

# **The Transformation of China's Demographic Dividend and its Possible Implications for Africa**

Fan Huang

(Nankai University, Tianjin 300350, China)

## **BACKGROUND**

Both China and African countries are in the midst of demographic transition but characterized by different stages of development. In the process of demographic transition, the accompanying demographic dividend is often the focus of the attention of scholars and policymakers.

Since the reform and opening-up of China, over the past four decades, China's economic growth has created a “miracle” rarely seen in economic history. It is widely recognized that the demographic dividend has contributed greatly to this. However, the latest data from the seventh national census shows that China's working-age population continues to decline and the aging of the population is further aggravated, which has once again aroused concerns of all sectors of society.

Reviewing and studying the changes in China's demographic dividend and its contribution to economic development could be important for African countries, but there is a relative lack of research on China's demographic dividend and comparative studies with Africa.

## **OBJECTIVE**

The purpose of this paper is to describe the process of change in the demographic basis of China's demographic dividend and to explore its contribution to economic development. On this basis, it then compares the similarities and differences between Africa's demographic dividend and China's, and tries to put forward suggestions in favor of African countries to further exploit the demographic dividend.

## **DATA AND METHODS**

In terms of the demographic basis of the demographic dividend, this paper utilizes data from successive censuses, *1% National Population Sample Survey*, *China Statistical Yearbook*, and *China Health Statistics Yearbook* to depict the changes in the working-age population, elderly population, total dependency ratio (including child dependency ratio and old-age dependency ratio), educational status, health, and other aspects of China's population from 1953 to 2020.

In terms of the economic contribution of the demographic dividend, this paper utilizes data from the *China City Statistical Yearbook* for 293 prefecture-level cities over a period of 15 years (2005 to 2019) to examine the contribution of the demographic dividend as well as the education and health dividend to economic development and the relationship between them using a two-way fixed-effects model.

Based on summarizing China's experience in the development of the demographic dividend, in terms of the comparison between Africa and China, this paper uses UN World Population Prospects

2022 data to compare the demographic basis of the demographic dividend in Africa and its sub-regions with that of China and attempts, in stages, to make suggestions for exploiting Africa's demographic dividend.

## RESULTS

### 1 Changes in the demographic basis of China's demographic dividend

1.1 Continuation of the downward trend in the size and proportion of the working-age population

#### Figure 1(omitted here) Trends of China's Working-age Population Aged 15-64, 1953-2020

1.2 Ageing has accelerated since the new century

#### Table 1(omitted here) Trends of China's Aging Population, 1953-2020

1.3 The total dependency ratio has gone from decreasing to increasing, and the impact of old-age dependency ratio has widened

#### Figure 2(omitted here) Dependency Ratio of China's Population, 1953-2020

### 2 The economic contribution of the demographic dividend and the education and health dividend in China

The simplified model used for the analysis is constructed as follows:

$$\ln y_{it} = a_0 + a_1 \ln K_{it} + a_2 \ln L_{it} + a_3 \ln I_{E_{it}} + a_4 \ln I_{H_{it}} + \varepsilon_{it}$$

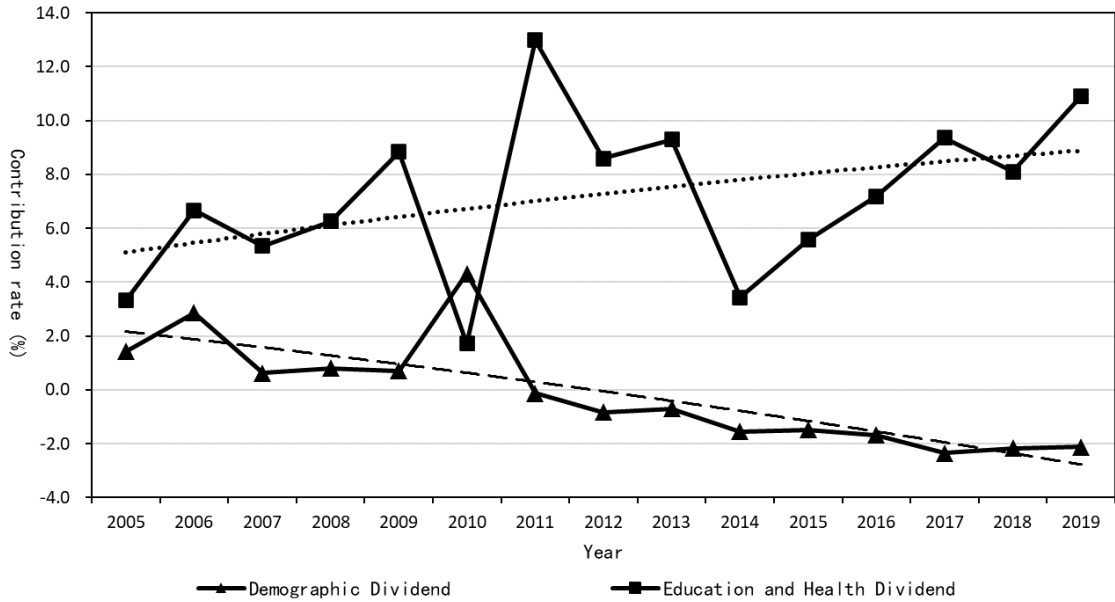
where  $y$  denotes GDP per capita,  $K$  denotes per capita investment in fixed assets,  $L$  denotes labor force share,  $I_E$  and  $I_H$  denotes per capita investment in education and health, and subscripts  $i$  and  $t$  denote prefecture-level city and year, respectively.

**Table 2 Estimated Results of Models**

	Fixed-effects model	OLS(POLS)	Random-effects model
$\ln K$	0.064** (0.024)	0.215*** (0.025)	0.072*** (0.005)
$\ln L$	0.270*** (0.021)	0.702*** (0.022)	0.315*** (0.012)
$\ln I_E$	0.159*** (0.019)	-0.071*** (0.021)	0.137*** (0.013)
$\ln I_H$	0.149*** (0.031)	0.049** (0.023)	0.147*** (0.012)
Constant	9.908*** (0.223)	8.719*** (0.262)	9.850*** (0.063)
$N$	3574	3574	3574
within R-squared	0.894	0.749	0.894

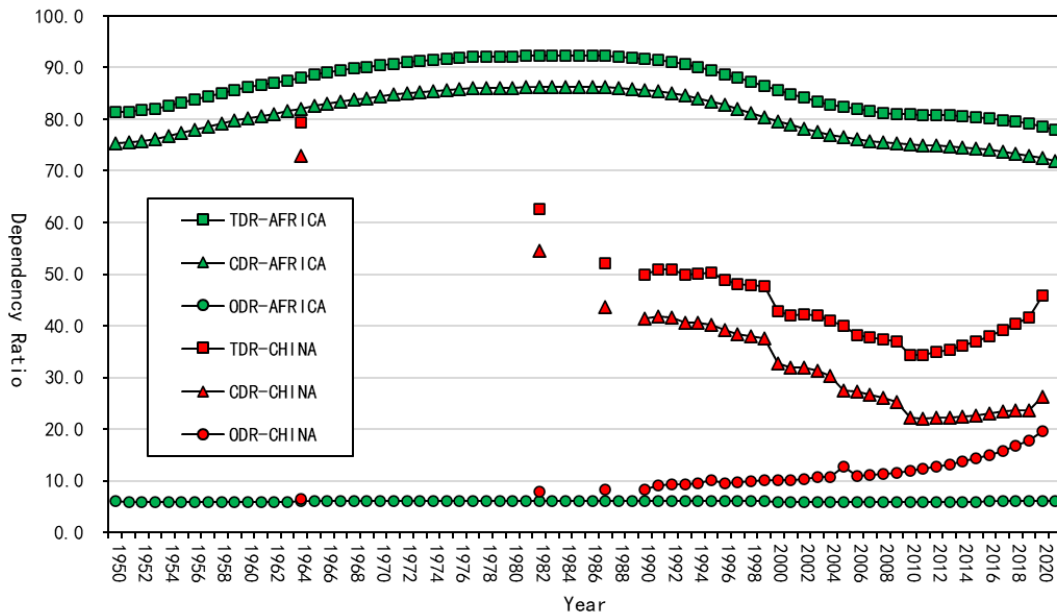
Note: Numbers in parentheses are standard errors. \*p < 0.1, \*\*p < 0.05, \*\*\*p < 0.01.

#### Table 3(omitted here) Contribution of Factor Inputs to China's Economic Growth, 2005-2019

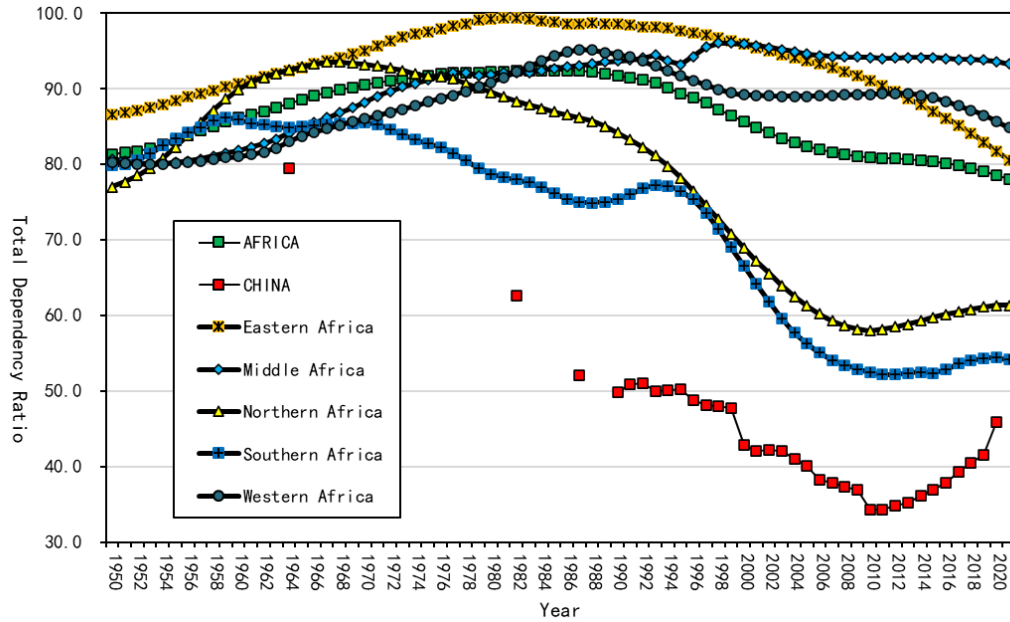


**Figure 3 Contribution of Demographic Dividend and Education and Health Dividend in China**

### 3 Comparison of the demographic basis of the demographic dividend in Africa and China



**Figure 4 Dependency Ratios in Africa and China, 1950-2021**



**Figure 5 Total Dependency Ratio by Subregion in Africa and Comparison with China**

## CONCLUSIONS AND DISCUSSION

China's demographic dividend (DD) is evolving from the traditional DD to an education and health dividend (EHD). On the one hand, DD is slowly diminishing, as evidenced by the continuing decline in the size and proportion of the working-age population, the acceleration of aging, the shift from a decreasing to an increasing total dependency ratio, and the weakening of the contribution to economic growth. On the other hand, EHD is gradually manifesting itself in the form of a significant increase in the educational status and health of the population, replacing DD to play a more positive role in economic development.

A comparison of the African and Chinese populations reveals that in the 1960s, the African and Chinese populations had very similar dependency ratios, meaning that they were almost as young. However, after the 1970s, with the introduction of family planning and the reform and opening up of China, the Chinese population experienced a sharp decline in the child dependency ratio and a subsequent sharp decline in the total dependency ratio, which led to the concentration of China's DD over a period of four to five decades. However, nearly 60 years on, Africa's population appears to be only in the initial stages of releasing DD.

Looking specifically at the subregions of Africa, it can be observed that the demographic base of the DD in northern and southern Africa is closer to that of the Chinese population, while eastern, middle, and western Africa are still in the early stages. Based on China's experience and the calculations in this paper, it is argued that the promotion of the demographic transition to modernization and the implementation of reform and opening-up are crucial for the release of DD, especially in the early stages, while in the later stages, greater investment in education and health becomes even more important.