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OTORITAS

JIP

VOL. XIII

NO. 2

PP. 182-363

August 2023

P-ISSN 2088-3706

E-ISSN 2502-9320



Department of Government Studies
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Jurnal Ilmu Pemerintahan

Volume 13 • Number 2 • 2023

OTORITAS : Jurnal Ilmu Pemerintahan

Published by the Department of Government Studies,
Faculty of Social and Political Sciences, Muhammadiyah University of Makassar

For further information, please visit: <https://journal.unismuh.ac.id/otoritas>

ISSN: 2088-3706 (Print) | 2502-9320 (Online) | DOI : 10.26618

First published in April 2011

Please send all articles, essays, reviews, and documents to:

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The insignificance of GDP growth rate to people's welfare: a political economy analysis of China's impressive GDP

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Abstract

In recent decades, there was a fierce debate about whether Gross Domestic Product (GDP) accurately describe people's welfare. This manuscript aims to prove, an impressive GDP does not mean that people live on welfare. This topic is important to be discussed, simply, because it shows the actual condition of the people during their impressive GDP growth, besides, theoretically, it also sheds light on the correlation between GDP and real welfare. Taking China between 1980-2014, when China experienced the highest GDP growth as a case study, this investigation used secondary data provided by previous empirical research documents and international organizations' data such as UNDP, WHO, World Bank and other relevant sources. The data was analyzed by comparative research method for comparing China's GDP rate with China's achievement on five aspects of alternative economic development gauges: inequality rates, life expectancy, health quality, education attainment, and environmental impacts. This investigation figured out that the impressive of China's GDP has no direct correlation to Chinese real welfare. Along with the impression of China's GDP, the Chinese must deal with inequality, the low government budget for human resources development, and environmental issues. This finding might support the previous analysts who were pessimists about the accuracy of GDP in measuring people's welfare and develop a new path for future research.

Keywords: China economy, gross domestic product, welfare

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Introduction

Gross Domestic Product (GDP) is one of the most popular indicators and is often used as a benchmark of a country's economic development. It represents the total dollar value of all goods and services produced over some time and is commonly used as an economic measure. Regularly, the current GDP of each country will be updated quarterly, so that the progress or decline of economic growth can be observed, and certainly can be used as a basis for comparing the countries' economic achievements.

Besides showing the achievement of a country's economic growth, GDP also has a political function in the world order. GDP sets up the ranking of countries and determines the position among countries. The global definition of "power" is made based on the GDP (e.g., superpower, new powers etc.), access to world governance institutions is provided based on GDP achievements (e.g., G8 or G20 members selected by their GDP), and also policy development in a country is controlled by the formula of GDP (Fioramonti, 2013).

There are three ways to measure a country's GDP. First, GDP can be calculated as the amount of expenditure made by the user of the good. This is known as the expense approach and its data can be obtained from companies, service providers, retail stores, government offices, and so on. Second, measurement is based on the price of goods and services in the market, given the price of a product or service contains the components of production costs and revenues earned by the company. This is known as the income approach (or gross domestic income) and is often used to assess household purchasing power and the financial health of a business. And the third, GDP is obtained by measuring the amount of value added in each stage of the production process or known as the value-added approach. To assess these ways, it is necessary to conduct a special survey of thousands of companies, especially manufacturing and services (Bureau of Economic Analysis, 2007).

However, GDP as a symbol of economic growth gauge has been debated in the last decade. As a macroeconomic index, GDP can reflect some achievements in economic growth but is considered incapable of describing the real welfare perceived by society. Moreover, the ambition of achieving high GDP is often considered the cause of social and environmental problems. Stiglitz (in Bureau of Economic Analysis U.S. Department of Commerce, 2009) argued that the focus on GDP growth can bring conflicts between the government and the people. Political leaders were eager to exploit resources for industrial needs, while citizens demand their rights to live in prosperity such as high income, good quality of life, and a healthy environment-which may have the opposite effect on GDP growth. Instead represent the welfare of a country, the attempt to raise GDP is considered to become a boomerang and a threat to society.

Some indications as the reasons why GDP was deemed a weak measure. According to the European Economic and Social Committee (2012), the first weakness of GDP is its inability to reflect the cost of economic growth upon society and the environment. Second, GDP cannot reflect the quality of economic growth, such as the proportions of new technologies and new products. Third, GDP cannot reflect wealth stock and fairness of income distribution. Fourth, GDP cannot reflect the total output of economic activities, such as non-market economy, underground economy and non-money economy. Fifth, GDP cannot reflect the total value of public services such as education and health services. Sixth, GDP cannot reflect wealth increments, such as GDP created in dismantling houses and that created in building houses. Meanwhile, according to Fioramonti (2013), the popularity of GDP as an instrument cannot be separated from pragmatism. GDP is designed to capture the quantity production at certain times but does not consider whether production is done for short-term consumption, for fixed asset investment, or to replace depreciable fixed assets. If this calculation is done it will be obtained a more accurate measure that is the domestic net product. But for the reason of ease of calculation, so that it can be updated as soon as possible every three months, then GDP becomes more popular than the net count.

The scepticism about GDP describing the real well-being of society is because GDP does not contain non-economic measures of human life. GDP only looks at the production and consumption aspects of goods and services regardless of the qualitative microeconomic measures that directly correlate with people's lives, such as living standards, social cohesiveness, and environmental quality. Therefore, scholars continue to redefine the meaning of welfare and develop measurements which fit the real developments and conditions of society.

Attempts to seek welfare tools have long been conducted by various economists. Measuring quantitatively has been initiated since the beginning of the classical era. Since the 1600s, the British classical political economist William Petty used land and labour as determinants of national welfare, which was then regarded as the king's property. Similarly, the era of King Louis XIV in France also applied the same principle, where society is divided into three classes based on the value of the land that is the owner class (the landlords), the productive class (the farm labourer), and the sterile class (people outside the group associated with agriculture) while the production of goods and services is based as consumption over the agricultural surplus. Adam Smith, in his masterpiece *The Wealth of Nations*, also argues that the wealth of a nation is produced by all the results of years of land and labour (Fioramonti, 2013).

Since many countries experienced a transformation from agricultural to industrial and society developed gradually from traditional to modernism, the standard of welfare and wealth then also changed, from the value of land and labour to the accumulation of goods and services. The amount of GDP is then used through the calculation of the total consumption of the citizens, the amount of investment made by the people, the expenditure of government spending, and the comparison value of exports and imports in international trade conducted by a country. GDP as a non-descriptive single digit generalize the economic achievement not only for industrialized countries but also for agricultural countries. Hence, this generalization emerged in new debate among scholars and stakeholders about the right standard of welfare.

This controversy shifted perspectives in measuring real welfare. A variety of alternative measures were developed by various institutions in the world to approach accuracy in measuring the real welfare of society. Not only relate to the economy but the alternative measures also considered the achievements of social and environmental development. For instance, the Human Development Index (HDI) involves human development outcomes as indicators of well-being such as health and longevity, knowledge acquired, and a decent life (UNDP, 2016); the Sen Index measures the degree of well-being based on the inequality rate of the society (Liberati, 2015), Genuine Progress Indicator (GPI) using environmental impact and social costs of economic production and consumption as factors in overall well-being beside GDP indicators (Investopedia, 2018). Gross National Happiness (GNH) has been initiated by Bhutan's King using physiological indicators to measure real welfare through seven indicators namely economic, environmental, physical, mental, workplace, social and political wellness (business dictionary, 2018) and the new version of Human Development Index (HDIN) measures average achievements of a country in five basic aspects of human development namely, long and healthy life indicated by life expectancy at birth, universal higher education indicated by the enrollment rate of universities and colleges, information sharing indicated by internet penetration rate, environmental improvement indicated by sanitary wastewater treatment rate, and wealthy life indicated by purchasing power per capita (He, 2012). These alternative indicators put human development as the main object to be measured that primarily concerned with several human important aspects, namely inequality rates, life expectancy, health quality, education attainment, and environmental impacts.

For some economists and analysts, measuring economic development using GDP alone has been deemed obsolete. GDP was considered incapable to reflect real well-being and leaves the question of its correlation to the achievement of social equality, quality of individual life, the sustainability of development, and environmental protection. Therefore, this article aims to prove whether GDP is an appropriate gauge of

a country's economic growth. Is the high GDP strongly related to the real welfare of the people? Or on the contrary, the more ambitious a country achieves high GDP, the more neglected the real welfare of society is.

Research Methods

This paper uses China's impressive high GDP between 1980-2014 as the case study to analyse the correlation between the GDP rate and people's real welfare. This period was chosen because in these years China's GDP reached more than 14%, the highest GDP rate in China's history. This research used a literature study as a research approach. Data was collected from academic journals, books references, reports, and government documents containing empirical research particularly disseminated by trusted organizations. In this study, the data exerted from organizations that are experts in the related field and have been acknowledged as having accurate and credible processes for collecting and analysing the data, namely the United Nations Development Programme (UNDP), the World Health Organization (WHO), the World Bank, The World Health Report, World Education Services, the US Department of Education, the Department of Health and Human Services USA, the Ministry of Environmental Protection of China, Embassy of the People's Republic of China, State Environmental Protection Administration of China, and China National Bureau of Statistics.

The variables used in this research are the annual growth rate of China's GDP and the level of Chinese people's welfare which is manifested through its inequality rate, life expectancy, quality of health and education, and quality of the environment. In the data selection process, only data that meets relevant, valid, and reliable criteria is included. Data that does not meet these criteria and is inconsistent when compared with other sources will be excluded.

To analyse the correlation between GDP and Chinese real welfare, this research employed a comparative research method on the collected data. China's GDP rate during 1980-2014 was compared to achievements on other alternative measurements in the respective year namely, inequality rates, life expectancy, health quality, education attainment, and environmental impacts. These aspects are important to be compared, simply, because it shows the real condition of the Chinese during their impressive GDP growth period. A comparative research method is a fundamental tool of analysis, as it focuses on suggestive similarities and contrast among cases so that it can verify or falsify the relationship between two phenomena (Collier, 1993; Pennings et.al, 2006)

Results and Discussion

China officially adopted GDP as an indicator of economic performance in 1993 when the country abandoned its Marxist-inspired national accounting system and transitioned to a system of accounting adapted to international standards. GDP has enormous political and social significance for governance by the Chinese Communist Party (CCP), especially in achieving the big targets set in the narratives of "the rise of China". Since then, GDP has been firmly entrenched in China's economic governance (Heijster and DeRock, 2020).

This can be observed both at the national level, in the Chinese Five-Year Plan (FYP), and at the local level, through local performance appraisal systems. GDP indicators are applied to the practice of China's governance system. Policies in China then targeted acquiring the long-term target of achieving \$800 GDP per capita by 2000 and \$4,000 GDP per capita by 2050. The World Bank proposes a minimum growth

rate of 5.5 or 6.5% per annum. To realize the goal of catching up to the West by 2050, The Chinese planners set the official GDP target at 7.5%. As a result, China's economic development is focused exclusively on GDP growth figures. (Heijster, 2020).

The Reason Behind the Impressive of China's GDP

China is a party state, a country run by one ruling party in which the president is elected through a congress consisting of a majority party. The elimination of public involvement in the election of heads of state can lead to low public trust in the leader and his government. Hence, gaining legitimacy through other alternative paths becomes an important issue for the ruling party-Chinese Communist Party (CCP). Economic growth is the means that the CCP uses to gain legitimacy from the public. Most observers contend that economic development is the main basis for getting political support and acceptance of regimes. (Teresa Wright, 2010).

Strengthening the economy as a tool of legitimacy has been done by the CCP four decades ago, that is in the Post Mao period. In the era of Deng Xiaoping, the party changed the direction of what has been established by the Maoist era by *The Great Leap Forward* and *The Cultural Revolution*. It abandoned ideological debates of the past and moved on to adopt economic modernization as the new main orientation. In the Post Mao era, China's government built an implicit social contract that the party-state would reduce political controls over everyday life and allow people to pursue economic prosperity in exchange for political quiescence, in order to ultimately gain political support (Dickson, 2016: 8).

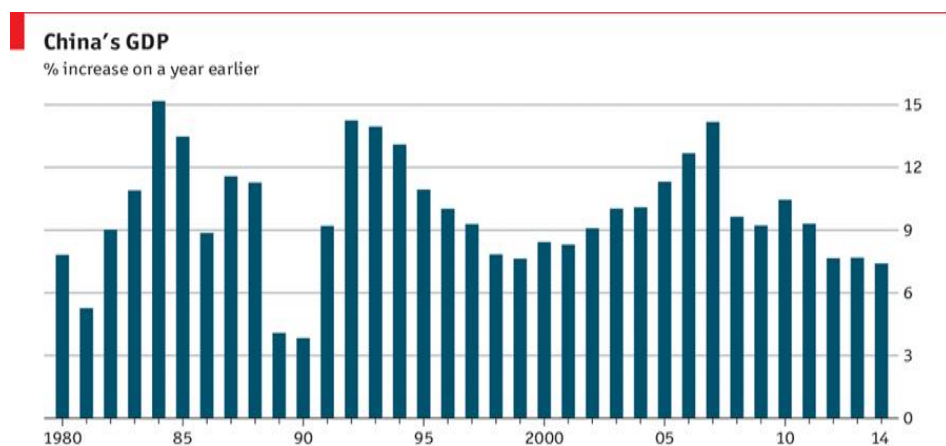


Figure 1. China's GDP 1980-2014 (in%)

Source: *The Economist*, 2015

The Third Plenary Session of the 11th Central Committee of the Communist Party in December 1978 was the defining moment for China's economic reforms. It laid the groundwork for future growth by introducing the shift from collective farming to the household responsibility system. Another strategy applied is trade liberalization. In 1979 China government released the Law on Chinese Foreign Equity Joint Ventures, allowing foreign capital to enter China and helping to boost regional economies. In the mid-1980s, China government gradually ease pricing restrictions and allow companies to retain profits and set up their wage structures. This market liberalization process established China as a major global exporter (Hirst, 2015).

In addition, the decision for joining the World Trade Organization (WTO) opens up China's market in international trade and investment. China's open market policy has attracted the highest foreign direct investment and export level. China's foreign exchange reserving of more than \$2 trillion is by far the largest in the world. As the

world's factory, China produces many important industrial, agricultural, and household products, especially steel, cement, food from aquaculture, television sets, and many others; production increases have been exponential. China also has become the largest consumer of many products, including fertilizers and steel (Liu and Raven, 2010). These reforms were considered to be an important step which created China as the largest manufacturing centre which dominates the world market.

This economic modernization has boosted China's economic growth. Over the past three decades, China has been the world's most remarkable economic transformation with a growth rate three times faster than the world average (Liu and Raven, 2010). Had experienced a slowdown and decline in economic growth in certain years, for example in 1989-1990, the late 1990s until the early 2000s, and in 2011, however, in the majority of years China's economic growth still achieve a higher position in the world compared to other OECD countries. China was experiencing remarkable economic growth, averaging an annual GDP growth rate of 10% over the past two decades (Fang and Kiang, 2018). China occupies the second position, achieving 14.2% in 2007, catching up with the United States economy (Country Economy, 2007). Through this achievement, China confirmed its position as the second most powerful economy in the world.

Income inequality during high GDP rate

The impressive GDP achievement raises many questions about its correlation with the real welfare gained by the Chinese people. Using an alternative gauge of economic development that welfare is a composite component of income justice, the quality standard of life such as access to education, health and life expectancy rate, and environmental quality; it is important to know whether the level of economic growth can be enjoyed by all Chinese people fairly? Is the increase in GDP followed by an increase of China government's commitment to improving the quality of life and public services? And whether the impression of the GDP achievement is correlated with the sustainability of the environment or vice versa.

Based on the coefficient of the Gini Index, China's high GDP has no direct effect on the raising of Chinese welfare. Along with the increasing GDP rate, China also reaches a high level of the Gini Index ratio, even in the year when China reaches the highest GDP rate in its history. As an illustration, when China experienced significant GDP growth in 1984, the Gini index coefficient also increased from 0.28 in 1983 to 0.29 in 1984. Similarly, when GDP increased in 1994, China's Gini index coefficient also continued to increase from 0.39 in 1992 to 0.43 in 1994 (Ravallion and Chen, 2007). Even when an impressive GDP rise of more than 14% in 2007, China's Gini index also increased from 0.46 in 2002 to 0.49 in 2007 (Knight, 2017).

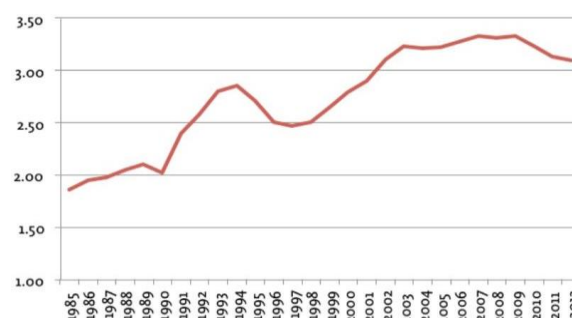


Figure 2. China's Urban-Rural Income ratio, 1985-2012

Source: Li Shi (2013)

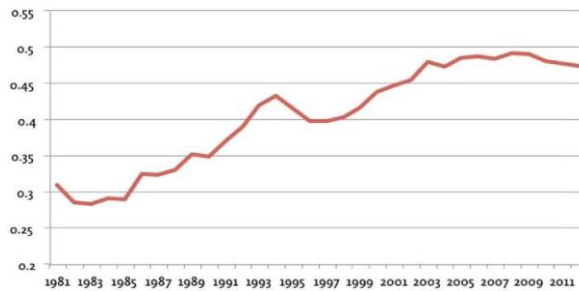


Figure 3. Income Inequality in China 1981-2012
Source: Sicular (2013)

With a Gini ratio close to 0.5, China's income inequality is at the same level as other Latin American countries that also have high inequality, such as Mexico (0.51), Nicaragua (0.52) and Peru (0.48), although still lower than Brazil and Honduras (0.56–0.57). China is now included in 25 per cent of the most unequal countries in the world, even though very few countries in Asia are included in this group (Sicular, 2013).

The income gap in China also occurred between urban and rural societies. China's urban-rural income gap has increased since the early 1980s. By 2002, incomes per capita for urban households were, on average, more than three times higher than those for rural households. Since that time, the urban-rural income ratio (measured as the average income per capita of urban households divided by the average income per capita of rural households) has remained well above 3.0. Compared to international standards, China's urban-rural income gap is very high (Knight and Song 1999). This has been a central factor underlying national income inequality in recent years. The gap's contribution to overall inequality was 45 per cent in 2002, and 51 per cent in 2007 (Li et al. 2013).

The income inequality between urban and rural is reasonable because the economic growth (with the GDP standard) is based on export and import activities of industrial products produced in urban areas. The increasing industrial economy in urban provides jobs and rising the income of its people because those who work in the industry are paid higher than rural people working in the agricultural sector.

In addition, the income gap especially between urban and rural communities is also caused by the *hukou* (household registration) policy aimed at limiting the flow of community migration from rural to urban areas. *Hukou* issued during the Mao era determined the status of the Chinese people based on where that person is born, urban or rural. Their place of birth will be the determinant of where they should live, and work, including the right to public services such as health and education. This policy limits villagers' access to getting jobs in the city, which consequently also minimizes the opportunity for villagers to earn a higher income and improve their well-being. Even if they can migrate to the city, they usually only get temporary jobs in urban factories and are paid substantially less than in full-time positions (Dickson, 2016).

It can be concluded that when China experienced an impressive high GDP rate, at the same time China also experienced an increase in income gaps among its people. This illustrated that impressive China's GDP does not mean directly increasing the welfare of all Chinese people. The benefits of significant GDP growth are only felt by a few people and leave others behind. In addition, as long as unfair policies in urban and rural are not overcome, the inequalities between them will remain.

Chinese burden improving quality life

For measuring the correlation of high GDP on Chinese quality of life, it can be assessed in the Human Development Index (HDI) which comprises the life expectancy index, education attainment, and people's health condition. According to UNDP data, China's HDI has been increasing every year. Between 1980 and 2012, China's HDI value increased from 0.407 to 0.699, positioning China at 101 out of 187 countries (UNDP, 2013).

In education issues, China has achieved nine-year compulsory education in both urban and rural areas. The enrolment rate of primary school-age children remained steady at more than 99 per cent between 2000 and 2005, and the gross enrolment rate in junior middle schools increased from 88.6 per cent to 95 per cent. The dropout rate in primary schools reached the lowest rate in Chinese history, at under half of 1 per cent in 2005. The adult literacy rate has also been rising, from 67.1 per cent in 1980 to over 90.7 per cent in 2006, which was higher than the global average adult literacy rate (78 per cent) and the average among developing countries (77 per cent) (UNDP, 2008).

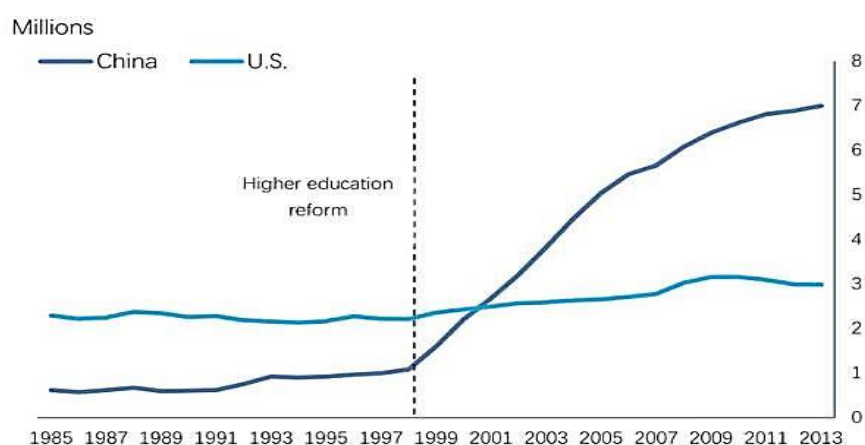


Figure 4. The Comparison of Annual Enrolment of New Students in Higher Education Institutions in the US and China

Source: China National Bureau of Statistics and US Department of Education, 2014.

The increasing participation of Chinese people in education is not only happening in basic education but also in higher education at various universities both at domestic and abroad. Just two decades ago, higher education in China was a rare privilege enjoyed by a small, urban elite. But, in 1999 when the government launched a program to massively expand university attendance the number of enrolments to universities increased by nearly 50% and this average annual growth rate persisted for the next 15 years (Stapleton, 2017). The number of Chinese who study abroad, especially in the United States, as the primary orientation, is also very large and increasing. There are 274,439 Chinese who study in the United States in 2013 and this continue to grow to 304,040 people by 2014 (World Education Services, 2016).

In recent decades the Chinese government has paid more serious attention to improving the quality of their education. This intention can be seen from the expansion of equal educational opportunities for urban as well as rural populations, and also from the amount of government budget allocation to education. In 2004, the government budget for education was only 2.79% of the GDP, and then up to 3.22% of the GDP in 2007 (China Daily, 2010), and the following year the China government required each

local government to raise 4% of its regional income for the allocation of education. Nevertheless, compared to other large economic countries, even though China government had raised the education budget allocation, the proportion is still lower. In 2011, the OECD countries spent their budget allocation on education an average of 5.2 per cent of their GDP. Moreover, the budget allocation of 4% for education is also not fully run by the all-local government as assigned, only seven out of 50 regions spent 4% of GDP on education (Dickson, 2016).

The increasing educational opportunities by China's government is contrary to the argument ever expressed by Bueno de Mesquita that one of the characteristics of an authoritarian state is restricting access to their people to education so that the freedom and critical power of society can be shackled (Dickson, 2016). Therefore, one plausible reason for China government's attention to education is inseparable from economic reasons. The China government encourages and gives broad access to people in education in order to get a productive and qualified labour surplus in the labour market for industrial development so that high economic growth can be achieved eventually.

Meanwhile, the spirit of Chinese people to achieve high education even going abroad cannot be separated from the existing context. Since reforms have been introduced, China implements a market system, in which both private and state enterprises are treated equally, and the government spending efficiency causes rightsizing down the structure and privatization of several State-Owned Enterprises (SOEs). As a result, the number of workers is abundant, but the number of job opportunities is getting smaller. Moreover, at the same time, 150 million villagers migrate to the city (Dickson, 2016). The struggle for getting jobs made Chinese people have no other way than to compete strictly with each other by taking education as high as possible and getting the best possible skills to be absorbed in the industry and earning a commensurate income. Some who go to school abroad often do not return to their home country because of looking for overseas employment opportunities so they will be avoided tight competition in their own country.

The abundant number of workers in China is the driving force of the industry in China, including attracting foreign investors and exporters to invest in China. Unfortunately, inadequate government education budgets give new burdens to every household expenditure of Chinese people. In addition, the oversupply of labour made them not in a bargaining position for decent wages. It can be concluded, the Chinese people as a factor of production in the China industry which resulted in high GDP are educated workers, but they live in low welfare. Chinese people are the ones who bear most of their education costs, because of the lack of government budgeting allocation contribution to the education sector.

The Chinese government during the economic development period paid more attention not only to education but also to health issues. The health condition of Chinese people can be seen from the life expectancy which rises continuously every year. Before liberation in 1949 China's life expectancy was only in the 35-year range, in the following decade China's life expectancy continued to rise, even in 2000 to double that of 71.4 years (UNDP, 2008 and Embassy of People's Republic of China in the United State of America, 2012). China's life expectancy does not have much difference from other developed industrialized countries, in 2013 the life expectancy of OECD countries reached 80.0 years while China's at 75.4 years (Dickson, 2016).

Table 1. Average Life Expectancy in China, 1949-2000

Year	Total	Male	Female
Before 1949	35	-	-
1957	57	-	-
1973-1975	-	63.6	66.3
1981	67.9	66.4	69.3
1990	68.6	66.8	70.5
2000	71.4	69.6	73.3
2005	73	-	-
2010	74.8	-	-

Source: Data Before 1949 up to 2000 taken from UNDP (2008), data from 2005 and 2010 taken from the Embassy the of People's Republic of China in the United States of America (2012)

Efforts to reduce maternal mortality, infant mortality, and under-five mortality also continue to improve. In 1990 the maternal mortality rate in China was very high, with an average of 100 people out of 100,000 births, this number declined in 2007 to 40 people / 100,000 births and smaller in 2011 which is no more than 30 people / 100,000 births. Cases of infant mortality born also have the same trend, and continue to decrease every year. In 1990 there were an average of 50 babies dying every 1,000 births, in 2007 dropping drastically to 15 babies / 1,000 births. Nutritional intake and the upbringing pattern of Chinese people to their children is increasingly evident from the decline in the under-five children mortality rate each year, on average 60 children / 1000 (1991) to 15 children / 1000 (2011) (China Embassy, 2012). In other words, the health quality of children and pregnant women is increasing in China. This proves that the quality of hospital services and awareness of the health of Chinese people is also increasing. The reduced infant or child mortality will benefit China for at least the next two decades, especially since the one-child policy that generates ageing populations was an end.

It will possibly become part of the solution to the low fertility rate in China. If this is successful then China does not have to worry about labour supplies to continue industrialization and maintain China's economic growth in the future. As mentioned, China government provided a small budget allocation supporting the development of the education sector. In health issues, the China government's contribution is even less than its contribution to the education sector. When China's economic system is a state-led economy, the government is the sole provider of public services, but since China's economic policy in the 1990s shifted to market-based, it also changed the state's contribution to public services provision that was controlled by market mechanisms.

China began to reform the public service sector by introducing a multiple-contribution mechanism. The actual execution of this mechanism involved a low ratio of government contributions, while the ratio of personal contributions has risen year after year. The China government's contribution to medical care for citizens declines continuously every year. In 1980 the government contribution was still 36.2%, declining by 15.5% in 2000 and slightly increasing by 18.1% in 2006. It means that the rest of the health costs are borne by social expenditure (expenditure from public institutions or private outside the government budget) and mainly from the pockets of the Chinese people themselves (UNDP, 2008).

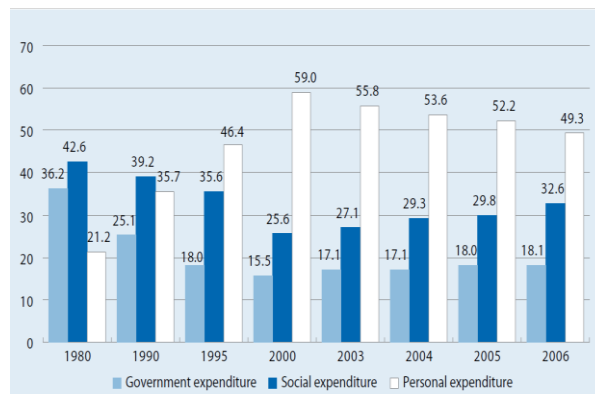


Figure 5. Share of Health Spending

Source: UNDP, 2008

Moreover, compared to OECD countries, China's budgeting allocation for healthcare is also quite far, half of the total OECD budgeting for healthcare. The average percentage of OECD countries allocating their budget for healthcare in 2013 is 7.6 per cent of their GDP, whereas China's government spent only 3.1 per cent (Dickson, 2016).

As one of the production factors in the industrialization process, to increase productivity and competitiveness, the Chinese people need to improve the quality of their education and health. Unfortunately, because of the small government spending on these sectors, they have to allocate large amounts of their own money to obtain health and education services. Therefore, the high GDP growth of China which is not followed by the government's commitment to providing public services increases the burden for Chinese people to afford it in the midst of intense job competition.

Environmental degradation as cost of high GDP

Environmental sustainability is one of the main issues debated about the impact of high economic growth. Because the attempt to achieve it often exploits the environment, economic growth allegedly will never coincide with environmental sustainability. Each industrial country faces a dilemma about how to harmonize the environment and the desire to boost industrialization as a driver of economic growth. Industrialized countries often trade off their environmental sustainability with high economic growth. Likewise, China is facing serious environmental problems amidst its impressive GDP growth. Based on Environmental Sustainability Index 2010, China's environmental quality poses a low rank, 133rd of 146 countries in the world (Liu and Raven, 2010). This fact represents the truth of the proposition that the magnitude of GDP is not equal to environmental sustainability.

a. Air pollution as high GDP Cost

China's massive industrial activities have brought three important environmental issues, namely air pollution, clean water scarcity, and farmland losses. Air quality in China is one of the worst in the world, only about half of China's sky has healthy air for humans. In 2005, 11% of 522 cities observed, were heavily polluted air, and only 56% of cities meet the standards of the State Environmental Protection Administration of China (SEPA). The majority of pollutants in China's sky are components of particulate matter (PM), SO₂, and nitrogen oxides (NO_x). Besides, more than 40% of Chinese cities experience high levels of suspended particles (Fu, 2007).

In addition, China currently emits more CO₂ every year than any other country. The urge for reaching high economic growth through industrialization has increased energy consumption that simultaneously increases the number of CO₂ emissions in the

air. CO₂ emissions in China rose significantly from 0.5 billion tons of coal in 1980 to 1.5 billion tons in the mid-2000s and doubled in 2010 to close to 3 billion tons (Liu and Raven, 2010).

Rapid economic growth has transformed China into the world's largest energy consumer. China's energy consumption has grown fourfold since 1980, especially in the use of coal as an industrial fuel. China is the largest country in producing and consuming coal, approximately 25% of the world's total consumption. The coal used as the main fuel of industrial activity in China accounts for at least 70% of total smoke/aerosol, 90% of SO₂, and 67% of NO_x from the overall air in China (Fu, 2007).

Coal is very efficient as an industrial fuel but the impact of pollutants is very high compared to other fuels or more when using renewable resources. In 2003 China managed to reduce the use of coal from > 90% of China's total energy in 1950 to about 70% in recent years (Liu and Raven, 2010). Despite these reductions, due to the big size of the industry in China, the use of renewable energy is below 7%, and coal remains a major source of energy in the industrial production process (Liu and Raven, 2010), hence environmental defects remain a major issue in China economic growth. Consequently, this condition brings a huge impact on climate change, environmental damage, and public health issues. Air pollution causes acid rain which is common in southern China. This acid rain generally has a chemical content like SO₄²⁻. But lately, acid rain that has occurred in China has experienced a significant increase in NO₃ concentrations. Acid rain leads to the acidification of water and soil surfaces that can disrupt ecosystems including fish and forest populations. This acid rain is also the cause of crop failure in China and can result in a food crisis in China.

In the health aspect, a study in Shanghai revealed that ozone levels also had significant associations with cardiovascular disease (CVD) mortality (Fu, 2007). In 2006 the mortality rate due to CVD was 177 per 100,000 people in rural areas and 184 per 100,000 people in urban areas. This figure is increasing drastically in 2014 to 295.63 per 100,000 people in rural areas and 261.99 per 100,000 people in urban areas (Chen, 2017). In addition, according to the World Health Organization (WHO), high air pollution is a cause of over 300,000 premature baby births in China each year (The World Health Report 2002 in Greenbaum and O'Keefe, 2018).

b. Clean water scarcity amidst high GDP

China's massive industrial activity also affects the availability of clean water in China. China is one of 13 countries in the world with very limited availability of clean water. There are 400 out of 669 cities in China that are having a water crisis (Liu and Raven, 2018). Moreover, Chinese people's access to clean water is also unequal. As many as 44% of Chinese residents living in the northern region only have access to 15% of water resources. Due to low water availability, more than 24 million rural people have insufficient drinking water (Fu, 2007). The clean water issue is not only happening at China's household level but beaches and oceans are also polluted due to industrial waste disposal. Moreover, nearly half of 26 lakes in China experience eutrophication threatening the life of animal waters (Liu and Raven, 2018).

The scarcity of clean water in China is inseparable from the high activity of industry that is not enough getting supervision in waste disposal. Many projects and factories consume large amounts of water and produce water pollution in areas with low environmental control and prone to damage. Only a few industrial wastes get the treatment before being discharged to nature. For example, only 10% of industries in Shanghai get supervision in waste management (Fu, 2007).

The poor management of industrial waste treatment is also exacerbated by excessive urban populations. The massive growth of industrialization in urban China offering employment has attracted large numbers of rural people to get jobs in the urban. The rapid flow of urbanization in China has occurred since economic development and socioeconomic change in the 1980s. At least 40% of China's population currently resides in urban areas, compared to the 1980s the city occupied only 20% of China's population. Nowadays, the average annual urbanization in China is in the range of 1% in other words, there are about 13 million people who migrate to the city each year (Fu, 2010).

Increasing the population will also put a burden on the city to manage household waste. According to the Ministry of Environmental Protection of China (2008), there is almost no sewage treatment for more than 3/4 of the population in China (Liu and Raven, 2008). Because of the large urban flow population, the demand for clean water also increases. This unbalancing of supply and demand for clean water emerging to the clean water scarcity in China.

c. Cropland decreasing and threat to food security

As mentioned earlier, industrialization offering employment has caused huge urbanization. The increasing population will inevitably urge the demand for shelters, roads, and public facilities. As a result, the amount of agriculturally productive land decreases because it has been converted into settlements and other urban infrastructure. In 2008, construction has taken as much as 313,333 ha of agricultural land (Liu and Raven, 2010). Moreover, the amount of cultivated land in China continues to shrink every year. From 1996 to 2008, China lost 8.4 million ha of cropland (Fu, 2010). By the end of 2008, China's agricultural land was only 122 million ha, very close to the government's safe limit of 120 million ha, to ensure food security (Liu and Raven, 2008). The industrialization that attracts urbanization followed by the conversion of agricultural land will be a major threat to China providing food security for their people in the future.

Environmental degradation amid high GDP in China proves that the attempt to increase economic growth has the opposite way with the effort to get environmental quality. It happened particularly in an industrial country which uses cheap coal material, poor disposal management, and vast conversion of agricultural land. The more ambitious a country gets high GDP, the lower quality of the environment unless the government put great attention to environmental sustainability by shifting cheap fuel material to more environmentally friendly fuel, having good disposal management and good urban planning in order to gain better environmental quality in the future.

Conclusion

Using China's high GDP in 1980-2014 as a case study, this paper proves that China's impressive GDP has no direct correlation to Chinese real welfare. On the contrary, the attempt to reach a high GDP has often been emerging many problems faced by Chinese people. Firstly, high GDP was able to show impressive economic growth but fail to ensure equal income distribution. When China's GDP increased, at the same time the income gap also increases among Chinese people. It is mean that the benefits of economic growth only prosper a few people and leave others behind.

Secondly, the rising of Chinese education and health quality along with the rise of the Chinese GDP is a kind of natural thing as an impact of the competitive situation in the industrial economy rather than the result of the GDP's effect. The large number

of people competing for jobs has raised the awareness of Chinese people to improve their productivity and life quality through education and health. However, the low budget allocation of the government to these services created a new burden for Chinese society. They have to spend more expenses to gain good health and attain education from their own pocket, widening their distance from prosperity.

Thirdly, China's massive industrialization has boosted China's GDP but at the same time has resulted in huge environmental degradation. The desire to achieve high GDP through increasing productivity of the industry resulted in some negative externalities. Production efficiency by using a large number of coals produced air pollution that raises various health problems. In addition, the low supervision of industrial disposal treatment has also resulted in water pollution. Moreover, polluted rivers and the conversion of agricultural land become threats to the food crisis which cannot be avoided by Chinese people in the future.

The fact presented by China proves that GDP as development and people's welfare gauge is already obsolete. The impressive high GDP has no direct correlation to people's welfare. On the contrary, the attempt to achieve high GDP impacted environmental sustainability and the quality of human resources as industrial-production factors. Therefore, the non-economic measures need also be popularized and implemented by a state, so that people's real well-being can be monitored and evaluated. The efforts to increase GDP necessarily do not have a paradoxical impact on people's welfare. With a high GDP, the government must also ensure that there is a fair income distribution so that economic growth can also be felt by all citizens. A rise in economic growth must also be followed by a policy that increases employment opportunities that can absorb as many workers as possible with the determination of fair wages. Economic growth also must be accompanied by increased attention to improving the quality of human resources, especially allocating more social budgets that prioritize improving the quality and access of the community to Health and Education services.

In addition, the government's target to increase GDP should not override environmental impacts. Increasing economic activity needs to be accompanied by monitoring of its external impacts and efforts to protect environmental sustainability. It is necessary to impose punishment for industries that damage the environment and rewards or incentives for companies that have a concern for ecosystem preservation. Thereby, the high economic growth will be followed by the increase of real welfare perceived by people. Further work, the inquiry examining GDP as the welfare gauge needs to be conducted in countries with different contexts such as developing countries as the comparison.

Acknowledgement

We are very grateful to Chin Fu-Hung, a professor at the Graduate Institute of Political Economy (GIPE), National Cheng Kung University (NCKU), Taiwan. He helped us in developing the research framework for this manuscript.

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