labor force participation. Only 23.3 per cent of the female population in the working-age cohort participated in the labor force compared to the male participation rate of 55.7 per cent.

Disaggregating the above figures shows the drastic decline in the LFPR especially among women. The LFPR for rural males increased negligibly in the last five years from 55.5 per cent to 55.6 per cent, while for urban males it actually declined from 57 per cent to 55.9 per cent. On the other hand the LFPR for rural females decreased drastically from 33.3 per cent to 26.5 per cent, while for urban females it decreased from 17.8 per cent to 14.6 per cent. Overall, we observe a decline in the labor force participation rate with female participation being hit the most.

	Labor force participation rate			
	Males (in %)		Females (in %)	
	Rural	Urban	Rural	Urban
2004-05	55.50	57.10	33.30	17.80
2009-10	55.60	55.90	26.50	14.60

Source: *Ministry of labor (DGE&T); calculated figures from various NSSO rounds & employment report (2010), Planning Commission of India*

The declining trend of the labor force participation since 2004-05 is alarming. This doesn't only keep the productive capacity unutilized but also creates a larger problem of having a large working age group dependent on the working few.

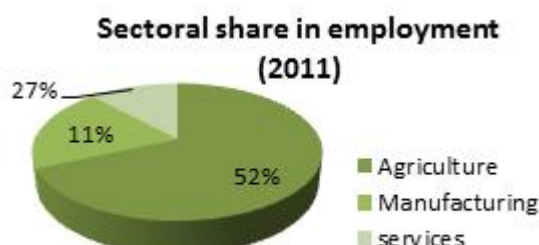
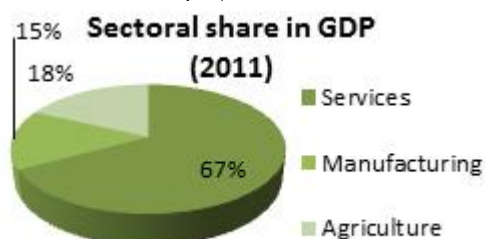
LABOR DEMAND

Employment opportunities lie at the heart of growth and development. However, the Indian scenario is paradoxical. India with an unemployment rate¹ of around 2.2 per cent in 2010 has more than 68 per cent of its people living below poverty line of USD² 2 per day as defined by the World Bank.

	GDP growth rate (in %)	Poverty (USD 2 per day) (in %)	Unemployment rate
United states	3.0	15	9.6
China	10.4	29	4.3
India	9.6	68	2.2

Source: The Economist (current statistics), World Bank , NSSO report 2009-10 & CIA fact book

The inability of jobs in India to adequately lift large number of people from poverty is due to the difference in the sectoral labor share in the total employment.



In India, the service sector contributes 67 per cent to the GDP, but the employment distribution is still agrarian in nature. Out of 465 million people employed in the Indian labor market, 242 million (around 52 per cent) are dependent on agriculture, another 50 million are engaged in manufacturing and about 170 million are working in the service sector. On

the contrary, the developed countries such as Japan, United States and United Kingdom have 4, 2 and 1 per cent of total labor involved in the agricultural activities respectively. Thus, fewer people engaged in the agriculture sector ensure a higher productivity. This is exactly what we should now aim at.

Non- agriculture population supported by each person employed in agriculture		
Countries	Population in agriculture (%)	Population supported (absolute figure)
United States	1.70%	58
European Union	4.30%	22
Least Developed Countries	64.20%	0.56
World	38.00%	1.63

Source: Target 3 billion, by A P J Abdul Kalam

In India, the agricultural sector is least productive. Moreover, it is also plagued with problems like disguised unemployment¹⁰ and underemployment. Thus, unless large number of labor shifts from agriculture to non-agricultural sectors, the growth and development of the country would

suffer. A fine example is that of China, an upper income developing country which has been able to shift a whopping 300 million people from agriculture to non-farm jobs in past three decades and has been able to bring down the poverty levels to 15%¹¹. On the contrary, the process of labour shifting from farm to non-farm jobs in India is rather slow.

Sector-wise analysis of employment									
Sectors	Employment (in millions)				Employment share (in percentage)				
	1993	2000	2004	2011	1993	2000	2004	2011	
A. Agriculture, forestry & fishing	239.84	237.56	268.30	242.73	63.99	59.84	58.44	52.15	
B. Manufacturing	45.20	50.26	56.42	52.55	12.06	12.66	12.29	11.29	
B1. manufacturing	42.50	48.00	53.67	49.29	11.34	12.09	11.69	10.59	
B2. Mining & quarrying	2.70	2.26	2.75	3.26	0.72	0.57	0.60	0.70	
C. Services	89.79	109.18	134.38	170.19	23.96	27.50	29.27	36.56	
c1. Electricity, gas & water supply	1.35	1.27	1.38	3.72	0.36	0.32	0.30	0.80	
c2. Construction	11.68	17.63	25.66	40.46	3.12	4.44	5.59	8.69	
c3. Trade, hotels & restaurants	27.78	37.32	47.24	41.85	7.41	9.40	10.29	8.99	
c4. Transport, storage & communication	10.33	14.69	17.45	20.93	2.76	3.70	3.80	4.50	
c5. Financing, insurance, real estate & business services	3.52	5.08	6.89	5.58	0.94	1.28	1.50	1.20	
c6. Community, social & personal services	35.12	33.19	35.76	57.66	9.37	8.36	7.79	12.39	
Total (A + B + C)	374.82	397.00	459.10	465.47	100.00	100.00	100.00	100.00	

Source: Ministry of Labour (DGE&T); NSSO rounds & employment report (2010), Planning Commission of India

On the manufacturing front, there has been an absolute increase in employment since 1983. However, the last decade has been volatile. Manufacturing sector added more than 10 million labors within the time period of 1993 to 2003 and in the next half a decade the manufacturing sector lost almost 4 million jobs and brought the employment share to around 11.2 percent.

Focusing on the Indian service sector, its employment share in 1983 was less than 20 per cent with a total of 60 million people. The share increased to 36.5 per cent by 2011 with 170 million people, a population size equivalent to the entire population of Pakistan! Though the absolute increase in the employment in services looks decent

but when it is juxtaposed to the share of services in the overall GDP it is very less.

Given the large working age population and over manning of agricultural sector in India, it is imperative for a labor-intensive country like ours to concentrate on high productive sectors that increases employment and growth in the country. Analyzing the quinquennial data of US and UK in 1980s reveals that the growth rate of employment grew in tandem with the growth of GDP while the growth rate of productivity declined. This shows how countries by concentrating on employment generation can spur growth in the economy.

Macro performance: United States and United Kingdom (Annual percentage change)							
United States				United Kingdom			
Year	GDP	Unemployment	Productivity	Year	GDP	Unemployment	Productivity
1980-85	3.1	8.3	1.8	1980-85	2.1	11.1	3.5
1985-90	3.2	5.7	1.4	1985-90	3.1	9.0	2.6

Source: Bureau of labour statistics (USA) & Office of National Statistics (UK)

PRODUCTIVITY & INCOME

Historically, three patterns of growth have been observed. First, in which both the employment and productivity grew simultaneously. This pattern was observed during Industrial revolution in Western Europe and United States. For example, in United Kingdom in 1801-61, both employment along with the productivity doubled¹². The second pattern of growth was observed in USSR and other socialist countries, where initially the focus was on increasing the employment levels and later on the productivity. The third growth pattern observed in India is the one which is characterized by low productivity and low levels of productive employment.

Increasing productivity is crucial to an economy as mere focus on the per capita GDP growth would not help an economy in the long run. Thus, policies aimed at increasing productivity and productive employment is required to help a country grow sustainably. Particularly in India, there exists large scope for increasing the productivity levels as the differences in the productivity levels among the sectors are very large. In 2011, the productivity in agriculture was worth USD 4,848; in manufacturing (excluding mining as a subsector) it was worth USD 10,437 (twice of agriculture) and in services the productivity was USD 25,140 (five times of agriculture). The difference in productivity levels across major sectors are at the root cause of economic backwardness. Thus, there is a clear need for structural shift in the employment pattern in India from farm to non-farm sectors.

	Sectors	Labour productivity (in USD)					Growth rate (CAGR)			
		1983	1993	2000	2004	2011	1983 to 93	1993 to 03	2000 to 10	2004 to 11
A.	Agriculture, forestry & fishing	324	958	1,844	1,965	4,848	0.11	0.07	0.07	0.14
B.	Manufacturing	3,934	7,093	16,786	29,416	57,437	0.06	0.14	0.15	0.10
B1	Manufacturing	820	1,548	2,656	3,835	10,437	0.07	0.09	0.10	0.15
B2	Mining & quarrying	3,114	5,545	14,130	25,580	47,000	0.06	0.15	0.17	0.09
C.	Services	1,485	3,892	8,241	12,705	25,140	0.10	0.11	0.13	0.10
C1.	Electricity, gas & water supply	3,484	6,529	16,588	24,533	17,410	0.06	0.13	0.14	(0.05)
C2.	Construction	1,852	3,317	5,752	8,514	13,696	0.06	0.09	0.10	0.07
C3.	Trade, hotels & restaurants	1,158	3,478	6,445	9,838	27,924	0.12	0.10	0.11	0.16
C4.	Transport, storage & communication	1,436	3,650	6,649	12,587	23,237	0.10	0.12	0.13	0.09
C5.	Financing, insurance, real estate & business services	10,151	22,882	39,246	57,777	192,491	0.08	0.09	0.10	0.19
C6.	Community, social & personal services	972	2,478	7,220	10,424	16,144	0.10	0.14	0.15	0.06
	Total	625	1,862	3,979	5,776	13,758	0.12	0.11	0.12	0.13

Source: Calculated from national accounts statistics, CSO & ministry of labour (DGE&T)

Productivity refers to the net output (income) an average labor of the workforce produces in an economy in a year. Per capita income is the ratio of income to population. Since workforce is a subset of the total population, per capita income is always lower than productivity. Thus, it becomes all the more necessary to increase the productivity of the country because what is produced in the country has to be shared with the non-working population also.

Decomposing per capita income growth across countries has shown that during the first 20 years of its takeoff, much of the increase in the per capita income have come from

an increase in the productivity levels. This phenomenon was also seen in China, where the per capita income grew at the rate of 8.2 per cent from USD 193 in 1980 to USD 949 in 2000. In the same time period, the productivity grew from USD 1,655 to USD 4,655; an increase of 5.3 per cent. Considering 1991 as a year of structural break, after which India took-off, the per capita income in the next twenty years grew at a rate of almost 8 per cent from USD 322 to USD 1,489 and so did the productivity at a rate of 4.8 per cent from USD 3,498 to USD 8,939. The comparison between India and China reveals that though both the countries

performance had been more or less similar in the first 20 years of takeoff, China's productivity has been more than that of India. Moreover, a country would require increasingly

higher rates of productivity to even seek a small increase in per capita income.

Country	Time period	Productivity growth (%)	Per capita income growth (%)
China	1980-2000	5.3	8.2
India	1991-2011	4.8	8
Difference	20 years	0.5	0.2

Source: World Bank; National Accounts Statistics, CSO & NSSO employment-unemployment report (2009-10)

CONCLUSION

What have been the drivers of growth in India, and how do they compare with other economies of the world? The primary source of growth in any economy lies in increasing the productivity and employment. So far, the increase in productivity has been through structural shifts of labor force from farm to non-farm sectors. The important point to note is that increased productivity levels not only helps growth but also increases employment level in the country.

United States and Japan are two highly productive countries of the world. Analyzing two decades from 1980-2000, United States experienced a period of very high productivity growth which also led to higher growth rate of 3.2 per cent and higher employment levels in the country by

decreasing the unemployment rate from 8.3 per cent to 5.7 per cent in the next period (1985-90). Similarly, among G7¹³ countries in 1980-89, Japan showed the highest productivity growth in the twenty years' time from 1980-00. During the same period both the GDP growth rate and employment rate also reached its peak at 3.83 per cent and 1.40 per cent respectively.

Though improving the productivity is the key to achieving higher per capita income in the long run, focusing on employment generation in a labor abundant country like India is imperative. In fact, higher employment generation can also help country achieve higher growth. Among Indian subsector, one can see a similar pattern of growth in 2004-11. Construction has large proportion of labor. The employment growth rate of 6.68 per cent has led to a good growth in sectoral GDP rate of 7.32 per cent.

United States (%)				United Kingdom (%)			
Year	GDP	Unemployment	Productivity	Year	GDP	Unemployment	Productivity
1980-1985	3.1	8.3	1.8	1980-85	2.1	11.1	3.5
1985-1990	3.2	5.7	1.4	1985-90	3.1	9.0	2.6

Source: Bureau of labor statistics (USA) & Office of National Statistics (UK)

Another important factor to focus upon is the labor force participation rate. The boom of East Asian countries during 1950-1975 also had high rates of working age people and therefore high labor force participation rate. In India too, high growth rates states such as Tamil Nadu, Karnataka and Gujarat had higher working population ratio than the low growth states such as Bihar, Madhya Pradesh and Uttar Pradesh. India is currently blessed with 61 per cent working age population and a labor force participation rate of 56 per cent. While we have advantages of having high working age population and decent labor force participation rate, we still have looming absolute poverty. The need therefore boils down to enhancing productivity and employment in the country.

Another aspect that has not been explored in the paper so far is that of increasing productivity of the labor force by skilling them adequately for the job opportunities in non-farm sectors. Adequate investments from the government in enhancing the employability and skill development space are imperative. The strategy of investing in labor intensive sectors and labor intensive technology must be complemented by investments in the education and skill development.

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Endnotes

¹ Productivity in this paper refers to labor productivity or national income per employed person, a ratio of national income to workforce.

² Source: World Bank data

³ Source: World Bank data

⁴ As pointed out in the Indian Planning Commission Report 2012-13

⁵ Dependency ratio is the ratio of non-working to working age population.

⁶ Among BRIC nations, data for Russia's dependency ratios not found

⁷ Labour force participation rate (LFPR): LFPR is defined as the number of persons/person-days in the labour force per 1000 persons /person-days

⁸ Unemployment refers to the share of the labour force that is without work but available for seeking employment.

⁹ USD: United States Dollar

¹⁰ Disguised unemployment is unusually found in overpopulated underdeveloped countries, and more particularly in agricultural sector. Sometimes the number of persons working on land may be far in excess of those who are really required to produce the given volume of output.

¹¹ The poverty figure is based on USD 1.25 per day. However, China's official poverty line is less than USD 1.25 per day.

¹² Source: Deane and Cole (1967)

¹³ The **G7** (also known as the **G-7**) is an international finance group consisting of the finance minister from seven industrialized nations: the US, UK, France, Germany, Italy, Canada, and Japan. They are the 7 formerly largest and wealthiest (not intended as GDP, but global net wealth) nations on Earth.