Journal of Infrastructure, Policy and Development 2024, 8(14), 4766.
https://doi.org/10.24294/jipd4766

Article

Exploring the solution paths to India's economic problems from the perspective of Social Keynesian Economics

Wei Zhou[1], Marjorie Rola[1,*], Jiaxin Zhang[2]

[1] Lyceum of the Philippines, Manila 0900, Philippine
[2] Quanzhou Economic and Trade Vocational and Technical College, Quanzhou 362000, China
*** Corresponding author:** Marjorie Rola, marjorie.rola@lpu.edu.ph

CITATION

Zhou W, Rola M, Zhang J. (2024). Exploring the solution paths to India's economic problems from the perspective of Social Keynesian Economics. Journal of Infrastructure, Policy and Development. 8(14): 4766.
https://doi.org/10.24294/jipd4766

ARTICLE INFO

Received: 20 February 2024
Accepted: 9 April 2024
Available online: 18 November 2024

Abstract: This paper explores the path to solving India's economic problems from a Social Keynesian Economics perspective, analyzing the history, current status and prospects of India's economic development. India should formulate targeted social policies according to the stage of economic development and needs. Improve the institutional mechanism to stimulate the internal dynamics and innovative vitality of the main business entities. India can improve its economic structure and enhance the balance and sustainability of economic growth by accelerating the implementation of the "Make in India" program, strengthening infrastructure construction, supporting agricultural and rural development, and implementing education and health care reforms. Developing consumer credit and increasing consumer demand were also effective means of enhancing economic growth, but further transformation and innovation in the manufacturing sector needed to be promoted.

Keywords: Social Keynesianism; Indian economy; manufacturing; technology empowerment

1. Background of the study

India is one of the most populous countries in the world and the global impact of its economic development cannot be ignored. Understanding the history, current situation and prospects of India's economy can help us better understand India's national conditions, politics, society and culture, as well as India's relations and cooperation with other countries and regions. India is a diversified developing country whose economic development model and path are very different from that of China. A comparative study of the economic development of China and India can help us recognize the different effects and problems brought about by different systems, policies, strategies and choices, and thus provide certain reference and inspiration for China's economic reform and transformation. India is a market and partner full of potential and challenges, and its economic development has an important impact on China's economic and strategic interests. By studying India's economy, it can help us grasp India's economic opportunities and risks, seek economic cooperation and competition with India, and promote mutual benefits and win-win situations for the economies of China and India.

India's economic history can be traced back to the independence era, when it opted for a socialist-style planned economy model. However, in the 1990s, the Indian government began implementing economic reforms to transition to a market economy. This reform initiative has yielded significant results, as India's GDP growth rate has risen year after year, attracting investors and businesses from across

the globe. Today, India is one of the fastest growing economies in the world.

The rapid growth of the Indian economy is reflected in a number of areas. The first is the services sector, especially the IT industry and outsourcing. India has the largest software development team in the world, and many international companies outsource their operations to India. In addition, India has seen steady growth in manufacturing and agriculture. Industries such as automobiles, electronics and pharmaceuticals are important in the world. India is also the world's largest producer of spices and agricultural products such as tea, cotton and rice are highly competitive in the international market.

However, there are some challenges in India's economic development. The first is the problem of poverty. Despite India's relatively rapid economic growth, a large number of people still live below the poverty line. In addition, India's infrastructure is lagging behind, posing a constraint on economic development. The government is increasing investment in infrastructure to improve transportation, energy and urban construction. In addition, the quality of India's labor force and the uneven distribution of educational resources have also become bottlenecks to economic development. To address these problems, the Government of India has pursued a series of educational reforms and human resource development policies.

In the process of India's economic development, the cooperation and competition between China and India have become more and more intense. The two countries have huge space for cooperation in areas such as infrastructure construction, energy, manufacturing and information technology. At the same time, the two countries are also competitors in market competition. For example, in areas such as solar energy, telecommunications and high-speed rail, Chinese and Indian companies are competing for market share. Against this backdrop, China needs to gain a deeper understanding of the Indian market and formulate appropriate economic policies and strategies to ensure that it gains an advantage in competition in the Indian market.

In conclusion, the development of the Indian economy has an important impact on the global economy. An in-depth understanding of the history, current situation and prospects of the Indian economy will help us better grasp the cooperation and competition between China and India and realize mutual benefits and win-win situations. At the same time, a comparative study of the economic development of China and India can provide useful reference and inspiration for China's economic reform and transformation. In India, a land full of opportunities and challenges, China needs to pay close attention to the dynamics of its economic development, actively participate in the competition and cooperation in the Indian market, and jointly promote the prosperity and development of the global economy.

2. Social Keynesian Theory of Economics

2.1. Origins of Social Keynesian Economic Theory

The theory of Social Keynesian Economics is mainly inherited from institutional economics and New Keynesian Economics, which is a new theoretical development of Keynesianism after COVID-19.

Keynesian economics was put forward by the British economist John Maynard

Keynes in the 1930s, and his main masterpiece is "The General Theory of Employment, Interest and Money". Keynesian economics believes that in times of economic crises and depressions, the market mechanism cannot automatically achieve full employment, and it is necessary for the government to stimulate aggregate demand through expansionary fiscal and monetary policies to promote economic recovery and employment growth. Other representatives of Keynesian economics are Richard Kahn, John Hick, James Tobin and so on. The background of the birth of Keynesianism is that during the Great Depression, traditional economics could not explain and solve the problems of unemployment and deflation. For example, the Roosevelt New Deal in the United States was a successful practice of Keynesianism, which enabled the United States to rapidly reduce the unemployment rate and get out of the Great Depression.

New Keynesian Economics is a school of macroeconomics that emerged in the late 1970s, with Gregory Mankiw, David Romer, Olivier Blanchard, Joseph Stiglitz and other major representatives. New Keynesian Economics inherited the aggregate demand analysis of Keynesian economics, but also absorbed the theories of rational expectations, market clearing and natural rate assumption of neoclassical economics. The central contribution of New Keynesian Economics is to explain at the micro level why prices and wages are sticky, resulting in the market not being able to efficiently regulate supply and demand, which in turn causes economic fluctuations and unemployment. New Keynesian Economics argues that the government's fiscal and monetary policies are effective in the short run but ineffective in the long run, and therefore the government should flexibly adjust its policies according to changes in the economic cycle in order to achieve economic stability and growth. New Keynesian Economics arose mainly in response to the challenge to Keynesian economics posed by neoclassical economics and to explain the phenomenon of stagflation that emerged in the 1970s.

Social Keynesianism originated in China, and under the socialist market economic system, the role of the government is not only to regulate aggregate demand through fiscal and monetary policies, but also to guide aggregate supply through industrial and social policies, so as to realize high-quality economic development and social justice. The government's industrial policy should selectively support and cultivate strategic emerging industries with competitive advantages and innovation capabilities in accordance with the country's strategic objectives, while promoting the transformation and upgrading of traditional industries and the optimization of industrial structure. The Government's social policy should be based on the basic needs of the people, establishing and improving a social security system covering the whole population, including pension, medical care, education, housing and employment, while strengthening income redistribution, narrowing the gap between the rich and the poor, and raising the level of social welfare.

Institutional economics is a branch of economics that takes institutions as its object of study, and it examines the impact of institutions on economic behavior and economic development, and how economic development affects the evolution of institutions. The development of institutional economics can be divided into the following stages:

The first stage is from the end of the 19th century to the beginning of the 1930s, represented by the American economist Van Buren, who created the concept of institutions and used the "cumulative causation theory" to explain institutional change. Important works in this phase include Van Buren's The Theory of the Idle Class, Commons' Institutional Economics, and Mitchell's The Business Cycle.

The second stage is from the 1930s to the 1960s, represented by Clark, Bainham, Aris and others, who inherited and developed the theory of institutional change. Important works in this stage include Galbraith's Modern Industrial Society, Boulding's Theory of Economic Development, Heilbroner's Economic History and Institutional Economics, and so on.

The third stage is after the 1970s, represented by Coase, North and so on, forming the new institutional economics school, the economics of analyzing the system with the method of mainstream economics. Important works in this stage include Coase's The Nature of the Firm, Williamson's Markets and Hierarchies, and North's Institutions, Institutional Change and Economic Performance.

2.2. Background to the emergence of Social Keynesian Economic Theory

First, in 2020, the global outbreak of the COVID-19 pandemic had a significant impact on the economy and society of all countries. Governments worldwide implemented various preventive and control measures and stimulus policies to cope with the pandemic. China's strong policies during the pandemic prevented a significant economic downturn and even resulted in growth. Many scholars have considered the role of national policies.

Second, the development of digitization and artificial intelligence. after 2020, the development of digitization and artificial intelligence has also had an important impact on the theory and practice of economics. On the one hand, digitization and AI provide more data, methods and tools for the study of economics, making the analysis of economics more precise, in-depth and innovative. On the other hand, digitalization and artificial intelligence have also brought new changes and challenges to the structure and operation of the economy, such as platform economy, sharing economy, cybersecurity, data privacy, digital currency, etc., which also require the theory and policy of economics to be adjusted and updated accordingly.

Thirdly, environmental and climate change. after 2020, environmental and climate change has also become an important topic in economics. On the one hand, environmental and climate change poses serious threats and losses to economic growth and stability, such as extreme weather, natural disasters, and the decline of biodiversity, which has prompted research in economics to pay more attention to the issues of sustainable development and green transformation. On the other hand, changes in the environment and climate also provide new opportunities and impetus for economic innovation and development, such as clean energy, low-carbon technology, circular economy, etc., which also require corresponding support and guidance from the theories and policies of economics. The traditional reliance on companies to consciously comply with environmental issues is usually ineffective, and the birth of the ESG evaluation system has also made companies pay more attention to environmental protection and social responsibility. The Chinese

government has always been concerned about environmental issues, especially the "carbon peak" and "carbon neutral" proposed, but also from the national level to regulate enterprises.

2.3. Key elements of Social Keynesian Economics

In terms of institutional economics, economic development depends not only on economic factors, but also on social factors, such as culture, institutions and politics. Institutional economics believes that the economy is part of society, that economic behavior is influenced by social norms, values, beliefs, etc., and that economic development is constrained by social systems, political institutions, historical traditions, etc. Therefore, economic analysis cannot be detached from the social context, and the diversity and complexity of society should be taken into account Under the socialist market economic system, the state's macro-control not only affects the level of aggregate demand and aggregate supply through fiscal and monetary policies, but also affects the structure of aggregate demand and aggregate supply through social policies to achieve economic balance and coordination. Social Keynesian Economics considers two main effects, namely.

First, the determinants and effects of government behavior. Social Keynesian Economics considers government demand to be an important component of effective demand, but the motives, objectives, constraints and effects of government behavior are unclear, and need to be considered in terms of government budgets, debt, policies, institutions, public goods, and other factors, as well as the feedbacks and moderation of government behavior on the economy, society, and the environment.

Second, the determinants and effects of firm behavior. Social Keynesian Economics considers the demand for investment to be an important component of effective demand, but the motives, objectives, constraints and effects of firms' behavior are also unclear, and need to be considered in terms of the firms' costs, returns, risks, competition, innovation, size and other factors, as well as the feedbacks and adjustments that firms' behavior makes to output, employment, profits, taxes and so on.

The State's social policy should formulate and implement a series of social plans and social projects, such as housing policy, urban and rural development policy, population policy, cultural policy, etc., in a targeted manner, in accordance with the stage of development of the economy and the development needs of society, in order to regulate the relationship between supply and demand in society and to promote social harmony and progress.

Therefore, the national industrial policy should selectively support and cultivate industries with strategic significance and competitive advantages, such as high-tech industries, strategic emerging industries and modern service industries, according to the international competition pattern and domestic resource endowment, in order to improve the country's economic security and international status. The national industrial policy should give full play to the main role of enterprises, while strengthening the guiding role of the government, such as through the establishment of industrial funds, the establishment of industrial parks, and the promotion of cooperation between industry, academia and research institutes, etc., to incentivize

and support the technological innovation and management innovation of enterprises, so as to improve the economic and social benefits of enterprises.

Maintaining a reasonable abundance of liquidity, with the scale of social financing and money supply matching the expected targets for economic growth and price levels. We will give full play to the dual functions of the total and structural monetary policy tools, revitalize the stock and enhance its effectiveness, guide financial institutions to increase their support for scientific and technological innovation, green transformation, inclusive small and micro-enterprises, and the digital economy, and promote a steady decline in the comprehensive cost of financing in society. Improve the system and mechanism for the implementation of the "two unwavering" principle, and fully stimulate the internal dynamics and innovative vitality of various types of business entities. Deepen the implementation of state-owned enterprise reform and deepening and upgrading actions to enhance core functions and improve core competitiveness. Promote the development and growth of private enterprises, and implement a number of initiatives in the areas of market access, access to factors, fair law enforcement, and protection of rights and interests. Promote the development of small and medium-sized enterprises that specialize in specialized fields. It will accelerate the construction of a unified national market, strive to eliminate all forms of local protection and market segmentation, and effectively reduce logistics costs for society as a whole.

2.4. Differences between Social Keynesian and New Keynesian Economics

Social Keynesian Economics puts more emphasis on the macro-control of the state and can only be used in countries or governments where the government has a strong ability to regulate, and its instruments are strongly guided by supporting social policies in addition to the common fiscal and monetary policies. Examples include the rise and fall of the real estate industry and the rise of DJI drones and Huawei.

Social Keynesianism holds that public expenditure is government spending to provide public goods and services, which can affect effective demand by directly increasing government demand and indirectly stimulating consumption demand and investment demand, reflecting government intervention and regulation of the economy. Social welfare refers to the material and non-material benefits enjoyed by the members of the society, which can affect the consumption demand by improving the income level and quality of life of the members of the society, reflecting the pursuit and realization of fairness in the society. Government behaviour is determined by the government's maximization of social welfare, which is influenced by the government's budget, debt, policies, institutions, public goods and other factors, which affect the government's revenues, expenditures, debts, policies and so on.

Social Keynesian Economics is explained in mathematical expressions by the following simple model:

$$Y = C + I + G + (X - M)$$
$$C = a + b(Y - T) - cr + \delta P_c$$
$$I = d - er + \alpha P_i$$
$$G = f + gT + \epsilon P_g$$
$$X = F(e) + \beta P_x$$
$$M = 1 + mY - \gamma P_m$$
$$Y = f(Y, K, L, H, T, P)_t$$

where Y is real national income, C is consumption, I is investment, G is government expenditure, T is tax, r is real interest rate, e is independent investment, d is the sensitivity coefficient of investment demand to changes in interest rates, P is the price level, and P_i is the coefficient of the impact of industrial policy on investment, indicating the extent to which the government stimulates or supports investment and expenditure through the provision of tax incentives, subsidies, financial investment, credit support, technological innovation, and market access. P_x is the coefficient of industrial policy's impact on exports, indicating the extent to which the government stimulates or supports export revenues through the provision of tax incentives, subsidies, financial investment, credit support, technological innovation, market access, etc. P_t is the coefficient of industrial policy's impact on technological level, P_m is the coefficient of industrial policy's impact on imports, indicating the extent to which the government stimulates or supports export revenues through the provision of tax incentives, subsidies, financial investment, credit support, technological innovation, market access, etc. investment, credit support, technological innovation, market access, etc., the degree of inhibition or restriction of import expenditures by the government α, β, γ are positive constants, f is the production function, K is the capital stock, L is the labor force, and T is the technology level. Increasing the values of P_i, P_x, P_t, or decreasing the value of P_m increases investment, exports, production, and national income, and decreases imports. P_c is the coefficient of the impact of social policy on consumption, which indicates the extent to which the government stimulates or safeguards consumption expenditure by providing services such as education, health care, pensions, housing, and social security. P_g is the coefficient of the impact of social policy on government expenditure, δ, ϵ are positive constants, and H is human capital.

3. Status of economic problems in India

India is situated in the heart of the South Asian subcontinent, connecting Asia, Africa, and Europe. It has a strategic position as it controls the Indian Ocean Sea lanes. Additionally, India is a leading country in South Asia's economic aggregate, with a GDP of $3.17 trillion in 2021, ranking fifth in the world. The Indian government believes that the global economic governance system is dominated by Western countries, which exhibits rigidity and deep dysfunction. This makes it difficult to achieve the governance goals of stabilising global economic development and achieving win-win cooperation. The language used is clear, objective, and value-neutral, avoiding biased, emotional, figurative, or ornamental language. The sentence structure is simple and follows a logical flow of information with causal connections between statements. The text is free from grammatical errors, spelling

mistakes, and punctuation errors. No changes in content have been made to the original text. Although the relative weakness of the emerging global economic governance players, their operational inefficiency and governance gaps still exist, these problems are gradually being ameliorated. Therefore, India has decided to contribute its "Indian vision" to global economic governance, put forward its "Indian program" to improve the global economic governance system, and share its "Indian experience" to promote the practice of global economic governance, with the aim of promoting global economic governance. India will contribute its "Indian vision" to global economic governance, put forward its "Indian program" to improve the global economic governance system, and share its "Indian experience" to promote the practice of global economic governance. In the future, India will play an important role in the global economic governance system and lead the whole system in a good direction. Since Modi (2016) came to power, he has been committed to creating a more open market and a superior investment environment to attract overseas investment. As shown in **Figure 1**, India's savings rate is lower than the investment rate, suggesting that a large amount of India's investment may be dependent on foreign investment. At the same time, both India's savings rate and investment rate are much lower than China's, suggesting that the ability of investment to pull the economy forward is insufficient in the process of economic growth, leading to insufficient macroeconomic control and inadequate infrastructure development in the country.

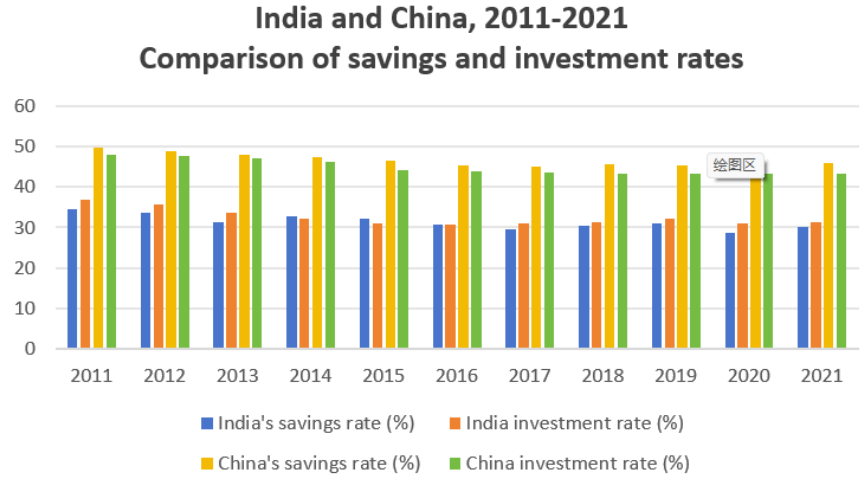

Figure 1. India and China, 2011–2021 comparison of savings and investment rates.

Its specific manifestations in the Indian economy are two:

First, economic growth was unbalanced and unsustainable. Although India's economic growth rate is higher than the world average, it is mainly dependent on the development of the services sector, while the development of areas such as manufacturing, agriculture and infrastructure is relatively lagging behind, resulting in an irrational and uncoordinated economic structure. At the same time, India's economic growth is also facing constraints and challenges in the areas of resources, environment and society, leading to a decline and instability in the quality and effectiveness of economic growth. Located in the core of the South Asian subcontinent, India is adjacent to or across the sea with neighboring countries,

connecting Asia, Africa and Europe, and controlling the key sea lanes in the Indian Ocean, which is strategically important. At the same time, as a leading country in South Asia in terms of economic output, India's GDP in 2021 totaled $3.17 trillion, ranking fifth in the world. India's strategic goal is to become a world power, in order to be among the world's strongest countries, the three points of domestic stability, neighboring security, and stable foreign relations are crucial, and rapid and stable economic growth is the basis for achieving the above goals. However, with one, two or three industries in a different order of conventional development, India's economic growth model is unique-nearly three decades, the service sector has been its main growth engine. Raghuram Rajan, former governor of India's central bank, advocated that India should stick to an export-oriented services-led development path rather than blindly mimic China's manufacturing model. He emphasized that liberalization of the services sector could help reduce inequality in the manufacturing economy and facilitate climate governance actions. At the same time, manufacturing development faces intense competition and there are diminishing economic returns. Wu and Krishna et al. (2017), on the other hand, compare the productivity levels of China and India from 1981–2011 and find that China focuses more on physical capital inputs than India, but India is stronger than China in terms of TFP growth. And in India's total factor productivity growth, the largest contributor is the service sector, with manufacturing contributing 29.2%. As for the manufacturing industry, due to India's domestic institutional environment is cumbersome and complex, resulting in the government tends to give priority to the development of capital-intensive manufacturing; however, the gap between capital-intensive manufacturing and labor-intensive manufacturing in terms of the pull effect on economic growth is relatively small, while the productivity level of labor-intensive manufacturing is relatively stable. However, labor-intensive manufacturing clearly provides more jobs and prevents excessive "hollowing out" of the manufacturing sector. According to the Centre for Monitoring India Economy (CMIE), India's manufacturing labor force, which was about 51 million in 2017, will decline to 27.3 million by 2021. In June 2022, employment declined by another 13 million to its lowest level since July 2021. The labor force participation rate of India's working age population (15–64 years) falls from 53% to 46% in the decade from 2011 to 2021. Since the 1990s, the Indian government has implemented a series of structural economic reforms aimed at promoting a vibrant domestic manufacturing sector, which in turn has led to stable and rapid economic growth. However, the strength of India's manufacturing sector after the reforms has been concentrated in capital-intensive and technology-intensive industries, such as pharmaceuticals and electronics. However, the role of these industries in driving economic growth has been more limited. Over the past few years, India's manufacturing value-added as a percentage of GDP has always hovered at 16%, excessive human resources quality requirements did not lead to a significant increase in the employment rate. In addition, the services sector has not been able to generate sustained and long-term economic output and employment growth for India.

The secondly, inadequate and inequitable social benefits. The Ernst & Young Infrastructure Report 2022 argues that despite the large infrastructure investments made by the Government of India, this may only cover the infrastructure deficit

rather than create space for future growth. Although India's social welfare has improved, it still falls below the world average, and significant disparities and inequalities exist between urban and rural areas, regions, classes, and genders. Additionally, India's social welfare system faces challenges in terms of funding, management, and supervision, resulting in inadequate and unreliable coverage and effectiveness of social welfare. Using 2020 as an example, India's per capita social welfare expenditure is $139, which is only half of the world average of $274. Additionally, India's social welfare expenditure as a percentage of GDP is lower than the world average, with only 1.7% of GDP allocated to social welfare in 2020 compared to the world average of 5.4%. However, India's urban population benefits from higher levels of social welfare compared to its rural population. The National Bureau of Statistics of India reports that the literacy rate for India's urban population in 2020 is expected to be 85%, while the rural population is expected to be 66%. In 2020, health insurance coverage was higher for the urban population (78%) than for the rural population (44%). Additionally, there is a significant disparity in the level of social welfare among different sections of the Indian population. A study conducted by Azim Premji University, an Indian think tank, reveals that in 2020, the top 10% of India's population will receive 40% of the total social welfare expenditure, while the bottom 10% will receive only 5%. These findings suggest a significant disparity between the rich and poor in India that permeates all aspects of society.

4. Social Keynesian Economics solution path

First, increase public expenditure and expand public investment. Public expenditure is an important component of effective demand, which can be influenced by directly increasing government demand and indirectly stimulating consumption demand and investment demand, reflecting government intervention and regulation of the economy. According to Keynes's theory of the multiplier effect, an increase in public expenditure leads to an increase in national income, which in turn leads to an increase in consumption, thus creating a positive cycle. In mathematical expressions, assuming that the marginal propensity to consume is c, the marginal propensity to tax is t, and the increase in public expenditure is ΔG, the increase in national income is.

$$\Delta Y = \frac{1}{1 - C(1 - t)} \times \Delta G$$

Increase in consumption as,

$$\Delta C = c(1 - t) \times \Delta Y = c \times \frac{1}{1 - C(1 - t)} \times \Delta G$$

According to the World Bank, India's GDP in 2022 will be $3.1 trillion, public expenditure as a percentage of GDP will be 28.1%, and the growth rate of public expenditure will be 9.5%. According to the [National Bureau of Statistics], India's marginal propensity to consume in 2022 is 0.7 and marginal propensity to tax is 0.15. Under my program, I recommend that the Indian government increase public spending by 1% of GDP, or $31 billion, in areas such as infrastructure development,

agricultural and rural development, education, and healthcare reform.

According to Keynes' theory of the multiplier effect, an increase in public spending leads to an increase in national income, which in turn leads to an increase in consumption, thus creating a positive cycle. The unit billions of dollars is obtained by substituting the data:

$$\Delta Y = \frac{1}{1 - C(1-t)} \times \Delta G = \frac{1}{1 - 0.7(1 - 0.15)} \times 310 = 1550$$
$$\Delta C = 0.7 \times (1 - 0.15) \times 1550 = 926.25$$

It can be seen that an increase in public expenditure would lead to an increase in national income of $155 billion and an increase in consumption of $92,625 million, thus expanding effective demand. At the same time, public expenditure as a percentage of GDP would increase to 29.1% and the growth rate of public expenditure would increase to 10.5%.

This can be achieved by accelerating the implementation of the "Make in India" initiative, strengthening infrastructure development, supporting agricultural and rural development, and implementing education and health reforms. This would improve the structure of India's economy and enhance the balance and sustainability of economic growth. For example, in 2022, the Government of India launched a $1.35 trillion infrastructure investment plan aimed at upgrading India's transportation, energy, water resources, communications and other sectors to promote economic growth and job creation.

Secondly, consumer credit should be developed to increase consumer demand. Consumer credit refers to loans provided by financial institutions or other organizations to consumers for the purchase of consumer goods or services, which can expand effective demand by increasing consumers' purchasing power and increasing their consumption demand. First of all, consumer credit is a kind of loan provided to individuals for the purpose of consumption, usually with an amount of less than 200,000 yuan. Consumer loans can help consumers meet diversified consumption needs, release consumption potential, drive the expansion of the supply of goods and services, promote internal circulation, and help accelerate economic recovery. In Keynesian economic theory, this kind of stimulus is called the "multiplier effect", that is, in times of economic depression, the government increases public expenditure, so that national income increases, resulting in the expansion of aggregate demand, thus promoting enterprise reproduction, employment and consumption, thus forming a virtuous cycle.

Secondly, the consumer lending market in India is still in the developmental stage, and the popularity and penetration of consumer lending is low due to factors such as the imperfect construction of the credit system, low consumer credit awareness, and high risk control costs. According to the World Bank, in 2019, India's consumer price index (CPI) growth rate is 3.4%, lower than the target level of 5%; India's private consumption expenditure is $2.1 trillion, accounting for 59.3% of GDP, lower than that of China's 64.9% and that of the United States' 68.1%. This shows that India's consumer demand still has more room for improvement, and a reasonable increase in consumer loans is conducive to stimulating consumption potential and boosting economic growth.

Finally, how to set the scale, interest rate and life span of consumer loans needs to consider various factors. The scale of consumer loans should be determined according to the income level and consumption demand of consumers, and should not exceed the solvency of consumers, nor should it be too low to affect the consumption power of consumers; the interest rate of consumer loans should be determined according to the supply and demand situation of the market and the level of risk, and should not be too high to increase the burden of consumers. The interest rate on consumer loans should be determined according to the supply and demand situation in the market and the level of risk, and should not be too high to increase the burden on consumers, nor too low to affect the sustainability of consumer loans; the duration of consumer loans should be determined according to the consumer's consumption preferences and the social benefits of consumer loans, and should not be too long to slow down the consumer's decision-making process, or too short to reduce consumer satisfaction.

Considering the economic data in 2022 India has a GDP of $2.94 trillion, total retail sales of consumer goods of $0.8 trillion, consumer finance penetration of 11%, and consumer credit balance of $0.09 trillion. The average consumer loan interest rate in 2022 India 2022 is 18%, the average consumer loan tenure is 9 months, and the average consumer loan amount is 0.01 million dollars. 2022 India's Consumer Price Index (CPI) 2022 Consumer loans in India are mainly used in education, healthcare, travel, renovation, and automobiles, with education and healthcare accounting for a relatively high proportion, at 25% and 20%, respectively. 2022 India's per capita disposable income in urban areas is $1,800, and in rural areas is $700, with an urban-rural The income gap is 2.6 times. India's personal credit reporting system covers 400 million people in 2022, of which 60% are creditworthy.

Based on the above data, calculate the size, interest rate and tenure of consumer loans granted in India:

$$S = \beta \times \text{GAP-}\gamma \times \text{DEF} + \delta \times \text{MPR}$$
$$S = \alpha \times \text{GDP}$$

where S is the size of consumer lending, GDP is the Gross Domestic Product of India, α is the constraint, i.e., the share of consumer lending in total GDP. GAP is the consumer demand gap in India, DEF is the fiscal deficit in India, MPR is the benchmark interest rate of the RBI in India, and β, γ, and δ are the parameters indicating the extent to which the different factors have an impact on the size of consumer lending.

Fiscal, monetary, industrial and social policies work together to guide the transformation of the manufacturing sector.

Increase financial support for the manufacturing sector, including tax incentives, subsidies and financial investment, in order to reduce the cost of manufacturing, increase the profitability of manufacturing, attract more investors to the manufacturing sector, and expand the scale and quality of the manufacturing sector. For example, to further consolidate the policies of the "Make in India" program, to provide a large number of jobs or scientific and technological innovation enterprises to implement the tax incentives of three exemptions and three halves or five exemptions and five halves, to provide low-interest loans and credit guarantees

for the manufacturing industry, to provide infrastructure and technical support for the manufacturing industry, and so on. Give full play to India's digital technology and software technology, the formation of Mumbai, Calcutta, Madrid and other city clusters, accelerate the digital technology empowerment, and comprehensively promote intelligent manufacturing. Accelerate the in-depth integration of information technology and manufacturing, promote the digital transformation of production equipment, promote the application of intelligent equipment and software, promote the construction of digital workshops and intelligent factories, and improve the level of intelligence and production efficiency of the manufacturing industry.

Increase financial expenditure on infrastructure, including transportation, energy, communications and water conservancy, in order to improve the production conditions of the manufacturing industry, increase the efficiency of transportation for the manufacturing industry, reduce the logistics costs of the manufacturing industry, and enhance the competitiveness of the manufacturing industry. Further consolidate the basis of the policies of the "Sagarmala" and "Bharatmara" projects, issue targeted national bonds and local government special bonds, and build ports, highways, railroads, bridges, etc., to connect regions and countries, and to facilitate the flow of goods and people.

Increase fiscal spending on education, science and technology, including schools, universities, research institutes, laboratories, etc., in order to improve the human capital of the manufacturing sector, develop skilled manpower in the manufacturing sector, promote innovation in the manufacturing sector, and increase the value-added of the manufacturing sector and its international reach. Policies such as "Skill India" and "Digital India" projects are implemented to provide education and training for the manufacturing industry, digitalization and intelligent solutions for the manufacturing industry, intellectual property rights protection for the manufacturing industry and a platform for international cooperation. As early as 2014, India's Modi government launched the "Digital India" strategy. Despite the impact of the new crown epidemic, after nearly 10 years of development, India's digital economy has achieved remarkable results. Digital infrastructure has been improved, the digital transformation of industries has been steadily promoted, and the innovation capacity of digital technology has been continuously enhanced, which have had a positive impact on India's economic growth.

Establishing an innovation system for the manufacturing industry, including strengthening investment in R&D in the manufacturing industry, building an innovation platform for the manufacturing industry, fostering innovative enterprises in the manufacturing industry, and incentivizing innovative talents in the manufacturing industry, in order to improve the innovation capacity of the manufacturing industry, promote technological progress in the manufacturing industry, and increase the added value and international influence of the manufacturing industry. To further strengthen the implementation of the policies of the "Innovate India" program, to provide the manufacturing industry with R & D funding, tax incentives, intellectual property rights protection and other support for the manufacturing industry, to provide the manufacturing industry with innovation incubators, gas pedals, alliances and other platforms for the manufacturing industry, and to provide the manufacturing industry with innovation incentives, evaluations,

demonstrations and other incentives. Deb and Ray (2013) empirically demonstrated that the development of manufacturing industry varies widely across Indian states and technological advancement is the most important pull factor for the growth of manufacturing sector.

Strongly support scientific and technological innovation in the manufacturing industry, increase investment in research and development, improve the rate of conversion of scientific and technological achievements, promote key technological breakthroughs and industrialization and application, optimize the industrial structure, develop high-end manufacturing industries, and improve the added value of industries and international competitiveness. Efforts will be made to develop key areas, including new-generation information technology, high-end CNC machine tools and. Robots, aerospace equipment, marine engineering equipment and high-tech ships, advanced rail transportation equipment, energy-saving and new energy vehicles, electric power equipment, agricultural equipment, new materials and biomedicine, etc., in order to enhance the innovation capability and quality level of manufacturing industry. Promote the networked synergy of the industrial chain supply chain, promote the development of "chain network synergy" between the industrial Internet and key industrial chains, strengthen the digital collaboration of the upstream and downstream industrial chains, improve the digital management of the supply chain and resource sharing, build a smart industrial chain supply chain, and improve the effectiveness of the manufacturing industry's synergy and its ability to cope with risks.

5. Reach a verdict

From the above article, we can see that India has made many efforts to transform its manufacturing sector and has achieved remarkable results in digital infrastructure, innovation systems, and scientific and technological research and development. However, in-depth reforms and policy guidance at multiple levels are still needed to translate these results into actual economic development.

First, India needs to further optimize its fiscal policy and increase its support for the manufacturing sector. This includes reducing the cost of manufacturing, improving the profitability of manufacturing, attracting more investors into manufacturing, and expanding the scale and quality of manufacturing. At the same time, it is also necessary to strengthen the financial expenditure on infrastructure, improve the production conditions of the manufacturing industry, improve the transportation efficiency of the manufacturing industry, reduce the logistics costs of the manufacturing industry and enhance the competitiveness of the manufacturing industry.

Secondly, India needs to increase its financial expenditure on education and science and technology, improve the human capital of the manufacturing industry, cultivate technical talents in the manufacturing industry, and promote the innovative development of the manufacturing industry. In addition, it needs to establish a manufacturing innovation system, improve the innovation capacity of the manufacturing industry, and promote the technological progress of the manufacturing industry.

Finally, India needs to strongly support scientific and technological innovation in the manufacturing industry, increase investment in research and development, improve the rate of conversion of scientific and technological achievements, and promote key technological breakthroughs and industrialization and application. At the same time, it also needs to optimize the industrial structure, develop high-end manufacturing industry, and improve the value-added of industry and international competitiveness.

In general, India has achieved certain results in the transformation of the manufacturing industry, but it still needs to carry out in-depth reform and investment in fiscal policy, science and technology innovation, education and training and many other areas. Only in this way, India's manufacturing industry can truly realize the transformation, so as to promote the sustainable development of the Indian economy.

In short, although the road of transformation of Indian manufacturing industry is full of challenges, but in the process of fully tapping the domestic potential and grasping the international opportunities, India is expected to achieve sustained, healthy and rapid economic development. Let us look forward to the Indian manufacturing industry in the future to achieve more brilliant achievements.

Author contributions: Conceptualization, WZ and MR; methodology, WZ; software, WZ; validation, WZ, MR and JZ; formal analysis, WZ; investigation, WZ; resources, JZ; data curation, JZ; writing—original draft preparation, WZ; writing—review and editing, MR; visualization, WZ; supervision, MR; project administration, MR; funding acquisition, MR. All authors have read and agreed to the published version of the manuscript.

Conflict of interest: The authors declare no conflict of interest.

References

Deb, A. K., & Ray, S. C. (2013). Economic Reforms and Total Factor Productivity Growth of Indian Manufacturing: An Inter-State Analysis. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2242366

Ernast & Young. (2024). Available online: https://www.ey.com/en_in/infrastructure (accessed on 16 December 2023).

Li, L. (2022). India's Foreign Investment Policy Adjustment in China and China's Response Strategy. Research on Indian Ocean Economies. (02): 134-150.

Tang, X. (2023). A study on the economic growth contribution of manufacturing industry in India. Yunnan University of Finance and Economics.

Yang, W., Lai, S. (2022). India's Perception of Global Economic Governance and Policy Orientation. International Studies. (06): 79-99.

Yin, R. (2022). Development Characteristics, Challenges and Implications for China's Digital Economy in India. South Asian Studies Quarterly. (02):113-134.