



## INEQUALITY, HUMAN CAPITAL, AND INNOVATION: CHINA'S REMAINING BIG PROBLEMS

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**Abstract-** The purpose of this paper is to analyse China's current problems in inequality and compensation of employees, and their impact on human capital accumulation and innovation, which is one of key factors influencing the sustainable economic growth in China in the following decades. We have analysed the economic reforms in China in the past three decades and discussed the future economic development strategy of China from the perspective of human capital accumulation and innovation.

**Keywords-** Inequality, Compensation of employees, Human capital accumulation, Innovation, Economic reforms

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### Introduction

2013 marks the 64<sup>th</sup> anniversary of the founding of the People's Republic of China. In terms of economic development, a very clear structural break occurred in 1979. In the first 30 years from 1949 to 1979, economic growth was sporadic. However, the economic development in the following 34 years has been steady and rapid. This is mainly due to the economic reforms launched in 1978, which liberated the collective labour market and gave incentives to workers to increase their production efficiency.

Before 1820, China had been the largest economy in the world. Until the nineteenth century China was a much bigger and more powerful state than any in Europe or Asia. Its technical precocity and meritocratic bureaucracy gave it higher levels of income than Europe from the fifth to the fourteenth century [1]. The period of 1840 to 1949 was the most difficult time in China's long history. The First Opium War, the Second Opium War, War with Britain and France, War with the Eight Allied Nations, War with Japan and the invasion of China led to great hardship. "Between the 1840s and 1940s, China's economy collapsed. The GDP per capital in 1950 was less three quarters of that at 1820 level. Population growth was interrupted by major military conflict. In 1950, China's GDP was less than a twelfth of that in Western Europe and the Western Offshoots" [1].

Not long after 1820, Britain overtook China as the leading economy in the world. This position was relinquished to the United States after the First World War. Chairman Mao and the Chinese Communist Party unified China and revitalised China. Deng Xiaoping's economic reforms have transformed China into the second largest

economy in the world. If China's economy continues to grow at its current rate for another 30 years, it is more likely that China will reclaim the position of the largest economy in the world. Even then, China's GDP per capita will still only be average for the world.

The purpose of this paper is to analyse China's current problems in inequality and compensation of employees, and their implications on human capital accumulation and innovation, which is one of the key factors affecting the sustainable economic growth of China. We have analysed 30 years' economic reforms, and discussed the future economic development strategy of China from the perspective of human capital accumulation and innovation.

### Literature Review

At present, there are mainly two perspectives in the studies on the gap between human capital and income distribution. The first is from the perspective of macro-economic growth, which investigates the influence of human capital on economic growth, by separating the human capital from the number of population and labour. Seen from the output contribution rate, if the human capital plays a leading role in economic growth, the proportion of labour remuneration in overall national economy will certainly increase. The second is on the basis of human capital theory. If the labour remuneration is determined by human capital level, the inequality in human capital can be interpreted as that in income to a large degree.

Based on the expanded Solow model by Mankiw, et al. [2], it was concluded by most studies that it is human capital rather than the simple labour that is key to the economic growth [3,4]. A lot of studies and evidence have shown that with the economic progress and

growth of labour market, the impacts of human capital on the labour remuneration have become more important, which is reflected in the increasing rate of return to human, the widening income inequality on the basis of technology-oriented labours [5,6] and increasing wage inequality due to skill-biased technology change. As for the impacts of human capital distribution inequality on economic growth, the tenths distribution for the accumulation of educational level was calculated by Amparo and Rafael [7] as the Gini coefficient for human capital to analyze the relation between human capital inequality and economic growth. It was found that the influence of human capital inequality on economic growth was strong. And the human capital inequality would have a negative influence on the economic growth not only by decreasing the resource allocation rate, but also by reducing the investment rate. By following Barro and Lee [8] definition for human capital, an empirical analysis was conducted by the scholars in China on the contribution rate of human capital and simple labour for economic growth. The conclusion also showed that no matter in short-term or in long-term the human capital would always have a better effect on economic growth than simple labour, and even exceed the function of physical capital and become a new source for economic growth [9-12].

As for the income inequality, a lot of studies based on Mincer earning function showed that human capital was one of the most important influencing factors that determined the labour remuneration, and the skewed distribution of human capital would directly lead to the widening gap in income. The conclusion has been fully supported by other theoretical or empirical studies [13-16]. The distinctions in the salaries, pensions and medical benefits of urban and rural labours were analyzed by Yao and Lai [17]. It was discovered that 70%-80% of the income differences between urban and rural labours could be explained by their human capital and enterprise condition. By estimating the proportion of human capital and original labour in labour remuneration with Mincer earning function, it was revealed by Zhou, et al. [18] that in the past two decades, the rate of return to human capital measured by education and experience has increased dramatically, while there was no change in the rate of returns to simple labour.

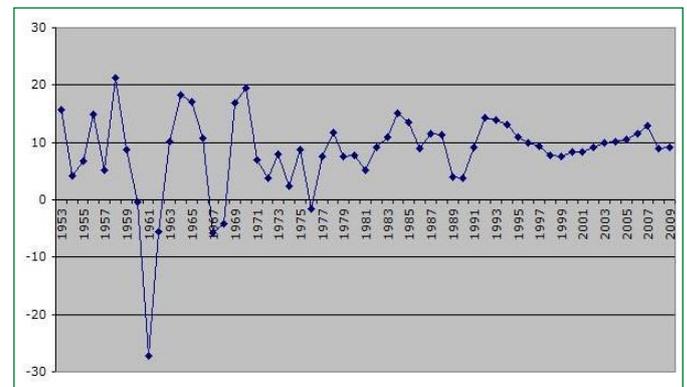
**Economic Reform and Inequality**

From 1959 to 1977, the People's Republic of China only managed economic growth averaging 4.9% while the four Asian Tigers and Japan grew much faster. Does this relatively poor economic performance indicate a failure of government economic policies during the period in which Mao Zedong was the supreme political leader of China? Did the development of heavy industries under Chairmen Mao build the foundations for the current economic miracle? Did Chairmen Mao's education system which greatly reduced the illiterate population pave the way for future economic development? These are questions that no one can answer with certainty.

The poor economic performance of the first 30 years of China lay largely in the successive political turmoil which ravaged China. The Korean War, which took place soon after the birth of the People's Republic of China, was a drain on China's limited resources in the early 1950s. This was followed by the 'Great Leap Forward' in 1958 which resulted in widespread famine. Subsequently, the Cultural Revolution was launched and this was a period of widespread social and political upheaval from 1966 to 1976.

What is often overlooked is the role that recent 30 years of political stability in China played in the current economic growth. [Fig-1]

shows GDP growth rate for China over last 60 years. What is perhaps surprising is that the fastest economic growth rate did not occur during the recent 34 years of phenomenal economic growth, but in the 'Great Leap Forward' in 1958. However, this special economic growth in 1958, which was in excess of 21.3%, did not bring wealth to the Chinese people. On the contrary, along with deteriorating relationship with the Soviet Union and natural disasters, it led to three years of economic catastrophe from 1960 to 1962. Indeed, the 27.3% economic contraction in 1961 was far worse than the Great Depression in the United State. The consequences were even much more severe. The other two occasions of negative growth took place during the Cultural Revolution from 1967 to 1968 and in the aftermaths of the death of Chairman Mao in 1976. The evidence supports our argument that the poor economic performance in the first thirty years of the People's Republic of China was mainly due to political turmoil and underperforming economic policies. Indeed, the only period in which China experienced slow growth in the past thirty years was between 1989 and 1990, also due to the political "turmoil".



**Fig. 1-** GDP growth rate for the People's Republic of China from 1953 to 2009

(Data source: China Statistical Yearbook 2002 and 2009)

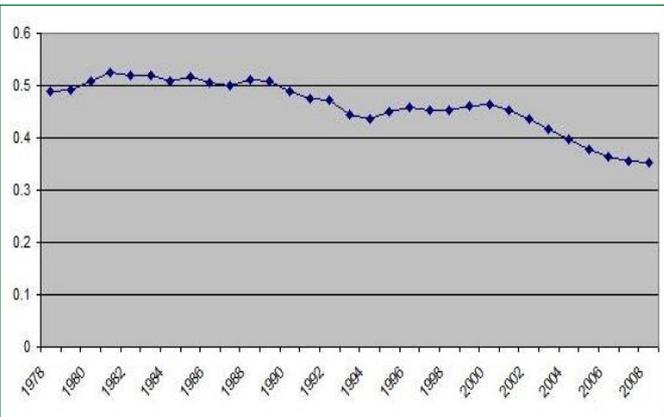
Deng Xiaoping's economic reforms are well known and acknowledged. But in fact, Deng also made contributions to political reforms. This is the second important reason for the spectacular economic growth we are witnessing today. Deng Xiaoping was never officially the head of the Chinese government. He proposed retirement for the party elderlies. During Deng Xiaoping's era and afterward, Hua Guofeng, Hu Raobang, Zhao Ziyang, Jiang Zemin and Hu Jintao all retired without major disturbances. Even the political turmoil of 1989, when economic growth fell to 4.1% in 1989 and 3.8% in 1990 [Fig-1], it was not a major incident relative to what we see in some countries today and in the history of China.

Deng Xiaoping once said we had to 'cross the river by feeling the stones', and his famous remark "no matter if it is a black cat or a white cat; as long as it can catch mice, it is a good cat". These remarks indicate that we did not have a theory. Should we call this Deng Xiaoping practice rather than Deng Xiaoping theory? Deng Xiaoping's other famous remarks include 'let some people get rich first'. This is a key direction for the economic growth which followed. However, this also led to the great economic disparity that we see in China today. What is forgotten is the second half of his remarks: 'let everybody get rich by the end of the (20th) century'. In actual fact, this is a typical economic problem. The efficiency and equality trade off studied by Arthur Okun already established equality of

opportunity and efficiency does not have a negative relationship. The negative relationship only occurred between efficiency and the equality of outcome. Okun argued that pursuing equality will cost society efficiency: there are fewer incentives for the working rich, fewer incentives for the working poor, less capital investment by the rich and more administrative costs. On the other hand, pursuing efficiency will cost society equality, with the rich getting richer and the poor poorer [19].

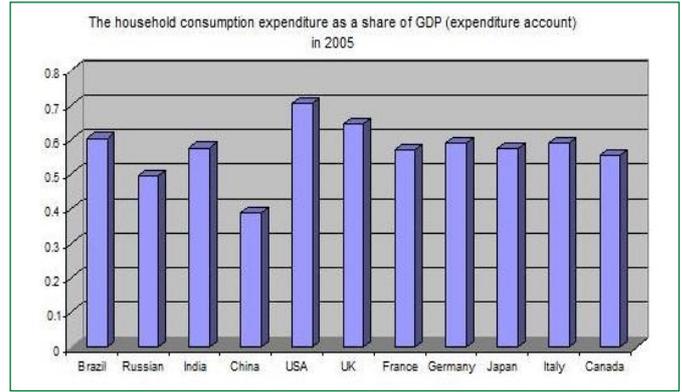
Today, China is still officially a socialist market economy. Then shouldn't a socialist market economy have more equality than a capitalist market economy, at least equality of opportunity? China is still a one party state. Shouldn't the Communist party be more concerned about the disadvantaged group of people? What does the Communist party's manifesto say? The political leaders of China have long established the need to correct these problems which are overlooked by economists. Former President Hu Jintao and former Premier Wen Jiabao advocated "scientific concept of development", "socialist harmonious society" and more recently, "don't do much ado about nothing" (*Bu Zhe Teng*).

The emphasis on efficiency, reform and market economy in the last 30 years has led to great inequality. This is reflected in the rising of Gini coefficient of China. The household consumption expenditure as a share of GDP (expenditure account) declined from 52.5% in 1981 to 35.3% in 2008. [Fig-2] shows a time series trend for China from 1978 to 2008 over 30 years. There is a noticeable downward trend since 2000. Cross sectional data from the World Bank on the BRIC 4 and G7 countries show that China has by far the lowest share of household consumption expenditure in GDP in 2005.



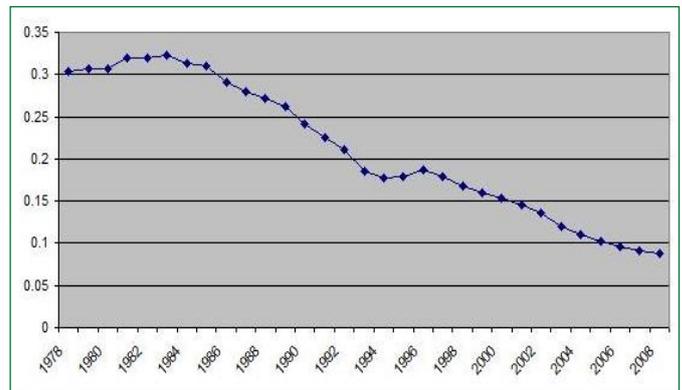
**Fig. 2-** The household consumption expenditure as a share of GDP (Expenditure account)  
(Data source: China Statistical Yearbook 2009)

[Fig-3] indicates that this was 10 % lower than the 2nd lowest country, Russia and an incredible 30% lower than highest country, the United States. Rural household consumption expenditure as a share of GDP (expenditure account) declined from 32.0% in 1981 to 8.9% in 2008 [Fig-4]. This is an astonishing decline, which highlights the growing inequality of China. The continuing urbanisation which has resulted in a lower proportion of people living in the countryside is certainly a major factor behind the trend, but this can only explain part of the decline. For the year 2008, household consumption expenditure as a share of GDP was 35.3%, of which only 8.9% was rural. This meant that despite the size of urban population being smaller than the rural population, urban dwellers spent about 4 times as much as the rural population.



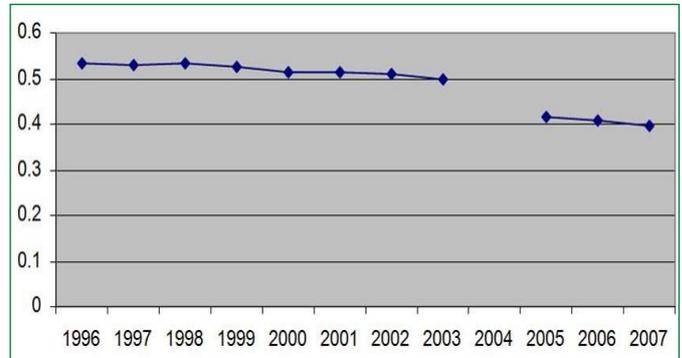
**Fig. 3-** (BRIC four and G-7)

(Source: World Bank Database)



**Fig. 4-** Rural household consumption expenditure as a share of GDP (Expenditure account)

(Data source: China Statistical Yearbook 2009)



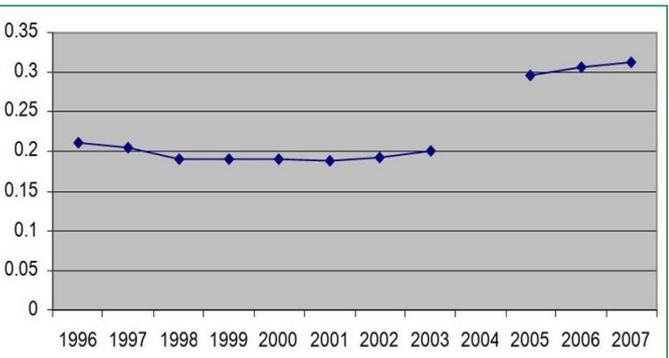
**Fig. 5-** The compensation of employees as a share of GDP (Income Account)

(Data source: China Statistical Yearbook 1997-2008)

The compensation of employees as a share of GDP (income account) also declined steadily from 53.1% in 1998 to 39.7% in 2007 [Fig-5]. The share of GDP (income account) which went to profits (operating surplus) has been increasing from 18.8% in 2001 to 31.3% in 2007 [Fig-6]. Some economic theories suggest that this has a positive impact on economic growth, as the retained profits are used for reinvestment. However, this is not necessarily true for China. Some nouveau rich of China use their money for gambling, prostitution, and illegal drugs. Chinese business culture has evolved from inviting people out for dinner to inviting people to bath, and now has changed to inviting people to take illegal drugs.

It is the poor whose expenditure patterns which are beneficial to economic development. They buy white electrical goods, clothes, and other manufactured commodities to stimulate the economy. If the less well off do not have enough high wages to improve their human capital, it would be detrimental to economic development. Migrants are one of the less well off groups.

According to the OECD, compensation of employees is the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period. Compensation of employees has two main components: (a) Wages and salaries payable in cash or in kind; (b) The value of the social contributions payable by employers: these may be actual social contributions payable by employers to social security schemes or to private funded social insurance schemes to secure social benefits for their employees; or imputed social contributions by employers providing unfunded social benefits. [Fig-7] shows the compensation of employees as a share of GDP in 2006 for China and G7. The data for the G7 is taken from OECD and data for China is from China Statistical Yearbook. Once again China has the lowest share, but Italy has very similar low share. Both compensation of employees and GDP data were available from the two sources.

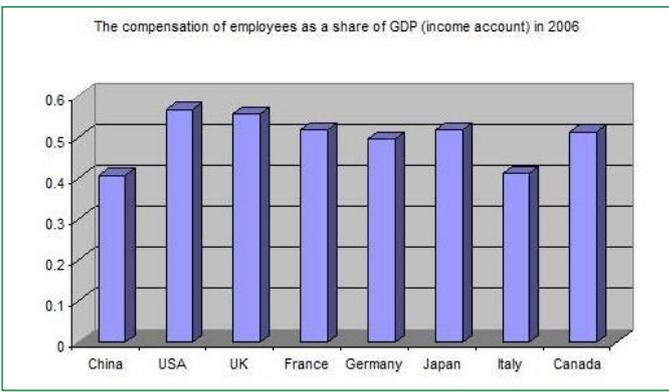


**Fig. 6-** The operating surplus as a share of GDP (income account) (Data source: China Statistical Yearbook 1997 - 2008)

People may argue that China's low consumption expenditure level is partly explained by the high saving rates. All the G7 countries had higher ratios of household consumption expenditure to compensation of employees. However, the main explanation lies in the low [Fig-7] and declining [Fig-5] share of compensation of employees as a share of GDP for China. This share was a full 10% lower than that in the G7 countries except Italy.

The lower wages share is a key factor behind the huge economic inequality in today's China. This is strong evidence for the unequal income distribution of the factor rewards. Labours are not getting their fair share of the output.

Recent research suggests that there are now as many as 250 million rural to urban migrants within China, which is equivalent to 70% of the urban employment. It is widely held that rural-urban migration has played a vital role in China's high economic growth over the last 20 years. Economists have suggested that these migrants should locate either in the countryside or in cities. Migrating to and from is not beneficial to the society. However, if they were to locate in the major cities such as Beijing or Shanghai, they would never be able to buy a property, as the housing price in Beijing and Shanghai are ridiculously high. Meanwhile, these cities are highly reliant on the migrant workers.



**Fig. 7-** (China and G-7 in 2006)

(Source: OECD OLIS database and China Statistical Yearbook 2007.)

Some scholars suggest that further urbanisation would be very good for the Chinese economy, which could add a further 3% to GDP growth. However, an endogeneity problem exists here. Does economic growth lead to urbanisation or does urbanisation lead to growth? However, despite the vast number of surplus labour in rural China, there has been growing evidence of shortages of migrant workers in South China recently. There has been a severe shortage of labour in Pearl River Delta. Among others, one of the reasons is low wages. From 1995 to 2005, real wages for migrant workers actually decreased. This migrant labour shortage happened again in the east coastal provinces of China in 2009 and 2010.

It would be wrong to argue that there was any one single reason for the migrant labour shortage. Knight and Song [20] examined the role of information and social networks in the employment and payment of rural-urban migrants. They found "the very imperfect labour market that still exists in urban China places an economic value on information. Better-informed workers are better able to seek out and secure the high-paying job" [20]. Cai and Du [21] a leading Chinese labour economist, argued that China had already reached the Lewis Turning Point, with its surplus labour pool had disappeared.

Since 1995, China has introduced the regulation on minimum wages. Unlike the UK and the USA, the minimum wage in China is based on regional costs of living. Labour economics theories suggest that a minimum wage law will result in: unemployment and economic inefficiency if the labour market is perfectly competitive. There is complete coverage, economic inefficiency if the labour market is perfectly competitive while there is a non-covered sector and an ambiguous effect on the level of employment if firms possess some degree of monopoly power. However, with some studies estimating no effect on employment and with many of those that did estimating own-wage labour demand elasticity well below unity, there was notably uncertainty about how employment among low-wage workers responded to increase in the minimum wage [22].

In 2008 a new labour contract law and a dispute arbitration law took effect, which pushed up the costs of manufacture sector, as it protected employees from sudden layoffs, as well as ensured that they were better compensated in the event of being made redundant by their employer [23].

In order for China to maintain the phenomenon growth of the past three decades, political stability is a necessary ingredient. Recognizing this, the leadership in Beijing has come up with a new moto: 'bu zhe teng', which is translated as 'don't ado about nothing'. In

order for the government to achieve the goal of political stability and ultimately a harmonious society, it must address the grievances which would cause dissatisfactions among the population. Economic inequality is reaching new heights in China. Not since the days of the Communist takeover has China experienced such levels of inequality. What is worse, the perception among the general population is that some of today's rich achieved their wealth through corruption and other illegal means. Chinese people may tolerate great economic inequality, but not when this is achieved through irregular means.

There have been numerous disturbances documented by the mass media. Some involved tens of thousands of people. None have been big enough to threaten political stability. However, the trend is worrying. The rise of China's netizens, a unique feature of China, has meant that it is almost impossible for the government to curb the spread of information. China's huge internet population is also a powerful force which have brought down corruptive politicians and influenced court rulings.

A prominent theme of western politics is the focus on the equality of opportunity rather than equality of outcome. Indeed, all market economies rely on the inequality of outcome to provide incentives for the people to engage in productive activities. China, despite officially being a Socialist country, has high levels of inequality in both opportunity and outcome.

#### Human Capital and Innovation

In the next 30 years, a key factor in maintaining economic development for China is technological innovation under political stability. "China must still go through many difficulty days before it can achieve its long-sought goal of becoming a fully modern nation-state" [24].

The basis of technological innovation is human capital. Education, on the job training and health care are important for human capital accumulation. Fleisher, et al. [25] find that human capital positively affects output per worker and productivity growth for China. In particular, in terms of its direct contribution to production, educated labour has a much higher marginal productivity. Moreover, they estimate a positive, direct effect of human capital on Total Factor Productivity growth. This direct effect is hypothesized to come from domestic innovation activities [25].

The low wage share means that workers are not properly compensated for their work. This reduces the ability of workers to accumulate their human capital. If workers' income can only cover their basic needs, such as food, clothing and accommodation, how can they invest in their human capital, such as education, training, health care and so on? Migrant workers can only earn enough for their subsistence. They do not have adequate resources to invest in their or their children's education. The cultural background for the Chinese people is to invest significantly on their children's education when they become well off.

It is possible to maintain the economic growth of China for another 10 years, and it would be truly a miracle for another 20 or 30 years. If economic growth of 8% or even 5% can be achieved in the following three decades, China could well become the largest economy in the world again. Even then, China's GDP per capita will still only be average in the world.

#### Conclusion

If China does not take the problem of income inequality and disad-

vantaged group of people seriously, political instability could derail economic development, for example, the riots in a Tonghua steel mill in 2009 where the chief executive was beaten to death as workers and police clashed. If the central and local government pursue economic development without regards to the interests of the less well off people, it will create political instability and undermine the development of China's human capital. In the following three decades, technological innovation would be key to China's sustainable economic development. Without a well educated work force, this would be very difficult to achieve.

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