

Foreword

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China's remarkable economic trajectory since the founding of the People's Republic in 1949 draws the continued attention of policy analysts and scholars. What lessons from China's recent past can inform those responsible for deciding on China's future? Is China's experience completely exceptional or does it contain information relevant for development policy elsewhere? In *Investing in Human Capital for Economic Development in China*, Gordon Liu, Shufang Zhang and Zongyi Zhang provide analysts with a comprehensive account of one of the most salient characteristics of China's growth experience: the exceptional health and educational attainments of China's population. Liu, Zhang and Zhang have assembled a group of scholars from inside and outside China to provide the currently definitive interpretation of the multiple dimensions of China's successful investment in human capital. Much can be learned from this carefully prepared volume (hereafter LZZ) to inform both Chinese policy making and policymakers elsewhere seeking to learn from China's experience. LZZ also provides the starting point for scholars seeking further insights into the linkages between human capital formation and economic development.

It may at the outset be worth reminding ourselves just how distinctive China's success in human capital formation has been. Two recent efforts to document the recent history of country outcomes in education (Lutz *et al.*, 2007) and in health — as measured by under-5 mortality rates (Murray *et al.*, 2007) — provide the best available comparative data.

Beginning in the 1950s, extremely rapid declines in under-5 mortality in China and real but modest ones in India led to a 1970 under-5 mortality rate in China of about 87 (per thousand live births) and in India of about 164. (I have chosen India for these comparisons for specificity and because India's improvements have been typical ones.) India's rate then declined to about 77 in 2000 and China's declined more rapidly, to a 2000 level of about 28. By 2000 China was thus just a little less than 30 years ahead of India on under-5 mortality (although India has recently pushed its rate of decline to a higher level than China has). By

2002 China's life expectancy of 71 years fell only 7 years short of the high-income country average of 78 years.

Lutz *et al.* (2007) point to an even greater China-India gap in education as represented by the educational attainment of the population aged 20–39. In 2000 about one-third of India's population in this age group had no education. Thirty years earlier, in 1970, the comparable figure for China was less than 30% and by 2000 the figure for China had declined to under 5%. By this measure China leads India by over 30 years. China's most substantial educational success has been at the secondary level, where Lutz *et al.* (2007, p. 223) point to "... a spectacular increase in the number of young adults with secondary education. It increased six-fold from 50 million in 1970 to 300 million in 2000." Ongoing studies using internationally comparable tests in mathematics suggest that, beyond the attainment numbers, Chinese secondary education quality well exceeds India's and, possibly, global norms.

In both absolute and comparative terms, then, China's investments in human capital have been enormously successful. LZZ explores the cost, finance and consequences of this success as well as pointing to remaining problems and challenges. The volume presents these findings in a natural and user-friendly structure: Part 1 contains four papers exploring the consequences of human capital for national economic growth and related matters. Part 4 returns to the dimensions and consequences of human capital formation at the microeconomic level. Parts 2 and 3 discuss, for education and for health respectively, issues concerning demand, attainment and remaining disparities.

The 21 papers in LZZ exhibit substantial variation in both approach and in scope. Most are empirical; some are entirely theoretical. Most deal explicitly with China; some are more general. There are several points that cut across the empirical papers relevant to China that I would like to highlight in this Foreword.

In paper 1, Nobel Laureate Robert W. Fogel addresses the question of whether China is likely to achieve the Chinese Communist Party's ambitious target of a 7.2% per year growth rate in income per capita between 2002 and 2020. He points to major problems — e.g., inequalities, pollution, and possible political instability — that mitigate against achieving the target rate. Despite those problems, Fogel views the growth goal as likely to be attained. His reasons lie partly in projection of continued favorable macroeconomic policies and, also, in the expectation of continued successful investments in education and in health, which could "... account for a large portion of the desired growth rate." Importantly he argues that a valuation of quality improvements in education and in health — unmeasured within national income accounts — could add substantially to growth rates measured in terms of income.

The microeconomic studies reported in Part 4 of LZZ provide evidence supporting Fogel's view of the importance of human capital for income improvement in China. Gordon G. Liu and colleagues use the power of longitudinal data to conclude that household income, particularly in rural areas, is strongly influenced by the health of its members. Dennis T. Yang finds a large and growing (between 1988 and 1995) impact of education on urban wages in China. He also found significant heterogeneity across cities in the magnitude of the impact, suggesting that urban labor markets remain to some extent unlinked. Zhiqiang Liu also addresses the economic impact of education in urban China with a focus on externalities at the individual level. He finds strong effects: an additional year of education

could increase individual earnings by 11%–13% with an additional 4.9%–6.7% in external returns.

A third (and often neglected) component of human capital constitutes physical beauty. Daniel Hamermesh has pioneered studies of the impact of beauty on wages and, with colleagues Xin Meng and Junsen Zhang, contributes a paper to this volume on female beauty in Shanghai. Very attractive women, it appears, earn about 10% more than others and investments in clothing and cosmetics have at least a modest impact on perceived beauty.

William Hsiao and colleagues report findings from Hsiao's long-term assessment of the impact of medical expenditures on poverty in rural China. In addition to the substantial impact of health expenditures on poverty, they find significant consequences in reduction of household investment in human and physical capital.

These microeconomic studies point consistently to the large effect of human capital on productivity and investment and, additionally, to the consequences of inadequate risk sharing for medical expenditures. An important additional dimension of analysis explores the extent to which improvements in health affect educational outcomes, the extent to which educational outcomes affect health, and the extent to which the observed correlation between education and health results from "third variables" influencing both. Michael Grossman has contributed seminal to understanding these issues, and his paper in this volume provides an up-to-date précis of the microeconomic literature. Its conclusions suggest that health and educational achievements in China are likely to have been mutually reinforcing.

In Part 1, Lawrence J. Lau and colleagues (including myself) report one in the sequence of Lau's studies of economic growth in Asia and in the G5. Their study concludes that only a modest fraction of China's growth between 1970 and 2000 appears to result from changes in the levels of education and of health in that period. Far more than in most countries, China's growth appears to have resulted from massive physical capital investments (as well as policy reform). What accounts for the apparent discrepancy between Lau *et al.*'s findings and those of Fogel and the microeconomic studies? I would venture three interpretations. First, health gains in China after 1970 have been relatively modest by comparison with gains of the preceding two decades. Had the Lau *et al.* analysis been able to extend back to the period of China's most rapid health gains, more significant effects may have appeared. Second, an important part of the impact of human capital improvements could occur with a substantial lag as production processes, dependency ratios and labor force participation decisions adjust to a more educated and healthier labor force. A third and related point was a finding noted but not highlighted in the Lau *et al.* study, and that was one of a strong complementarity between population health and physical capital investment. Each of these three points suggests that the differences among findings may be less important than they first seem.

Fogel's optimistic assessment of China's economic growth prospects rests in important part on the assumption of major improvements in the human capital stock over the coming decade. A straightforward projection of past success supports this assumption. But is such a projection warranted? The economic reforms beginning around 1980 have yielded major successes in agriculture, some services and industry. The reforms also affected schooling and health services. State finance (and state-mandated finance) ebbed in favor of out-of-pocket finance. Salary and institutional support in the health sector came increasingly to rely on

sale of medicines and diagnostic services, leading to a potential divergence of the physician's role as an agent for the patient and her role in maximizing her own income. Parts 2 and 3 of LZZ provide important analyses bearing on the probable future trajectory of human capital formation in China in light both of earlier reforms and of recent policies returning the state to a more prominent role in financing human capital formation, particularly in education.

A number of empirical papers in LZZ report results on the consequences of increased reliance on out-of-pocket finance of health and education services. Jin Feng and colleagues use data from the 1991 and 1997 China Health and Nutritional Surveys to assess the consequences in rural China of reductions in health insurance and increases in medical costs. They find an inelastic response of medical expenditure to income (0.31), indicating that individuals with lower income have relatively higher medical expenditures. In a more specific study of service utilization, Ake Blomqvist and Haoming Liu find that the most important factor influencing immunization uptake is health insurance coverage. In a study of the effects of costs on educational attainment, Linxiu Zhang and colleagues find that dropouts remain common in rural China and that 54% of dropouts resulted from inability to pay tuition fees. (The central government has recently introduced a policy of subsidizing tuition fees in western provinces, presumably in part to address this problem.) These studies collectively point to major problems for the poor in rural areas resulting from introduction of out-of-pocket payment for services. Likewise, Zai Liang and Yiu Por Chen find that children of the large numbers of temporary migrants to cities receive much less education than either city dwellers or non-migrant children at the place of origin. It is probable that costs play a significant role.

Despite these problems, Rachel Connelly and Zhenzhen Zheng report optimistic findings from the 2000 Chinese Census on educational attainment. Between 1990 and 2000 school enrollment data point to substantial progress in achieving China's goal of universal education for all children through the 9th grade. This suggests continuation of the rapid progress in educational attainment reported by Lutz *et al.* (2007) for the age cohort 20–39. Xiaoying Zheng and colleagues also use the 2000 Census, in their case to project the demand for teachers and facilities to 2030 in light of population trends and projections of educational attainment. Meeting attainment goals appears quite feasible. These interpretations, and those of Gregory C. Chow's econometric analyses for education and for health, provide less negative interpretations than some of the other chapters do of the consequences of the 1980s private finance-oriented reforms.

LZZ provides an indispensable compilation of findings on the consequences of human capital investment for income growth in China, on the factors influencing demand for health and education services and on important recent trends in outcomes. In particular, some papers provide empirical assessments of the consequences of the dramatic finance policy changes that began in the early 1980s. As the Chinese government begins to reinstate policies providing for a more substantial public sector role in health and education finance, it will be important to track carefully the consequences of these policies (which are more typical of modern capitalist economies). We can hope that Gordon Liu, Shufang Zhang and Zongyi

Zhang will take the effort to assemble an LZZ-2 for us to address these issues in several years' time.

References

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