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Research Paper

India's Growth: Jobless or Job-Led?

Economics

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ABSTRACT

Human capital is education and skill attainment leading to new ideas which contribute to performance, productivity and economic growth. Economic growth and social development have conventionally been expected to result in improvement of life. Growth of productivity and employment generally generates higher per capita income, have an impressive increase in labour productivity. The major determinants of productivity are technology and human capital capability. Rise in productivity, induced by technological and knowledge up-gradation, is both labour displacing and labour augmenting. The review of studies is indicative of the fact that dynamics of human capital and economic growth has been analyzed widely at the aggregate level. At disaggregate level, all the sectors do not behave in the same way. This is a high time to analyze the relation at a disaggregate level. Detailed analysis of employment growth, output growth and productivity growth emphasizes that employment growth is far lower than the growth rate of output and growth of productivity. Thus, indicating the fact that Indian economic growth has been associated with 'jobless growth', resulting in 'joyless growth'.

Introduction

Human capital is education and skill attainment leading to new ideas which contribute to performance, productivity and economic growth. The nineties era, characterized by information technology revolution, has been an era of improvement in technology and managerial practices. The movement from less efficient to more efficient technology and enhancement in human capital capability has affected employment, productivity and income growth.

The income effect of technological transformation arises from its impact on factor productivity, knowledge, skills and occupational structure of employment. Rise in productivity, induced by technological and knowledge up-gradation of the production base is labour displacing, since it raises the productive capacity of manpower, reducing overall human capital requirements per unit of output. Growth of output beyond the threshold level of labour displacing effect of factor transformation involves quantitative expansion of employment. In this context, the broad hypothesis this study attempts to test is that in the changed policy regime, both human capital and technology has played an important role in increasing the productivity which in turn has lead to employment neutral, employment enhancing, or employment displacing growth.

Review of Literature

Increase in employment and productivity have been the most important source of real per capita economic growth. To measure growth aggregate growth in output approach is used which is outcome of increase in employment and that in productivity. It is derived either by employing more people, or improving output per worker or both. Thus, employment, productivity and output growth are a linked process.

Despite industrialization and steady growth in GNP unemployment and underemployment rates have remained quite high in Philippines economy. Low employment multipliers with rapid increase in labor productivity may not be able to generate sufficient employment to absorb the informal sector labor unless the rate of investment and export growth increases rapidly enough to generate more jobs and improve productivity. The rate of employment growth is not very high compared to the overall increase in the labor force (Venida, 1998). Policy is still an important input, as far as the employment is concerned. The collapse of employment generation in agriculture and the very poor performance of formal sector employment has been the net outcome of reforms (Bhattacharya and Sukhtivel, 2004; Chandrasekhar and Ghosh, 2001; Jayati Ghosh, 2004). The fastest growing industries in terms of employment are mainly those with relatively higher elasticities and vice versa (Valadkhani, 2003). Production in modern society cannot occur without appropriate quantities of fixed assets, natural resources, labor (human capital), and financial assets. The scale of production and the economic benefits derived from the output also partially depend on the quality and quantity of production factors and assets. The output is obtained not only by factor input, but also by assets held and used (Xikang et al., 2005). Employment income-growth interrelation cannot be a homogenous phenomenon across the sectors, over space and through time; nature and degree of this relationship is bound to vary among sectors. Probably the nature of employment, specially its knowledge and skills profile, has undergone radical transformation (Prakash and Balakrishnan, 2005). (Sheibani and Afshari, 2002), most labor intensive sectors of the economy are education, social security and public affairs, health, agriculture, transportation, communication and industry respectively. But the impact of different growth strategies on job creation for women is highly sensitive to the level of education.

Methodology

Paper analyzes the growth and employment under new policy regime for this input output tables for years 1993-94/ 2006-07 have been worked out. Data on employment, gross value of output and value added have been obtained from the databases of National Sample Survey Organization (NSSO), Central Statistical Organization (CSO) and Annual Survey of Industries (ASI). To explore the final impact of new policy regime, disaggregate sector-wise employment elasticity has been worked out. Tabular technique of analysis has been assisted with percentages, growth rates and other simple statistical techniques. To ensure reliability and validity, wherever needed, appropriate adjustments have been made.

Analysis

Growth of Output, Value Added and Employment

The overall as well as sectoral rates of growth are shown in table 1 over the period under consideration. The last row of the table shows the geometrical average of all twenty nine sectors of the economy. The ***growth of output*** as inferred from the I-O tables shows a growth rate of 7.87 percent per annum during entire period. However, merely growth of the economy does not reflect differential performance of the sectoral growth. Sectors like, 'Agriculture', 'Mining & Quarrying', 'Tobacco Products', 'Furniture and Fixtures-Wooden', 'Paper and Paper Products', 'Printing, Publishing and Allied Activities', 'Leather and Leather products', 'Coal Tar Products', 'Railway Transport Equipment' and 'Electricity and Water Supply' have recorded a lower than average growth in comparison to other sectors. Growth rates are more pronounced in 'Electrical, Electronic Machinery & Appliances' (19.80 percent per annum) followed by 'Petroleum Products' (17.49 percent per annum) and Beverages (13.99 percent per an-

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num). 'Wood and wood products' is only sector with negative output growth of (-0.20) percent.

The ***income*** grew at 6.78 per cent during the entire period. As in case of growth of output where sixteen sectors lag behind the average, while the other thirteen are higher than the average growth in output in the economy. Growth rates in value added follow almost similar pattern as growth of output however number has decreased from sixteen to thirteen sectors; which lag behind in terms of average income growth. 'Wood and wood products', 'Railway Transport Equipment' and 'Petroleum Products' are the sectors which have shown the lowest growth. 'Non-Metallic Mineral Products', 'Metal Products except Machinery and Transport Equipment', 'Agriculture, Industrial, General & Special purpose Machinery' and 'Iron & steel Industries & Foundries' are some of the sectors that have registered a higher growth than average income growth. 'Beverages' have displayed the highest growth of 14.26 percent per annum, followed by 'Electrical, Electronic Machinery & Appliances', 'Coal Tar Products' and 'Construction including Cement'.

The **employment growth** during the period 1993-94 to 2006-07 is just 2.39 percent which far lower than the growth rate of output (7.87) and growth in value added (6.78 percent). This lends credence to our thesis that there has been not only an improvement in technological base of production but production itself has taken place under increasing returns. This also lends support to the general belief that Indian economic growth has been associated with 'jobless growth', resulting in 'joyless growth'.

To examine whether growth of income followed by lower growth of employment at macro level has been all-pervasive across all sectors; or whether there have been variations that triggered labour augmentation effect through technology or human capital induced productivity increases that accelerated economic growth without growth of employment at comparable rate. For this, sectoral comparison of growth of output, employment and productivity has been worked out on the basis of I-O tables and results are reported in table 1. 'Tobacco products', 'Wood and Wood Products', 'Printing, Publishing and Allied Activities', 'Railway Transport Equipment' and 'Electricity and Water Supply' have witnessed a negative employment growth. 'Iron & Steel Industries & Foundries' showing a considerable impact in output and income growth (above 7 percent) are also among one of the sectors that demonstrated employment lag with negative growth of (-0.70 percent). Beverages a sector with highest growth of output and income has just shown employment growth of 3.93 percent. The use of electronic media and advanced communication systems could be a major factor for this, leaving one to believe in technology unleashing the labour augmentation effect. Universal computerized operations in such sectors as insurance, banking, health, education, communication, trade and government offices have led to leaner, thinner and meaner organization structures.

Productivity growth (table1) highlights a higher average growth of 5.53 percent as against employment growth at meager 2.39 percent during the period 1993-94 to 2006-07. There is also evidence of improvement in growth of productivity in all sectors except 'Furniture and Fixtures-Wooden' (-8.65) percent. 'Railway Transport Equipment' revealed highest growth of productivity (24.79 percent) followed by 'Iron & steel Industries & Foundries' (8.53 percent). 'Electrical, Electronic Machinery & Appliances', 'Petroleum Products', 'Beverages', 'Agriculture, Industrial, General & Special purpose Machinery', ' Other Transport', 'Construction including Cement', 'Textile' and 'Electricity and Water Supply' are the sectors where productivity growth is above 5 percent. The question that needs further investigation is whether this is on account of improvement of technology or human capital. Though, Information Technology has been the major contributor in generating improvement in productivity in all the above sectors, but not without human or physical capital.

Table 1: Growth of Output, Value Added, Employment and Productivity (1993-94/2006-07) in Percent

Code	Industry	Growth of Output	Growth of Value added	Growth of Employment	Growth of Productivity
1	Agriculture	3.25	2.85	1.03	2.19
2	Mining & Quarrying	5.62	5.92	2.03	3.52
3	Food Products including Sugar	7.75	4.40	1.11	6.57
4	Beverages	13.99	14.26	3.93	9.68
5	Tobacco products	1.38	2.24	-0.09	1.48
6	Textile	8.64	7.87	2.25	6.25
7	Wood and Wood products	-0.20	0.10	-0.78	0.58
8	Furniture and fixtures-wooden	3.52	2.15	13.34	-8.65
9	Paper and Paper Products	5.11	5.19	1.73	3.32
10	Printing, Publishing and Allied Activities	3.98	2.72	-1.24	5.29
11	Leather and Leather products	6.16	6.46	3.53	2.54
12	Plastic and Rubber Products	8.92	4.91	3.07	5.68
13	Petroleum Products	17.49	1.94	5.79	11.06
14	Coal tar Products	3.76	11.34	0.22	3.53
15	Basic Chemicals	8.30	7.03	3.38	4.77
16	Other Chemical Products and Man-made Fibers	7.83	8.65	3.76	3.93
17	Non-Metallic Mineral Products	10.34	10.29	5.22	4.88
18	Iron & Steel Industries and Foundries	7.77	9.65	-0.70	8.53
19	Other Basic Metals Industry	8.23	7.57	4.49	3.58
20	Metal Products except Machinery and Transport Equipment	9.46	10.10	8.18	1.19
21	Agriculture, Industrial, General & Special purpose Machinery	10.83	9.94	1.32	9.39
22	Electrical, Electronic Machinery & Appliances	19.80	11.91	1.09	18.51
23	Railway Transport Equipment	4.75	1.49	-16.06	24.79
24	Other Transport Equipment	10.61	8.59	1.63	8.84
25	Miscellaneous Manufacturing Industries	9.73	8.30	6.55	2.98
26	Construction including cement	11.84	11.29	5.40	6.11
27	Electricity and Water Supply	4.05	3.86	-1.35	5.47
28	Trade, Hotels, Transport, Storage & Communication	7.66	7.86	4.09	3.42
29	Other Services	7.54	7.78	6.44	1.04
	Total	7.87	6.78	2.39	5.53

Source: Calculated from *NSSO*, CSO and ASI

The **output elasticity of income** however, has been marginally less than 1, indicating almost a balanced growth of income with output (Table 2). The **income elasticity of employment**, which clearly indicates that growth of employment, has not kept pace with growth in value added or income. In fact, it has not even grown at half the rate at which income has grown. Only some sectors: 'Furniture and Fixtures-Wooden', followed by 'Petroleum Product', 'Other Services' and 'Metal Products except Machinery and Transport Equipment' have showed signs of an employment growth. **Output elasticity of employment** gives a similar picture with employment not keeping pace with output; which is distinctive from the near unitary output elasticity of income during the same period.

Table 2: Output, Income and Employment Elasticities

Code	Industry	Output elasticity of Income	Income elasticity of Employment	Output elasticity of Employment
1	Agriculture	0.87	0.36	0.31
2	Mining & Quarrying	1.05	0.34	0.36
3	Food Products including Sugar	0.56	0.25	0.14
4	Beverages	1.02	0.27	0.28
5	Tobacco products	1.62	-0.04	-0.07
6	Textile	0.91	0.28	0.26
7	Wood and Wood products	-0.51	-7.35	3.74
8	Furniture and fixtures-wooden	0.61	6.20	3.78
9	Paper and Paper Products	1.01	0.33	0.33
10	Printing, Publishing and Allied Activities	0.68	-0.45	-0.31
11	Leather and Leather products	1.04	0.54	0.57
12	Plastic and Rubber Products	0.55	0.62	0.34
13	Petroleum Products	0.11	2.97	0.33
14	Coal tar Products	3.02	0.01	0.05
15	Basic Chemicals	0.84	0.48	0.40
16	Other Chemical Products and Man-made Fibers	1.10	0.43	0.48
17	Non-Metallic Mineral Products	0.99	0.50	0.50
18	Iron & Steel Industries and Foundries	1.24	-0.07	-0.09
19	Other Basic Metals Industry	0.92	0.59	0.54
20	Metal Products except Machinery and Transport Equipment	1.06	0.80	0.86
21	Agriculture, Industrial, General & Special purpose Machinery	0.91	0.13	0.12
22	Electrical, Electronic Machinery & Appliances	0.60	0.09	0.05
23	Railway Transport Equipment	0.31	-10.78	-3.38
24	Other Transport Equipment	0.81	0.19	0.15
25	Miscellaneous Manufacturing Industries	0.85	0.78	0.67
26	Construction including cement	0.95	0.47	0.45
27	Electricity and Water Supply	0.95	-0.35	-0.33
28	Trade, Hotels, Transport, Storage & Communication	1.02	0.52	0.53
29	Other Services	1.03	0.82	0.85
	Total	0.90	-0.03	0.41

Source: Calculated from *NSSO*, CSO and ASI

Conclusion and Suggestions

During the new policy regime, the employment requirement in all sectors of economy has decelerated except in 'Furniture and fixtures-wooden' sector. The reason is increasing use of capital intensive techniques and/or increasing human productivity. Employment growth is far lower than the growth rate of output and growth of productivity. Thus, there has been not only an improvement in technological base of production but production itself has taken place under increasing returns. Thus, growth of Indian economy has been an 'employment less' growth. This may be attributed to rising productivity. Productivity itself maybe envisaged to be a function of the following: replacement of less by more advanced technology; and replacement of less efficient by more efficient human capital. To make employment growth faster, sectors with relatively higher employment elasticity should be targeted. But the compulsion of raising productivity with a view to improving employment quality in major part of the economy makes it essential that economy grows at a higher rate to generate the required new employment opportunities.

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