Impact of the Three-Child Policy and Delayed Retirement on the Transfer of Surplus Rural Labor under Xi Jinping's New Population Vision: A Re-examination of China's Lewis Turning Point

Jun Dai[1,a], Honggang Xu[1,b*], Guanqing Shi[1,c*], Xinke Du[2,d], Aitong Xie[3,e], Yile Wei[1,f]

[q]Baise University, Baise, Guangxi, 533000, China
[2]Shanghai Normal University Tianhua College, Shanghai, 201815, China
[3]School of Economics and Finance, Guizhou University of Commerce, Guiyang, Guizhou, 550014, China

[a]598656371@qq.coma, [b*]398062204@qq.com,
[c*]shiguanqing@126.com, [d]dxk2420@sthu.edu.cn,
[e]taijj@vip.qq.com, [f]2326838064@qq.com

Abstract. Chinese-style modernization involves the modernization of a large population, requiring top-level design in terms of scale and structure. The population perspective in Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era serves as the fundamental guide for population policies. The three-child policy and delayed retirement will affect the supply of labor in China and challenge the previous assessments of China's Lewis Turning Point. This study examines the rural surplus labor transfer from 2013 to 2022 based on urban and rural data. The results indicate that China's overall wage levels have continuously increased, the urban-rural income gap has narrowed, and the transfer of surplus rural labor has slowed. China has passed the first turning point and entered a transitional phase. Factors such as the level of agricultural mechanization, urbanization rate, and urban-rural income gap are more significant in influencing the transfer of surplus labor than the normal working-age population ratio. The delayed retirement policy has a more immediate impact on the supply and transfer of rural surplus labor than the three-child policy. Additionally, delayed retirement can offset the negative impact of the reduced relative surplus labor supply caused by the three-child policy, although the three-child policy could increase the future absolute surplus labor supply.

Keywords: Xi Jinping's Population Perspective; Three-Child Policy and Delayed Retirement Policy; Rural Surplus Labor; Lewis Turning Point.

1　Introduction

China, as the most populous country in the world, faces population issues that have always been global and strategic in nature[1]. During the first meeting of the 20th Cen-

tral Financial and Economic Affairs Commission, President Xi Jinping emphasized that "population development is crucial to the great rejuvenation of the Chinese nation. We must focus on improving the overall quality of the population to support Chinese-style modernization." Currently, China's population development is characterized by trends such as declining birth rates, aging population, and regional population shifts. Xi stressed the importance of "focusing on the strategic arrangements for building a strong nation and national rejuvenation, improving the population development strategy for the new era, understanding, adapting to, and leading the new normal in population development, and striving to improve the overall quality of the population. We must maintain a moderate fertility level and population size, and accelerate the development of a modern human resource base that is well-qualified, adequately supplied, optimally structured, and reasonably distributed. "Furthermore, Xi issued important directives on strengthening aging-related work: "We must enhance top-level design and improve major policies and systems, and respond to population aging in a timely, scientific, and comprehensive manner." This highlights the critical importance of population size and structure in the broader strategy of Chinese-style modernization and the great rejuvenation of the Chinese nation.

Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era regarding population is the latest development of the Communist Party of China's population ideology. It addresses the significant new population challenges and issues currently faced by China with high attention and proactive planning[2]. This thought is based on a scientific understanding and proposals for China's population issues, grounded in China's national conditions, and represents the Sinicization of Marxist population theory[3]. The "Proposal for the 13th Five-Year Plan for National Economic and Social Development" issued in 2015 outlined China's implementation of a gradual increase in retirement age policy. In November 2020, the "Proposal for the 14th Five-Year Plan for National Economic and Social Development and the Vision for 2035" proposed, "To implement a national strategy to actively respond to population aging, formulate a long-term population development strategy, optimize fertility policies, and enhance the inclusiveness of fertility policies." The "Decision on Optimizing Fertility Policies and Promoting Long-Term Balanced Population Development" passed in 2021 clarified that a couple is allowed to have three children. Under the current conditions of population fertility willingness, this policy is not much different from fully opening up fertility.

The Lewis Turning Point is a classic model in Western economics used to analyze urban-rural population mobility issues, offering significant insights for traditional urbanization processes. However, China has transitioned from pursuing development speed to focusing on development quality, resulting in a new urban-rural development pattern characterized by coordinated progress in new-type urbanization and rural revitalization. This shift affects the applicability of the Lewis model, the complexity of China's economic and social realities, and data availability, leading to discrepancies in the assessment of the Lewis Turning Point. This has prompted academic discussions on whether China has reached the Lewis Turning Point and which stage it is in. Under the new three-child policy and delayed retirement measures, this paper examines the development stage China is in based on the transfer of surplus rural labor from 2013 to

2022. The analysis includes data on surplus rural labor, the proportion of the working-age population, urban-rural income disparity, urbanization rate, net imports of agricultural products, agricultural mechanization level, and farmland area. The study assesses China's current development stage according to the Lewis Turning Point theory and explores the contributions of influencing factors and the short-term and long-term impacts of the two policies.

2   Literature Review

2.1   Introduction to the Lewis Turning Point Model

In the 1950s, the renowned economist Arthur Lewis proposed the Lewis Turning Point theory based on the "dual-sector model." This theory posits that developing countries have a dual economic structure: one sector is the "subsistence" sector, represented by traditional agriculture, which produces using traditional methods; the other is the "capitalist" sector, represented by industry and urban areas, which uses modern production methods. The theory asserts that the agricultural sector often has excess labor due to its low marginal productivity, meaning that additional labor does not significantly increase output. As a result, there is a surplus of labor in rural areas. If the industrial sector offers wages slightly higher than the minimum subsistence level for agricultural workers, it can absorb a large amount of rural labor.

For a certain period, with a given wage level, the supply of labor is virtually unlimited, allowing the industrial sector to continually absorb labor without raising wages. This expansion continues until all surplus rural labor is absorbed, reaching the Lewis Turning Point. After this turning point, as the marginal productivity in agriculture increases, the industrial sector must raise wages to continue attracting rural labor. Eventually, when the marginal productivity in both sectors equals out, the dual economic structure transitions to a single-sector structure.

2.2   Debate on China's Lewis Turning Point

There has been ongoing debate about whether China has reached the Lewis Turning Point and what stage it is currently in. Scholars such as Islam, R.(2017) and others argue that China has indeed reached the "Lewis Turning Point" and is transitioning from a period of labor surplus to labor shortage. They point out that the surplus of rural labor has significantly decreased, indicating that China has entered the "Lewis Turning Zone"[4]. On the other hand, some scholars believe that China has reached the "first Lewis Turning Point" and is moving towards the "second Lewis Turning Point," or that it may have already surpassed the "second Lewis Turning Point"[5-6]. Conversely, other scholars, through analysis of the supply of rural labor in China, argue that the country is still in a stage of labor surplus and that it is premature to discuss China's entry into the "Lewis Turning Point"[7].

2.3   Research on Demographic Dividend

Demographic changes impact the economy, and current research often focuses less on the overall population size or growth rate and more on how changes in the working-age population affect economic growth. Some scholars argue that the three-child policy has a minimal effect on the demographic dividend in terms of population quantity but could positively impact the demographic dividend related to population structure[8].

Other researchers emphasize the significance of changes in the working-age population on economic growth, suggesting that there is a bidirectional causal relationship between changes in the working-age population and economic growth[9]. Additionally, some scholars, drawing from demographic transition theory, analyze changes in the working-age population and find that the demographic dividend follows an inverted U-shaped curve. They argue that the demographic dividend period began in the mid-1980s, reached its peak around 2010, and is expected to shift towards a demographic debt by 2030[10].

2.4   Literature Review

Current research on China's Lewis Turning Point primarily focuses on previous labor contract laws and family planning policies. These studies often fail to comprehensively account for the impacts of accelerating urbanization, increasing agricultural mechanization, and expanding net exports of agricultural products on the transfer of surplus rural labor. Additionally, with the introduction of the three-child policy and delayed retirement measures, previous research conclusions may no longer be reliable.

Given this context, it is crucial to re-evaluate China's Lewis Turning Point under the new three-child policy and delayed retirement measures. This involves a comprehensive consideration of factors such as the working-age population ratio, urban-rural income disparity, urbanization rate, net imports of agricultural products, urban-rural income gap, and farmland area. Revisiting the understanding of China's Lewis Turning Point in light of these factors holds significant practical implications for China's economic development.

3   Theoretical Foundation and Hypotheses

3.1   Agricultural Mechanization and Rural Labor Transfer

According to Hussain, Muzzammil, et al (2022), the relationship between agricultural mechanization and rural labor is a dynamic process that changes with economic development and adjustments in rural industrial structures. As the level of agricultural mechanization improves, it tends to replace agricultural labor, creating more surplus labor[11]. Some scholars further argue that increasing the level of agricultural mechanization and agricultural productivity can lead to factor substitution between machinery and labor, thereby promoting further transfer of rural labor. X Du et al. (2023) explore how advancements in technology, such as artificial intelligence, can enhance supply chain efficiency and reduce costs in the e-commerce sector. This technological pro-

gress may intensify market competition and impact labor markets by shifting labor demands and potentially exacerbating labor displacement. This perspective supports the notion that technological advancements, including those in agricultural mechanization, can significantly influence labor dynamics[12].Based on this, the following hypothesis is proposed:

H1: The level of agricultural mechanization is positively correlated with surplus rural labor.

3.2   The Three-Child Policy, Delayed Retirement, and the Lewis Turning Point

Typically, the demographic dividend refers to the positive impact of the working-age population on economic growth during the population transition process. Structuralists argue that a demographic dividend arises from a lower ratio of young and elderly populations combined with a higher proportion of working-age individuals, creating a "bell-shaped" age distribution with a large middle and smaller ends. With an ample supply of labor and a lower dependency ratio, this scenario is beneficial for economic growth. Gu Yan (2019) also suggests that relaxing family planning policies will support continued rapid economic growth, indicating that China's Lewis Turning Point may not arrive prematurely[13]. Based on this, the following hypothesis is proposed:

H2: The three-child policy and delayed retirement measures will affect the transfer of surplus rural labor and influence the timing of the Lewis Turning Point.

3.3   Debate on Whether China's Era of Unlimited Labor Supply Has Ended

The debate on whether China's era of unlimited labor supply has ended primarily revolves around differences in understanding, proving, and selecting data related to the concept of the "Turning Point." According to the Lewis Turning Point theory and the Fei-Ranis "dual-economy model," standards for determining whether the "Lewis Turning Point" has been reached include the quantity of surplus rural labor[14] and the convergence of wages between rural and urban areas[15].

Existing research on the drivers of rural surplus labor transfer mainly focuses on the relationship between urbanization and the transfer of surplus rural labor, as well as the impact of urban-rural income disparity on this transfer. Du X.,et al., (2022) analyzed historical data using econometric methods and found that the transfer of rural labor is challenging. The driving force for labor transfer primarily comes from industrialization, urbanization, and their interactive development[16]. Bommy, M., et al (2023) suggest that the pace of urbanization is generally in line with the speed of rural labor transfer, with urban-rural income disparity being a major factor in rural labor transfer[17]. Fink, G., et al. (2020) point out that the rapid advancement of urbanization in the eastern coastal regions has increasingly driven the transfer of rural labor, with the scale and proportion of labor transfer continuously growing[18]. Based on this, the following hypothesis is proposed:

H3:Surplus rural labor is positively correlated with urban-rural income disparity and the urbanization process.

3.4   Net Agricultural Product Exports and Rural Labor Transfer

According to Adam Smith's theory of absolute advantage and David Ricardo's theory of comparative advantage, a country should focus on producing products in which it has an absolute or comparative advantage and participate in international trade to reap the benefits of trade. Zhao Lin (2012) also points out that import trade can increase competition in domestic industries, eliminate outdated production capabilities, reduce employment in those industries, and drive labor to sectors with higher productivity[19]. Based on this, the following hypothesis is proposed:

H4: Net imports of agricultural products are negatively correlated with surplus rural labor.

3.5   Changes in Farmland Area and Rural Labor Transfer

Existing research on the relationship between changes in farmland area and rural labor transfer is limited. Li Muran (2014) suggests that the area of arable land has a suppressive effect on surplus rural labor. This effect is primarily reflected in the demand for labor in agricultural production. Under a dual-economic structure, a larger area of farmland increases labor demand, which leads to a reduction in surplus rural labor[20]. Based on this, the following hypothesis is proposed:

H5: The area of farmland is negatively correlated with the transfer of rural labor.

4   Data Sample and Research Methods

4.1   Variable Selection

Based on the above theories and hypotheses, the annual rural surplus labor force (mw) is taken as the dependent variable.

Given that the birth rate in previous periods affects the current labor supply, and the current birth rate influences the relative supply of labor by altering the proportion of the working-age population, the proportion of the working-age population (zn), urban-rural income gap (sr), urbanization rate (cz), net import of agricultural products (jk), agricultural land area (nm), and total agricultural mechanization power (nj) are selected as independent variables.

4.2   Model Selection

Considering the numerous factors influencing the rural surplus labor force and the need to accurately reflect the relationships between variables, principal component regression is a suitable method due to its ability to reduce dimensionality without losing essential information.

Principal component analysis (PCA) reduces dimensionality by combining multiple variables through linear transformations into a smaller number of new variables, or principal components, that are mutually independent and effectively capture the overall information. By performing regression between the principal components and the dependent variable, a principal component regression equation is obtained. The process then involves deriving a regression model expressed in terms of the original variables, based on the relationship between explanatory and response variables and the principal component coefficient matrix.

4.3 Data Sources

To revisit the analysis of China's Lewis turning point under the context of the three-child policy and the new retirement delay policy, data from the 2013–2022 China Statistical Yearbook and the China Land and Resources Bulletin were selected. The net import value of agricultural products was converted based on the exchange rates of the corresponding period, adjusted for inflation using 2013 as the base year, and expressed in RMB. The urban-rural income gap refers to the difference in average income between urban and rural employees, adjusted for inflation. Data on rural surplus labor, normal working-age population ratio, urbanization rate, and agricultural land area were all extracted according to the standards set by the China Statistical Yearbook and the China Land and Resources Bulletin.

There are many factors influencing the supply and transfer of surplus labor in rural China, such as children's education, transportation, regional economic differences, and the transfer of rural land. However, these factors are not the focus of this study.

5 Results and Analysis

Using SPSS 19.0, data from 2013 to 2022 on surplus rural labor, working-age population ratio, urban-rural income disparity, urbanization rate, net imports of agricultural products, agricultural mechanization level, and farmland area were analyzed. The results are presented in Tables 1-3 and Figures 1-2.

5.1 Principal Component Analysis Suitability Test

The results of the KMO and Bartlett tests, as well as the common factor variance test, are shown in Table 1:

Table 1. KMO and Bartlett tests and common factor variance

Variable commonality	nj	zn	cz	jk	sr	nm
Initial	1.00	1.00	1.00	1.00	1.00	1.00
Extraction	0.98	0.82	0.98	0.85	0.99	0.81
	Kaiser-Meyer-Olkin	Sig.	Approximately chi-squared	df		
KMO and Bartlett's test	0.91	0.000	182.90	21		

From Table 1, it can be seen that the KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy is 0.91, which is close to 1, indicating that the data is highly suitable for Principal Component Analysis (PCA). The Bartlett's Test of Sphericity has a significance value (sig) of 0.00, which is less than 0.05, suggesting that the correlation matrix is significantly different from the identity matrix and supports the use of PCA.

Additionally, Table 1 shows that the communalities of all variables are above 80%, indicating that the extracted common factors have a strong explanatory power for the variables.

Results of Total Variance Explained and Component Matrix are presented in Table 2:

Table 2. Total variance explained and component matrix

Variance contribution rate and cumulative contribution rate							Component matrix	
Comp onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Component	
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Variable	1
1	5.12	85.26	85.26	5.12	85.27	85.27	Total Agricultural Machinery Power	0.99
2	0.7	11.63	96.89				Proportion of The Normal Working-age Population	0.77
3	0.12	1.93	98.83				Urbanization Rate	0.99
4	0.07	1.1	99.93				Net Import Value of Agricultural Products	0.94
5	0	0.04	99.97				Urban-rural Wage Income Gap	0.99
6	0	0.03	100				Agricultural Land Area	-0.83

From Table 2, it can be observed that there is only one principal component with an eigenvalue greater than 1, which explains 85.27% of the variance in the principal components. Therefore, extracting the first principal component is sufficient to represent the information from the original variables.

Based on the relationship between the component matrix coefficients and the eigenvalues of the principal components, the principal component expression can be derived by dividing the coefficients of each variable in the component matrix by the

square root of the eigenvalue of the first principal component. This is shown in the following expression (1):

$$FAC = 0.4384nj + 0.3420zn + 0.4374cz + 0.4173jk + 0.4397sr - 0.3656nm \tag{1}$$

5.2   Principal Component Regression Statistical Test and Analysis

Table 3. Results of principal component regression analysis

		Coefficient	T-statistic	sig.		
Parameter test	Constant	7.14E-11	0.000	1.000		
	FAC	1.019	28.964	0.000		
Model fit	R Square	0.964	F	318.84	S.E	0.508
	Adjusted-R^2	0.949	sig.	0.000	DW	1.698

Table 3 shows that the t-statistic for the constant term is 0, which is less than 2, and the P-value is 1, which is greater than 0.05. This indicates that the constant term does not have a significant impact on the dependent variable, and its coefficient is 7.14E-11, close to zero. Therefore, the constant term can be omitted. Additionally, from Table 3, it can be seen that DW = 1.698. Referring to the DW (14, 1) values, where du = 1.350 and dl = 1.045, the condition du $\leq$ DW $\leq$ (4 $-$ dl) is satisfied, indicating that there is no autocorrelation among the variables. The adjusted R^2 is 0.901, suggesting that the fit of the regression model is good. The F-statistic is 838.941, which is greater than the critical value of 4.75 ($F_{0.05}(1,12)$), indicating that the overall model is significant.

Therefore, the obtained principal component regression model is well-suited for analyzing the relationships between rural surplus labor and factors such as the natural population growth rate, the proportion of the working-age population, the urban-rural income gap, urbanization rate, net agricultural product imports, and arable land area. Additionally, based on the principal component coefficients and parameter test results shown in Table 3, the principal component regression equation can be derived as shown in Equation (2).

$$mw = 1.02FAC \tag{2}$$

By further substituting Equation (1) into Equation (2), the final regression equation expressed in terms of the original variables is obtained, as shown in Equation (3):

$$mw = 0.4472nj + 0.3488zn + 0.4462cz + 0.4256jk + 0.4485sr - 0.3729nm \tag{3}$$

5.3   Analysis of Factors Influencing Rural Surplus Labor

From the coefficients in Equation (3), it can be seen that the factors influencing rural surplus labor in order of impact are: urban-rural wage income gap > total agricultural

machinery power > urbanization rate > net import value of agricultural products > agricultural land area > proportion of the normal working-age population. Among these, the agricultural land area is negatively correlated with rural surplus labor, while the other factors are positively correlated with it. This impact of the independent variables on the dependent variable is consistent with all the hypotheses presented in the paper. For a detailed view of the factors affecting rural surplus labor, see Figure 1.
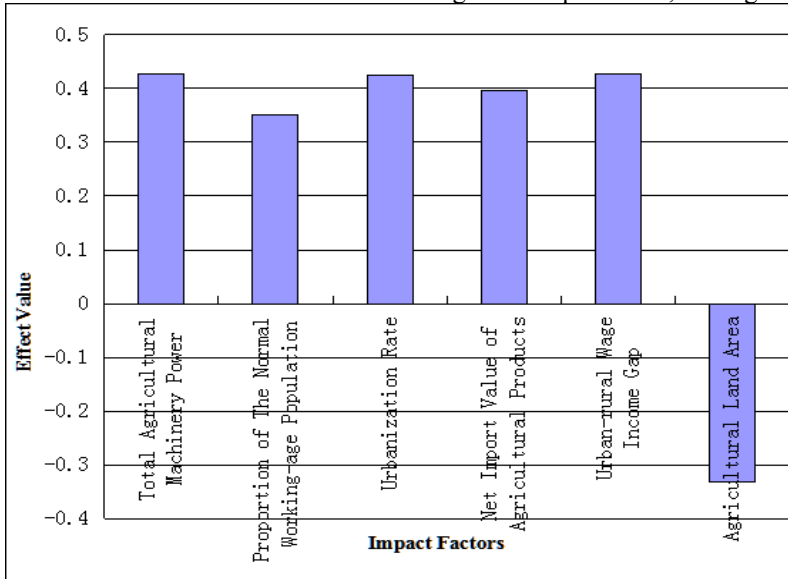

Fig. 1. Influencing factors of rural surplus labor

Rural surplus labor is positively correlated with the proportion of the normal working-age population, indicating that an increase in this proportion benefits the absolute amount of surplus labor. Additionally, delayed retirement further increases the relative supply of surplus labor. The impacts of urbanization rate, net import value of agricultural products, and total agricultural machinery power are greater than the impact of the normal working-age population on rural surplus labor. This suggests that as the urbanization rate increases, agricultural land area decreases, net import value of agricultural products rises, and the level of agricultural mechanization strengthens, rural surplus labor also increases accordingly.

5.4   Analysis of the Lewis Turning Point under New Policies

In analyzing the Lewis turning point, the urban-rural income gap is a crucial influencing factor. The measurement results indicate that the urban-rural income gap has narrowed, suggesting that China has entered the Lewis turning point. The results are shown in Figure 2.
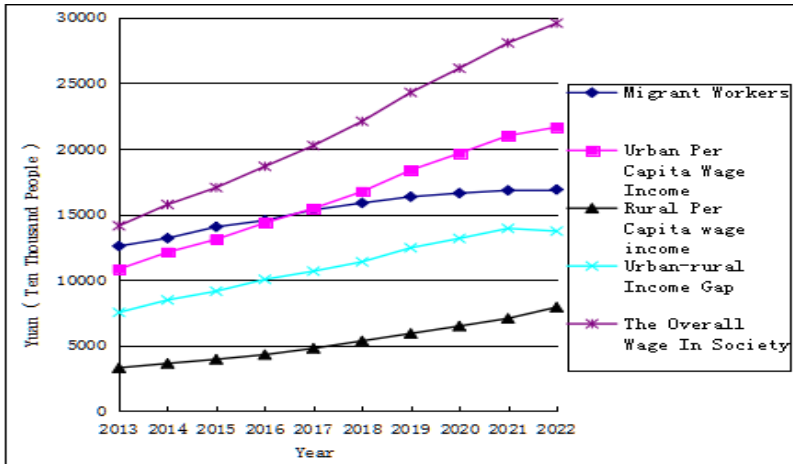
Fig. 2. The relationship between income and surplus labor

From Figure 2, it can be observed that the overall wage level in society is gradually rising, while the growth rate of migrant workers is declining, indicating that China has entered the Lewis turning point. At the same time, the growth rate of urban residents' per capita income has slowed, while the growth rate of rural per capita income has accelerated. Although the urban-rural income gap remains significant, it is gradually narrowing, but urban and rural wages are still far from converging, suggesting that the urban-rural income gap remains a major driving force for the transfer of rural surplus labor in China.

According to the relationship between the natural population growth rate and the working-age population ratio, an increase in the natural growth rate would lead to a decrease in the working-age population ratio. However, delaying retirement will increase the working-age population ratio, thus offsetting the negative impact of the increased dependency ratio caused by the higher natural growth rate. In 2022, the urban-to-rural population ratio was 6:4, with a birth rate of 6.8‰ and a natural growth rate of -0.6‰. Furthermore, under the new retirement regulations, women's retirement age will be extended by four months each year, and by one year every three years; for men, the extension will be two months annually and one year every six years. By 2055, the retirement age will be 65 for men and 60 for women. This means that in six years, the retirement age will be extended by at least one-sixth of a year per person annually, thus further making rural surplus labor relatively sufficient.

Based on the impact and ranking of various factors on rural surplus labor in Equation (3), and considering the current policies in China, it can be inferred that with further increases in the urbanization rate, reductions in farmland area, increases in net imports of agricultural products, and ongoing improvements in agricultural machinery levels, rural surplus labor will also increase. This will delay the arrival of the second turning point or create a new phase of unlimited labor supply with wage levels higher than the first turning point.

6   Conclusion and Implications

6.1   Main Conclusions

(1)Rural surplus labor transfer is influenced by various factors: The impact of agricultural mechanization level, urbanization, and the urban-rural income gap on rural surplus labor transfer is greater than that of the normal working-age ratio.

(2)The impact of the delayed retirement policy on rural surplus labor supply and transfer is more significant in the short term compared to the comprehensive three-child policy. Moreover, delaying retirement can offset the negative impact of the comprehensive three-child policy on the relative supply of surplus labor. However, the comprehensive three-child policy can increase the future absolute supply of surplus labor.

(3)The urban-rural income gap is gradually narrowing, and the overall wage level is continuously rising. The amount of rural surplus labor transfer is increasing, but the growth rate is slowing. China has already passed the first turning point and entered the Lewis turning zone, but the second turning point has not yet arrived.

6.2   Main Implications

(1) China should formulate relevant policies to increase the supply and further transfer of surplus labor to delay the arrival of the Lewis second turning point. It is crucial to consider the impacts of urbanization rate, agricultural land, net import of agricultural products, and total agricultural mechanization power on rural surplus labor, in addition to population policies. This reflects the alignment with the population perspective in Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era, which emphasizes that population policy is integral to the overall strategy for the great rejuvenation of the Chinese nation and requires a coordinated, multi-factor top-level design.

(2)When implementing the delayed retirement and comprehensive three-child policies, it is important to further enhance health awareness among workers and increase willingness to have three children. Only by improving these factors can the policies effectively increase the supply of surplus labor. This demonstrates that the mechanisms of population transition have both a fundamental economic development role and significant institutional intervention. China has sufficient conditions to abstract and generalize population theories and policies based on its own experiences.

(3)In the current period, reasonable agricultural land protection and usage policies should be formulated without compromising arable land limits and food security. Efforts should focus on further increasing the urbanization rate and agricultural mechanization level, reducing barriers to agricultural product imports, and increasing the relative supply of rural surplus labor. This will help delay the arrival of the second turning point and create a new stage of infinite labor supply with a wage level higher than the first turning point. This aligns with Xi Jinping's thought on the importance of coordinated urban-rural development in resolving the main contradiction between people's aspirations for a better life and the uneven and inadequate development, and in mitigating the short-term negative effects of policies.

Funded

References

1. Maestas, Nicole, Kathleen J. Mullen, and David Powell. "The effect of population aging on economic growth, the labor force, and productivity." American Economic Journal: Macroeconomics 15.2 (2023): 306-332.
2. Yang Chenggang, Yang Zifan. "The Population Thoughts of the Communist Party of China over a Century and the Modernization and Sinicization of Marxist Population Theory" *Population Research*, 2021, 45(06): 3-13.
3. Versace, Vincent L., et al. "National analysis of the Modified Monash Model, population distribution and a socio-economic index to inform rural health workforce planning." Australian Journal of Rural Health 29.5 (2021): 801-810.
4. Islam, Rizwanul. "Structural transformation and alternative pathways to the Lewis Turning Point." Rural Labour Mobility in Times of Structural Transformation: Dynamics and Perspectives from Asian Economies (2017): 15-34.
5. Padhi, Satya Prasad. "The Lack of Lewis Turning Point in India: Conceptualizing the Roles of Capital Intensity, Employment Opportunities, and Keynesian Investments." Global Journal of Emerging Market Economies (2024): 09749101241277486.
6. Manning, Chris, and Raden Muhamad. "17 Has Indonesia Passed the Lewis Turning Point and Does It Matter?." Managing Globalization in the Asian Century: Essays in Honour of Prema-Chandra Athukorala (2016): 457.
7. Zhai Zhenwu, Yang Fan. "Labor Shortages: Is It the Lewis Turning Point or the Esterling Population Trough?" *Economic Theory and Economic Management*, 2011, 08: 5-13.
8. BENGANA, Ismail Mohamed, et al. "Evaluating the nonlinear population-economic growth nexus in MENA countries." Journal of Ecohumanism 3.7 (2024): 372-385.
9. Zhang Xiuwu, Zhao Xindong. "Population Age Structure, Human Capital, and Economic Growth" *Macroeconomic Research*, 2018, No.233(04): 5-18.
10. Guo Han, Ren Baoping. "Structural Changes, Factor Output Elasticity, and China's Potential Economic Growth Rate" *Quantitative Economic and Technical Economic Research*, 2014, 12: 72-84.
11. Hussain, Muzzammil, et al. "Reinvestigation of environmental Kuznets curve with ecological footprints: empirical analysis of economic growth and population density." Journal of Public Affairs 22.1 (2022): e2276.
12. Xinke Du, Guanqing Shi, and Yilin Zhao. 2023. The Path of Artificial Intelligence Technology to Reduce Cost and Increase Efficiency of E-Commerce Supply Chain. In Proceedings of the 2022 6th International Conference on Software and e-Business (ICSEB '22). Association for Computing Machinery, New York, NY, USA, 28–32. https://doi.org/10.1145/3578997.3579014.
13. Gu Yan. "Is China Still 'Aged before Becoming Rich'?—Judging Based on the 'Old'-'Rich' Relationship Model" *Social Policy Research*, 2019, No.14(01): 11-24.

14. Kanbur, Ravi, Yue Wang, and Xiaobo Zhang. "The great Chinese inequality turnaround." Journal of Comparative Economics 49.2 (2021): 467-482.
15. Zhang Chao, Wang Chunyang. "Research on the Debate over China's 'Lewis Turning Point' in Labor Supply" *Exploration of Economic Issues*, 2013, 05: 21-26.
16. Du X, Ouyang T, Shi G, Deng L and Gul R (2022), Role of oil price volatility, energy efficiency, and financial stability on sustainable energy production. Front. Environ. Sci. 10:977733. doi: 10.3389/fenvs.2022.977733
17. Bommy, M., et al. "Prediction of Agricultural Surplus Labor Transfer Trend Based on Big Data Fuzzy Clustering Algorithm." 2023 Second International Conference On Smart Technologies For Smart Nation (SmartTechCon). IEEE, 2023.
18. Fink, Günther, B. Kelsey Jack, and Felix Masiye. "Seasonal liquidity, rural labor markets, and agricultural production." American Economic Review 110.11 (2020): 3351-3392.
19. Zhao Lin. "Analysis of the Impact of Import and Export Trade on the Transfer of Labor Among China's Three Major Industries" [D]. Shandong University, 2012.
20. Li Moran. "Study on the Relationship Between Non-Agriculturalization of Farmland and Rural Surplus Labor in Hubei Province" [D]. Huazhong Agricultural University, 2014.