

The Impact of Labor Force on the Economy

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Abstract. The labor force is the core element driving economic growth. Its quantity, quality and mobility directly determine the vitality of economy. The topic of the research paper is to analyze various aspects that affect the labor force and the corresponding policies for alleviating regarding issues relating to the labor force. The research method of this paper is analyzing previous scholars' research on labor force through macroeconomic concept and practical cases, and study the significance, feasibility and improvements on policies. This paper introduces and points out the characteristic structure and development of Chinese economy. Then this study analyzes the impact of quantity, quality and mobility of labor force on economy, and emphasized that the quality of the labor force, specifically the level of education, is the core factor influencing economic growth. The aim is to strengthen the understanding that labor is a significant driving force for economic growth. Based on the experiences of labor forces in various countries and combining the characteristic of China's labor force to provide a foundation on policy formulation. Finally, it offers a reference for other countries to solve global issues such as aging population.

Keywords: Labor force, labor market, economics

1. Introduction

Since the implementation of the reform and opening-up policy in China in 1978, China's economy has achieved rapid development. In recent years, the characteristics of China labor force has shown new trends. According to data from National Bureau of Statistics of China, the natural population growth rate in China decreased from 16.61 percent in 1988 to -1.48 percent in 2023, proving the role of the demographic dividend will continue to decline and the economy needs to undergo rapid transformation. Similarly, the phenomenon of aging population in China is also intensifying. Some scholars predicted that even with the implementation of the policy allowing for second and third children, China would become an aged society by 2022 and evolve into a super-aged society by 2035 [1]. An aging population will lead to a reduction in future labor force scale and may also cause labor shortage due to low working-age population and labor supply. In the long term, this will slow down the economic growth rate in China. Based on the data from National Bureau of Statistics of China, the percentage taken up by working age population in China which is people between 15 years old and 64 years old decreases gradually and continuously from 74.5 percent in 2010 to 68.3 percent in 2023. Despite the decreasing trend in China working-age population, the total quantity also remains relatively large providing sufficient time for China to carry out labor force

transformation, shifting from quantity to quality. Above all, the aging of the labor force and the decline in the natural population growth rate will have a negative impact on China's future labor market and economic growth potential. Insufficient labor force will lead to a lack of economic development momentum, and without a sufficient labor force to support the manufacturing, innovation and development of industries.

In addition, the mobility of labor force in China shows a trend of urbanization. Some researchers analyzed the population mobility through the 7th Population Census Data in China. They pointed out that even though a large number of people have migrated to eastern regions and mega-cities, issues related to education, medical care, and other basic public services persist due to household registration regulation. Therefore, local governments should introduce policies regarding the rapid household registration settlement for migrant workers and also help workers to gain social security. Then promote the social integration of migrant labor population effectively [2].

In the era of technological development, the phenomenon of skills mismatch is also emerging. Many universities are currently using textbooks that were published ten or twenty years ago. The skills acquired by universities students do not align with the requirement of enterprises. The number of colleges graduates each year is continuously increasing. Despite this, there are still a large number of job vacancies in high-technology enterprises due to the lack of skills and creativity which college students have. Skills mismatch is a severe structural issue. If government does not promptly implement policies for adjustment, it will lead to economic inefficiency, excessive income gaps and other economic issues.

In the world, the birth rate in the world population is continuously decreasing. According to the data from the World Bank, in 1987, the birth rate is approximately 28 per 1000 people. However, in 2023, this figure dropped to 16 per 1000 people. The decreasing trend in birth rate may continue indefinitely due to the increase in the cost of raising children and the improvement in the average level of education. Low birth rate will lead to future labor shortage and impede economic development, also strengthening aging population.

To promote economic growth, many countries increased investment on education to improve the quality of labor. According to the data from the World Bank, world tertiary school enrollment shows a rapid upward trend, changing from 10 percent in 1970 to 43 percent in 2023. Higher education level and higher labor quality can improve the development of high-tech industries, therefore contribute to economic growth.

The research method of this paper is literature review method. Some researchers prove that Literature Review Method is a foundation method for all types of research. It can lay the groundwork for advancing knowledge, establish framework for guiding policies and real-world practices [3]. The significance of this research topic lies in first enhancing the understanding of the impact of labor force on the economy, secondly in the combination of relevant policies implemented by various countries regarding the labor force with the characteristics of China's own labor force, providing analysis and suggestions for China's future policies related to the labor force.

The structure of this paper consists of abstract, introduction, the impact of the quantity of the labor force on the economy, the impact of the quality of the labor force on the economy, the impact of the mobility of the labor force on the economy and the conclusion.

2. The impact of the quantity of the labor force on the economy

2.1. Demographic dividends

After 1980, China entered the period of reform and opening up. In this period, China's manufacturing industries have developed rapidly. Due to the implementation of the family planning policy, China's population has been controlled and has been steadily increasing, which has created a demographic dividend for the country. The size and structure of the population are a very important factor in promoting economic growth. China's manufacturing cost advantage promotes economic growth via the large labor force [4]. Many companies in manufacturing industries are labor-intensive companies. A large labor supply reduced labor costs for companies, further enhancing the competitive advantage of the manufacturing industry and enabling China to become a major manufacturing country rapidly.

However, low labor cost and comparative advantage cannot fit the sustainable economic growth in China. Nowadays, China's comparative advantage is becoming decreasingly obvious due to a more educated, aging population [5]. The decline in China's natural population growth rate also indicates that the population dividend will become increasingly. The policy on labor force in China should adjust from demographic dividend to education dividend. Some researchers found that in the process of development, any country will undergo a demographic transition. A high proportion of the working-age population does not necessarily guarantee faster economic growth. In contrast, changes in the quality of labor force may be more important than an increase in the number of the working-age population [6]. For developing countries with large populations, demographic dividend is an important factor in promoting economic development. However, for long-term and sustainable development, it is necessary to upgrade and transform industries, increase investment in high-tech sectors, promote automation in labor-intensive industries, and place a greater emphasis on quality demands.

2.2. The risk of labor shortage

Labor shortage is a common and serious labor issue. An aging population, low birth rate and high net emigration may lead to labor shortage. For companies, low labor supply will lead to insufficient production resources, resulting in inability to produce reduced output and profits, or even bankruptcy and closure. For countries, labor shortage caused by low labor supply will lead to inflation. The increase in human resource costs forces enterprises to raise prices in order to maintain profits. This eventually leads to rising prices, inflation, a loss of competitive advantage in international trade, and may even result in a trade deficit. Meanwhile, labor shortage decreases the output of the country, which may influence the Gross Domestic Product (GDP) of this country and decreases the rate of economic growth rapidly. Moreover, inflation caused by the shortage of labor force may widen the gap between the rich and the poor, increase the number of people in absolute poverty, and lead to a decline in the average living standard.

Aging population and low birth rate in Japan cause labor shortage to pose a threat to Japan's economic development. To alleviate labor shortage, Japanese government introduce Womenomics and Migrant Workers Policy. Womenomics is the concept proposed by Japanese strategic analysts in 1999. It advocates empowering women and creating a more favorable and equal workplace environment for them. The aim is to increase the participation rate of female labor force, enhance the number of female management position, activate the female potential, and better utilize the potential human resources to promote economic growth. Based on World Bank Data, the proportion

of female employment to population ratio increased from 46.1 percent in 2012 to 53.6 percent in 2023. Despite this, some researchers claimed that this policy do not have a significant impact on the labor shortage condition in Japan [7].

In 2012, Japan implemented the policy which is introduction of the Points-based preferential treatment for highly skilled foreign professionals in immigration procedure to reduce labor shortage. Some researchers found that immigration policies will fail to ease labor and skill shortages without concurrent transformations to employment and training practices [8]. Above all, immigration policies should introduce talents who can address the shortage of skills and providing technical training for immigrants would be beneficial for Japan. For instance, some immigrants could receive training in children's education, thereby alleviating the parenting pressure on Japanese women and better promoting Japan's economic potential.

3. The impact of the quality of the labor force on the economy

3.1. Improvement in education level

The quality of labor force is the important factor which directly influences economic growth. Education is the key to a country's economic growth. Through education, workers acquire skills, which improve their work efficiency, increase output for enterprises, and raise the per capita and national real GDP. Some scholars found that education level is of vital importance to the economic growth of Indonesia through the educational data of Indonesia [9].

The improvement of the average educational level of a nation lays the foundation for its long-term sustainable development. For low skilled workers, education can enable them to acquire basic skills and livelihood skills, improve their living standards, and reduce the gap between poor and rich. For high-skilled talents, education can cultivate their innovation capabilities and enhance the country's technology in core and supporting fields, such as developing chips and artificial intelligence. Therefor improving the country's technological level and increasing economic efficiency, promoting economic growth. Some researchers have found that improving the quality of school education can bring about strong long-term economic benefits. There is also evidence showing that increasing the skill level of the population will lead to a higher growth rate [10].

China is currently in the stage of industrial transformation. In China's 15-16th Five-Year Plan, it was mentioned to enhance human capital, improve the education and training system, improve the quality of the labor force, and cultivate high-quality talents. Moreover, China should also increase its investment in healthcare. According to some scholars, both health levels and educational levels have a significant positive impact on the economy. An improvement in medical standards can boost people's enthusiasm, therefore, promoting national output and economic growth [11].

3.2. Skills mismatch

Skill mismatches essentially refer to the imbalance in the skill dimension between the supply of labor and the requirement for positions. The knowledge, abilities and experience that workers have acquired do not match the requirements of the positions, and it is not merely a shortage of labor. Under-qualifications, over-qualifications, skill type mismatch, geographical mismatch are the main types of skill mismatch. Under-qualifications is the workers do not have sufficient knowledge, abilities and skills to complete the tasks. However, due to the severe shortage of positions, only those with low educational qualifications or low skills can fill the vacancies. In the short term, the vacancy is filled, and the production process is not interrupted. However, in the long term, this will

lead to various problems such as product quality, work efficiency, and safety. Overqualifications occur when the skills of the workers are higher than the actual requirements of the positions. For instance, students with a bachelor's degree in computer science may go to work on assembly line with low requirements and skills after graduation. In the short term, higher skilled graduates will increase the overall output and efficiency. Despite this, in the long term, highly skilled graduates will experience wages, low job satisfaction, high turnover rates, leading to social conflicts, therefore, slow down the rate of economic growth. At the same time, educational resources are wasted, and the knowledge and skills acquired during university studies not put into practical use. Skill type mismatch is a situation where the skills of the workers do not match the requirements of the job positions.

Currently, the general environment is unfavorable for students with liberal arts backgrounds. Many liberal arts students are seeking jobs or are about to take up jobs unrelated to their majors, such as marketing, and are thus entering new professional fields. This results in the failure to utilize the professional skills of the workers, the waste of educational resources, and the occupation of students' undergraduate study time. For companies, the cost of training increases, and the overall work efficiency declines, ultimately leading to slower economic growth. Geographical mismatch refers to the situation where certain regions, such as some new first-tier cities, may require a large number of highly skilled professionals, but these individuals may be concentrated in other regions, resulting in job vacancies that cannot be filled in the short-term. This may lead to structural unemployment or a shortage of human resources, thereby slowing down economic growth.

Based on the data from Chinese 4-Year College Graduates' Employment Annual Report in 2023, there is still a mismatch between individual job expectations and job demands. Currently, China economy is in a transitional phase. With an increase in the number of under graduation graduates and a greater pursuit of better employment prospects and career development, the number of people choosing to pursue postgraduate studies to delay employment is on the rising trend. At the same time, the desire to take civil service or enter the public sector is strengthening, leading to intensified competition. Many enterprises suffer from a shortage of positions because the salaries offered do not meet the expectations of graduates. In the high-tech industry, although there are a large number of applicants, the positions require high-level skills and innovation capabilities. Most recent graduates only possess skills but lack the ability for innovation, resulting in the persistent presence of job vacancies.

Some researchers have put forward suggestions for addressing the issue of skill mismatch. Firstly, universities should optimize the major settings and reasonably plan the enrollment scale. Secondly, universities need to emphasize clarifying the training goals for talents [12]. Moreover, the enrollment trend in universities in China is to place emphasis on science students and to offer more courses related to key and strategic emerging industries such as artificial intelligence and automation. Therefore, in order to prevent skills mismatch that could lead to unemployed graduates among liberal arts students, universities can offer interdisciplinary programs or dual degrees, providing more job opportunities for liberal arts students.

4. The impact of labor mobility on the economy

4.1. Urban-rural mobility

Based on World Bank Data, the proportion of urban population in China has gradually increased from 18 percent in 1978 to 66 percent in 2023. Urbanization provides sufficient labor resources for first-tier cities such as Shenzhen, and Shanghai. These cities are the economic centers of China.

They require a large number of highly skilled innovative talents to drive economic growth, thereby enabling the relatively wealthy areas to lead the less affluent regions and promote the overall economic development of the country. However, some scholars found that although urbanization can increase the rate of economic growth, the low educational level of rural labor force actually has a counter-effect on economic growth [13]. They cannot fill the job vacancies which need high-skilled or high-educational level workers. China can first enhance the educational level in rural areas, such as strengthening implementation of nine-year compulsory education and improving the overall educational standards. Then, it can increase loans and subsidies for students or workers from rural areas who go to cities for study and work. Moreover, different regulations should be set based on the demand for the labor force in each city.

4.2. International migration

In America, there is a strict immigration H-1B Visa which helps enterprises in America to recruit highly skilled foreign workers. Some researcher found that many American firms believe this program has provided their enterprises with a large number of talents with exceptional skills [14]. Despite this, there are also many domestic people may be dissatisfied with the immigrants, believing that they are taking up job opportunities. Over immigration may lead to labor surplus and increase the pressure on the lives of the domestic people. The country should set appropriate regulation limits based on the actual quantity and quality of the required workforce. For example, for countries with a saturated labor force, strict immigration regulations should be established, setting restrictions in terms of education, savings, and residence permits, etc., to prevent immigrants from affecting the living standards of the local population.

5. Conclusion

This paper used literature review methods to analyze the impact of the quantity, quality and mobility of the labor force on the economy. The paper found that quality of the labor force is the most important factor which influences the rate of economic growth. Quantity can bring demographic dividend to an economy, but this is only applicable when the country is a developing country, not in the period of economic transformation, and with a manufacturing sector that is labor-intensive, the demographic dividend cannot promote sustained economic growth either. In terms of labor mobility, whether at the national or regional level, workers with high technology and high educational attainment are more likely to bring about positive economic growth to a region and an economy. The country needs to strike a balance between the quantity, quality and mobility of the labor force, and avoid problems such as imbalance in labor supply and demand, and skill mismatch.

For China, government should introduce the policy which can achieve a balance between security and openness in China, and formulate immigration polices based on the quality and quantity of the labor force required.

Secondly, universities set up majors and the number of students based on the requirements of enterprises promoting China shift from “Made in China” to “Smart Manufacturing in China”. Moreover, more opportunities should be provided for liberal arts students to switch majors or pursue minor subjects in science, in order to prevent a large number of liberal arts students from being unemployed unemployment after graduation. Thirdly, continue to increase the rate of higher education in China and enhance the overall level of education for the entire population. Ensure nine-year compulsory education in rural areas and modify the content of textbooks according to China’s employment prospects and future development goals, reducing the waste of educational resources.

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