



**SDG 8:
Decent Work and Economic Growth**

Zhun Xu and Shouvik Chakraborty

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SDG 8: Decent work and economic growth

Zhun Xu

*Associate professor of economics at John Jay College, City University of New York.
Recent book: "From Commune to Capitalism: How China's Peasants Lost Collective Farming and Gained Urban Poverty"*

Showvik Chakraborty

Researcher at the Political Economy Research Institute, UMASS-Amherst.

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One of the two components of the United Nations Sustainable Development Goal (SDG) 8 is "economic growth", a term which people in the 21st century are quite familiar with. The question of growth, or the lack thereof, has often featured prominently in political debates, scholarly writings, as well as popular media. Nevertheless, sustained economic growth was only a recent phenomenon in human history. The world economy remained stagnant throughout the first 1800 years in the Common Era and started to grow exponentially after that.¹ Measured by international dollars in 1990, the world has seen more than 5 times increase in population in the last two centuries, but the real GDP has increased by more than 700 times.²

Of course, that growth was not and is not shared evenly across time and space. Nevertheless, it is fair to argue that economic growth has been a common theme in modern times, that is, the era of capitalism. As the most important critics of capitalism, Karl Marx, and Friedrich Engels made the following praise in 1848: "The bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together. Subjection of Nature's forces to man, machinery, application of chemistry to industry and agriculture, steam-navigation, railways, electric telegraphs, clearing of whole continents for

¹ Based on Maddison, Angus. "Historical Statistics of the World Economy: 1-2008 AD." (2010).

<http://www.ggdc.net/maddison/oriindex.htm>.

² Ibid.

cultivation, canalisation of rivers, whole populations conjured out of the ground — what earlier century had even a presentiment that such productive forces slumbered in the lap of social labour?”³

The other component of the SDG 8 is “decent work.” This broad term covers different dimensions, such as employment (paid or unpaid), social protection, workers' rights, and social dialogue.⁴ It emerged in the late 1990s in the International Labour Conference.⁵ The ideas of a decent job and the struggles around it, however, are probably as old as capitalism and modern economic growth.

Capitalism and economic growth

Capitalism, with its logic of competition and accumulation, is an inherently growth-oriented system. If modern economic growth is historically associated with capitalism, a related question is how capitalism first started to develop in the last few hundred years. Although various parts of the world documented some early signs of the bourgeois class and capitalism, scholars widely acknowledge that capitalism first made its break-through in Western Europe around 16th century. There are different opinions as to why and how Western Europe first developed capitalism. Some writers emphasize the fact that the internal class struggles between serfs and lords have successfully weakened the feudal system, which eventually made the rise of capitalist commerce and agriculture possible.⁶ Other writers focus more on the external factors such as the rise of long-distance trade and towns, as well as the immense financial, political, and ecological benefits associated with overseas expansion and colonialization.⁷ Here the external factors cease to be external once we consider the world economy as a whole and the rise of Western Europe as one outcome of the world labor division under the creation of the world capitalist system. Moreover, scholars have argued that due to damages from colonialization, unfair division of labor, and unequal exchange, the development in the West had caused underdevelopment in the third world.⁸

³ See the Communist Manifesto, <https://www.marxists.org/archive/marx/works/1848/communist-manifesto/ch01.htm>.

⁴ Ghai, Dharam. "Decent work: Concept and indicators." *International Labor Review*. 142 (2003): 113.

⁵ Ibid.

⁶ Sweezy, Paul M., and Maurice Dobb. "The transition from feudalism to capitalism." *Science & Society* (1950): 134-167. Hilton, Rodney H., and Christopher Hill. "The transition from feudalism to capitalism." *Science & Society* (1953): 340-351.

⁷ Sweezy and Dobb. "The transition from feudalism to capitalism." Pomeranz, Kenneth. *The great divergence: China, Europe, and the making of the modern world economy* (Princeton: Princeton University Press, 2000).

⁸ Baran, Paul. *The Political Economy of Growth* (New York: Monthly Review Press, 1957). Frank, Andre Gunder. *The Development of Underdevelopment* (New York: Monthly Review Press, 1966). Amin, Samir. *Accumulation on a world scale: A critique of the theory of underdevelopment*. (New York: Monthly Review Press, 1974).

On a more concrete level, economic growth has been driven by capital accumulation. And industrial revolution and the subsequent waves of industrialization are the most important examples of capital accumulation. Scholars have offered a range of different explanations for the causes of industrialization and growth. Many of these efforts, unfortunately, are not satisfactory. An old and often criticized view focuses on the role of culture. Max Weber provided a popular version of this idea, arguing that protestant ethics encouraged people to work and accumulate, which led to the rise of capitalism.⁹ The culture perspective not only often relies on stereotypical and Eurocentric understanding of non-European societies, but it also has great difficulties in explaining different economic outcomes among regions or countries with similar religions or cultures. Another popular explanation involves the influence of natural conditions, such as natural resources, geography, and temperature (see Chapter 15). For example, warmer weather, lack of access to ports, and even rich natural resources have been used to explain the lack of development in Africa and other third-world countries. But clearly, countries in warm weather such as Singapore have developed well, and colder weather only ceased to be a major constraint on people's working capacity in Northern countries due to better infrastructure and higher income.¹⁰ And for any such suggested causes, it is easy to identify rich countries where these factors also exist (lack of ports or resource abundance).

And finally, some scholars also emphasize the role of institutions and argue certain types of institutions induce economic growth while others prohibit economic growth. While this explanation offers a more fruitful analysis, its limitation is also obvious. Many economists, for example, like to mention the importance of secure private property and less taxation. Research has shown, however, such institutional arrangements were not present when economic growth first started in countries that are now rich today.¹¹ Moreover, it is not clear at all whether secure private property relations or free markets are prerequisites for economic growth. The US has benefited from its long tradition of industrial policy and high tariffs before reaching dominance in the world market.¹² The Soviet Union achieved long periods of rapid economic growth with economic planning. And China in the last few decades has had huge economic successes without a completely free market and fully secure private properties.

There was optimism among some economists, especially those in the neoclassical tradition, that economic growth will cease to be an issue in the long term. For example, in the standard Solow model, countries with different starting levels of capital stocks will eventually converge to the same level of per capita capital stocks. Thus poor countries tend to grow faster, while richer countries tend to grow slower. It is as if every market economy has a guaranteed happy ending

⁹ Weber, Max. *The Protestant Ethic and the Spirit of Capitalism* (New York: Routledge, 2001).

¹⁰ Chang, Ha-Joon. *23 things they don't tell you about capitalism*. (New York: Bloomsbury Publishing USA, 2012).

¹¹ Allen, Robert C. *Global economic history: a very short introduction*. (New York: Oxford University Press, 2011), 28-9.

¹² Chang, Ha-Joon. *Bad Samaritans: The myth of free trade and the secret history of capitalism*. (New York: Bloomsbury Publishing USA, 2010).

without a need for state policies. This so-called convergence thesis has generated much debate in the field, and the existing evidence is strongly against it.¹³

To move beyond these explanations, we need to go back to the root of capital accumulation. In any society, the resources available to be invested after meeting the essential social consumption needs can be called the economic surplus following Paul Baran. The central question of economic growth is how much of the economic surplus can and will be invested. Baran convincingly argues that even poor countries still have considerable economic surplus beyond the national essential consumption, and the way ruling classes use the economic surplus determines the potential of economic growth.¹⁴ For example, The Japanese government in the late 19th century strongly encouraged investment in railway construction, shipbuilding, education among other things which enabled Japan to start catching up with the Western industrial nations.¹⁵ This is the reason Keynes and the post-Keynesian have placed much importance on the capitalists' investment decisions (or investment functions) and coined the term "animal spirit" to describe the connection between expected profits and planned investment.

What then affects the utilization of economic surplus or the Baran ratio?¹⁶ One of the most important factors is the function of the state, either through industrial policy or more comprehensive planning. One may recall the early discussions on the so-called vicious circle of poverty or poverty traps. In a poor country, self-sustained growth can be extremely hard to achieve. From the supply side, poor countries, in general, have lower savings and a low level of science and technology. From the demand side, poor countries often have limited market and purchasing power. Since the externalities prevail in the economy, a new business may not be viable unless there is a range of related industries developing at the same time. All this essentially means that leaving to itself, the market economy is unlikely to break these constraints, and some strong government intervention and planning are indispensable to modern economic growth. Indeed, the role of the state was obvious in all the late developers such as Germany, Japan, and the Soviet Union, and later examples like South Korea and China.

Whether the governments are willing and able to play such an important role is, of course, subject to concrete historical conditions. In some cases, the ruling class and its political elites are not interested in domestic industrial development because their interests are based on or closely related to non-industrial activities: mining, plantation, and most importantly, trading these raw materials or tropical products. This was the case with much of Latin America from 17th century to 19th century which was buried deeply in the colonial economic system as a raw material producer and correspondingly developed forms of bonded labor and plantations. It was also the case with much

¹³ Johnson, Paul, and Chris Papageorgiou. "What remains of cross-country convergence?." *Journal of Economic Literature* 58, no. 1 (2020): 129-75.

¹⁴ Baran, "The Political Economy of Growth".

¹⁵ Baran, "The Political Economy of Growth", 157; Allen, "Global economic history", 116-124.

¹⁶ Xu, Zhun. "Economic surplus, the Baran ratio, and capital accumulation." *Monthly Review* 70, no.10 (2019): 25-39.

of the US south, where the ruling class was content with exporting cotton to Britain with slave labor. It was only the US north, which was largely neglected in the process, partly due to its unfavorable condition for mining and plantations, that the local capitalist class had an interest in developing its own industries before the abolition of slavery.¹⁷ The anti-accumulation/reactionary characteristics of the capitalist class were common in the former colonies and semi-colonies. Sometimes called the compradors, these elites serve as the local connections for the colonial and imperialist powers.

Even if the governments happen to have the willingness to push for growth and industrialization, they cannot always do so. The more progressive wing of the capitalist class in the third world, or the national bourgeoisie, was certainly more interested in growth and accumulation. They were, however, in general quite weak economically and politically, and unable to carry out anti-imperialist and anti-feudal struggles to develop national industries and national markets. It is important to note that, very often the national governments cannot better facilitate economic growth because of the collusion between domestic and foreign interests. The long history of colonialism and imperialism has illustrated this point well. When countries started to implement reforms, they often face a hostile external environment. This was the case in Guatemala, Chile, Indonesia, and others where progressive governments were overthrown in bloody coups with US involvement. And countries such as Cuba still face sanctions today.

Success in implementing radical changes can set a country on a long course of economic growth. The Chinese government for a long time in the Republican era, for example, was controlled by the Guomindang (Nationalist Party) which had close connections with the landlords. Although they had plans of land reform, they failed to implement them due to opposition from landed interests. It was only the revolutionary government led by the Chinese Communist Party later that was able to carry out nationwide comprehensive land reform. The effect of such radical changes can have a major impact on the growth potentials of a country. Following the 1949 revolution and land reform, the Chinese government achieved a dramatic increase in capital accumulation and growth by eliminating unnecessary elite consumption and waste. The per capita income in China was about the same in 1933 and 1953, but the saving rate increased from merely 1.7 percent in 1933 to 20 percent in 1953.¹⁸ The Chinese government maintained its tradition of high accumulation persisted even after its transition into a market economy since the 1980s. Measured by the Baran ratio, China consistently spent more than 80 percent of its economic surplus on capital accumulation, which has been the basis of the sustained rapid growth in the last four decades.¹⁹

¹⁷ Frank, Andre Gunder. *Dependent Accumulation and Underdevelopment* (New York: Monthly Review Press, 1979), 25-69.

¹⁸ Lippit, Victor D. "The concept of the surplus in economic development." *Review of Radical Political Economics* 17, no. 1-2 (1985): 1-19.

¹⁹ Xu, "Economic surplus".

Early struggles for decent work

The transition from feudalism to capitalism generated the modern issue of unemployment. This transition to capitalism happened at different times in different places. In the countryside, different paths of agrarian change gradually sent people off the rural land. The newly formed urban working class did not have the tradition-protected job tenures and customary rights to certain public resources. Many of the new urban population became either unemployed or semi-unemployed. Calling these people the "relative surplus population" or "reserve army of labor", Karl Marx categorized them into three groups: the floating, the latent, and the stagnant.²⁰ The floating refers to those workers who routinely get hired and fired, following the business cycles. The latent means the rural migrants who were driven out of capitalist agriculture, while the stagnant describes those with highly irregular employment. Besides these, vagabonds, criminals, prostitutes, and the like constitute the lowest layer of the reserve army. Marx argues that capitalism will never provide decent work to the entire working class, as "The greater the social wealth, the functioning capital, the extent and energy of its growth, and, therefore, also the absolute mass of the proletariat and the productiveness of its labour, the greater is the industrial reserve army."²¹

For those who were lucky enough to have relatively stable employment, the conditions were not much better. They had to work for extremely long hours in harsh conditions and receive little pay. Children labor were prevalent and they worked as long as 15 hours a day. The low nutritional intake, the high intensity of work, and the overall bad health conditions even had a visible impact on how tall people could grow. Marx as well as recent economic historians have all documented a marked degeneration in human stature (and so was the general health) in the first decades of the 19th century.²² Engels' vivid description of the working conditions of the English working class in the 1840s is worth quoting at length:

“In many rooms of the cotton and flax-spinning mills, the air is filled with fibrous dust, which produces chest affections, especially among workers in the carding and combing-rooms. Some constitutions can bear it, some cannot; but the operative has no choice. He must take the room in which he finds work, whether his chest is sound or not. The most common effects of this breathing of dust are blood-spitting, hard, noisy breathing, pains in the chest, coughs, sleeplessness – in short, all the symptoms of asthma ending in the worst cases in consumption. Especially unwholesome is the wet spinning of linen-yarn which is carried on by young girls and boys. The water spurts over them from the spindle, so that

²⁰ Marx, Karl. *Capital* Vol. 1 (London: Penguin, 1990), 794.

²¹ Marx, *Capital*, 798.

²² Komlos, John. "Shrinking in a growing economy? The mystery of physical stature during the industrial revolution." *The Journal of Economic History* 58, no. 3 (1998): 779-802. Floud, Roderick, Robert W. Fogel, Bernard Harris, and Sok Chul Hong. *The changing body: health, nutrition, and human development in the western world since 1700*. (Cambridge: Cambridge University Press, 2011).

the front of their clothing is constantly wet through to the skin; and there is always water standing on the floor.”²³

Industrialization, a core element of modern economic growth, was a crucial factor that deteriorated the conditions of the English working class. Before industrialization, workers still enjoyed a considerable degree of autonomy and did the work at home such as spinning and weaving while facing not much competition. In Engels' words, "So the workers vegetated throughout a passably comfortable existence, leading a righteous and peaceful life in all piety and probity; and their material position was far better than that of their successors. They did not need to overwork; they did no more than they chose to do, and yet earned what they needed." Interestingly, economic historians have suggested that the key reason behind the English or Western European Industrial Revolution was the relatively high labor cost. For example, Allen showed that the English wages were high relative to the price of capital and sufficient for most people to eat bread, beef, and beer instead of subsistence-level food (see Chapter 9).²⁴

Thus capitalist economic growth and industrialization, at least at the beginning, have some clear negative impact on the working class. Even today, we can still see traces of this early damage through the relentless Malthusian population theory. Naturally, the working class in response launched the early waves of struggles towards decent work and related radical goals.

As workers often viewed machines as the source of their misery, one of the early forms of labor struggle, the Luddite movement, was a fight against machines. The working people also started organizing trade unions. In response, the government brought out the Combination Acts, which prohibited trade unions and collective bargaining. As E.P. Thompson noted, the Act caused much resistance and unwittingly brought the revolutionary tradition into association with the then illegal unions.²⁵ In the era of the Industrial Revolution, there also emerged a new school of thought, known as Utopian Socialism, which aimed to provide plans for a better society. This group of thinkers emphasizes the need for full employment, economic democracy, and social equality, which is now incorporated into the decent work goal. The efforts of building a socialist society via new experimental communities largely failed, but the working class did gain some solid progress in improving their overall conditions, including better living conditions and a shorter working day since the second half of the 19th century.

Indeed, the achievements that the Western European and American working class made towards the end of the 19th century were remarkable. Trade unions gained legal status in Britain in 1871, in France in 1884, and in Germany in 1890. Social democracy saw increasing influence and the German workers' Social Democratic Party became the largest and most popular working-class party at the time. Political representation of the workers also expanded so that many (male)

²³ Condition of the Working Class in England, <https://www.marxists.org/archive/marx/works/1845/condition-working-class/ch08.htm>.

²⁴ Allen, "Global economic history", 31.

²⁵ Thompson, E. P. *The making of the English working class*. (New York: Vintage Books, 1966), 500.

European workers and African American workers became eligible to vote. As a consequence, workers' material conditions greatly improved. The average US annual working hours, for example, declined dramatically from 3096 hours in 1870 to 2136 in 1929, and declined further in the post-war era.²⁶ The historical data suggest that the British workers' real wage fell behind output growth in the early decades of the Industrial Revolution, but it started to catch up with output growth later. Output per worker rose by 46 percent between 1780 and 1840 when the real wage rose by only 12 percent; between 1840 and 1900, output per worker increased by 90 percent and the real wage by 123 percent.²⁷ At the same time, there was much progress in public health which mainly affected the working people. For example, infectious disease mortality in the US declined rapidly after measures such as clean drinking water became available.²⁸ All these factors contributed to the rise in human stature and life expectancy in rich countries since the late 19th century.²⁹

The Russian revolution in 1917 and later the founding of the Soviet Union further strengthened the power of the working class worldwide. The Soviet workers had guaranteed employment, and they also enjoyed a relatively high social wage in terms of affordable housing, food, and free healthcare, and free education. The Soviet women were also among the first to actively participate in the governing of the state and the economy. At the same time, the Soviet Union achieved a very high economic growth rate, thanks to economic planning. Between 1928 and 1975, the Gross National Product (GNP) of the Soviet Union grew at 4.5 percent annually while the US grew at 3.1 percent.³⁰ In terms of the Net Material Product, the official Soviet statistics indicate a 60-fold increase during this period.³¹

Despite its internal problems, for a long time, the Soviet Union illustrated a possible model where economic growth and decent work were compatible. More importantly, the Soviet Union and the socialist bloc that subsequently formed also set a precedent for all other countries, which pressured the competing nations in the capitalist camp to match part of what the Soviet workers received. This factor, along with several other things, contributed to the unprecedented rise in workers' power as well as economic growth in the major capitalist economies in the postwar years, also known as the Golden Age.

²⁶ Huberman, Michael, and Chris Minns. "The times they are not changin': Days and hours of work in Old and New Worlds, 1870–2000." *Explorations in Economic History* 44, no. 4 (2007): 538-567.

²⁷ Allen, Robert C. "Engels' pause: Technical change, capital accumulation, and inequality in the british industrial revolution." *Explorations in Economic History* 46, no. 4 (2009): 418-435.

²⁸ <https://www.cdc.gov/healthywater/drinking/history.html>, accessed Feb 1, 2021.

²⁹ Riley, James C. "Estimates of regional and global life expectancy, 1800–2001." *Population and development review* 31, no. 3 (2005): 537-543. Floud et al, "*The changing body*".

³⁰ Kotz, David, and Fred Weir. *Russia's path from Gorbachev to Putin: the demise of the Soviet system and the new Russia* (New York: Routledge, 2007), 35-6.

³¹ *Ibid.*

Growth and distribution in the Golden Age

The Golden Age between the early 1950s and early 1970s was a remarkable period in modern history. Many of the former restraints on growth in the Third World were loosened as many countries gained independence. The Third World for the first time started its independent industrialization process. The Soviet Union and the greatly expanded socialist camp occupied a large share of the world population. Within the advanced capitalist countries, economic growth accelerated with more equal income distribution and the building of a welfare state.

Between 1870 and 1950, the US per capita GDP grew by about 1.7 percent per year. Between 1950 and 1973, the US per capita GDP grew by 2.5 percent per year. Other advanced countries followed the same pattern, for example, per capita German GDP grew at merely 0.1 percent per year between 1870 and 1950 but grew at 5 percent in the Golden Age. And this growth was not limited to the most advanced economies. Egypt barely grew at all in the first half of the 20th century but achieved a 2.8 percent annual growth rate of per capita GDP between 1950 and 1980. The whole Africa's per capita GDP grew at 0.7 percent between 1870 and 1950, but grew at 1.7 percent between 1950 and 1980. The socialist countries in Eastern Europe also grew more than 3 percent in per capita GDP between 1950 and 1980, and East Asian economies like Singapore and South Korea achieved about 5 percent growth in per capita GDP during the same period.³²

At the same time, working people saw real improvements in their life. Following the example of the Soviet Union, the socialist countries, in general, provided full employment along with affordable education and healthcare. Among the rich capitalist countries, income distribution has improved considerably. According to World Inequality Database, the top 10 percent share of national income was always above 40 percent between the 1910s and 1930s in the US, but it declined to around 35 percent in the Golden Age.³³ Several capitalist countries implemented universal health insurance or health services.³⁴ Even the US, where the elites were in general hostile to universal health coverage, started Medicare and Medicaid which covers the senior population and low-income people. All of these developments contributed to the fast rise in life expectancy across different countries. Between 1960 and 1980, the world average life expectancy increased by about 10 years, and this fast progress is still unmatched by any other periods of human history.³⁵

What has caused the Golden Age? A useful explanation is that postwar capitalism was able to develop certain socioeconomic institutions (social structure of accumulation, or SSA) that

³² These growth rates are based on Maddison, "*Historical Statistics*".

³³ Based on World Inequality Database, wid.world.

³⁴ Navarro, Vicente. "Why some countries have national health insurance, others have national health services, and the United States has neither." *International Journal of Health Services* 19, no. 3 (1989): 383-404.

³⁵ Based on the World Development Indicators, World Bank.

encouraged capital accumulation and economic growth. As Kotz observed, a decisive part of big business in the US from the 1940s started to support collective bargaining, Keynesian policies, and a welfare state, after the experiences of depression, intense labor conflicts, and wartime mobilization.³⁶ The Golden Age SSA had three main pillars.³⁷ The first was the so-called capital-labor accord, a quid pro quo between the two classes that while capitalists maintained firm control of the enterprises, (unionized) workers received stable jobs and rising incomes. The second was the relatively stable world capitalist system dominated by the US. This enabled US capital to gain access to cheap raw materials and intermediate goods. The last was the capital-citizen accord, as the government increased the regulation of capital and provided comprehensive social programs. To theorize the Golden Age experiences, some scholars argued that these conditions led to higher wage share in the national income (and lower profit share), and the increasing aggregate demand and capital utilization stabilized the rate of profit and capital accumulation at a relatively high level.³⁸

However, as the Golden Age reaches a certain point, the previous SSA that has facilitated economic growth gradually ceased to work. For example, the increasing labor militancy and labor share of national income started to "squeeze" the profit rate of the capitalists, which then lowered investment and economic growth in the 1970s.³⁹ The American hegemony started to decline, as shown by the increasing competition from West Germany and Japan, as well as rising oil prices. Moreover, the increasing social spending also decreased business profitability, which eventually mobilized the big capital to stand against government regulations and social programs.⁴⁰ Indeed, the US economy, for example, entered a period of crisis between 1973 and 1979 when productivity stagnated, and wages and rate of profit fell.⁴¹ Similar problems emerged in other advanced capitalist countries as well. The result was that capitalists in the leading capitalist economies eventually started promoting neoliberal restructuring from the 1970s. And the developing countries quickly followed suit, often due to the financial pressure from the World Bank and IMF. The now dominant neoliberal model featured deregulation, privatization, and in general pro-capital income distribution.

The above discussions on profit rate and capital accumulation did not apply to socialist economies. But interestingly, the Soviet Union and much of the socialist camp also started to grow much slower in the 1970s. For example, the CIA estimated the GNP growth rate of the Soviet Union was still close to 5 percent throughout the 1960s, but it declined to 3 percent between 1970 and 1975,

³⁶ Kotz, David M. *The rise and fall of neoliberal capitalism* (Cambridge: Harvard University Press, 2015), 53.

³⁷ Bowles, Samuel, David M. Gordon, and Thomas E. Weisskopf. "Power and profits: the social structure of accumulation and the profitability of the postwar US economy." *Review of Radical Political Economics* 18, no. 1-2 (1986): 132-167.

³⁸ Bhaduri, Amit, and Stephen Marglin. "Unemployment and the real wage: the economic basis for contesting political ideologies." *Cambridge Journal of Economics* 14, no. 4 (1990): 375-393.

³⁹ Armstrong, P., Glyn, A., Harrison, J., & Armstrong, P. *Capitalism since 1945* (Oxford: Basil Blackwell, 1991).

⁴⁰ Kotz, "neoliberal capitalism", 77-81.

⁴¹ Kotz, "neoliberal capitalism", 64-5.

and further declined to 1.9 percent in the second half of that decade.⁴² Several possible factors have contributed to this stagnation, including slowing technological progress, policy errors as well as the gradual decline of labor discipline.⁴³ And the economic stagnation eventually paved the way for Gorbachev's reforms in the 1980s. The market-oriented reforms did not solve the existing problems in the planning system, rather they caused an economic crisis and general chaos. Then the Soviet elites initiated the notorious shock therapy, which quickly buried the socialist system and introduced a free-market version of capitalism. This transition created a long-term depression along with severe income and wealth inequality in the former Soviet republics.⁴⁴ The working people, in general, suffered a great setback as they no longer had decent wages, full employment, as well as generous social spending under socialism. After 1990, it took the Russian people 16 years to see their real GDP restored to the 1990 level and 20 years to reach again their life expectancy in 1990.⁴⁵

Overall, since the 1980s, the neoliberal economic order prevailed not only in the Western capitalist economies but also in the former socialist camp. And the rise of neoliberalism has posed the largest threat to both economic growth and decent work.

Challenges in the neoliberal age

When the national governments and international agencies introduced waves of deregulation, privatization, and pro-capital distribution since the 1980s, the belief is often that (at least rhetorically) the neoliberal reforms will induce competition, innovation, and investment, which lead to growth and the benefits will eventually "trickle-down."

The actual history in the last four decades has been quite different from the more optimistic visions. First of all, although there has been some rise in the general profit rate, that did not translate into actual investment and growth. For example, in the US the after-tax corporate profit as a share of GDP has more than doubled since the mid-1980s, but the net investment as a share of GDP has declined by half.⁴⁶ Bakir and Campbell show that there was a long period of profit recovery between 1980 and 1997, while the rate of accumulation showed a general decline.⁴⁷ Indeed, the growth rates in the neoliberal era are generally lower than the Golden Age numbers. The rich countries, in general, saw some dramatic decrease in their growth rates. German per capita GDP

⁴² Kotz and Weir, "*Russia's path*", 42.

⁴³ Kotz and Weir, "*Russia's path*", 46-51.

⁴⁴ Kotz and Weir, "*Russia's path*", 176.

⁴⁵ Based on World Bank, World Development Indicators and FRED, Federal Reserve Bank of St. Louis.

⁴⁶ Xu, "Baran ratio".

⁴⁷ Bakir, Erdogan, and Al Campbell. "Neoliberalism, the Rate of Profit and the Rate of Accumulation." *Science & Society* 74, no. 3 (2010): 323-342.

used to grow 5 percent in the Golden Age, but only grew 1.6 percent annually between 1973 and 2008. The African per capita GDP grew 1.8 percent every year between 1950 and 1980, but the growth rate shrank to 0.5 percent between 1980 and 2008. Not to mention the former socialist camp where almost all countries went into a long depression since their capitalist transition.⁴⁸

There are different explanations for such tendencies of stagnation. Some scholars focus on the supply side, particularly the lack of great technological breakthroughs, while others emphasize the lack of effective demand.⁴⁹ These views, however, fail to recognize the inherent crisis tendency in capitalism itself. As discussed at the beginning, economic growth is largely dependent on the way that the ruling classes utilizes the economic surplus in a country. Measured by the Baran ratio, there was a fast and steady decline of Baran ratios among a large number of economies since the 1980s.⁵⁰ For example, the US used to spend about 70 percent of its economic surplus on capital accumulation during the Golden Age, but only spends about 40 percent on capital accumulation now. Where do capitalists spend their surplus if not on capital accumulation? They can "waste" the economic surplus on several things such as wars, sales, as well as finance (interest payments, dividends, buybacks, etc.) thanks to deregulation and financialization.⁵¹ There are exceptions in the neoliberal age. For example, China and India have consistently spent a large share of their economic surpluses on investment, which served as the basis of their rapid economic growth in the last decades.⁵² But overall, it is fair to conclude the world as a whole faces serious growth issues.

At the same time, the global working class is facing some serious challenges. The income distribution became much worse than previously regardless of the income levels. In the US, the top 10 percent share of national income increased from about 34 percent in the 1970s to about 45 percent in 2019. In South Africa, the same ratio rose from about 46 percent in the late 1980s to about 65 percent in 2014. In India, the ratio increased from about 31 percent in 1980 to about 56 percent in the 2010s.⁵³ From the perspective of functional distribution, the labor shares of national income have seen dramatic declines around the globe, occurring in most countries and industries.⁵⁴

⁴⁸ These calculations are based on Maddison (2010).

⁴⁹ Gordon, R. J. *The rise and fall of American growth* (Princeton: Princeton University Press, 2016). Summers, Lawrence H. "US economic prospects: Secular stagnation, hysteresis, and the zero lower bound." *Business economics* 49, no. 2 (2014): 65-73.

⁵⁰ Xu, "Baran ratio".

⁵¹ See Sweezy and Baran, "*Monopoly Capital*". Bakir and Campbell, "Neoliberalism". Magdoff, Fred, and John Bellamy Foster. "Stagnation and financialization: the nature of the contradiction." *Monthly Review* 66, no. 1 (2014): 1-24.

⁵² Xu, "Baran ratio".

⁵³ Based on World Inequality Database, wid.world.

⁵⁴ Karabarbounis, Loukas, and Brent Neiman. "The global decline of the labor share." *The Quarterly journal of economics* 129, no. 1 (2014): 61-103.

Among other things, this has to do with the increasing power of capital with deregulation, globalization, and outsourcing.⁵⁵

The rise of neoliberalism has also created a large global reserve army. In rich countries, outsourcing has displaced and disempowered a large portion of the working class. While in the developing countries, the neoliberal restructuring often destroyed the existing industrial base and create a new proletariat and turn the countries into links of the capitalist world economy. This is most evident in countries like Russia and China.⁵⁶ And in many other parts of the world, the trend of informalization or the rise of the precariat is more than clear. As Foster, McChesney and Jonna show, "if we take categories of the unemployed, the vulnerably employed, and the economically inactive population in prime working ages (25–54) and add them together, we come up with what might be called the maximum size of the global reserve army in 2011: some 2.4 billion people, compared to 1.4 billion in the active labor army."⁵⁷ The huge pool of the global reserve army is the fundamental reason for the defeat of labor worldwide.

The challenges are in other aspects as well. For example, female labor force participation has seen a steady decline. Different from the previous increasing trend, the global female labor force participation rate has decreased from 51 percent in 1990 to 47 percent in 2019.⁵⁸ A large part of this decline was due to declining female labor participation in China and India. But such a pattern also exists in countries such as the United States and Russia. As another example, trade unions have suffered greatly during the neoliberal era. When Reagan and Thatcher started their neoliberal programs, they started by defeating the unions. Most advanced capitalist countries had at least a moderate decline of union density since the 1980s.⁵⁹

In a nutshell, both the question of economic growth and the struggle for decent work remains highly relevant today, as most of the world population are not getting either of those. This is further complicated by the increasing concern of global warming and climate change because economic growth is usually associated with increased carbon emissions. The next section discusses job creation potentials with investments in a clean, green energy programme and the various aspects of those newly created jobs.

⁵⁵ <https://www.mckinsey.com/featured-insights/employment-and-growth/a-new-look-at-the-declining-labor-share-of-income-in-the-united-states#:~:text=Available%20studies%20suggest%20that%20the,the%20focus%20of%20our%20analysis>, accessed Feb 1, 2021.

⁵⁶ Xu, Zhun. Potential Reserve Army and Diverging Paths of Transition in Former State Socialist Economies. Political Economy Research Institute Working Paper no. 519 (2020).

⁵⁷ Foster, John Bellamy, Robert W. McChesney, and R. Jamil Jonna. "The global reserve army of labor and the new imperialism." *Monthly Review* 63, no. 6 (2011): 1-31.

⁵⁸ Based on World Bank, World Development Indicators.

⁵⁹ Western, Bruce. "A comparative study of working-class disorganization: Union decline in eighteen advanced capitalist countries." *American Sociological Review* (1995): 179-201.

The prospect of green growth and decent work

A substantial section of the population, primarily located in developing countries, is still deprived of access to basic energy infrastructures like electricity and clean cooking fuels. Increased investments for a green economy, including energy transition from fossil fuels to renewables and improving energy efficiency, help the economies grow and generate more jobs. It is in line with the SDG 8 that promotes "sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all." A transition away from the fossil fuel industry to a more clean, green economy helps the global economy move closer to full and productive employment — a target of SDG 8. However, due to the underlying economic conditions discussed above, it does not necessarily ensure that these jobs are "decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value." The United Nation's goal is to achieve these targets by 2030.

Notwithstanding these ambitious targets, the task became increasingly daunting with the ongoing pandemic of COVID-19. As discussed earlier, before the pandemic itself, economic growth slowed down, with the global economy's real GDP growth rate declining from 3.0 percent in 2018 to 2.3 percent in 2019. With the pandemic spreading globally, the global economy faces the worst economic crisis since the Great Depression, with the real GDP estimated to decline by 4.2 percent in 2020.⁶⁰ The emerging market and developing economies (EMDEs) are worse impacted — the per capita GDP levels are projected to be lower in 2022 than in 2019 for almost two-thirds of these economies.⁶¹ Such economic contraction levels have profound implications for the labour market, especially the informal and unorganized sectors, where almost more than 1.6 billion workers are at the risk of losing their livelihoods. In this current context, the discussions on green growth and generation of more jobs and decent work add further relevance.

With the soaring oil prices during the first oil crisis and the growing concern over the natural "limits to growth," the decades of the 1970s saw environmentalism gaining ground in the mainstream discourse. In 1972, the United Nations conference of the environment, where the Stockholm Declaration and Action Plan for the Human Environment and several other environment-related resolutions were adopted, was the first world conference to make the environment a significant issue. "Sustainable development," defined as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" became the buzzword.⁶² Interestingly, the concept of sustainable development did not imply absolute limits but limits imposed by the existing technology, the social organization on environmental resources, and absorbing the effects of human activity by the biosphere. Hence, green growth turned out to be a key strategy to achieve the goal of sustainable development. In

⁶⁰ World Bank. *Global Economic Prospects* (Washington, DC: International Bank for Reconstruction and Development/ The World Bank, 2021), 3.

⁶¹ World Bank, "*Global Economic Prospects*", 25.

⁶² United Nations. Report of the World Commission on Environment and Development: Our Common Future (Oslo: United Nations, 1987), 37.

March 2005, in Seoul, South Korea, at the Fifth Ministerial Conference on Environmental and Development (MCED), 52 governments and other stakeholders from Asia and the Pacific agreed to pursue a “green growth” path. This approach sought to harmonize economic growth with environmental sustainability while improving the eco-efficiency of economic growth and enhancing the synergies between the environment and economy.

Investments to build a clean energy, green economy will be a source of new jobs (see Chapter 7). However, the more relevant question is how many jobs are likely to be created? And, more importantly, what are the quality of those jobs? Will they be good jobs in terms of wages, benefits, and workplace conditions? What policies need to be formulated and enacted to make those jobs more inclusive in terms of race and gender? To date, the deprived and marginalized sections in the society are underrepresented in the energy sector jobs, except where those jobs involve activities that are considered hazardous.⁶³ These questions also assume a special significance globally, especially in developing countries, where the working class is more informal and contractual.

The job-creating potential from investments in a clean, green energy program depends on: (a) the labour intensity of the technology and (b) the utilization of domestic resources versus relying on domestic imports.⁶⁴ The former is relatively much higher in the renewable energy sector than fossil fuels — it is true both in the advanced, industrialized countries and the developing countries. Recent research on the United States economy shows that renewable energy creates 7.49 full-time-equivalent (FTE) jobs per \$1 million of spending, energy efficiency creates 7.72 FTE jobs per million dollars, and fossil fuels create only 2.65 FTE jobs per \$1 million spending.⁶⁵ Assuming the U.S. economy continues production at existing domestic content levels, some other recent estimates show that the direct (like producing and installing solar panels) plus indirect jobs (i.e., jobs along the supply chain) are at 5.9 jobs per \$1 million in spending for clean renewables relative to 4.4 jobs in the fossil fuels industry. Adding the induced jobs in the economy brings the job numbers to 10.2 jobs per \$1 million in spending for renewables versus 8.5 jobs in fossil fuels.⁶⁶ This study also shows that the full set of investments to achieve a net-zero emissions U.S. economy by 2050 will generate about 2.5 million jobs per year, considering jobs created through direct and indirect channels only. Over 4 million jobs per year will be generated if jobs generated through induced channels are also included. For other developed countries like Germany, estimates show that the economy can generate employment between 500 to 600 thousand jobs through large investments into renewable energy (RE), which in terms of net employment will reach around 150 thousand jobs in 2030.⁶⁷ Studies focusing on other European economies like the Dutch economy

⁶³ <https://www.politico.com/news/2020/06/14/energy-sector-diversity-racism-police-318463>, accessed Feb 1, 2021.

⁶⁴ UNIDO and GGGI. *Global Green Growth: Clean Energy Industry Investments and Expanding Job Opportunities* (Vienna and Seoul: United Nations Industrial Development Organization (UNIDO) and Global Green Growth Institute (GGGI), 2015), 23.

⁶⁵ Garrett-Peltier, Heidi. "Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model." *Economic Modelling* 61 (2017): 439-447.

⁶⁶ SDSN. *Zero Carbon Action Plan* (New York: Sustainable Development Solutions Network (SDSN), 2020).

⁶⁷ Lehr, Ulrike, Christian Lutz, and Dietmar Edler. "Green jobs? Economic impacts of renewable energy in Germany." *Energy Policy* 47 (2012): 358-364.

show that the transition to renewable energy would positively impact the economy by creating almost 50,000 jobs by 2030 and adding nearly 1 percent to the gross domestic product.⁶⁸

Analysis for the developing countries also portrays a similar picture regarding the potential of creating jobs in the renewable energy sector vis-à-vis the fossil fuel sector. This question assumes greater significance in the context of developing countries, especially for two reasons. First, with the developing economies projected to grow in the future, there will be an increasing demand for energy to support these growing economic activities.⁶⁹ It would become pertinent for sustainability to determine which path these economies choose — expanding the existing fossil fuel infrastructures or redirecting the economy towards a more sustainable, clean, renewable energy programme.⁷⁰ Secondly, as discussed earlier, some of these developing countries' recent growth experiences have shown that it was a lopsided growth, which failed to absorb the labour force in these economies and accentuated inequality. Therefore, it becomes essential to determine whether the path towards sustainability would further add to that bias.⁷¹ Fortunately, most research points to the fact that the potential to generate jobs is immense when it comes to clean, renewable energy.

In India, for example, the clean energy program can generate almost 271 jobs compared to the 129.1 jobs generated per million dollars of investment in the fossil fuel industry, which is an increase of 109.8 percent.⁷² Another study shows that Indonesia and South Africa would generate about 100 jobs and 70 jobs, respectively, by spending a similar amount on the clean energy programme.⁷³ For these two countries, net employment gains from the clean energy program are substantial and can be a net positive source of job creation. A similar exercise in China shows that spending a million dollars within the three categories of renewable energy sectors — solar, wind, and bioenergy — would generate almost 162.3 jobs compared to 96.7 jobs in the fossil fuel sector.⁷⁴ It generates almost twice as many jobs per dollar of expenditure than an equal amount of fossil fuel spending. Another study based on CGE modeling in China shows that 1TWh expansion of solar P.V. and wind power would create up to 45.1 thousand and 15.8 thousand direct and

⁶⁸ Bulavskaya, Tatyana, and Frédéric Reynès. "Job creation and economic impact of renewable energy in the Netherlands." *Renewable Energy* 119 (2018): 528-538.

⁶⁹ Sari, Ramazan, and Ugur Soytaş. "The growth of income and energy consumption in six developing countries." *Energy Policy* 35, no. 2 (2007): 889-898. Asafu-Adjaye, John. "The relationship between energy consumption, energy prices and economic growth: time series evidence from Asian developing countries." *Energy economics* 22, no. 6 (2000): 615-625.

⁷⁰ Kaygusuz, Kamil. "Energy for sustainable development: A case of developing countries." *Renewable and Sustainable Energy Reviews* 16, no. 2 (2012): 1116-1126.

⁷¹ Tejani, Sheba. "Jobless growth in India: an investigation." *Cambridge Journal of Economics* 40, no. 3 (2016): 843-870. Nayyar, Deepak. "Why employment matters: Reviving growth and reducing inequality." *International Labour Review* 153, no. 3 (2014): 351-364.

⁷² Pollin, Robert, and Shouvik Chakraborty. "An egalitarian green growth programme for India." *Economic and Political Weekly* (2015): 38-51.

⁷³ UNIDO and GGGI, "Global Green Growth".

⁷⁴ Chen, Ying. "Renewable energy investment and employment in China." *International Review of Applied Economics* 33, no. 3 (2019): 314-334.

indirect jobs, respectively.⁷⁵ Even in the Middle East, renewable sources of power generation, which is projected to be almost 60 percent by 2050, could generate about 180,000 direct jobs, which comes down to 155,000 direct jobs with more conservative assumptions on the domestic content. Indirect jobs across the supply chain account for almost 115,000 additional jobs.⁷⁶ Hence, most studies point to the massive job-generating potential of investments in the clean, green energy programme with the real-world experience to date indicating in the same direction.

According to the International Renewable Energy Agency (IRENA), the total jobs added in the renewable energy sector reached 11.5 million globally in 2019, led by solar P.V. generating some 3.8 million jobs, or a third of the total.⁷⁷ Currently, China is leading the globe accounting for more than 4.3 million jobs. The study also reports that 63 percent of all renewable jobs in 2019 were recorded in Asia. Many such jobs are in the agricultural supply chain due to biofuels' increasing use, particularly in countries like Malaysia, the Philippines, and Thailand. In the United States, over 2015-2019, the renewable energy sector added 177,000 jobs, which currently brings the total employment in the sector to 799,000 jobs.⁷⁸ However, according to IRENA, the number for the USA stands marginally low at 756,000 jobs.⁷⁹ The energy efficiency sector employed 2.38 million people in the design, installation, and manufacture of energy efficiency products and services.⁸⁰ These numbers show that the clean, green energy programme is also turning out to be an effective job-generating program across the globe. Notwithstanding the good job numbers, some genuine concerns about these jobs' inclusive quality in terms of the demographical composition and also the job quality in terms of benefits like pension, healthcare, and other social benefits have been raised. They are worth addressing in the next section.

The Demographics and Quality of Employment in the Clean Energy Sector

The energy sector jobs — a heavily gender-biased industry — are biased more towards men, and women are globally underrepresented in this industry. On average, women represent only 22 percent of full-time employees in the oil and gas industry.⁸¹ Only 20 percent of oil and gas extraction employees in the United States were women in 2013, while the number was 27 percent in Canada in 2006. In the coal industry, women's employment was much lower at about 9 percent

⁷⁵ Mu, Yaqian, Wenjia Cai, Samuel Evans, Can Wang, and David Roland-Holst. "Employment impacts of renewable energy policies in China: A decomposition analysis based on a CGE modeling framework." *Applied Energy* 210 (2018): 256-267.

⁷⁶ Van der Zwaan, Bob, Lachlan Cameron, and Tom Kober. "Potential for renewable energy jobs in the Middle East." *Energy Policy* 60 (2013): 296-304.

⁷⁷ IRENA. *Renewable Energy and Jobs - Annual Review 2020* (Abu Dhabi: International Renewable Energy Agency, 2020).

⁷⁸ National Association of State Energy Officials (NASEO) & Energy Futures Initiative (EFI). *2020 U.S. Energy and Employment Report* (Washington, D.C.: NASEO & EFI, 2020).

⁷⁹ IRENA, *Renewable Energy*.

⁸⁰ NASEO & EFI, *Report*.

⁸¹ IRENA. *Renewable Energy: A Gender Perspective* (Abu Dhabi: IRENA, 2019).

in the United States in 2013 and 12 percent in Canada in 2006.⁸² The bias is starker in the case of a developing country like India. Based on the National Sample Survey Office's (NSSO's) periodic labour force survey (PLFS), women's share in total employment in coal is less than 5 percent. In the oil and gas extraction industry, their share is less than 1 percent.

The history of women, especially in coal mining, portrays a picture of masculinization of work and labor sites by implementation of protective laws. It coincided with the “de-labourization” of women since the eighteenth century and was also concomitant with developing a social welfare system in the European countries. However, this did not percolate to the global south due to an increased informalization of the labour market. In essence, “on a longer term global scale, women were evicted from mining for a period of 150 to 200 years, to reappear in the present era, mainly in the Global South, but in the worst and most precarious conditions.”⁸³ It is not a coincidence. The low representation of female employment in the fossil fuel sector also coincides with the concept of petro-masculinity — a relationship that exists both technically and affectively, ideationally and materially between the fossil fuel sector, and white masculinity.⁸⁴

In comparison, the share of jobs for women in the renewable energy sector is better. Based on a survey, IRENA found that the percentage of women in the renewable energy workforce has recently increased to 32 percent.⁸⁵ According to other estimates, the share of female jobs in the clean, renewable sector for the US economy is around 21 percent.⁸⁶ Even for a developing country like India, the female representation in the renewable energy sector is about 19.0 percent.⁸⁷ Despite these promising numbers, much more needs to be done to make these jobs more inclusive. It requires a much broader initiative to formulate more socially progressive pro-women policies to increase these proportions further and promote women employees into more managerial and executive roles.⁸⁸ Zambia's energy policy can be an example that identifies gender as a primary component in energy access programmes and promotes women as active energy providers and entrepreneurs.⁸⁹ As Baruah notes, "women can gain optimal traction from RE(renewable energy) initiatives only within the context of wider socially progressive pro-women policies, as well as

⁸² Pearl-Martinez, Rebecca, and Jennie C. Stephens. "Toward a gender diverse workforce in the renewable energy transition." *Sustainability: Science, Practice and Policy* 12, no. 1 (2016): 8-15.

⁸³ Romano, Rossana Barragán, and Leda Papastefanaki. "Women and Gender in the Mines: Challenging Masculinity Through History: An Introduction." *International Review of Social History* 65, no. 2 (2020): 191-230.

⁸⁴ Daggett, Cara. "Petro-masculinity: fossil fuels and authoritarian desire." *Millennium* 47, no. 1 (2018): 25-44.

⁸⁵ IRENA, Renewable Energy.

⁸⁶ SDSN, Zero Carbon.

⁸⁷ Azad, R., & Chakraborty, S. A Policy Proposal for Green Jobs in India. APU, Centre for Sustainable Employment (Bangalore: Azim Premji University, 2018).

⁸⁸ Allison, Juliann Emmons, Kirin McCrory, and Ian Oxnevad. "Closing the renewable energy gender gap in the United States and Canada: The role of women's professional networking." *Energy Research & Social Science* 55 (2019): 35-45.

⁸⁹ Prebble, M., & Rojas, A. Energizing Equality: The importance of integrating gender equality principles in national energy policies and frameworks (Washington D.C.: IUCN Global Gender Office, 2017). Retrieved February 2, 2021, from <https://www.usaid.gov/sites/default/files/documents/1865/iucn-egi-energizing-equality-web.pdf>.

more transformative shifts in societal attitudes about gender roles. This is as true for developing countries and emerging economies as it is for industrialized nations”.⁹⁰

A related aspect that prevents gender participation in these renewable energy jobs is the lack of skills and gender-specific training opportunities (see Chapter 5). 41 percent of respondents from the IRENA survey cited lack of gender-specific training opportunities as a barrier to their entry into this labour market.⁹¹ These skill shortages could impede the process of inclusive transition, which targets to ensure equal opportunities for women, youth, and the marginalized. A primary survey designed to understand the skill gap for the Asian developing countries – India, Indonesia, Sri Lanka, and Vietnam — finds that reconsidering and replanning current skill levels are imperative to accommodate green growth policies in these countries.⁹² The study further observes that the skill development policies targeted at green jobs to be more compelling need to be part of a comprehensive national development plan, accompanied by purposive advocacy and adequate awareness plans. The problem is also real for the energy efficiency sector, even in European countries, where vocational education and training (VET) can play a transformative role in reducing carbon emissions and improving the buildings' energy efficiency.⁹³ These challenges are also evident in individual renewable energy industries like solar. Research points out a mismatch in the skill set due to what the industry demands and the education system offer. This crisis is more severe in developing countries than in developed ones.⁹⁴

The developing countries also have an added problem which is comparatively less in the advanced countries – the informal, unorganized labour market. Unlike the fossil fuel sector, the jobs generated in the renewable energy sector are placed more in the informal labour market than the formal ones. In India, almost 54 percent of the green jobs are in the unorganized sector, which is much higher than the 12.2 percent in the fossil fuel sector.⁹⁵ Employers in India have a significant tendency to hire workers as contractors. Then, the workers are not subjected to the same labor standards as provided by the Industrial Disputes Act of 1947.⁹⁶ More than 70 percent of the jobs in China's renewable energy sectors are estimated to be in the informal economy.⁹⁷ In Indonesia, the proportion of self-employed in total employment, which is usually reflective of the

⁹⁰ Baruah, Bipasha. "Renewable inequity? Women's employment in clean energy in industrialized, emerging and developing economies." In *Natural Resources Forum*, vol. 41, no. 1 (2017): 18-29, 27.

⁹¹ IRENA, *Renewable Energy*.

⁹² Maclean, R., Jagannathan, S., & Panth, B. *Education and Skills for Inclusive Growth, Green Jobs and the Greening of Economies in Asia* (Singapore: SpringerOpen, 2018).

⁹³ Clarke, Linda, Melahat Sahin-Dikmen, and Christopher Winch. "Overcoming diverse approaches to vocational education and training to combat climate change: the case of low energy construction in Europe." *Oxford Review of Education* 46, no. 5 (2020): 619-636.

⁹⁴ Lucas, Hugo, Stephanie Pinnington, and Luisa F. Cabeza. "Education and training gaps in the renewable energy sector." *Solar Energy* 173 (2018): 449-455.

⁹⁵ Azad & Chakraborty, "Policy Proposal".

⁹⁶ Jairaj, B., Deka, P., Martin, S., & Kumar, S. *Can renewable energy jobs help reduce poverty in india?* (Washington D.C.: World Resources Institute, 2017). Retrieved February 9, 2021, from <https://www.wri.org/publication/can-renewable-energy-jobs-help-reduce-poverty-india>.

⁹⁷ Chen, "Renewable in China".

unorganized sector, is more than 60 percent. It is as high as 91 percent in bioenergy, compared to only 22 percent in oil and natural gas.⁹⁸ The story is similar for jobs with benefits. Even in advanced countries like the USA, around 76 percent of workers employed in the fossil fuel-based sectors have health insurance, compared to 57 percent in the clean renewables. So, the trends are, in fact, clear. The informal job numbers or jobs without benefits go up with green employment relative to the fossil fuel sector until proper policies are formulated and enforced to ensure that these jobs are formalized with benefits and labour contracts. Examples from Bangladesh show that if policies are properly framed and implemented in the green energy program, it significantly improves the poor's livelihoods, especially the youth and women in the unorganized sector.⁹⁹

In the long-run, building a clean energy economy globally, instead of expanding the existing fossil-fuel-dominated energy system, will generate both significant opportunities and challenges for the economies in terms of the employment effects. The opportunities exist since there will be an overall net gain of employment by expanding the clean energy program. The challenges will be to encourage and support these workplaces to become increasingly organized and formalized. This expanding workforce should benefit from better quality jobs, higher and stable earnings, and other employment benefits like health insurance, pension, the right to form unions, and enhanced social security. Additionally, this transition process should also ensure inclusivity in gender, race, and other marginalized section of the society. Otherwise, this program's significant objective — a better livelihood for the workforce, as highlighted in SDG8, gets defeated. An organized workforce will, in turn, allow for higher productivity, higher earnings, and, thereby, a more rapidly growing clean energy sector for the global economy.

A Just Transition Programme

One cost of this transition away from the fossil fuel sector to the clean energy program is that the fossil fuel sector businesses might have to bear the brunt of this transition unless they transit to a cleaner, greener form of energy. Generally, the workers, primarily the aged and those at the lower end of the earnings distribution, bear the significant chunk of this brunt during a firm closure.¹⁰⁰ This transition, then, might be alarming in the current economic context. As discussed earlier, when the levels of inequality are already at historically unprecedented levels, both within and across the nation-state's geographical boundaries, it would be unfair for policymakers to burden

⁹⁸ UNIDO and GGGI, "Global Green Growth".

⁹⁹ Islam, M. S., A. M. H. R. Khan, S. Nasreen, F. Rabbi, and M. R. Islam. "Renewable energy: the key to achieving sustainable development of rural Bangladesh." *Journal of Chemical Engineering* 26 (2011): 9-15.

¹⁰⁰ Korkeamäki, Ossi, and Tomi Kyyrä. "A distributional analysis of earnings losses of displaced workers in an economic depression and recovery." *Oxford Bulletin of Economics and Statistics* 76, no. 4 (2014): 565-588. Morissette, R., Zhang, X., & Frenette, M. Earnings Losses of Displaced Workers: Canadian Evidence from a Large Administrative Database on Firm Closures and Mass Layoffs (Ottawa: Statistics Canada, 2007). Retrieved February 9, 2021, from https://epe.lac-bac.gc.ca/100/200/301/statcan/research_paper_analytical_11f0019-e/2007/291/11F0019MIE2006291.pdf.

the workers with further cost of this energy transition.¹⁰¹ In the recent past, the popularity of Donald Trump in the USA or Jair Bolsonaro in Brazil among the coal miners for promising to protect their jobs is an example of how the workers can be swayed away from environmental concerns once their livelihoods concerns are not adequately addressed. Hence, a strategy to protect the workers' interest in the fossil fuel industry also needs to be in place while pushing the energy transition agenda.

According to IRENA's REmap Case (a global roadmap to increase the share of renewable energy to 60 percent or more for a country's total final energy consumption (TFEC)), the fossil fuel industry would lose more than 7.4 million jobs globally by 2050.¹⁰² As discussed earlier, the same report suggests that more than 19.0 million jobs would be created in the clean, green energy program for a net gain of 11.6 million jobs. Nonetheless, the concern remains how those 7.4 million people losing their jobs can be reabsorbed back in the workforce to ensure a just transition. Along with the oil and gas extraction jobs and coal mining jobs, other ancillary industries will also get impacted in the process, and workers might lose their jobs. In the United States itself, the total number of direct employment in all the fossil fuel-related industries, including the ancillary industries, is at 2.5 million as of 2018, i.e., 1.7 percent of the U.S. labour force. Among all these industries, the largest employment source was gas stations, with 765,718 total employment, more than 30 percent of total employment, followed by oil and gas extraction with 636,449 jobs.¹⁰³

The plan for the path to just transition should cover the fossil fuel workers and communities on three grounds: (a) protecting the income of the workers for a specific time frame (possibly five years), retraining and relocation support for the workers, (b) guaranteeing the pension of the fossil fuel workers who would be retiring, and (c) a program to support the fossil-fuel dependent communities. In the United States, this program would cost around \$600 million per year for a twenty-year goal of achieving a 40 percent decline in emissions.¹⁰⁴ To reach a net-zero carbon economy by 2050, the cost estimate through government programs to support the fossil fuel workers in a more inclusive program is on an average more than \$3.0 billion per year, at a total cost of 100.8 billion dollars.¹⁰⁵ Along with these expenses, what is also required is a much broader legal geography 'JUST' framework approach.¹⁰⁶ This framework identifies "what justice is needed

¹⁰¹ Alvaredo, Facundo, Lucas Chancel, Thomas Piketty, Emmanuel Saez, and Gabriel Zucman. "Global inequality dynamics: New findings from WID. world." *American Economic Review* 107, no. 5 (2017): 404-09. Zucman, Gabriel. "Global wealth inequality." *Annual Review of Economics* 11 (2019): 109-138.

¹⁰² IRENA. *Global Energy Transformation: A Roadmap to 2050* (Abu Dhabi: International Renewable Energy Agency, 2018).

¹⁰³ SDSN, Zero Carbon.

¹⁰⁴ Pollin, Robert, and Brian Callaci. "The economics of just transition: a framework for supporting fossil fuel-dependent workers and communities in the United States." *Labor Studies Journal* 44, no. 2 (2019): 93-138.

¹⁰⁵ SDSN, Zero Carbon.

¹⁰⁶ Pai, S., Harrison, K., & Zerriffi, H. *A systematic review of the key elements of a just transition for fossil fuel workers* (Ottawa, CA: Smart Prosperity Institute, 2020).

and/or expected" by paying attention to various justice forms at a spatial scale (national/provincial/state, and or local) and over time (long-term, medium-term, short-term).

The importance of local communities' involvement also helps bring synergy between the just transition and environmental justice by active engagement and participation of all sections of the community — those who have already suffered due to the "dirty industry" should not suffer more during this transition.¹⁰⁷ The governments and policymakers across the world should see the just transition as an opportunity to align both the climate change goals and improve social justice and equality in these local economies and communities, thereby taking into account both the distributive and procedural justice.¹⁰⁸ In this context, the experience of the transition movement in Hunter Valley, in New South Wales, Australia, shows that "successful collaboration draws from local knowledge and skills to create a compelling vision that addresses local aspirations and deals with structural inequality and disadvantage".¹⁰⁹ Notwithstanding the dominant political and power dynamics in our society, policymakers should strive to democratize the process as much as possible. They should frame evidence-based policies that positively influence the decarbonization process by explicitly keeping in mind the affected population and ensuring strong sustainability.¹¹⁰ This dominance of the political dynamics is valid within an economy's geographical boundaries and across borders, reflecting the significance of justice and equity concerns in the context of global decarbonization and transition to a greener economy.¹¹¹

Concluding remarks

This chapter reviews the concepts of economic growth and decent work in a historical context. Capitalism created the condition for economic growth that we know in the last two centuries. The struggle for decent work has also originated in capitalism, and the working class has made great progress since the late 19th century. The Golden Age was a unique period when many countries have succeeded in pursuing both economic growth and decent work. But the later rise of neoliberalism has damaged those achievements, and we are living in a period of global stagnation and increasing inequality.

¹⁰⁷ Farrell, C. A Just Transition: Lessons Learned from the Environmental Justice Movement. *Duke Forum for Law & Social Change*, 4, (2012): 45-63.

¹⁰⁸ Piggot, G., Boyland, M., Down, A., & Torre, A. R. Realizing a just and equitable transition away from fossil fuels (Seattle, WA: Stockholm Environment Institute, 2019). Retrieved February 10, 2021, from <https://www.jstor.org/stable/pdf/resrep22996.pdf>.

¹⁰⁹ Evans, Geoff, and Liam Phelan. "Transition to a post-carbon society: Linking environmental justice and just transition discourses." *Energy Policy* 99 (2016): 329-339, 336.

¹¹⁰ Harrahill, K., & Douglas, O. Framework development for 'just transition' in coal producing jurisdictions. *Energy Policy*, 134, (2019): 1-11.

¹¹¹ Healy, Noel, and John Barry. "Politicizing energy justice and energy system transitions: Fossil fuel divestment and a "just transition"." *Energy policy* 108 (2017): 451-459.

Considering the urgency of climate change and global warming, any new proposal of economic growth needs to be based on green economy/clean energy. It also needs to consider the global labor division, environmental justice, and the quality of work.

Historically, the advanced industrialized countries formed a significant chunk of the fossil fuel users and the globe's primary carbon emitters. These countries were major importers of oil and gas. For instance, the total U.S. annual primary energy net imports generally increased in most years since the mid-1950s. They reached a record high in 2005, which was equal to about 30 percent of total U.S. energy consumption. Since 2005, the trends started reversing, and it eventually culminated in 2019, when the United States became a net total energy exporter for the first time since 1952.¹¹² Among the several factors, one important factor contributing to the lower dependence on fossil fuel within the US during this period was relocating the production process to the global south, especially in China, Vietnam, and other South Asian countries. With the poorer countries becoming the global production houses, the need for energy to produce commodities within the United States' geographical boundaries started to decline. Hence, in the process, the developing countries became major carbon emitters, and their share in the global emissions increased. Therefore, while accounting for the global energy transition, a just approach should consider the current per capita level of emissions (the flow) and account for the advanced countries' level of carbon emitted historically (stocks) and their energy dependence. Nonetheless, to accelerate the just transition process at the global level, the countries that continue to emit carbon should make financial transfers to net absorbers of carbon.¹¹³ The developed countries need to play a more prominent role in this since any successful execution of this energy transition at a global scale will require "a communicated and well-coordinated strategy, with close cooperation within and between countries."¹¹⁴

¹¹² <https://www.eia.gov/energyexplained/us-energy-facts/imports-and-exports.php>, accessed Feb 23, 2021.

¹¹³ United Nations. World Economic Situation and Prospects (New York: United Nations, 2020). Retrieved February 10, 2021, from https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/WESP2020_CH2.pdf. Azad, R., & Chakraborty, S. (2019). Balancing climate injustice: a proposal for global carbon tax. In S. Acar, & E. Yeldan, Handbook of Green Economy (Cambridge: Elsevier, 2019): 117-134.

¹¹⁴ United Nations, World Economic Situation and Prospects, 97.