Executive Summary

We adopt and modify the widely used Jorgenson-Fraumeni lifetime income approach (hereafter referred to as the J-F approach) to calculate China's human capital stock and estimate its distribution and trend. The J-F framework provides a comprehensive measurement of human capital compared to the partial measurements traditionally used, such as education.

Due to lack of data, the J-F approach needs to be modified to measure human capital in China. Following widely accepted methods based on the theory of human capital, we combine micro survey data with provincial level aggregate data and the Mincer model to fill in missing values in the Chinese data. Our approach allows us to systematically estimate China's human capital stocks at both the national and provincial levels. We use the results of those estimates to build various human capital indexes.

I. What is in the database?

In this report, we present our calculations of China's human capital stock at the national level and provincial level, including Hong Kong and Taiwan, from 1985 to 2015. The human capital measurement covers total human capital and human capital per capita, for rural and urban residents, male and female. We also present our calculation of traditional measures of human capital based education.

Additionally, in order to aid research, we also provide the related estimates of physical capital at the national level and provincial level for the same period, as well as living cost adjustment indexes (i.e., purchasing power parity index) for cross-province comparison of money values. The provincial panel datasets containing human capital, physical capital and provincial living cost adjustment index, and many other useful provincial data (raw and processed), have been released for public use, and can be downloaded free at:

http://humancapital.cufe.edu.cn/rlzbzsxm.htm

II. The Main Findings of the 2017 Report

The main findings in the 2017 report are summarized below.

(All real values are based on 1985 prices unless otherwise specified.)

I) J-F based human capital measures

- 1. The top three provinces in terms of human capital stock in 2015 were Shandong, Guangdong, and Jiangsu.
- The top three provinces ranked by per capita human capital stock in 2015 were Beijing, Tianjin and Shanghai.
- 3. China's total human capital reached RMB 1,747.1 trillion in 2015. Urban and rural human capital was RMB 1,468.1 and RMB 278.9 trillion, respectively, accounting for 84.03% and 15.97% of the total human capital.
- Human capital per capita reached RMB 1.5 million in 2015, while urban and rural human capital per capita was RMB 2.3 million and 0.6 million, respectively. Human capital per capita for males and females was RMB 1.9 million and 1.2 million, respectively.
- Total human capital in 2015 was 8.20 times its level in 1985. Total human capital and human capital per capita grew at an annual rate of 7.40% and 6.79% on average, respectively.
- 6. During 1985-2015, rural human capital grew at an average annual rate of
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3.53%, while urban human capital grew at 9.31% annually. Growth rates of both urban and rural areas accelerated since 1997, to annual rates of 11.97% and 4.10%, respectively, for 1997-2015.

- 7. Urban human capital surpassed rural human capital in 1990, and has remained higher since then.
- Rural human capital per capita grew at an average annual rate of 4.91% over the period 1985-2015, while per capita urban human capital grew at an annual rate of 5.63%, reflecting China's rising rural-urban economic gap.
- 9. At the national level, the ratio of human capital to physical capital decreased rapidly up to 1995 and then began to rise slowly, as human capital growth began to exceed the growth of physical capital.
- II) Traditional Human Capital Measures
- 10. During 1985-2015, the average age of labor force at the national level increased from 31.9 to 35.9 years, from 31.7 to 36.7 years for the rural areas and 32.3 to 35.3 years for the urban areas.
- 11. During 1985-2015, the average years of schooling at the national level increased from 6.2 to 10.1, with 5.6 to 8.6 for the rural areas and 8.1 to 11.3 for the urban areas.
- 12. During 1985-2015, the proportion of workers with a high school education or more increased from 13.49% to 37.17%, with 8.04% to 13.90% for the rural areas and 29.77% to 54.13% for the urban areas.
- 13. The proportion of labor force with college education or above increased from 1.49% to 16.40%, with 0.22% to 2.94% for the rural areas and 5.28% to 26.20% for the urban areas.
- III) Hong Kong and Taiwan
- 14. In Hong Kong, during 1985-2015, the average annual growth rate of human capital was 4.26%, and for human capital per capita was 3.42%.

- 15. In Taiwan, during 1985-2015, the average annual growth rate of human capital was 1.39%, and for human capital per capita was 1.11%.
- 16. During 1985-2015, in Hong Kong and Taiwan, average labor force age grew from 33.5 to 37.8 years and from 32.3 to 37.0 years, respectively.