



Demographic Dividend in the Age of Neoliberal Capitalism: An Analysis of Employment and Employability in India

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Accepted: 18 June 2021 / Published online: 24 August 2021
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Abstract

After examining the concept of demographic dividend and in-depth analysis of the changing demographic profile of Indian population in a comparative framework, in this study it has been argued that the transformation of demographic potential into demographic dividend is predicated on the premise that India adopts state sponsored social-economic policy regime for public health and education for its youth to acquire skills which will be required in the twenty-first century and adopts macro-economic policies which ensures optimal use of human resources. Otherwise demographic dividend will be a myth and a mirage.

Keywords Demographic dividend · Employment · Employability · Capital-intensive technology

1 Introduction

A country's potential and its ability for sustained growth in the long run is determined by the size of its young population. In this context, Indian policy designers are quite optimistic about economic growth in the near future due to the increased share of productive population in the total population. The current demographic transition of Indian economy highlights fall in its dependency ratio. The advocates of demographic dividend (Brander and Dowrick 1994; Bloom et al. 2000) have argued that when it comes to economic growth and development, change in population composition matters. Demographic dividend refers to a youth bulge driven growth potential that results from a shift in the population structure. The increase

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in proportion of the working-age population (15 to 64) relative to the proportion of non-working-age population (14 and younger, and 65 and older) is characterised as demographic dividend.

However, the relationship between population growth and economic development is a contentious subject that dates back to the era of classical economics. The classical theory of population and economic development led by Malthus (1878[1798]) was undermined by the technological advancement and higher agricultural production. The later systematic theories of economic growth by Harrod (1939) and Solow (1956) though were not directly concerned with the population question but population growth was an important precondition for their sustained economic growth models. In these theories, population growth has been considered as a distinct advantage for economic growth because it ensures adequate supply of labour and division of labour which also leads to expansion in the size of domestic market. These models view economic growth as a function of higher saving and investment rates that are facilitated by the increase in proportion of working-age population or when demographic transition of a country enters into phase of declining dependencies at lower and upper scale of population pyramid. At that stage, an economy can further accelerate the growth rate due to decline in consumption demand at lower and upper scale of pyramid that increases the saving rate further. In order to harness increasing return during this phase of demographic transition, a sufficient proportion of total investment is required to be devoted to human capital formation along with the increase in rate of absorption of workforce.

However, due to overgeneralisation of relationship between population growth and economic development, the developmental models are constrained in their explanatory power. The relationship between demographic dividend and economic growth can be pessimistic for some countries, optimistic or neutral for others depending upon the conditions and sensitivity of the economic policy towards the demographic change. For instance, China's state-engineered demographic transition according to a predetermined strategy has successfully channelized the demographic transition into an optimal zone through appropriate and timely measures. When China experienced her first demographic potential, public policy had responded to the anticipated changes in age structure that reduced the dependency at lower as well as higher levels of population pyramid. Second dividend was experienced by China in the form of generation of productive and decent employment opportunities through development of its industrial sector by a visible shift from centrally controlled economy to market-oriented economy. India's transition, however, is feared to exemplify the classical school of thought because of lack of suitable policy measures to accommodate the growing population. Kuznets (1960) stated that demographic advantage also differs between economies according to the level of development. The less developed economies suffer from an acute shortage of capital, not only for material investment but also for adequately raising and educating their younger generations. The typical neoclassical argument of relationship between population and economic growth was presented by Becker (1999) which views workers as capitalist as they own human capital. He argued that investment in human capital is no less important than physical capital to reap the benefits of demographic dividends. As per his argument, the provision of better schooling and health facilities, technical

know-how, safe environment, fair governance, vitamin consumption, acquiring information about the economic system, etc., are preconditions to convert favourable changes in population structure into demographic dividend (Becker 1962).

The recent studies (World Bank 2005) reveal that first half of the twenty-first century will belong to India due to its demographic potential for higher economic growth. In 2020, the average Indian will be only 29 years old, in contrast to China's average of 37 years and Japan's 48 years. The demographic transition in India would create a large and growing labour force, which is expected to deliver spin-offs in terms of growth and prosperity through a number of routes (Chandershekar et al. 2006). UNPF (2018) stated that India with relatively high ratio of working to dependent populations has the possibility of benefitting from a 'demographic dividend', provided that appropriate labour market and other policies allow for a productive absorption of the growing working-age population and for increased investments in the human capital of children and youth. The population of India has increased by more than 181 million during the decade 2001–2011 due to which the proportion of the population in the working-age group (15–59 years) is expected to rise from 60.7 per cent in 2011 to 65.1 per cent in 2036 (Census of India 2011b, a). The expectations and anticipations of demographic dividend require shift in philosophy of growth from austerity-led to decent employment-led growth in order to accommodate the growing young bulge.

In the light of these facts, the present study is an attempt to critically examine the validity of preceding formulations and the potential of the Indian economy to utilise the demographic advantage. The first section of the paper examines India's claim of demographic dividend by comparing the important demographic indicators with competing Asian economies (China and Japan). Second section examines the implications of neoliberal policy regime on current employment situation in India. It evaluates the quantitative and qualitative aspects of existing employment structure. The last section examines the mainstream economic theories in order to locate the question of employability in labour abundant economy with an objective to examine the paradox of technological revolution and issue of employability in neoliberal India.

2 Demographic Dividend in India: A Comparative Perspective

In order to link population growth with economic development, demographers use 'demographic transition' and age structure of population as their tools for analysis (Blacker 1947). The decline of infant and child mortality rate and improvement of educational and health facilities are considered as positive factors for economic growth. In the case of India, selected demographic indicators (not in comparative terms) show an impressive improvement. Mortality indicators have fallen, and life expectancy has increased from 56.2 year during 1980–1985 to 66 in 2015–2020. There has been a significant improvement of some key indicators of health. The decline in infant mortality rate has contributed positively to qualitatively balance the population profile. The improvement in literacy rate shows that percentage of educated people has increased from 18.33 per cent in 1951 to 74.04 per cent in 2011 (Census of India 2011b, a). All these changes have raised optimism about the

contribution of population growth to economic development in India, and it has been characterised as demographic dividend. However, there are two conditions for demographic transition to qualify as demographic dividend: naturalistic and economic. Natural condition refers to the birth and death rates in a society that result in the change in composition of population. Most of the theories which explain demographic advantage in terms of economic advantage first deal with the naturalistic part and then relate it to the saving/investment rate and ultimately with economic growth. However, meaningful analysis of demographic dividend requires relating the naturalist analysis of demographic potential to macroeconomic analysis through the state of employment and employability in the economy. Hence, naturalist conditions are necessary but not the sufficient conditions to harness demographic dividend. There is cumulative causal relationship between naturalistic and economic conditions. As economy experiences natural increase in youth bulge, economic dimension in the form of employment-led cumulative causation should become the driver of the economic transition. The life cycle analysis (developed by Modigliani (1986) in context of consumption and saving cycle) reveals that at individual level (that can be translated into society as a whole through aggregation), the economic impact of new births is initially negative during the child rearing years, then positive on entering productive labour force and finally negative during retirement years. The natural pattern of demographic change enters into demographic dividend potential phase for an economy when the proportion of aggregate labour force further increases in comparison with the aggregate proportion of dependency at lower and upper levels of population pyramid. The economic condition to transform this demographic potential into demographic dividend depends upon the growth of sufficient and productive employment opportunities which is a function of macroeconomic policies.

The theories of economic growth argue that growth of per capita income is driven by growth of labour productivity (what average worker produces), growth in working-age population (decline in the population in the dependent age group), growth in the share of those who are in working-age group and actually look for work (labour force participation rate), and growth in those looking for work and succeed in finding it (employment rate). The rising proportion of the population in the working-age group is an advantage characterised as demographic potential for higher economic growth. The decomposition of the population between the different age groups i.e. between labour force (15–64 age group) and those outside of it (usually children and old age dependents) gives the estimate of working-age population. In general, the opportunities available when the population enters the demographic dividend age require increase in investment and productive employment opportunities to absorb or encash the budge. The utilisation of demographic dividend is not an automatic market process. There is no guarantee that all the countries may experience benefits of demographic dividend. As Bloom and Canning (2004) pointed out, there is nothing automatic about the link between the demographic change and economic growth. No doubt, changes in age composition of population create the potential for economic growth, but the utilisation of this potential depends on the macroeconomic policy framework and environment.

The naturalistic analysis assumes that demographic dividend in an open economic regime can be considered as an advantage to attract the global capital. In Asia, India

has two competing (China and Japan) economic powers to attract the flow of global capital. Their demographic disadvantage (Yashiro 1997; Chen et al. 2019) emerges as an advantage to India. India has been characterised as the youngest nation in Asia that can attract the global production base from China (Government of India 2013). The naturalistic comparative demographic advantage of India can be examined from the data presented in Table 1. India has certain advantages over Japan as it has already entered into the phase of ageing society due to lowest birth rate among the three. India also has an edge over China in terms of demographic advantage. Although China has lower aggregate dependency ratio, but it will be in a comparative disadvantage position in near future. No doubt, the one child policy in China has controlled its population growth, but it has also unbalanced the population composition in the country. Contrary to India, the low dependency ratio in China is not due to the low old age dependency but due to the low child dependency. In other words, in future, China will experience a decline in proportion of working-age population as its potential working-age population (children who enter into the labour market after a span of time) will not increase as in India. In quantitative terms, India is the leading country in Asia which is experiencing and will experience comparative demographic advantage in naturalistic terms.

The data on youth population presents the actual picture of naturalistic demographic advantage. It highlights that the proportion of young population in Japan and China is consistently declining and will remain so in near future (Table 2). On the other hand, the proportion of young population in India has increased from 1980 to 2010 and after that it shows a slow decline but still remains much

Table 1 Trends in dependency ratio in India in comparative perspective

Countries	1970	1980	1990	2000	2010	2020	2030
<i>Dependency ratio</i>							
Japan	44.9	48.1	43.5	46.6	55.9	69.0	72.4
China	79.1	68.4	52.1	46.2	36.5	42.2	48.4
India	79.2	79.2	75.0	64.2	56.0	48.7	46.1
Asia	79.6	72.8	63.2	56.6	48.5	47.8	49.0
World	75.0	70.01	63.9	58.7	52.8	53.3	54.5
<i>Child dependency ratio</i>							
Japan	34.9	34.9	26.5	21.7	20.8	21.0	19.2
China	72.4	60.5	43.5	36.2	25.5	25.2	23.4
India	73.3	68.7	65.2	57.0	48.1	38.9	33.6
Asia	72.8	65.3	57.5	47.5	38.5	34.7	31.4
World	65.7	60.1	53.8	47.8	41.2	39.0	36.5
<i>Old dependency ratio</i>							
Japan	10.0	13.2	17.0	24.9	35.1	48.0	53.2
China	6.7	7.9	8.6	10.0	11.0	17.0	25.0
India	5.9	6.3	6.5	7.2	7.9	9.8	12.5
Asia	6.8	7.5	8.0	9.1	10.0	13.1	17.6
World	9.3	10.0	10.1	10.9	11.6	14.3	18.0

Source: United Nations (2019), World Population Prospects

Table 2 Share of youth population (15–34)

Countries	1980	1990	2000	2010	2020	2030
India	33.96	34.26	34.73	35.18	34.65	32.27
China	35.30	35.19	35.22	31.28	27.53	23.00
Japan	30.92	28.14	27.39	22.47	19.48	18.94
Asia	34.12	35.84	34.98	33.93	31.54	28.63
World	33.52	34.44	33.72	32.96	31.12	29.23

Source: United Nations (2019), World Population Prospects

Data for 2030 are calculated from Population Estimates and Projections, World Bank Database

higher than other countries. In 2030, India will be the leading country in terms share of youth population and certainly will be the youngest among the given countries and also in the world.

However, when we depart from naturalistic advantage to turn towards real use of demographic potential, India is nowhere near China and Japan. The comparative perspective on labour force participation rate of youth and working-age population presents China as the dominant country. On average, the youth workforce (15–34 years) participation rate in China was around 80 per cent from 1981 and 2010, and if we correlate it with the economic growth, then the average growth rate during that phase in China was 9.3 per cent. This is an important fact that China has used its demographic dividend in an effective way that has resulted in acceleration of growth rate, whereas in India, the labour force participation rate of youth was relatively low and it is on further decline. In 2010 and 2018, it has been the lowest among the three. It is also less than the average of youth labour force participation rate in Asia and World. The same is the case with working-age (15–64) population. This shows India's failure to cash the demographic dividend. The lack of decent jobs along with lack of skilling people as per the requirement of labour market is a crucial factor to increase the labour force participation rate. The higher youth labour force participation rate in China and Japan in comparison with India is partly due to higher demand for skilled labour and partly due to the higher female youth labour force participation rate (Table 3).

The above analysis highlights that the naturalistic tendencies of demographic dividend are not equally optimistic in India as they are in China. The reason for low work force and labour force participation rate in India lies in the economic cumulative causation that is quite strong in China and Japan and fairly weak in India. The economic cumulative causation refers to an increase in demand for labour force in productive employment opportunities due to higher economic growth. In other words, employment-led growth rate is an important indicator of economic cumulative causation. The employment structure and change therein is an important measure to examine low economic cumulative causation effect of economic growth in India. The next part empirically examines the quantitative and qualitative aspects of employment and change therein over a period of high growth trajectory.

Table 3 Labour force participation rate of youth (15–34) and working-age population (15–64)

Countries	1981		1991		2001		2010		2018	
	Age group		Age group		Age group		Age group		Age group	
	15–34	15–64	15–34	15–64	15–34	15–64	15–34	15–64	15–34	15–64
India	61.07	60.80	55.29	59.3	54.97	60.08	48.44	55.24	42.98	50.06
China	88.42	83.74	86.47	84.17	80.31	82.35	73.45	77.37	–	–
Japan	58.50	68.40	61.60	70.70	63.75	72.60	63.55	74.00	67.70	78.90
Asia	–	–	71.31	72.13	66.89	70.64	61.10	67.26	58	66.29
World	–	–	68.84	70.29	65.54	69.22	61.53	67.34	58.48	67.00

Source: ILO

Data for China are of 1982, 1992, 2000

3 Macroeconomic Policy Regime and Employment in India

After the introduction of economic reforms, Indian policy architects of neoliberalism argued that economy has broken the ‘Hindu Growth Rate’ trap. However, growth rate of 3.5 percent from 1950–1980 was led by the basic and heavy industries including iron, coal, heavy electrical, multi-purpose dams, HEL, BHEL, NTPC, NHPC, etc. All these industries were in public sector that laid the foundations for self-reliant industrialisation which has been far superior to contents of industrialisation in 1991–2020 (Tiwari and Kumar 2019). No doubt, after the introduction of neoliberal reforms in 1991, the average GDP growth in India increased to 5.5 to 6 per cent and there were some years (2004–2009) when average GDP growth was around 7.5 to 8.5 per cent. But the cause of alarm is that the GDP growth in India got delinked with the employment growth. The retreat of the state and reliance on private capital to accelerate the economic growth is a peculiar feature of neoliberal regime. For the realisation of demographic dividend, two aspects of growth of GDP are essential. First, GDP growth should be employment-led, and second, it should lead to Lewisian structural change in employment. Both these are necessary conditions to exploit the naturalistic advantage of young bulge. However, the integration of Indian economy with the accumulation logic of global capitalism has shifted the gravity of India’s economic policy from decent employment generation to mere GDP growth. A political economy consideration led to the retreat of the State from production spheres after the introduction of neoliberal policy reforms and has strengthened the control of corporate and financial capital on the economy. Now, Indian economy is substantially run by the private capital. The increased control of corporate capital on economy has also expanded its control over government policies. The business leaders and their ideological allies have contempt for public spending policy, which does not align with their economic interests. Economic policy making establishment in the government is now dominated by experts who are wedded to the neoliberal economic philosophy under the patronage of the political leadership, which operates on the behest of the corporate capital. It is very evident from the fact that since 1991, the government is retreating from the economic

activities and social sectors. Contrary to China, a neoliberal turn in India's policy had even extended the commoditized zone to those aspects which had been considered non-commoditized, such as education and health, during the dirigiste regime (prior to the 1990s). Social sector spending as a percentage of GDP in India reached 6.52 per cent during 2001–2002 and increased marginally to 7.7 per cent in 2019. The share of public expenditure on health in India is around 1.3 per cent, one of the lowest in the world. It is even less than the average of the poorest countries in the world at 1.6 per cent (Singh 2020a). In terms of human development, India's HDI value for 2018 was 0.647, which puts the country at the margin of the medium human development category, positioning it as 129 out of 189 countries. Between 1990 and 2018, India's life expectancy at birth increased by 11.6 years, mean years of schooling increased by 3.5 years and expected years of schooling increased by 4.7 years (UNDP 2019). Contrary to China, India is able to sustain the institution of democracy, but in terms of human development that is a precondition to utilise the demographic advantage in productive manner, it is far behind. The withdrawal of the state from employment generating, commodity producing and social sector activities on the pretext that market can play a better role to increase the employment and transform the demographic potential into demographic dividend is a peculiar case of India's neoliberalism.

One important dimension to evaluate the economic aspect of demographic dividend is growth rate of workforce employed in organised sectors. It highlights that during pre-reform decade (1981–1991), the workers employed in all organised public sector activities have recorded a compound annual growth of 2.10 per cent and declined to 0.04 per cent in the next decade. It became negative 0.89 per cent per annum between 2001 and 2011. The situation in case of organised private sector employment is also not very encouraging. During the period from 1981 to 1991, the growth rate of organised employment in private sector was 0.37 per cent per annum with three sub sectors (Mining and Quarrying, Manufacturing and transportation and communication) recording negative growth. During 2001 to 2011, the annual compound growth rate of employment in private organised sector has improved in comparison with previous decade. During this period, the highest growth was recorded in finance, insurance, real estate, etc., whereas growth rate of employment in private manufacturing sector was only 0.28 per cent (Government of India 2013, 2018). Hence, the shift in economic policy has transformed the employment structure from state and state-protected production sectors to private sector. The shift of government focuses from investment to fiscal discipline due to its commitment to neoliberalism has diluted the decent employment-led growth in India.

3.1 Distribution of Workforce and Question of Productive Opportunities

The related aspect to transform demographic potential into demographic dividend is the change in structure of employment from low productivity to high productivity opportunities. Lewis (1954) highlighted the importance of structural transformation for underdeveloped economies to enter into the phase of high growth. Lewis' structural transformation is based on two conditions. First, there should be availability of

labour reserve in the economy in the form of unemployment and disguised employment in rural sector. Secondly, real wage rate in rural as well as urban sector should be upward sticky. Under these conditions, increase in investment in urban industrial sector will lead to higher capital accumulation that will simultaneously solve both the problems of developing countries: taking economic growth and structure of employment from low to high productive activities. However, India has not witnessed Lewisian turning point. During post-reforms era, the most peculiar feature of Indian economy has been that it has experienced a stimulus to economic growth without corresponding increase and desired structural shift in employment. The recent data of NSSO show that Indian economy is passing through an unprecedented phase in its employment history. There has been an obliteration of 9 million jobs between 2011–2012 and 2017–2018. The data presented in Table 4 reveal that rural as well as urban working population employed in agriculture has declined during calendar year 1983 to 2017–2018. The urban population employed in agricultural activities declined to one third in 2017–2018 as compared to its proportion in 1983. It was not same for the rural population employed in agriculture sector. The proportion of rural population employed in agriculture was 82.5 per cent in 1983, and it has declined to 64.1 per cent in 2017–2018. It is clear that after the period of more than three and a half decades rural population employed in agriculture has recorded only 18 per cent decline, whereas share of agriculture sector in GVA has declined from 39.93 per cent to 14.00 per cent during the same period. The fundamental reason behind the above fact is that a proportion of population, which have been displaced from farming (usually small and marginal farmers) due to the unviable conditions of cultivation and lack of decent non-farm employment opportunities, were forced to leave farming and become agricultural wage labour. It is well evident from the data that the absolute number (as well as percentage) of agricultural labour in India has increased from 64.4 million (38.52 per cent of total agricultural workers) in 1981 to 144.3 million (54.95 per cent of total agricultural workers) in 2011 (Census of India 2011b, a). Along with this, the other disturbing fact is that, due to the increased mechanisation of agricultural operations, majority of them became marginal rather than main workers. Under neoliberal regime, government's disproportionate incentives to private corporations in the form of land acquisition have not only resulted in widespread dispossession of means of livelihood of those who were owners of that land but also those who did not possess any land but were tightly aligned with the land for their livelihood. Hence, the people who seem to have left agriculture are actually dispossessed by the state and forced to become part-time wage labourers (Bhaduri 2018).

The structural transformation in non-agricultural activities has also not shown any positive sign in the form of increase in factory employment. However, there has been an increase in proportion of population employed in construction, transportation, trade, hotels, restaurant, etc., in both rural and urban areas. The important feature of these activities is that these are unorganised, informal and casual employment driven. The critical minimum criterion for successful structural transformation in employment is the product of specific type of industrialisation. As Fei and Ranis (1964) argue, 'the rate of industrial capital accumulation must be large enough, the intensity of innovations should be high enough, "*the labour using bias of the*

Table 4 Distribution of usually employed persons (PS + SS) by broad industrial categories (per cent)

Sectors	1983		1993–1994		2004–2005		2011–2012		2017–2018	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Agriculture	82.50	20.65	80.15	16.85	74.90	12.10	67.15	8.25	64.1	7.25
Mining and Quarrying	0.45	0.90	0.55	0.65	0.45	0.55	0.40	0.60	0.35	0.40
Manufacturing	6.70	26.75	7.00	23.80	8.15	25.85	8.95	25.55	7.90	23.80
Electricity and Water	0.10	0.65	0.15	0.75	0.10	0.50	0.20	1.20	0.25	0.95
Construction	0.80	4.10	2.05	5.50	4.15	6.50	9.80	7.35	9.90	7.90
Trade, hotel and restaurants	3.15	14.90	3.80	15.95	5.40	20.10	5.50	19.40	6.60	18.75
Transportation storage and communication	0.90	5.70	1.65	5.50	2.00	6.05	2.20	7.20	2.75	8.00
Other services	4.45	25.70	5.20	30.70	4.90	28.35	5.80	30.50	8.25	32.95

Source: NSSO (2015) and NSSO, (2019)

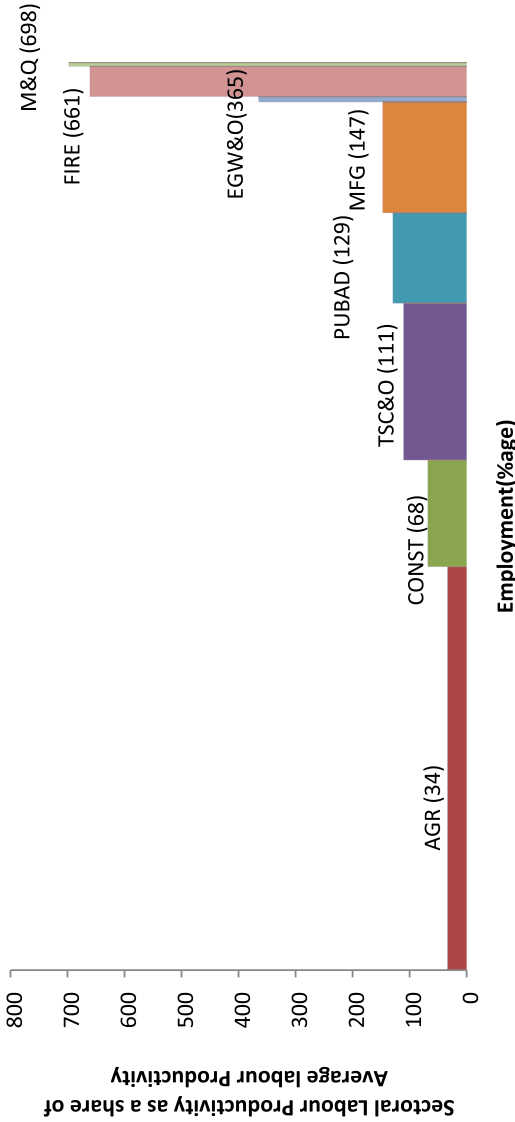
innovation strong enough” and law of diminishing returns to labour must of weak enough so that the demand for labour in industry exceeds the growth rate of labour force (emphasis added)’. If we examine the industrialisation process in India through growth of employment in India’s manufacturing sector, it seems to have failed to accommodate the young bulge. The pattern of manufacturing growth under open economic regime shows decline in responsiveness of employment growth to investment and output growth (Roy 2008).

The proportion of population employed in rural and urban manufacturing sector has not shown any significant increase. Rather the proportion of population employed in manufacturing sector of urban areas recorded decline from 26.75 per cent in 1983 to 23.80 per cent in 2017–2018. The urban manufacturing sector, which in Lewisian analysis was referred to as a major driver of structural transformation for economy as a whole through active pull factor, has failed to generate the new employment opportunities (Table 4). Rather, during 2011–2012 to 2017–2018 manufacturing sector alone has recorded a 3.5 million decline in jobs. Falling manufacturing jobs is not only opposite to the goal of ‘Make in India’ but also has serious implications for the young population seeking productive employment.

India’s changing production structure, characterised by the declining importance of agriculture, would have been more inclusive had it been supplemented by an increase in agricultural productivity and such changes in structure of employment that lead to labour moving out of agriculture to higher productivity sectors. Figure 1 shows how India’s workers are distributed across sectors along with the levels of sectoral labour productivity (relative to average productivity). It highlights that major proportion of India’s workers are engaged in the agriculture sector. The implication of extremely low productivity of the sector—only 34 per cent of average productivity nationally—is that still a major proportion of India’s workers are involved in very low productive activities. As per the demands of progressive structural transformation in a labour abundant economy, where majority of population is involved in agriculture, twofold structural changes are required: first, increase in agriculture productivity through substantial public investment (that is not an agenda of neoliberal state) in agricultural infrastructure and technology; second, absorption of surplus labour and incremental youth of rural areas into highly productive value added activities associated with agricultural production.

Figure 1 also highlights that there are certainly sectors in which productivity levels are quite high. The difficulty is that many of these sectors, such as finance, insurance, real estate, mining and public utilities, are not able to provide enough employment opportunities to incremental young population. The other paradox is that there is little potential for generating jobs in these sectors on a large scale for semiskilled workers (particularly coming from countryside with low educational skill). One sector with considerable untapped potential for generating reasonably high productivity jobs is manufacturing sector. But instead of absorbing the workforce, it is releasing the already employed workforce.

Thus since 1990s, the structural transformation in employment in India reveals that (1) the shift of workforce from agriculture to non-agriculture sector has occurred at a slow pace and the major destination of new employment is not manufacturing sector, (2) the decline in dependency on agriculture has not shown any significant



Source: Calculated from RBI (2019) and NSSO (2019),
Note: AGR= Agriculture and Allied Activities, CONST= Construction, TSC & O= Transport, Storage and Communications and Others, PUBAD= Public Administration, Defence and Other Services, MFG= Manufacturing, EGW&O= Electricity, Gas, Water Supply and Others, FIRE= Finance, Insurance and Real Estate and M&Q=Mining and Quarrying.

Fig. 1 Employment Shares and Labour Productivity Differentials across Sectors

increase in agricultural productivity, and (3) the sectors which have recorded an increase in productivity are not labour-absorbing sectors. This process is explained by Patnaik (2006) with an argument that the import of labour-saving technology has reduced the requirement of labour (extensively discussed in last section-III). Along with this, secular decline of public investment in rural areas is one of the major reasons behind the low productivity/income of agriculture sector that has constrained the growth of non-agriculture sector employment in rural areas (Singh 2020b).

3.2 Informalisation Versus Demographic Dividend

The other sphere to examine the future of demographic dividend in India is the status of employment and changes therein over a period of time. As far as status of employment is concern, in rural areas, the pre-reforms (1983) period demonstrates that due to the domination of agricultural activities in rural India the proportion of population involved in self-employed activities was more than 50 per cent of the total rural employment. The proportion of population involved in regular employment activities was recorded 8.06 per cent in 1983. During this period, the share of casual workers was recorded as 33.72 per cent. On the other hand, in urban areas the higher proportion of population was working as regular workers followed by the self-employed activities during pre-reforms period. The recent data of 2017–2018 highlight some improvement in regular employment in rural as well as urban areas. The proportion of population involved in self-employment activities has not recorded much variation in rural areas. The casual labour emerged as the second major occupation after self-employment in rural areas. The utilisation of demographic dividend depends upon the potential of economy to absorb the casual workers in better and productive jobs (Table 5).

The other qualitative aspect of labour market that is important to understand the future of demographic dividend in India is distribution of workers in formal and informal activities. The distribution of workers in different types of employment activities presents many aspects of workers and their working conditions. Formal employment activities are considered decent because workers have some social security in terms of provident funds, medical insurance, etc., and therefore considered

Table 5 Distribution of usually employed (PS + SS) persons by status of employment (per cent)

Years	Status of employment					
	Self-employed		Regular employed		Casual labour	
	Rural	Urban	Rural	Urban	Rural	Urban
1983	57.82	39.68	8.06	42.07	33.72	18.11
1993–94	58.00	42.30	6.40	39.40	18.30	32.00
2004–05	60.20	45.40	7.10	39.50	32.80	15.00
2011–2012	56.90	42.25	7.80	43.10	35.30	14.60
2017–2018	57.75	36.95	12.25	48.90	30.00	14.10

Source: NSSO, (2015), and NSSO, (2019)

active army of labour. On the other hand, the workers employed in informal activities are characterized as ‘lumpenproletariat’. These workers who are spread over the informal sector are part of Marx’s reserve army of labour because they remain under threat of multiple insecurities (Tiwana and Singh 2015).

Table 6 provides more detailed information regarding the distribution of workers as per types of employment in India. During 2004–05, out of the total workers employed in non-farm sector 136.7 million (71.7 per cent) were employed in unorganised sector the number of which increased by 45 million by 2017–2018. In 2004–2005, informally employed workers in non-farm sector were 162.4 which increased to 217 million in 2017.18. The incapability of the formal and organised sector to absorb the incremental workforce in labour market presents the lack of increase in decent employment opportunities.

These qualitative changes in composition of employment have diluted the demographic advantage in India. A mass of workers is living in insecurity and uncertainty. Any slowdown of growth in the corporate segment of the economy will push them to the reserve pool of labour. In the present capitalist regime, the economic life of a large segment of population which is working under uncertain and risky environment has been distressed by the economic slowdown since 2008. The workers are facing multiple insecurities including employment insecurity, income insecurity, pension or old age insecurity, skill-related insecurity, medical and health insecurity, etc. It is well evident from Table 7 that the regular wage/salaried workers who do not have any written job contract have increased from 59.1 per cent in 2004–05 to 71.1 per cent 2017–2018 due to contractualisation in the job market. The proportion of workers who are not eligible for paid leave has increased from 45.5 per cent to 54.2 per cent during the same period. There is a slight fall in those who are not

Table 6 Distribution of workers in non-farm sector according to type of employment (in millions)

Non-farm sector	Type of employment: organised and unorganised sector					
	Organised			Unorganised		
	2004–2005	2011–2012	2017–2018	2004–2005	2011–2012	2017–2018
Manufacturing	15.3 (28.4)	20.7 (34.6)	18.1 (32.0)	38.6 (71.6)	39.1 (65.4)	38.4 (68.0)
Non-manufacturing	9.2 (31.2)	22.3 (40.4)	15.4 (26.2)	20.2 (68.8)	32.9 (59.6)	43.5 (63.8)
Services	29.5 (27.5)	40.3 (31.7)	43.2 (29.9)	77.9 (72.5)	87.0 (68.3)	101.3 (70.1)
Non-farm total	54.0 (28.3)	76.0 (34.4)	76.7 (29.5)	136.7 (71.7)	159.0 (65.6)	181.1 (70.5)
	Type of employment: formal and informal					
	Formal			Informal		
Manufacturing	5.6 (10.4)	6.5 (10.9)	8.7 (15.4)	48.3 (89.6)	53.3 (89.1)	47.7 (84.6)
Non-manufacturing	2.1 (7.2)	2.9 (5.3)	3.1 (5.2)	27.3 (92.8)	52.3 (94.7)	55.9 (94.8)
Services	20.6 (19.2)	25.4 (19.9)	31.1 (21.5)	86.8 (80.8)	101.9 (80.0)	113.4 (78.5)
Non-farm total	28.3 (14.8)	34.8 (14.4)	42.8 (16.5)	162.4 (85.2)	207.5 (85.6)	217.0 (83.5)

Source: NCEUS (2007) and NSSO (2015), NSSO (2019)

Figures in brackets are percentages

Table 7 Percentage of regular wage/salaried employees working in insecure environment

Year	No written job contract			Not eligible for paid leave			Not eligible for any social security		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
2004–2005	58.9	59.1	59.1	47.6	45.5	46.2	56.5	53.4	54.5
2011–2012	64.7	64.7	64.7	51.0	49.4	50.0	58.0	54.1	55.4
2017–2018	69.2	72.3	71.1	56.2	52.8	54.2	52.5	47.7	49.6

Source: NSSO (2015) and NSSO, (2019)

eligible for any social security, but still it is around 50 per cent among regular wage/salaried workers.

Demographic dividend does not have any relevance in a situation when every additional worker in labour force has been considered as an instrument that reduces the bargaining power of existing workers. The widespread informality and insecurity in India's labour market are indicators of declined bargaining power of workers. If we look at the workers employed in unorganised sector and their dependents who are either unemployed or underemployed, we can say that the majority of Indian population that is living under the threat of multiple insecurities and uncertainties.

4 Technological Revolution and Question of Employability

Demographic dividend is critically associated with the prospectus of employability. Since last couple of decades there have been some crucial changes in production structure associated with employability of labour, which world economy has experienced in general, and developing world in particular. These changes are associated with the rapid progress of globalisation of trade in technology, artificial intelligence and ICT revolution. Globalisation of Indian economy has given way to the change in production structure of industries and other economic activities in two ways. First, it has reduced the significance of industrial sector in employment generation and led to the rise of service and knowledge driven occupations that have necessitated a new type of skills for the workers. Second, the development of new methods of production has changed the inputs composition in favour of capital and against labour for given production process. The first issue demands new type of educational structure to prepare youth for new types of jobs. Nevertheless, the related question for India is to see if the service sector and high technology jobs have enough potential to absorb the vast amount of youth labour surplus, which is available for work, in organised segments. The other issue, which is more important for India, is the absence of Western style industrial revolution which remained labour augmented for a sufficient span of time to absorb the surplus population of countryside. In such a situation, the technological change away from labour augmented technology and in favour of capital-intensive technology has reduced the employability of existing industrial units. Therefore, it is important to examine the disjunction between capital and labour

employment in production process and its implications for future of employment of incremental youth bulge.

The last three phases of recession in the USA, beginning in the early 1990s, have been followed by what euphemistically is referred to as ‘jobless recoveries’. Similar phenomena are observable in Europe and even in China and globalised India. Both, the evidence of recent trends and the evolution of future prospects point in one direction: massive surpluses of potentially restive redundant population (Harvey 2014). In economic theory, the paradox of labour employment and machinery is quite old. It was first highlighted by Ricardo (1817) with an argument that due to the introduction of machinery in production process, no doubt, the one fund, i.e. net income from which capitalist class drives their revenue in the form of profits, may increase, but other fund, i.e. gross income from which labour class is employed, may diminish. Hence, capital formation or investment in the forms of introduction of new machinery will reduce the funds to employ labour. The fundamental proposition of Ricardo was that capitalist do not employ the new machinery from their shares of profits, i.e. net income but from the gross part of revenue. The introduction of machinery in production process has two effects: first, it reduces the availability of funds for the employment of labour, and second, it also reduces the requirement of labour for given production unit. Thus, it has a positive effect of saving labour for capitalist class along with a negative effect on working masses in the form of redundancy of labour from production process. No doubt, technological revolution during the nineteenth and the beginning of twentieth century had resulted in sustained increase in material standard of living, but fears of adverse employment consequences of technological advancement, artificial intelligence and ICT revolution had also aggravated in the twentieth century. This fear was also realised by Keynes during the era of Great Depression with a prediction that in near future we may be able to perform all the operations of agriculture, mining and manufacturing with a quarter of the human effort. But the rapid change will bring a new disease, namely technological unemployment (Keynes 1933). The real threat to employability is that machines are dominating majority of production activities and duplicating the human labour. This can be taken as positive if the production gains are distributed equally among all the sections. But if gains of increased productivity went to only one class (capitalist) and keep the other redundant, then productivity-led economic growth becomes meaningless for the society as a whole.

The growth economics literature that developed after the publication of Keynes’ *General Theory* including Harrod-Domar and Solow-Swan was more concerned with productivity and economic growth and did not give much weight to Keynes’ fear. They have developed capital centred rather than employment centred theories of economic growth (Sen 1970). The central aim of neoclassical growth models was to trace the steady state path with full (capital) employment equilibrium. However, in capitalist economy, as Kalecki (1971) observed, full employment is not only driven by the economic decision but also by the political decisions. In this context, in a labour abundant economy like India, the role of government in the form of compensatory investment and intervention to ensure the technological progress to be labour augmenting is quite crucial. The later theories of development such as Romer and Lucas have given an important role to the human capital for economic growth.

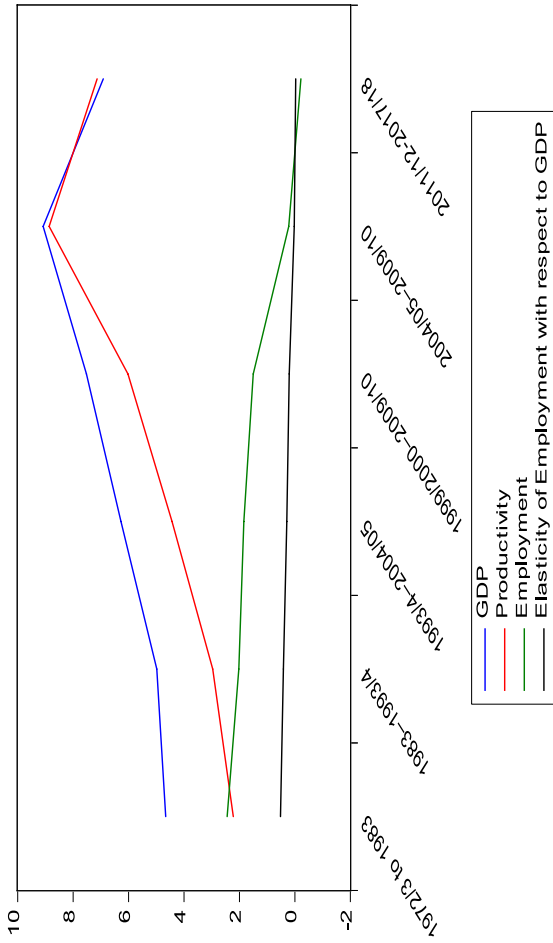
Arrow (1962), Kaldor and Mirrlees (1962) and later theories of Romer (1986) and Lucas (1988) show that capital accumulation can become more growth-oriented through learning by doing if a higher proportion of total investment is devoted to new discoveries and knowledge creation.

However, the recent experience shows that central problem of neoliberal capitalism-driven developing countries (like India), which have non-exhausted labour reserves, is not the economic growth rather the jobless growth. How growth can accelerate the employability for youth bulge is of central concern. In order to understand the issue of employability in a labour-abundant capitalist economic system, mainstream models are not helpful. The motive of production under capitalist economic system is not to ensure full employment equilibrium but to maximise the profit rate. The full employment equilibrium means strong bargaining power of the workers, which may result in rising wage rate and falling profit rate. Therefore, capitalists who own the means of production always want to ensure the persistent reserve pool of labour in the economy and they plan the investment accordingly. Marx had rightly argued (1992) that the accumulation of capital gives birth to the counterforce that reduces the requirement of labour for the given production with the introduction of new technology that is capital abundant in nature and at the same time labour displacing.

The misery of mainstream growth economics is that it does not highlight the real objective of capitalist production process which is an integral part of accumulation logic of capitalism. Under capitalism, control over the labour processes and the labourers have always been central to capital's ability to sustain profitability and capital accumulation. Harvey (2014) has pointed out that throughout its history, capital has invented, innovated and adopted technological forms whose dominant aim has been to enhance capital's control over labour in both labour process and labour market. Many industrial innovators have had labour control as their primary goal. Marx argued that technological innovations were a crucial weapon in class struggle; the sole aim of technologically induced unemployment is the power to regulate wage rate. If we apply mainstream and Marxian understanding of capital accumulation and its implications for economic growth and employment generation to India, the data clearly demonstrate that there has been extensive jobless growth.

Figure 2 shows the contradictory results in India with regard to mainstream growth theory. The high increase in productivity (largely due to the introduction of capital-intensive technology) of labour results in decline in employment opportunities. The elasticity of employment with respect to GDP shows secular decline in the time period from 1983–1993/1994 to 2004/2005–2009/2010 and became negative from 2011/2012 to 2017/2018.

There are reasons to believe why high growth of output is not resulting in an increase in employment. The fall in employment elasticity in India is due to the increase in proportion of investment in those sectors which are capital augmenting. The fall in proportion of savings out of wages and petty production sectors due to stagnation or relatively less increase in real income of these classes in proportion to the growth of national income has reduced the demand for wage goods which are characterised as labour augmenting. Moreover, under open economic regime there is a shift in elite demand from labour-intensive domestic commodities to



Source: Calculated from RBI (2019), Handbook of Statistics, CSO (2019), National Account Statistics, NSSO (2015) Employment and Unemployment Situation in India 68th Round (2011-12) and NSSO (2019), Periodic Labour Force Survey.

Fig. 2 Growth of GDP, Employment, Productivity and Elasticity in India

capital-intensive imported goods which has reduced the potential demand of labour-intensive activities to sustain. The widespread distress among the farming community and petty production sector is an outcome of these interrelated aspects (Singh 2020c).

The output per head is growing because of shift in composition of stock of plant to the desired level of accumulation that does not require employing whole of the labour. It highlights the disproportionate increase in fixed capital, whereas the number of workers remains almost constant. The increments to output have not been contributed by the proportionate increase in both the factors of production which is beneficial to increase the employability of youth bulge rather contributed by the disproportionate increase in one input only. The increase in industrial output in India is largely contributed by the cumulative increase in capital stock rather than by the proportionate increase in units of labour (Fig. 3).

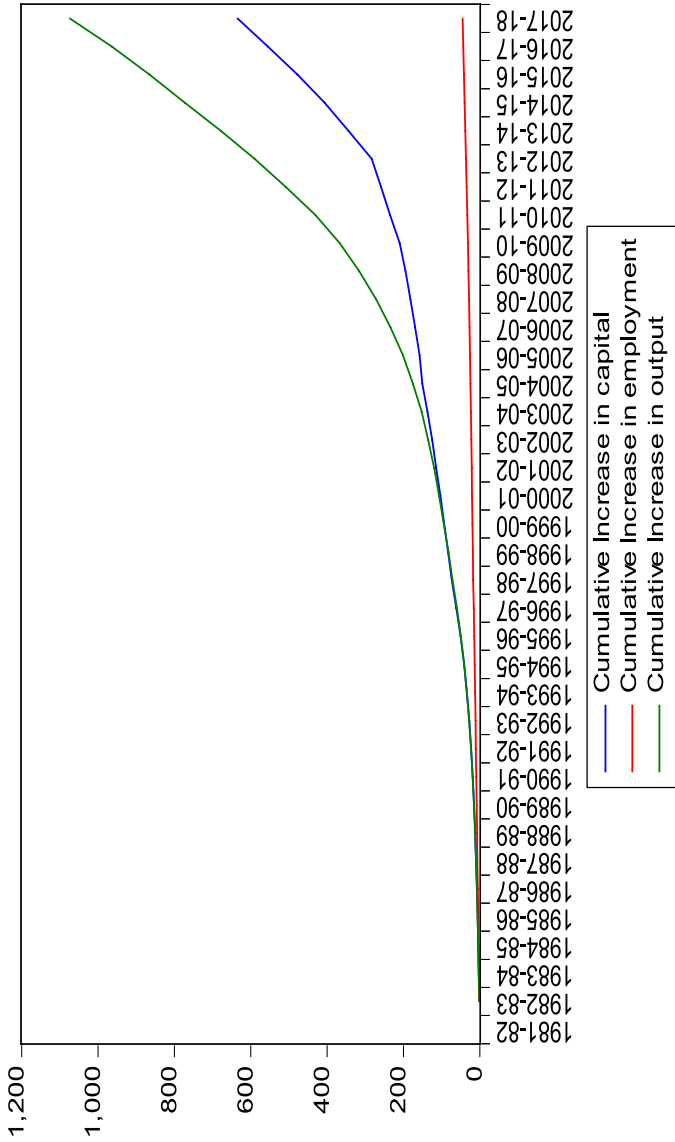
Due to the integration of the Indian economy with the global capitalist accumulation network, efficiency rather than employability has become the major agenda for manufacturing sector. It has given way to the inappropriate choice of technique by the industrial sector which has reduced the potential of manufacturing sector to transform the demographic advantage into demographic dividend. The decline in labour employment of industrial sector has also undermined the bargaining power of manufacturing workers and strengthened the control of capital and corporate class on the industrial sector.

Figure 4 highlights that after the introduction of neoliberal reforms in India during the 1990s, the share of profits in GVA increased at a rapid rate, whereas wage share showed a secular decline since the very beginning, but the gap between profit share and wage share has widened after 2001–2002. The increase in share of profits without any corresponding increase in real wages is a sign of increase in, what Kalecki (2009[1965]) said, 'degree of monopoly' in Indian manufacturing sector.

The decline in wage share is not only true for manufacturing sector but it is also true for the economy as whole. The high growth rate of Indian economy during open economic regime is not led by income and employment-induced increase in mass demand but by the credit-led increase in demand. It is quite evident from the proliferation of finance and related activities (as discussed in previous section), the proportion and growth of which have accelerated in GDP. Hence, the employability particularly in better and long-term employment opportunities does not seem to be possible in the present phase of technological revolution in industrial sector. Under India's open economic regime, the young labour reserve continues to remain non-exhausted and most of India's working population has become dispensable and irrelevant from standpoint of capitalist accumulation.

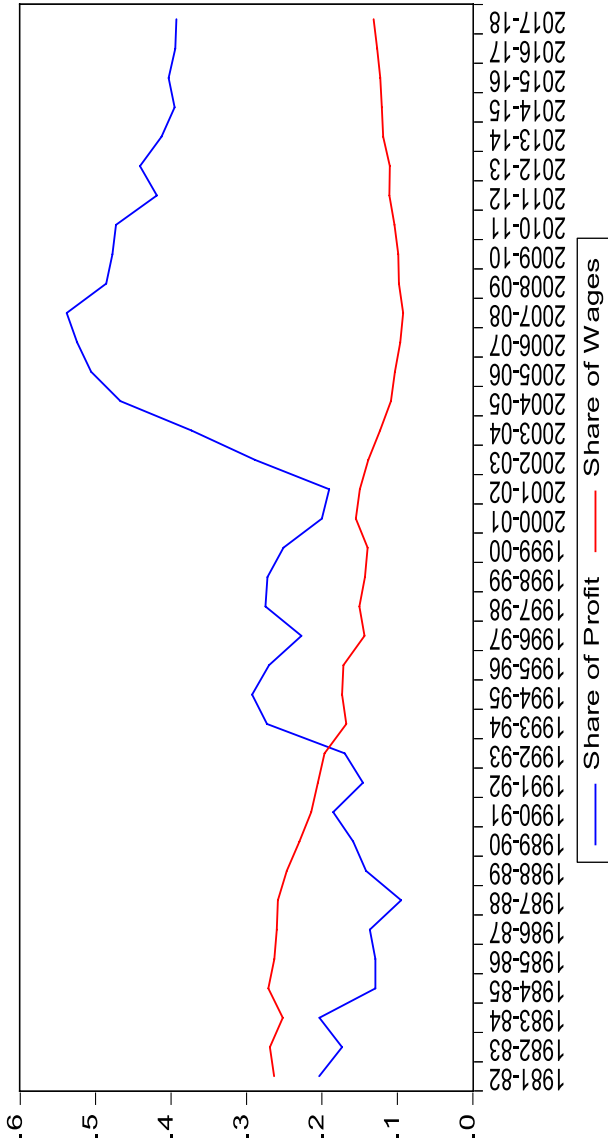
5 Concluding Remarks and Policy Implications

The growth process under neoliberal economic policy regime in India since 1991 has clearly established the apparent inability of Indian economy to generate adequate decent employment opportunities. It has not only led to jobless growth but also increased the interpersonal and interregional disparities with little impact on



Source: Government of India (2020) Annual Survey of Industries 2017-18.

Fig. 3 Cumulative Increase in Capital (Fixed + Working), Number of Workers and Value of Total Output in Manufacturing Sector



Source: Government of India (2020) Annual Survey of Industries 2017-18.

Fig. 4 Change in Share of Wages and Profits as Percentage of GVA in Manufacturing Sector

reduction in absolute levels of poverty. According to Periodic Labour Force Survey data (2017–2018), between 2011–2012 and 2017–2018, 15 million people failed to find any employment and have left the labour market in India. Usual status unemployment that is an indicator of ‘chronic unemployment’, which uses a reference period of 365 days, i.e. one year preceding the date of the survey, was 6.1 per cent in 2017–2018. And if we calculate the absolute number, it comes to around 28 million workers. It means that 28 million workers in India who were ready to work even at the existing wage rates were chronically unemployed. It highlights that the growth strategy followed by India has been faulty on various counts. First, it is driven by the balanced budget ideology (Fiscal Responsibility and Budget Management Act, 2003) dictated by World Bank and IMF at the instance of the finance capital that has led to the retreat of the state from the economic spheres. The aggregate demand in the economy is not driven by the increase in mass income rather driven by the increased circulation of finance in the form of consumer credit. Second, WTO dictated trade liberalisation regime has led to increased dependency on export markets that has given way to the shift in production structure of manufacturing sector towards capital-intensive goods. This technological shift has resulted in divergence between output, productivity and employment. Thirdly, the removal of restrictions of domestic corporate and foreign capital and liberalisation of labour market conditions has led to the profit-led rather than wage-led growth in Indian manufacturing sector. Fourth, the low level of expenditure on health and education that is a necessary condition to equip the potential workforce for new employment skills has undermined India’s potential to increase employment and experience employment-led growth. Last, the depressive structural transformation in the employment from formal to informal jobs has not only reduced the bargaining power of workers in formal sector but also discouraged the young working-age population to join the labour market. All these factors have led to slow down of the Indian economy due to lack of purchasing power and market demand which has been further aggravated by demonetisation and faulty implementation of GST regime. Covid-19 and consequent lock down have led to complete dislocation of the Indian economy, and its revival warrants reconsideration of the neoliberal economic policy regime as all these adverse events have serious consequences on the potential of Indian economy to encash the demographic dividend.

In order to transform the demographic potential into demographic dividend, there is a need to shift the economic policy from supply side corporate-led growth to employment-led development strategy. There are certain ways to achieve this. First, there is a need to increase the public investment in rural infrastructure that will enhance the productivity of agriculture sector. Massive programme of rural industrialisation should be launched like China (town and village industries) during 1978 to 1998 which increased non-farm rural per capita income four to five times and led to massive increase in rural non-farm employment, and demographic transition from agriculture to rural industrial sector. It has also created huge demand for durable and non-durable consumer goods in rural areas in China accelerating its growth of GDP at the fastest rate in the world for more than 40 years, transforming it into one of the strongest economic powers in the world. Such a development strategy requires massive skilled and semiskilled labour force for which public investment on vocational

and technical education must be increased many folds. Right to Education should be extended from pre-school to senior secondary school education, and vocational and technical education should create skills in students which will meet the requirements of the twenty-first century. Second, there is a massive demand for skilled and semiskilled labour in Gulf countries and demand for health workers (care economy), especially for aging population in Europe and other developed countries. India can transform its demographic advantage into demographic dividend by reorienting its economic and social policies. Thirdly, there is need for government to revert to production activities that will not only increase the organised employment opportunities for potential workforce but also set the floor for minimum wages that will further enhance the bargaining power of the workers in private corporate sector. Fourthly, instead of removal or relaxation of labour laws for big corporate capital there is need to effectively revive the labour laws in other sectors of the economy also, to ensure the increase in wage share in tune with increase in labour productivity. Fifth, in order to accommodate the increased workforce into the new form of jobs, investment in human capital oriented services should be accelerated. In order to equip the potential workforce to secure jobs in emerging activities, government should substantially increase the allocation of funds to health and education sectors. All these measures can go a long way to harness India's demographic advantage into demographic dividend; otherwise, twenty-first century will be characterised as a century of missed opportunities and notion of demographic dividend into a myth and a mirage.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Funding There was no funding obtained for this study.

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