

## EMPLOYMENT ELASTICITY OF GROWTH FOR THE INDIAN ECONOMY

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Employment has always figured as an important element of the growth and development process of the Indian economy. India being a highly populated country, employment becomes a crucial element. Employment acts as a link between economic growth and poverty reduction. Employment serves as a significant variable in the attainment of inclusive and sustainable growth. The focus of employment in the overall development planning had emerged around second half of 1970s and 1980s when it was felt that unemployment was on a rise. With the initiation of reforms post 1990s, it has generally been analysed whether reforms driven growth of the Indian economy has been job creating or not. The great recession has further renewed the concerns about unemployment and job creation due to the slow down, both globally as well as in India.

Employment elasticity is a measure of the percentage change in employment associated with a 1 percentage point change in economic growth. The employment elasticity indicates the ability of an economy to generate employment opportunities for its population as per cent of its growth (development) process. Employment elasticity measurement generally faces two sets of criticisms: (1) the relationship between employment and output need not be uni-directional and (2) the notion of employment elasticity is valid for a given state of technology, wage rate and policies. Notwithstanding these criticisms, employment elasticity represents a convenient way of summarising the employment intensity of growth or sensitivity of employment to output growth (Islam and Nazara, 2000). These are also commonly used to track sectoral potential for generating employment and in forecasting future growth in employment.

In the empirical literature, there are two methodologies that have generally been used for calculation of employment elasticities. These are based on compound annual growth rate (CAGR) approach that gives the 'arc' elasticity and regression approaches that provide point elasticity. The formula for calculation of 'arc' elasticity of employment is generally as under:

$$e = \frac{\Delta L / L}{\Delta Y / Y} \quad (1)$$

where  $L$  denotes employment and  $Y$  denotes GDP for the economy. The numerator refers to the percentage change in employment, while the denominator refers to the percentage change in income, which is essentially the GDP growth rate. While for other countries, simple percentage change is used, in case of India, since employment data is available once in five years, CAGR approach is used.

An alternative way to compute the elasticity is to estimate a log linear regression equation between employment and GDP that generates the point elasticity of employment. The conventional form of the equation is

$$\ln L = \alpha + \beta \ln Y \quad (2)$$

where variables  $L$  and  $Y$  denote employment and GDP, respectively, and  $\ln$  stands for the natural logarithm of the relevant variable. Here, the regression coefficient  $\beta$  serves as the employment elasticity. In other words,

$$e = \frac{d \ln L}{d \ln Y} = \frac{dL / L}{dY / Y} \quad (3)$$

The employment elasticity numbers as calculated by the Sub-Group on Employment/Unemployment Projections, set up by the Planning Commission for the 12th Five Year plan. These were based on NSSO employment data up to 2009-10. As per the 12th Plan document, the employment elasticity in India in the last decade (2000s) declined from 0.44 in the first half of the decade i.e., 1999–2000 to 2004–05, to as low as 0.01 during the second half of the decade (2004–05 to 2009–10). Similar trends have been witnessed at the sectoral level as well, namely agriculture, service, and manufacturing sectors.

**Sectoral Employment Elasticity as per Twelfth Five Year Plan**

<b>Sector</b>	<b>1999-2000 to 2009-10</b>
Agriculture	0.04
Manufacturing	0.09
Mining & quarrying	0.52
Utilities	0.04
Construction	1.13
Trade, Transport	0.19
Finance, real estate	0.66
Other services	0.08
<b>All sectors</b>	<b>0.19</b>

Papola and Sahu (2012) have also estimated the employment elasticity to be 0.20 for the period 1999-00 to 2009-10, in line with the Planning Commission estimates based on Compound annual average growth (CAGR) approach. They have further shown that there has been a continuous decline in employment elasticity from the 1970s to 1980s to 1990s. During 2004-05/2009-10, it declined to almost zero. Rangarajan, Padma Iyer and Seema (2007) made an analysis of employment elasticity and their implication for economic growth. They also calculated sector-wise employment elasticity by utilising the data on sectoral employment growth rate and the sectoral growth rate of GDP. The study shows that there has been a continuous and drastic decline in aggregate employment elasticity from 0.53 during 1977-78/1983 to 0.41 during 1983/1993-94 to 0.15 during 1993-94/1999-00. However this trend has been reversed in the period 1999-00 to 2004-05. During 1999-00/2004-05, aggregate employment elasticity was estimated to be 0.48.

The overall employment growth rate accelerated to a high of 2.8 per cent per annum during this period (Bhalla, 2008). In addition, there are many studies that have attempted to compute employment elasticity for organised manufacturing based on ASI data (Goldar, 2000, Nagaraj, 2000, Kannan and Ravindran, 2009).

International organizations like ILO also estimate employment elasticity for different countries/regions. "South Asia" that includes India recorded employment elasticity of 0.3 during 2004-08 that marks a slight decline from early 2000s. Studies have also attempted to explain the cross country variations in employment elasticities in terms of various structural factors such as labour market policies, product market policies as well as government size. Macroeconomic policies that aim at reducing (output and price) volatility and increasing trade openness have been observed to have a significant effect in increasing employment elasticities (Crivelli *et al*, 2012). International literature is also supported by Indian literature which states that the determinants of employment elasticity can be classified into labour market variables such as labor supply, labour market reforms (tax GDP ratio) and trend in the share of wages as well as macro economic variables like economic stability, investment, public expenditures etc (Pattanaik and Nayak 2010; Mazumdar and Sarkar 2007).

The All India employment and unemployment surveys conducted by the National Sample Survey Office (NSSO) are the primary source of various indicators of labour force at national and state levels, which are used for planning and policy formulation by various government organizations as well as researchers. They are in fact the major as well as most comprehensive source of data on employment-unemployment situation in the country. NSS surveys on employment & unemployment with large samples of households was conducted quinquennially (once in five years) for the first time in 27th round (October 1972-September 1973) survey. The concepts and definitions recommended by Dantwala committee (set up by the Indian Planning Commission) formed the basis of this survey. Since then, eight comprehensive quinquennial surveys on employment and unemployment situation in India have so far been carried out by the NSSO. The concepts, definitions and procedures in these surveys are based primarily on the recommendations of the Dantwala Committee. The results of these surveys are being brought out in the form of NSS reports.

The latest NSSO survey on employment is the 68th Round for the year 2011-12, released in June 2013. As per UPSS basis, the latest survey reveals that the work force was about 472.9 million (rural male: 234.6, rural female: 101.8, urban male: 109.2 and urban female: 27.3) as on 1st January 2012 whereas the number of persons in the labour force was reported to be 483.7 millions (rural male: 238.8, rural female: 103.6, urban male: 112.5 and urban female: 28.8). The unemployment rate in 2011-12 was recorded to be 2.2 per cent on usual principal subsidiary basis (UPSS) basis

An analysis of sectoral share in employment over the years reveals that there has been a shift in employment away from agriculture towards manufacturing, construction and service activities. The share of agriculture has declined continuously from 59.9 per cent in 1999-00 to 48.9 per cent in 2011-12 whereas the share of construction sector has consistently risen from 4.5 per cent in 1999-00 to 10.6 per cent in 2011-12. The industrial sector saw a reasonable increase in its share from 11.9 per cent in 1999-00 to 13.6 per cent in 2011-12,

notwithstanding a slight dip in 2009-10. Services have also seen an increase in its share, particularly in sub sectors such as transport, banking, storage and communications and education services.

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Another source of employment data is the Annual Survey of Industries (ASI) which is the principal source of industrial statistics, particularly for the organised manufacturing sector in India. The major advantage of ASI data (released by the Ministry of Statistics and Programme Implementation, MOSPI) is that since it is conducted annually, time series information is available unlike that of NSSO. The ASI was launched in 1960 with 1959 as the reference year and is continuing since then except for 1972. The scope and coverage of ASI survey has been modified from time to time. From ASI 2000-01 to ASI 2003-04, the census sector was modified to include units employing 100 and more workers instead of 200 and more workers and to some extent because of this, ASI data since 2000-01 are not strictly comparable with that of previous ASI rounds. In ASI 2004-05, National Industrial Classification (NIC) 2004 was introduced and from 2008-09, the latest classification NIC-2008 was introduced. Given the fact that industrial sector occupies an important position in the Indian economy, job creation in the industrial sector, particularly manufacturing sector is the key to achieving the employment challenge as envisaged in the 12th Plan. An analysis of the employment elasticity for manufacturing sector based on ASI data has also, therefore, been attempted in this study.

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