

Employment and employment elasticity in service sector economics essay



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India's services sector accounts for 54 per cent of GDP and is currently the fastest-growing sector of the economy, growing at 9 per cent per annum since the mid-1990s. The sector has the unique opportunity to grow due to its labour cost advantage reflecting one of the lowest salary and wage levels in the world, coupled with a rising share of working age population.

India, with 467 million labour population (CIA, 2009), has second largest labour force in comparison of world. According to The World Fact Book, 2009, India's labour force participation in agriculture is 52 percent, in industry 14 percent and in services it is 34 percent. It seems that slightly more than half of the work force is in agriculture, but services are the major source of economic growth, accounting for more than half of India's output, with only one-third of its labor force. India has capitalized on its large educated English-speaking population to become a major exporter of information technology services and software workers.

As far as various NSSO reports during 1994-95 to 2009-10 on employment and unemployment in India are concerned, for the usual status (ps+ss) the share of agriculture in employment was 66.7 per cent in 1994-95 that declined to 53.2 per cent. Besides the policy reforms like delicensing, disinvestment and FDI that were favoring the manufacturing sector, its share in employment slowly and marginally increased from 10.4 per cent to 13.1 per cent till 2005-06 but again declined to 11.9 per cent showing overall increase in the share.

But the leading sector in GDP contribution, the services sector, also has shown significant change in its share in employment, which was 22.9 per

cent in 1994-95 rose to 34.9 percent in 2009-10. That means more than one third of employment in India is provided by services. Despite the global slowdown, when developed world is worried to employ their labour force to narrow crisis period and support growth, India's service sector has been succeeded in attracting more of work force towards it.

Rangarajan (2006) accentuates while analyzing structural changes in Indian economy for the period of 1972-73 to 1999-2000 that the growth process has brought about significant changes in the structure of the Indian economy. Defying somewhat the conventional paradigm of development, the share of services has touched 51 per cent of GDP at a relatively early stage of development. The share of services in employment was only 22 per cent. The last decade has seen a decline in the aggregate sectoral employment elasticities. All the same, the growth rate of employment has lagged behind the growth rate of labour force.

Prasad (2007). The tertiary sector is the leading sector of growth in the Indian economy not only in terms of output, but also in terms of employment. Studies show that the employment elasticity in the tertiary sector as a whole in the post-reform period (1993-2000) has been 50 per cent higher than in manufacturing sector. India's share of employment growth in the tertiary has been higher than in manufacturing sector on Usual Principal Status (UPS) basis. In the decades of eighties and nineties, the fall in the share in employment in agriculture sector has been increasingly absorbed by the tertiary sector. However, in 2004-05 compared to 1999-2000, there is a change with the fall in employment share of the agriculture sector being absorbed both by the manufacturing and tertiary sectors with a <https://assignbuster.com/employment-and-employment-elasticity-in-service-sector-economics-essay/>

higher share for the former. A larger share of employment in India has been created in the tertiary sectors, in the eighties and nineties. While the recent rise in share in employment growth in manufacturing sector is a positive development, the importance of services in employment creation needs to be noted, particularly when India is competitive in many labor-intensive and skill-intensive services and there is a huge market (both domestic & external) including outsourcing to India.

Table 1. Sectoral Employment Share in India

Year

Round

Period

Agriculture

Manufacturing

Services

1983#

68. 6

13. 8

17. 6

1987-88#

65. 0

15. 9

19. 1

1993-94#

64. 7

14. 8

20. 5

1994-95

51

July 1994-June 1995

66. 7

10. 4

22. 9

1995-96

52

July 1995-June 1996

65. 5

10. 8

23. 6

1996-97

53

Jan -Dec 1997

65. 7

10. 5

23. 8

1997-98

54

Jan-June 1998

65. 7

9. 8

24. 6

1998-99*

63. 4

11. 3

25. 3

1999-2000

55

July 1999-June 2000

61. 7

11. 6

26. 7

2000-01

56

July 2000-June 2001

59. 3

13. 3

27. 4

2001-02

57

July 2001-June 02

60. 8

12. 6

26. 5

2002-03

58

July -Dec 2002

59. 3

11. 8

28. 9

2003-04

59

January -Dec 2003

61. 5

11. 7

26. 8

2004-05

61

July 2004-June 05

58. 6

12. 5

28. 9

2005-06

62

July 2005-June 06

57. 8

13. 1

29. 1

2006-07*

56. 6

12. 6

30. 8

2007-08

64

July 2007-June 08

57. 4

12. 3

30. 4

2008-09*

55. 1

12. 9

32. 1

2009-10

66

July 2009-June 10

53. 2

11. 9

34. 9

Source: Computed based on NSS Reports (various issues).

Construction is included in Manufacturing Sector

*Estimated values for the respective years based on trend lines for the respective sectors.

The above table implies that there has been transitional effect on growth in terms of increasing labour force participation in services sector as it

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contributes highest in national output. It is undoubtedly surprising that though there are 34.9 per cent of labours participated in and contributed 65 per cent of GDP to services sector for the year 2009-10.

The labour participation in agriculture largely diminished from 66.7 per cent in 1994-95 to 53.2 per cent in 2009-10. Whereas despite many attempts like raising the funds for IITs and ITIs, establishing EPZs and later extending incentives through SEZs to raise the industrial employment did not serve the purpose and that is not depicted in the statistics of labour participation.

As Rangarajan (2006) noted that the employment shift has lagged behind shift in output in India. The present study undergoes through the methodology to measure inter-sectoral shift in employment. And analysis the inter-sectoral shift in employment for the period of 1994-95 to 2007-08. And also account for the employment elasticities of output in agriculture, manufacturing and services sector and compare them to discuss development paradigm in employment in India.

Data and Methodology for Measuring Inter-sectoral Shifts in Employment and Employment Elasticity of Output

The sample period of the study is 1991 to 2010 but the employment data is used from National Sample Surveys from 1994-95 to 2010. NSS data on employment is not reported for 1998-99, 2006-07 and 2008-09, therefore the employment for these years is interpolated with the help of trend line. The GDP data is from CSO in 1999-2000 prices. But the employment elasticities are found for 1995-96 to 2008-09 period only, as 1994-95 is

elapsed because of base year for growth calculation and GDP for 2009-10 is yet to be declared in 1999-2000 prices.

In his study of the inter-temporal shifts in the inter-sectoral distribution of working population, Fuchs (1968) studied the expected changes in them as predicted by the three sector division of economic activities with the help of relationship between sectoral shares in employment and economic growth. He found related shifts in sectoral distribution of working population with per capita income. Fuchs (1968) tested this relationship with the help of the following equation

(1)

where E_i stands for share of employment in the i th sector of the economy and x stands for per capita income.

The hypothesis implicit in the three sector division of economic activities can be tested and expressed as

- 1.
- 2.
- 3.

Fuchs stated three main conclusions based on his study a) agricultural employment declines faster in the early stages of development and employment shifts to secondary and services sectors, b) the decline in the share of employment in agriculture slows down with development,

approaching asymptotically, a share around three per cent of employment of working population and c) secondary and services reach asymptotically about 40 and 57 per cent respectively.

In the similar line Chenery and Taylor (1968) and Chenery and Syrquin (1975) studies suggest that a relative shift of employment occurs from primary sector to other sectors of the economy, as per capita income grows in an economy and also predicts that the pace of the shift eventually slows down as income per capita rises. Similarly a relative shift of employment from secondary sector to services is due to a high income elasticity of demand for services as compared to manufactured goods. Therefore, as per capita income increases with economic growth, initially it will increase demand for manufactured goods and subsequently, with higher changes in per capita income, demand for services increase.

While Gemmell (1981) stated that structural changes in the beginning when employment in secondary and services sector grows at the cost of employment in the primary sector and agriculture sector reaches the stage of asymptotically stagnant share, services sector employment increases at the cost of secondary sector employment. He evolved an alternative methodology to state the inter-sectoral shifts in employment. He used the equation by Fuchs (1968) for primary sector employment.

(2)

He believes that Fuchs' equation does not represent structural changes in services sector, therefore, he evolved an equation services

(3)

is a cubic in x and provides sigmoid shape.

Kopsos (2005) gave a detailed methodology to measure the employment elasticity of output in his research paper and also estimates of the employment intensity of economic growth over the period 1991 to 2003. The research provides estimates of the employment intensity of growth for 160 economies.

The most basic definition of employment elasticity is the percentage change in the number of employed persons in an economy or region associated with a percentage change in economic output, measured by gross domestic product. Within this broad definition, two methodologies are frequently utilized for calculating elasticities. The first technique, given in equation 1 below, gives the arc elasticity of employment, E_i :

(4)

The numerator simply gives the percentage change in employment in a country E , between periods t and $t-1$, while the denominator gives the corresponding percentage change in output, Y . While this methodology is computationally very simple, Islam and Nazara (2000) and Islam (2004) have demonstrated that year-over-year employment elasticities calculated using this method tend to exhibit a great deal of instability and may therefore be inappropriate for comparative purposes. As a result, this paper utilizes a second method, a multivariate log-linear regression model with country

dummy variables, D_i , interacted with log GDP for generating the point elasticity. This is given in equation 2.

(5)

In equation 2, the elasticity of employment with respect to GDP in country i is given as $\beta_1 + \beta_2$. This is calculated by differentiating both sides of equation 2 and solving for $\frac{\Delta E}{\Delta Y}$:

(6)

Using this econometric method, $\beta_1 + \beta_2$ represents the change in employment associated with a differential change in output. Thus, an elasticity of 1 implies that every 1-percentage point of GDP growth is associated with a 1-percentage point increase in employment. An elasticity of 0.4 implies that every 1-percentage point of GDP growth is associated with employment growth of 0.4 percentage points, and so forth.

Employment elasticities by economic sector (agriculture, industry and services) were calculated using equation 2 by Kapsos (2005), whereby E_i represents employment by sector and Y_i represents total GDP. The last three sector elasticities were generated using equation 4:

(7)

E_i again represents employment by sector and V_i represents value added by economic sector. Thus, in Kapsos' analysis, equations 2 and 4 were used to calculate two types of elasticities: the elasticity of employment with respect

to total output, and secondly, with respect to value added in the given economic sector.

Kapsos (2005) further stated the interpretation of employment elasticities and its relationship with employment growth, GDP growth and productivity growth.

Table 2 : Interpreting employment elasticities (Kapsos)

GDP growth

Employment elasticity

Positive GDP growth

$e < 0$

(-) employment growth

(+) productivity growth

$0 < e < 1$

(+) employment growth

(+) productivity growth

$e > 1$

(+) employment growth

(-) productivity growth

KILM (2005) provides the list of issues related to the use of employment elasticities as an analytical tool should be borne in mind before attempting to draw inferences from them regarding employment performance.

In the present study Kapsos' equation 2 is used to find the sectoral elasticities for three sectors viz. Agriculture, Manufacturing and Services for the period of 1994-95 to 2008-09.

With above mentioned methodologies, the present attempts to measure inter-sectoral shifts in employment and employment elasticity of output.

I. Inter-sectoral Shift in Employment for the period of 1994-95 to 2007-08

In the present study a regression is run based on Fuchs's criterion (1968) as Gemmell's criterion could not be fitted for the given data to measure inter-sectoral shift for the period of 1994-95 to 2007-08.

Table 3: Results for Regression

Coefficient

Share of Employment in Agriculture (E_a)

Share of Employment in Manufacturing (E_m)

Share of Employment in Services (E_s)

Per Capita Income ($1/x$)



44. 6192*

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15. 80876*

39. 57188*



312726. 7*

-75803. 6*

-236937*

* Significant at 99 per cent level of significance

And observed derivatives are

Table 4: The Observed Derivatives for Regression Equations

Agriculture

Manufacturing

Services

Fuchs' conditions for inter-sectoral shift in employment are satisfied for agriculture and services sector but not the manufacturing sector. It means that there have not been significant shift in employment from agriculture to manufacturing sector. But there have been significant shift in employment from agriculture to services sector.

According to Fuchs, with rise in per capita income agricultural labours shifts from agriculture to manufacturing sector, but in Indian context it did not

happen significantly. In contrary labours from agriculture are shifted to services with high degree compare to manufacturing sector. Therefore as pointed out by many economists that Indian pattern of development is different than that of any country in the world is undoubtedly true.

Figure 1: Sectoral Labour Share and Per Capita Income

Source: Various surveys from NSSO and RBI, Handbook of Statistics on Indian Economy, 2007-2008

The pattern of development in India does not satisfy the conditions underlined by Fisher, Clark or Fuchs. It means three sector hypothesis also fails in Indian context. Indian services revolution in recent period brought in a unique pattern of development in economic history.

II Employment Elasticity of Output

According to ILO's 5th edition of KILM (2005), " Employment elasticities provide a numerical measure of how employment growth varies with growth in economic output. Though discussed less frequently than other key labour market indicators, employment elasticities can provide important information about labour markets. In their most basic use, they serve as a useful way to examine how growth in economic output and growth in employment evolve together over time. They can also provide insight into trends in labour productivity and employment generation for different population subsets in a country, and assist in detecting and analyzing structural changes in employment over time."

The document further cautions that when it comes to employment elasticities, there is no universally accepted “ ideal” figure to which countries’ historical elasticities should be compared. The degree of “ employment intensity” required by a country depends on several variables including the country’s rate of economic growth, the amount of surplus labour and labour force growth rate, the unemployment and labour force participation rates, the level and growth rate of labour productivity, and the poverty rate (especially among workers). All else being equal, countries with relatively high economic growth rates do not require an employment elasticity that is as high as those in countries experiencing lower rates of economic growth. Countries with high labour force growth – or with large reserves of workers – require higher employment elasticities. Given that the extreme poor often rely exclusively on their own labour for survival, countries with large numbers of impoverished workers may need to achieve relatively higher employment elasticities than less labour-abundant, more developed economies, in order to provide sufficient employment opportunities for the working poor. To this end, developing economies often require higher employment elasticities for a given rate of economic growth than developed economies, as the former tend to have a surplus of labour. Accordingly, employment elasticities tend to gradually fall as a country becomes more developed and more labour scarce.

Therefore overall macroeconomic performance of an economy can also be simulated through employment related economic indicators that are commonly found in literature such as unemployment rates, employment to population ratios and labour force participation rates. In order to measure

the employment outcome of economic growth, a summary indicator is needed of the degree of employment growth that is associated with a given output growth. The employment intensity of growth or elasticity of employment with respect to output is also such an indicator that enables us to understand macroeconomic relationship between growth of output and employment growth. The term employment intensity of growth is increasingly being used in that context. A measure of the employment intensity of growth can be provided by the elasticity of employment with respect to output growth (which is often referred to as employment elasticity). Quantitative estimates of employment elasticity are based on the assumption that employment is primarily a function of output. Based on this assumption, employment elasticity can be measured either arithmetically (i. e., by dividing the proportionate change in employment by the proportionate change in output during a given period) or by applying the econometric method of regression analysis where a functional relationship between employment and output is postulated and estimated (Islam, 2008). The elasticity of employment can also provide insights into how employment generation varies for different population subsets in an economy, and assist in detecting and analysing structural changes in employment over time (Kopsos, 2005).

Results and Conclusion

Services growth of output is consistently very high compare to inconsistent agriculture and lagging manufacture sector in terms of growth rate. The manufacturing growth has been greater than 6 per cent in most of the years after 2002-03 during which agriculture recorded positive growth for all the

years except 2002-03. Though agriculture sector observed negative growth of output for 1995-96, 1997-98, 2000-01 and 2002-03, the growth of manufacture got affected largely but not the services for the same period. The growth of services and manufacturing cannot be separated from that of agriculture as manufacturing is highly depending upon agriculture for primary inputs and services sector cannot grow without the demand for the services from manufacturing and agriculture sectors.

Most of the years the growth of employment in agriculture sector have been found to be negative or negligible, it means the contribution of agriculture in adding agricultural labour is either negative or negligible, and therefore most of the years employment elasticity of output for agriculture turned to be negative and or near zero. Thus agriculture is found to be not so attractive sector for the existing as well emerging labours. 1989-90 to 2001-02 are the golden years for labourers in terms of employment generation in manufacturing sector which added labours at the rate of 10 per cent per annum during this period.

The global crisis started in 2006-07 led to affect the employment growth in manufacture sector largely compare to other sectors, there have been negative growth of employment in the sector in each year during 2006-07 to 2008-09. The services sector, which is external demand elastic, recorded around 4 per cent growth of employment during crisis period. The annual average growth rate of employment in agriculture, manufacturing and services were -0.45, 1.85 and 3.44 per cent respectively during 1995-96 to 2008-09. Then the question arises that in what way the growth in services is jobless when on an average 3.44 per cent labours are additionally employed <https://assignbuster.com/employment-and-employment-elasticity-in-service-sector-economics-essay/>

in a year in services. Employment elasticity of output for services is high compare to manufacturing sector but not significantly, whereas it is highly consistent than that of manufacturing sector. Employment elasticity of output for manufacturing sector stood to be negative during all the years of recent crisis but it was positive and 4 times greater for services sector compared to manufacturing sector.

Therefore the services sector has been found to be high employment intensive to growth compared to other two sectors in the economy. Higher growth in services would increase more employment opportunities in economy not only in urban but also in rural sectors as non-agriculture sector is also growing rapidly. According to Kapsos (2005), in economies with positive GDP growth, employment elasticities between 0 and 1 correspond with positive employment and productivity growth and higher elasticities within this range correspond to more employment-intensive (lower productivity) growth. Hence, India's services sector is growing (during 1995-96 to 2008-09) at more than 8 per cent per annum with an average employment elasticity of 0.45, experiencing average annual employment growth of about 3.44 per cent with average annual productivity growth of 5 per cent. This type of situation typically, if it is for economy as whole, represents the ideal according to Kapsos (2005) but here for services sector in India, where job growth is occurring hand-in-hand with gains in productivity.

Table 5: Sectoral Employment Elasticity of Output and Growth of Average Productivity of Labour

Year

Agriculture

Manufacturing

Services

Growth of Emp.

Growth of Output

Emp. Elasticity of Output

Growth of Average Productivity of Labour

Growth of Emp.

Growth of Output

Emp. Elasticity of Output

Growth of Average Productivity of Labour

Growth of Emp.

Growth of Output

Emp. Elasticity of Output

1995-96

-5. 31

-0.70

7.58

15.43

0.54

11.63

0.05

8.01

-0.31

8.78

-0.04

1996-97

1.91

9.03

0.21

-4.29

-1.70

7.37

-0.23

4.31

2.33

6.50

0.36

1997-98

0.76

-2.62

-0.29

5.40

-6.49

1.98

-3.28

9.69

3.83

8.26

0.46

1998-99

-0.38

5.94

-0.06

-1.21

11.09

3.44

3.22

-7.53

6.84

7.47

0.92

1999-00

-0.39

2.60

-0.15

1.75

9. 98

3. 39

2. 95

-4. 85

6. 41

8. 55

0. 75

2000-01

-3. 10

-0. 25

12. 43

9. 83

14. 03

6. 00

2. 34

-11. 13

3. 37

5.40

0.62

2001-02

13.73

5.88

2.33

-20.06

6.47

2.30

2.81

-2.10

8.77

6.41

1.37

2002-03

-0.83

-7.81

0.11

10.70

-9.59

6.36

-1.51

16.62

-1.05

6.99

-0.15

2003-04

-9.63

9.06

-1.06

9.83

2.29

5.66

0.40

6.95

4.50

8.13

0.55

2004-05

4.05

0.05

83.50

0.92

4.06

7.84

0.52

5.50

2.62

8.98

0.29

2005-06

-2. 68

5. 52

-0. 49

6. 96

2. 67

7. 52

0. 36

10. 13

-0. 41

10. 08

-0. 04

2006-07

0. 16

3. 80

0. 04

6. 38

-2. 60

9.68

-0.27

12.59

2.71

10.15

0.27

2007-08

0.16

4.63

0.03

-0.95

-2.67

6.85

-0.39

7.26

2.64

9.72

0.27

2008-09

-4.71

1.58

-2.99

1.31

-2.20

2.57

-0.86

10.82

5.95

8.58

0.69