

**CHINA'S ECONOMIC PROSPECTS:
CAN CHINA ACHIEVE STABLE AND HIGH ECONOMIC GROWTH IN COMING
DECADES?**

Yueyun(Bill) CHEN, (CA)

*University of the West, Los Angeles, USA,
billchen@uwest.edu*

Xingong LI,

*Henan University, China
lglg998@126.com*

&

Chengyi PU,

*Central University of Finance and Economics, China
pucy2011@126.com*

Abstract

This paper focuses on whether China can maintain stable and high economic growth in coming decades. Based on the latest data and used the expenditure approach and value-added approach, it investigates China's growth potential by identifying contributory factors in the past and exploring their potential contributions in the future. This study projects that China will be able to keep a 5.5-6.5% annual growth rate on average through 2030 if it is able to avoid any potential financial or economic crisis and without a disaster like COVID-19; and after 2030 its growth will slow down to 4-5% in the following ten years. Its future development depends fully on increases of domestic consumption and investment, further shifts of labor from agriculture to other sectors, and productivity improvement. Exports are still important to its economy but net export's contribution to GDP growth will be marginal and mostly negative. The urbanization rate will rise further and so push the economic advancement, but 8-10 years later, it will diminish gradually and its economic effect will be minimal. The service industry will constantly grow and its shares of GDP and employment in the whole economy will rise; however, China's future relies more on its manufacturing industry, from the largest in the world now to become the strongest in the future. Based on challenges and problems China faces, this study proposes relevant actions and paths that China has to take in order to achieve stable, sustainable and inclusive development in coming decades.

Keywords: *China Economy, Economic Structure, Productivity, Labor Force, Financial Crisis*

DOI: 10.31039/jgeb.v3i11.55

I. Introduction

After fast economic growth for more than two decades, China has experienced slower growth with the annual rate around 6% in recent years (Figure 1 and Table 1). Can China attain stable and high annual expansion in coming decades? Or May China return back to steady and speedy annual growth such as 7-9% in coming years? There are different arguments and opinions on China's future development. The optimists believe that China still has potential with the average annual growth rate of 8%. For example, former World Bank Senior Vice President and Economist Justin (Yifu) Lin stated on several media interviews that China's realistic annual growth potential should be 8% for many more years so setting up 6% annual target growth rate should be quite reasonable. But the pessimists posit that its annual growth rate will slow sharply to roughly 3% a year by 2030 and then 2–3% a year on average (Rajah and Leng 2022). This issue is important not only to China but also to the whole world (Chen 2015, Morrison 2019).

Figure 1. China Annual Gross Domestic Product Growth Rate (1961-2021)

(Data Source: China National Bureau of Statistics (CNBS))

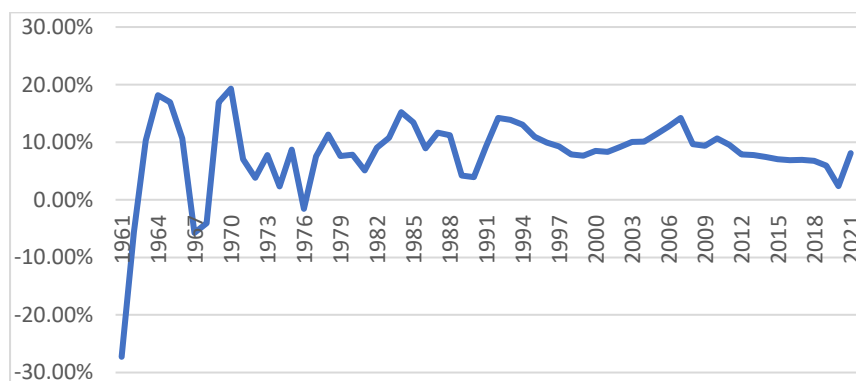


Table 1. China Annual GDP Growth in Different Time Periods (Data Source: CNBS)

1962-1977	5.02%
1978-2021	9.25%
1978-2011	10.00%
2012-2021	6.71%
2016-2021	6.16%

Economic development is always foremost essential to a country. Maintaining high growth is especially critical to developing countries. China is the largest developing economy in the world now and expects to surpass the US to be the largest economy in the near future. Its annual growth rate will determine how soon China becomes the biggest economy. Secondly, economic growth is the foundation to solve many economic and social problems. China is facing many challenges and difficulties, including rising aging, widening gaps of income and wealth among regions and groups of people, environment issues, and employment of young people, especially college graduates. Each year, China has had about 10 million college graduates and the majority of them look for jobs. According to some studies, 1% annual Gross Domestic Product (GDP) growth can generate about 1.5-2 million new jobs. Therefore, in order to generate about 10 million new jobs in cities/towns, China has to keep about 5.5-6% annual growth rate. Otherwise, many of these college students will not be able to find out jobs and that could be a serious social problem.

China's growth is also relevant and crucial to the whole world. China contributes to the global economic growth by about one third in recent years. Its slower economic growth will affect China itself and also impact many other economies. Particularly, China has been a major trade partner of many countries and it has been the biggest buyer of many products, including oils and many other products. In addition, China has been a big and major investor to many countries. Therefore, any economic problem in China significantly influences the global economy.

Given the above reasons, it is significant to ask and know: will China be able to keep stable and high economic growth in future? What will be its expectable annual growth rate in coming decades? This paper tries to answer these questions and explores its growth potential. It applies the value added approach and expenditure approach for GDP measurement to explain what will the potential growth opportunities in China. The value added approach for the GDP is related with the economic structure- the share of the GDP in three industries, Agricultural, Industrial and Services. The expenditure approach centers on contributions of consumption, investment and net export to the total GDP. The third approach-the income approach for the GDP calculation is not used in this study because the income is the outcome of the economic development, not the cause to the GDP. Certainly, the economic development is a dynamic process; the income distribution or income sharing among investors, workers and others will affect future consumption and investment so impact upcoming economic growth. A threatening

problem facing the world is the rising gaps of income and wealth among regions and countries globally and among groups of people inside each country. In other words, using the income approach of the GDP measurement to analyze the growth potential is relevant and vital, but, due to the limit of study, this paper will not focus on this important issue.

This study on China's future economic growth uses the latest data and the majority of the data is up to year 2021 and directly from China's National Bureau of Statistics (CNBS). Also, some latest data from the World Bank is used for the comparisons between China and other economies. Secondly, this study is more comprehensive. Most other studies on China's economic growth focus on one aspect or one approach such as the productivity or population or consumption. Furthermore, this study uses Chen et al. (2017)'s economic model to analyze the factors of the labor force ratio, productivity and economic structure and their direct effects on economic growth.

The rest of the paper is organized as follows: Section II reviews literature on economic growth and China's development; Section III discusses the expenditure approach for GDP measurement and explores China's growth potential; Section IV applies the value added approach to investigate the China's GDP growth potential; Section V examines challenges and issues that China is and will be facing and how China can overcome these problems to achieve stable and high economic development; Section VI concludes the paper.

II. Review of literature

The theory of economic growth is based on the production function which describes the relationship between the inputs and output. The modern growth study adds the technology, innovation, and entrepreneurship in the production function, besides traditional labor, capital and land. In the following function of $f()$, Y is the output; K , the capital or tangible assets that are created for use in the production process, includes buildings, machines, computers, and other equipment; L , the labor, the skilled and unskilled activities of human workers; P , the land, natural resources, raw materials, and energy sources, such as oil, gas, and coal; and H , the technology, innovation and entrepreneurship/management, which is the quality of the business intelligence that is applied to the production function:

$$Y = f(K, L, P, H) \tag{1}$$

Based on the above formula, the change of the output or economic growth depends on the changes of these inputs of K, L, P, and H. The neoclassical theory (Solow 1956 & 1957, Swan 1956) emphasizes the importance of the technological progress to growth and attributes the capital accumulations and increases as well. Their models and theory are further used to explain how a developing economy can catch up and keep fast growth through exogenous changes. The endogenous growth theory by Romer (1990, 1994) and Lucas (1990) studies the effects of the changes of human capital (like education) or technology (including innovation) on the economic development. There are other approaches on economic growth, such as the energy and energy efficiency theory that emphasizes the correlation between energy consumption and efficiency and economic growth (Blumstein et al. 1980, Howarth 1993, Metcalf 1994), and institutional economics which considers the roles of political, legal and economic systems in an economy's progress (Coase 1937, Williamson 1975, Levine 1999).

There have been numerous studies on China's economy and particularly on China's fast growth (Pettis 2022, Dollar et al. 2021, Zhou et al. 2021). The Beijing Consensus (Ramo 2004) considers innovations in the state sector, including close financial controls, state ownership of firms, and political controls as the main causes of China's fast economic growth. However, the Washington Consensus (Huang 2010) attributes China's success to its financial liberation, private entrepreneurship and political opening. Some focuses China's quality human capital and functioning market institutions (Chow 2002) and globalization (Chow 2006, Romer 2010, Chen 2015). Lin (2003 & 2012) attributes China's fast and sustainable economic growth to the government's active role, not just through the traditional provision of infrastructure and legal enforcement, but also by identifying and actively supporting industries that contribute to growth; and he believes that it is investment, not domestic consumption that has led to China's fast economic development.

The study on China's future growth then focuses on whether such endowments or sources can still function and play its roles (Zhou, et al. 2021, Yao 2014, Peerenboom 2014, Lin 2012, Tyers & Golley 2010) and especially through international comparisons. Chen (2015, 2016a, and 2016b) compared China's manufacturing, services and agricultural industries with the other economies and suggested how China may maintain stable, sustainable and fast economic development through further economic structural changes and productivity improvements. Chen (2019) reviewed the business cycle and economic crises, its causes and effects, and concluded that the key for China to pass through the middle-income trap is to prevent and avoid

any economic crisis by strengthening its financial regulation and further reforming and improving its economic system.

III. The Expenditure approach for GDP measurement and China's growth potential

According to the expenditure approach, an economy's total GDP composes three parts, final consumption, capital investment/formulation and net export. Some countries in its GDP statistics add the government spending and investment as its fourth component; but China only counts the first three parts and adds the government consumption into the total consumption and government investment into the total investment.

$$\text{GDP} = \text{Final Consumption} + \text{Capital Investment/Formulation} + \text{Net Export} \quad (2)$$

As a result, the annual GDP growth depends on the changes of consumption, investment and net export.

3.1. Three expenditures

Table 2 is the summary of China's final consumption, capital formulation (investment) and net export and its relevant contributions to the GDP from 1978-2021. It shows that the ratio of final consumption to its GDP in China used to be about 60-65%, and now it has been about 50-55% since 2007.

Table 2. China GDP Expenditure Approach (1978-2021)

(Unit: 100million Yuan)(Data Source: CNBS)

Year	Total GDP	Final Consumption	Capital Formulation	Net Export	Final Consumption %	Capital Formulation %	Net Export %
1978	3606	2234	1383	-11	62.0	39.2	-1.14
1979	4047	2579	1488	-20	63.7	36.8	-0.49
1980	4541	2968	1588	-15	65.4	35.0	-0.33
1981	4922	3277	1626	17	66.6	33.0	0.39
1982	5386	3577	1718	91	66.4	31.9	1.69
1983	6034	4061	1922	51	67.3	31.9	0.85
1984	7290	4787	2502	1	65.7	34.3	0.01
1985	9108	5921	3554	-367	64.5	38.7	-3.21
1986	10390	6731	3915	-255	64.8	37.7	-2.46
1987	12198	7644	4544	11	62.7	37.3	0.08

1988	15210	9429	5932	-151	62.0	39.0	-0.99
1989	17250	11044	6392	-186	64.0	37.1	-1.08
1990	18969	12012	6447	510	63.3	34.0	2.69
1991	21997	13626	7754	618	61.9	35.3	2.80
1992	27140	16239	10625	276	59.8	39.1	1.02
1993	35576	20815	15440	-679	58.5	43.4	-1.91
1994	48410	28297	19479	634	58.5	40.2	1.31
1995	61050	36229	23823	999	59.3	39.0	1.63
1996	71541	43122	26960	1459	60.3	37.7	2.04
1997	79416	47549	28317	3550	59.9	35.7	4.47
1998	84791	51502	29660	3629	60.7	35.0	4.28
1999	90095	56667	30891	2537	62.9	34.3	2.82
2000	99799	63749	33667	2383	63.9	33.7	2.39
2001	110388	68661	39403	2325	62.2	35.7	2.11
2002	121327	74227	44005	3094	61.2	36.3	2.55
2003	137147	79735	54447	2965	58.1	39.7	2.16
2004	161356	89394	67726	4236	55.4	42.0	2.63
2005	187658	101873	75576	10209	54.3	40.3	5.44
2006	219598	115364	87579	16655	52.5	39.9	7.58
2007	270499	137737	109339	23423	50.9	40.4	8.66
2008	318068	158899	134942	24227	50.0	42.4	7.62
2009	347650	174539	158075	15037	50.2	45.5	4.33
2010	408505	201581	191867	15057	49.3	47.0	3.69
2011	484109	244747	227673	11688	50.6	47.0	2.41
2012	539040	275444	248960	14636	51.1	46.2	2.72
2013	596344	306664	275129	14552	51.4	46.1	2.44
2014	646548	338031	294906	13611	52.3	45.6	2.11
2015	692094	371921	297827	22346	53.7	43.0	3.23
2016	745981	410806	318198	16976	55.1	42.7	2.28
2017	828983	456518	357886	14578	55.1	43.2	1.76
2018	915774	506135	402585	7054	55.3	44.0	0.77
2019	990708	552632	426679	11398	55.8	43.1	1.15
2020	1025917	556986	442401	26530	54.3	43.1	2.59
2021	1143670	747960	156683	239027	65.4	13.7	20.90
Average	264321.1	145998.0	106398.0	11925.1	58.8	38.8	2.4
STD	333820.2	188885.8	134962.5	35946.6	5.4	5.8	3.8

3.2. Export, import and net export

It is clear that the total trade to the GDP ratio has been much lower since 2006. Table 3 is China's ratios of export, import and total trade to GDP from 1985 to 2021 (a few year during 1985-1990 were not presented here). The trade to GDP ratio reached its peak 71.6% in 2006

and now it has been about 40%. Its export to GDP ratio also reached its peak at 39.1% in 2006 and now is has been about 20%.

Table 3. China Total Trade, Export and Import Ratios(1985-2021)

(Unit: 100Million Yuan) (Data Source: CNBS)

Year	Trade/ GDP	Export/ GDP	Import/ GDP	Export Growth	Import Growth
1985	24.3%	9.8%	14.5%		
1990	32.5%	17.8%	14.7%		
1991	36.2%	19.7%	16.4%	0.0%	30.0%
1992	38.1%	19.8%	18.3%	23.8%	37.2%
1993	36.0%	17.2%	18.8%	14.1%	34.6%
1994	48.6%	25.1%	23.5%	98.6%	70.1%
1995	45.3%	23.7%	21.6%	19.2%	15.8%
1996	39.6%	20.8%	18.8%	2.8%	2.1%
1997	40.5%	22.7%	17.8%	20.8%	5.1%
1998	36.2%	20.2%	16.1%	-5.0%	-3.5%
1999	38.8%	20.6%	18.2%	8.8%	20.0%
2000	45.3%	23.6%	21.7%	26.6%	32.2%
2001	44.1%	22.9%	21.2%	7.4%	8.2%
2002	48.7%	25.4%	23.3%	21.8%	20.8%
2003	57.8%	29.6%	28.3%	31.7%	37.1%
2004	66.7%	34.2%	32.5%	35.9%	35.3%
2005	69.7%	37.1%	32.6%	26.3%	16.6%
2006	71.6%	39.1%	32.5%	23.4%	16.8%
2007	69.2%	38.4%	30.8%	21.2%	16.6%
2008	63.7%	35.2%	28.5%	7.5%	8.9%
2009	49.3%	26.4%	22.9%	-17.9%	-12.4%
2010	55.6%	29.2%	26.4%	29.7%	35.7%
2011	54.9%	28.2%	26.7%	14.4%	19.9%
2012	51.0%	26.4%	24.6%	4.3%	2.6%
2013	48.9%	25.2%	23.7%	5.6%	6.8%
2014	47.1%	24.3%	22.7%	4.9%	3.8%
2015	41.3%	22.4%	19.0%	-1.7%	-10.6%
2016	38.5%	20.4%	18.1%	-1.5%	2.8%
2017	39.2%	20.4%	18.9%	10.7%	15.8%
2018	39.0%	19.9%	19.2%	7.7%	12.3%
2019	37.3%	19.4%	17.9%	5.5%	1.2%
2020	40.2%	21.3%	19.0%	13.6%	9.6%
2021	43.5%	23.5%	20.0%	23.0%	17.4%
Average	46.6%	24.5%	22.1%	16.5%	16.4%
STD	11.6%	6.5%	5.2%	19.5%	16.9%

Table 4. Net Export to GDP Ratio in Different Years (%) (Data Source: CNBS)

Year	Net Export/ GDP
1978-2004	0.96
2005-2010	6.18
2011-2020	3.21
2021	20.90

Table 4 gives the annual net export to total GDP ratio during different time periods. Since 2011, except 2021, the annual net export only contributed 3.21% on average to the total GDP in the relevant year while it was 6.18% during 2005-2010. The net export contribution to the total GDP in coming decades will be marginal and in some years, this contribution may be negative as occurred many times before (Table 2). The challenge is that if GDP is increased by 6% in a year from the previous year, the net export must also rise 6% in order to keep the same contribution ratio as the previous year. In other words, keeping the same contribution ratio in a year requires the rise of the net export with the same rate as the GDP growth rate. The further problem is that even if the export rises with the same rate as the GDP, the net export contribution will go down if the import rises more than the rate of the GDP growth.

3.3. Personal and governmental consumptions

Table 5. Final Consumption, Personal and Government Consumptions (1978-2021)

(Unit: 100Million Yuan)(Data Source: CNBS)

Year	Total GDP	Total Final Consumption	Personal Consumption	Government Consumption	Personal %	Government %	Personal/GDP Ratio
1978	3606	2234	1759	475	78.74%	21.26%	48.78%
1979	4047	2579	2014	565	78.09%	21.91%	49.77%
1980	4541	2968	2337	631	78.74%	21.26%	51.46%
1981	4922	3277	2628	651	80.20%	19.87%	53.39%
1982	5386	3577	2867	710	80.15%	19.85%	53.23%
1983	6034	4061	3221	840	79.32%	20.68%	53.38%
1984	7290	4787	3690	1097	77.08%	22.92%	50.62%
1985	9108	5921	4627	1293	78.15%	21.84%	50.80%
1986	10390	6731	5294	1437	78.65%	21.35%	50.95%
1987	12198	7644	6048	1596	79.12%	20.88%	49.58%
1988	15210	9429	7532	1897	79.88%	20.12%	49.52%

1989	17250	11044	8778	2266	79.48%	20.52%	50.89%
1990	18969	12012	9435	2577	78.55%	21.45%	49.74%
1991	21997	13626	10544	3081	77.38%	22.61%	47.93%
1992	27140	16239	12312	3927	75.82%	24.18%	45.36%
1993	35576	20815	15695	5120	75.40%	24.60%	44.12%
1994	48410	28297	21443	6854	75.78%	24.22%	44.29%
1995	61050	36229	28066	8163	77.47%	22.53%	45.97%
1996	71541	43122	33644	9478	78.02%	21.98%	47.03%
1997	79416	47549	36586	10963	76.94%	23.06%	46.07%
1998	84791	51502	38768	12733	75.27%	24.72%	45.72%
1999	90095	56667	41846	14821	73.85%	26.15%	46.45%
2000	99799	63749	46863	16886	73.51%	26.49%	46.96%
2001	110388	68661	50465	18196	73.50%	26.50%	45.72%
2002	121327	74227	54667	19561	73.65%	26.35%	45.06%
2003	137147	79735	58690	21045	73.61%	26.39%	42.79%
2004	161356	89394	65725	23670	73.52%	26.48%	40.73%
2005	187658	101873	74154	27719	72.79%	27.21%	39.52%
2006	219598	115364	82842	32522	71.81%	28.19%	37.72%
2007	270499	137737	98231	39506	71.32%	28.68%	36.31%
2008	318068	158899	112655	46245	70.90%	29.10%	35.42%
2009	347650	174539	123122	51417	70.54%	29.46%	35.42%
2010	408505	201581	141465	60116	70.18%	29.82%	34.63%
2011	484109	244747	170391	74357	69.62%	30.38%	35.20%
2012	539040	275444	190585	84859	69.19%	30.81%	35.36%
2013	596344	306664	212477	94186	69.29%	30.71%	35.63%
2014	646548	338031	236238	101793	69.89%	30.11%	36.54%
2015	692094	371921	260202	111718	69.96%	30.04%	37.60%
2016	745981	410806	288668	122138	70.27%	29.73%	38.70%
2017	828983	456518	320690	135829	70.25%	29.75%	38.68%
2018	915774	506135	354124	152011	69.97%	30.03%	38.67%
2019	990708	552632	387188	165444	70.06%	29.94%	39.08%
2020	1025917	556986	387176	169810	69.51%	30.49%	37.74%
2021	1143670	747960	573056	174904	76.62%	23.38%	50.11%
Average	264321	145998	104291	41707	74.59%	25.41%	44.06%
STD	333820	188886	135410	54077	3.75%	3.75%	6.06%

Table 5 is the personal and government consumptions. In earlier years, the government consumption was about 20% of the total final consumptions and recently it has been around 25-30%. The personal consumption to the total GDP used to be about 50% but it has been lowered to about 40% since 2004.

In most developed economies, personal consumption contributes about 60-65% to its total GDP each year. In the US, this ratio is about 68% and United Kingdom is about 63%; but this ratio in Japan is only around 54%. China’s personal consumption’s share of the total GDP is pretty low, compared with many developed economies. It will be ideal if this ratio in China can go back to about 50% gradually in the near future. However, raising the personal consumption ratio is not easy. The first issue is the consumers’ consumption tendency. Chinese culture encourages people to save more than westerns; as a result, China has a very high saving rate. Figures 2 and 3 are the statistics of the saving rates of China, compared with western countries. Such a culture and tendency is quite difficult to be changed. Secondly, high income people love to buy foreign made products while low income people cannot afford to buy expensive ones. Thus, domestic or personal consumptions do not rise proportionally along with the economic development and income increase. Figure 4 is China’s share of global luxury-product markets. The majority of these luxury products are foreign brands. China’s GDP per capita is only around the world’s average at about \$10,000 but its luxury product sales count for more than one third of the world’s totals.

Figure 2. China Gross Saving Rates (1960-2020) (Data Source: WB)

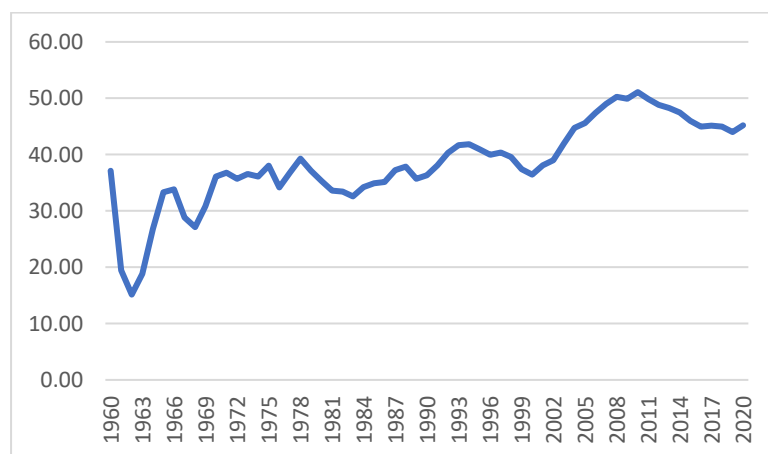


Figure 3. Comparisons of Gross Saving Rates (2020) (Data Source: WB)

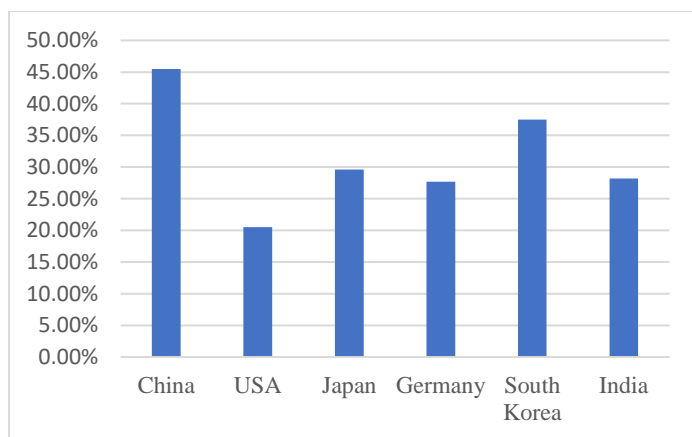
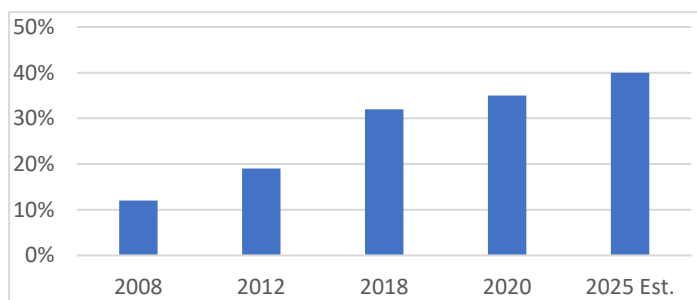


Figure 4. China's Share of Global Luxury Product Markets

(Data Source: McKinsey & Company)



3.4. Governmental and non-governmental investments

Table 6 is the summary of non-governmental and government investment from 1978-2021 in China. The contribution of investment to GDP is not stable in China. It is mainly decided by the central government's development target. When its economy slows down due to external or internal causes, the government takes strong actions to stimulate the growth. The most effective and controllable approach is the government spending and investment. The averages and standard deviations of growth rates of governmental and non-governmental investments indicated that the governmental investment has been more volatile.

Table 6. Governmental and Non-governmental Investments (1995-2021)

(Unit: 100Million Yuan)(Data Source: CNBS)

Year	Total Fixed Asset Investment	Non-governmental	Governmental	Non Governmental %	Governmental %	Total Investment Growth	Non-governmental Growth	Governmental Growth

1995	20019.3	10054.9	9964	50.23%	49.77%			
1996	22913.5	10223.8	12690	44.62%	55.38%	14.46%	1.68%	27.35%
1997	24941.1	11146.8	13794	44.69%	55.31%	8.85%	9.03%	8.70%
1998	28406.2	12263.4	16143	43.17%	56.83%	13.89%	10.02%	17.03%
1999	29854.7	11875.1	17980	39.78%	60.22%	5.10%	-3.17%	11.38%
2000	32919.7	12753.8	20166	38.74%	61.26%	10.27%	7.40%	12.16%
2001	37213.5	15279	21935	41.06%	58.94%	13.04%	19.80%	8.77%
2002	43499.9	18393.5	25106	42.28%	57.72%	16.89%	20.38%	14.46%
2003	45812	25829.1	19983	56.38%	43.62%	5.32%	40.43%	-20.41%
2004	59028	34902.7	24125	59.13%	40.87%	28.85%	35.13%	20.73%
2005	75095	47540.9	27554	63.31%	36.69%	27.22%	36.21%	14.21%
2006	93369	60358.5	33011	64.65%	35.35%	24.33%	26.96%	19.80%
2007	117464	79069.9	38394	67.31%	32.69%	25.81%	31.00%	16.31%
2008	148738	102542.3	46196	68.94%	31.06%	26.62%	29.69%	20.32%
2009	193920	131541.2	62379	67.83%	32.17%	30.38%	28.28%	35.03%
2010	241431	170091.6	71339	70.45%	29.55%	24.50%	29.31%	14.36%
2011	302396	179473	122923	59.35%	40.65%	25.25%	5.52%	72.31%
2012	364854	223982	140872	61.39%	38.61%	20.65%	24.80%	14.60%
2013	435747	274794	160953	63.06%	36.94%	19.43%	22.69%	14.25%
2014	501265	321576	179689	64.15%	35.85%	15.04%	17.02%	11.64%
2015	551590	354007	197583	64.18%	35.82%	10.04%	10.09%	9.96%
2016	596501	365219	231282	61.23%	38.77%	8.14%	3.17%	17.06%
2017	631684	381519	250165	60.40%	39.60%	5.90%	4.46%	8.16%
2018	635636	394051	241585	61.99%	38.01%	0.63%	3.28%	-3.43%
2019	551,478	311,159	240319	56.42%	43.58%	-13.24%	-21.04%	-0.52%
2020	518,907	289,264	229643	55.74%	44.26%	-5.91%	-7.04%	-4.44%
2021	544,547	307,659	236888	56.50%	43.50%	4.94%	6.36%	3.15%
Average	253675	153947	99728	56.56%	43.44%	14.09%	15.06%	13.96%
STD	233751	142538	92543	9.82%	9.82%	11.14%	15.09%	16.05%

Notes: The data source is from China National Bureau of Statistics; the data after 2003 excluded rural households and before 2011, there were no data of government or non-government so the foreign investment and self-raising funds were considered as the non-governmental and the remaining as the governmental.

3.5. Contributions of three expenditures to GDP growth

Table 7. Contributions to Annual GDP Growth by Different Expenditures (1978-2021)

(Data Source: CNBS)

Year	Annual GDP Growth Rate	Contribution from Final Consumption	Contribution from Capital Formulation	Contribution from Net Export
------	------------------------	-------------------------------------	---------------------------------------	------------------------------

1978	11.7%	4.5%	7.8%	-0.6%
1980	7.8%	6.1%	1.6%	0.1%
1985	13.5%	9.7%	10.7%	-6.9%
1990	4.0%	3.5%	-2.7%	3.2%
1995	10.9%	5.1%	5.0%	0.8%
2000	8.5%	6.7%	1.8%	0.0%
2001	8.4%	4.2%	5.3%	-1.1%
2002	9.2%	5.3%	3.7%	0.2%
2003	10.0%	3.6%	6.9%	-0.5%
2004	10.1%	4.3%	6.3%	-0.5%
2005	11.4%	6.5%	3.8%	1.1%
2006	12.7%	5.5%	5.4%	1.8%
2007	14.2%	6.8%	6.3%	1.1%
2008	9.6%	4.2%	5.1%	0.3%
2009	9.4%	5.4%	8.0%	-4.0%
2010	10.6%	5.0%	6.7%	-1.1%
2011	9.6%	6.3%	3.9%	-0.6%
2012	7.9%	4.4%	3.3%	0.2%
2013	7.7%	3.9%	4.1%	-0.3%
2014	7.4%	4.2%	3.3%	-0.1%
2015	7.1%	4.9%	1.6%	0.6%
2016	6.8%	4.5%	3.1%	-0.8%
2017	6.9%	3.9%	2.7%	0.3%
2018	6.7%	4.3%	2.9%	-0.5%
2019	5.9%	3.5%	1.7%	0.7%
2020	2.4%	-0.5%	2.2%	0.7%
2021	8.1%	5.3%	1.1%	1.7%
Average	8.8%	4.9%	4.1%	-0.2%
STD	2.7%	1.7%	2.7%	1.8%
Maximum	14.2%	9.7%	10.7%	3.2%
Minimum	2.4%	-0.5%	-2.7%	-6.9%

Above table gives the contributions of three expenditures-Final Consumption, Capital Formulation and Net Export to annual GDP growth. It demonstrates that historically, the Net Export has the negative (-0.2%) effect to the annual economic growth; the Final Consumption had the largest contribution of 4.9% on average and Capital Formulation contributed 4.1%. Moreover, the investment had the largest standard deviation, and final consumption had the lowest standard deviation. Thus, the investment is more volatile than the consumption. These results again illustrate that the future economic growth will rely on consumption and investment. The export is important but the net export contribution to economic growth will be

very limited and negative mostly. Investment will be crucial to stabilize the economy because the governments in China have financial resources and powers to stimulate its economy, whenever necessary, by monetary and fiscal policies and by its own direct investment. Nevertheless, it must be very careful in doing so. Quantitative easing will lead to inflation and over-investment by governments will waste money and also crowd out private sectors' investment as occurred before.

Table 8. Scenarios of China Annual Economic Growth with Three Expenditures' Contributions

Annual Growth Rate	Contribution from Final Consumption	Contribution from Capital Formulation	Contribution from Net Export
(5.5%, 6.5%)	(3.5%, 4.5%)	(2%, 3.5%)	(-1%, 0.5%)

Built on the above discussions, Table 8 provides the possible scenarios of China's economic growth and contributions from three sources in coming eight years (from 2023-2030). The Final Consumption could contribute to the annual growth between 3.5% and 4.5%, Capital Formulation by 2.0% to 3.5%, and Net Export by -1% to 0.5%. The average contribution from the first one will be 4%, 2.75% from the second source and -0.25% from the last one. As a result, the possible average annual growth rate will be 6.5%. Certainly it will be probable that its annual rate may rise more than 6.5%, such as 7.5%, in some years; on the other hand, more likely in other years, the rate could be much lower than 6.5%, such as only 4.5%. As Chen (2019) demonstrated, China ultimately may experience a business cycle as occurred in all developed economies; then its growth will be negative in certain years. Nonetheless, from 2031, this growth will further slow down to about 4-5% annually, mainly due to the reasons that will be discussed in the following section- labor forces, productivity and economic structure.

IV. The Value-added approach for the GDP calculation and China's growth potential

According to the value added approach, the GDP comes from three different industries in the economy, agricultural, industrial and service, i. e.

$$GDP = GDP_A + GDP_M + GDP_S \quad (3)$$

Where GDP_A is the GDP in Agriculture, GDP_M is the GDP in Industrial and GDP_S is GDP in the Services.

Thus, the annual GDP growth relies on the rises of GDPs in these three sectors. Instead of using GDP, the Gross National Income (GNI) is often used to measure an economy. For example, the World Bank uses the GNI to classify an economy's development level into low income, low-middle income, upper-middle or advanced income economy. As Chen et al. (2017) stated, the GNI and GDP are closely associated. Then, either measurement should be fine.

Also, GDP or GNI per capita is more important than its total GDP or GNI to assess an economy's development level. The WB applies the GNI per capita to classify the income and development levels. Chen et al. (2017) developed an economic model to describe the GDP per capita (gdp) growth as following:

$$GDP = GDP_A + GDP_M + GDP_S$$

$$= P_A * T_A + P_M * T_M + P_S * T_S;$$

$$gdp = P_A * L_A * L_r + P_M * L_M * L_r + P_S * L_S * L_r = (P_A * L_A + P_M * L_M + P_S * L_S) * L_r \quad (4)$$

$$= P_W * L_r \quad (5)$$

where P_i is the productivity per labor/employee in sector i and T_i is the total # of employees in the sector; and A, M, and S represent Agriculture, Industrial and Service sectors, respectively; $P_W = P_A * L_A + P_M * L_M + P_S * L_S$ is the average productivity of all employees and L_r is the ratio of labor forces(employees) to the total population.

Based on the above equation, the GDP per capita comes from the productivities in three sectors, and labor shares among three sectors, along with the labor force ratio (L_r , employees to population ratio).

Therefore, the change of annual GDP per capita will be:

$$gdp(2)/gdp(1) = (P_{W2}/P_{W1}) * (L_{r2}/L_{r1}) \quad (6)$$

where P_{W2}/P_{W1} is the overall productivity change from period 1 to period 2, and L_{r2}/L_{r1} is the change of the labor force ratio from period 1 to 2.

4.1. Productivity

Equation (5) shows that the per-capita GDP growth is associated with the average labor productivity rise and the change of the labor forces.

Table 9. Economic Structure and Productivity-

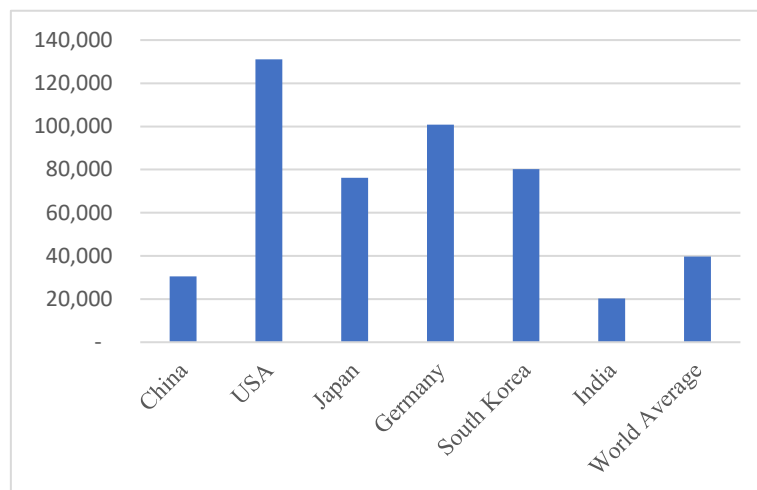
China, US, Japan, Germany, South Korea and India (2017) (Data Source: WB)

	World	China	US	Japan	Germany	South Korea	India
% of Agriculture GDP	4.11%	7.57%	0.94%	1.13%	0.85%	1.85%	16.56%
% of Industry GDP	31.40%	40.54%	18.90%	29.57%	37.35%	34.77%	28.90%
% of Service GDP	64.49%	51.89%	80.16%	69.30%	61.80%	63.38%	54.54%
% of Agriculture Labor Force	26.48%	26.98%	1.66%	3.49%	1.28%	4.89%	42.74%
% of Industry Labor Force	22.44%	28.11%	18.89%	25.58%	27.26%	24.79%	23.79%
% of Service Labor Force	51.08%	44.91%	79.45%	70.93%	71.46%	70.32%	33.48%
Total Labor Force (million)	3,380	799	163	66	44	28	472
Total Population(million)	7,519	1,396	325	127	83	51	1,339
Labor Force Ratio	44.95%	57.24%	50.26%	52.39%	52.98%	55.08%	35.23%
Total GDP (US\$(billion)	81,225	12,310	19,543	4,930	3,691	1,624	2,651
GDP per capita (US\$)	10,802	8,816	60,110	38,891	44,653	31,617	1,981
GDP per employee overall (US\$)	24,034	15,404	119,606	74,229	84,287	57,397	5,621
%GDP/%Labor In Agriculture	15.521	28.05	56.76	32.32	66.30	37.86	38.74
%GDP/%Labor in Industry	139.95	144.23	100.05	115.62	137.02	140.26	121.49
%GDP/%Labor in Service	126.25	115.54	100.89	97.70	86.48	90.13	162.93
Industry/Service	1.11	1.25	0.99	1.18	1.58	1.56	0.75
Service/Agriculture	8.13	4.19	1.78	3.02	1.30	2.38	4.21
Industry/Agriculture	9.02	5.14	1.76	3.58	2.07	3.70	3.14

The above table indicates that China's GDP per capita and GDP per employee are lower than the world average and much smaller than the developed economies like US, Japan, Germany and South Korea. Even using the data adjusted by Purchasing Power Parity (PPP) (Figure 5), China still lags behind the world average and the advanced economies significantly. Hence, China has large potential to improve its overall productivity and its productivity in each sector. Nonetheless, this will not be easy. In fact, the China's productivity in each sector was not improved significantly in the past many decades and the major improvement of the overall productivity came from the shift of labors from agriculture to other sectors (WB 2020). Figure 6 is China's overall Total Factor Productivity (TFP) from 1978-2019. It assumes that the Index =1 in 1978 and the Index was only 1.2584 in 2019. Then, in 42 years, its TFP was only

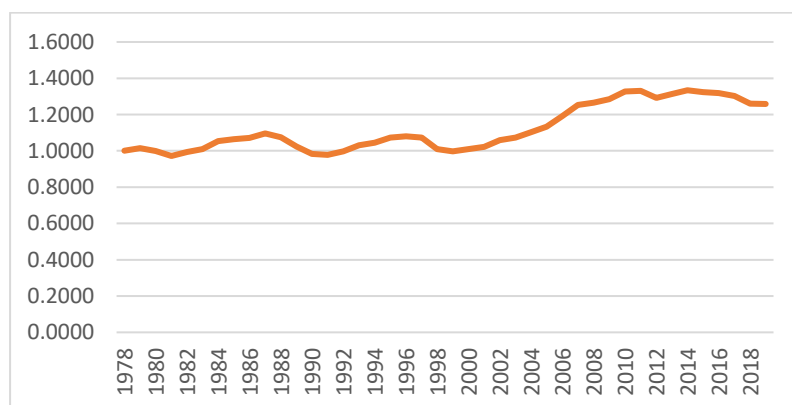
improved by 25.84% or on average, each year it rose only 0.62%. In recent years, the TFP actually has been decreased.

Figure 5. GDP per Employee Adjusted by PPP (2020)(Data Source: WB)



4.2. Labor forces

Figure 6. China's Total Factor Productivity (TFP) (1978-2019) (Data Source: WB)



Shifting of labor so the GDP from the agricultural sector to industrial, especially manufacturing is the common path to developing countries during its economic catch-up. Then, the labor will be gradually moved toward the service sector when an economy reaches its certain income level. The industrial productivity usually is the highest among all sectors and the agricultural productivity is the lowest. As Table 9 demonstrated, globally, the productivity in industrial industry was 8.02 times more than the agriculture, service sector was 7.13 times higher than the agriculture and the industrial was 11% more than the service. In China, these

ratios were 4.14 times, 3.19 times and 25%, respectively. Nonetheless, in the US, these differences were much smaller and service productivity even was slightly better than industrial.

Figure 7. China Labor Force Ratios (Data Source: CNBS)

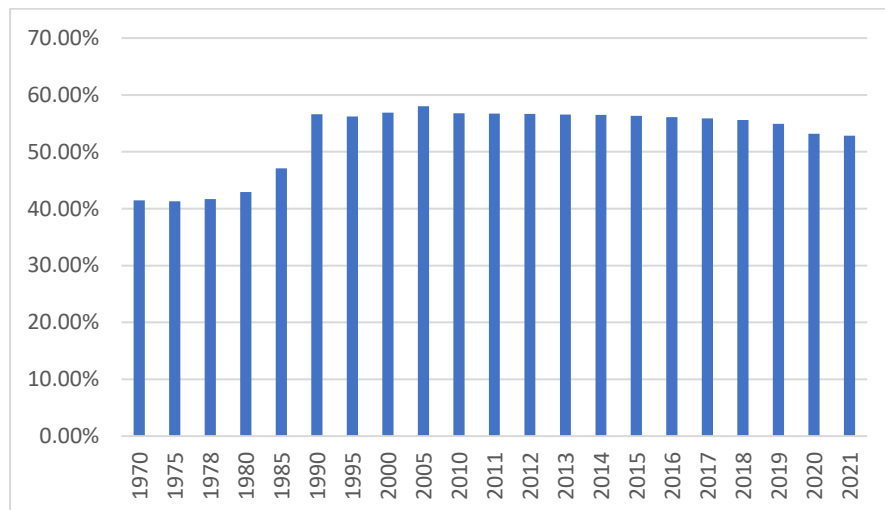


Table 10. China Population and Labor Forces (Unit: 10,000)(Data Source: CNBS)

Year	Labor Force Ratio	Population	Employment
1970	41.49%	82,992	34,432
1975	41.30%	92,420	38,168
1978	41.71%	96,259	40,152
1980	42.92%	98,705	42,361
1985	47.12%	105,851	49,873
1990	56.63%	114,333	64,749
1995	56.20%	121,121	68,065
2000	56.87%	126,743	72,085
2005	57.99%	130,756	75,825
2010	56.76%	134,091	76,105
2011	56.72%	134,735	76,420
2012	56.65%	135,404	76,704
2013	56.57%	136,072	76,977
2014	56.48%	136,782	77,253

2015	56.34%	137,462	77,451
2016	56.12%	138,271	77,603
2017	55.85%	139,008	77,640
2018	55.60%	139,538	77,586
2019	54.94%	141,008	77,471
2020	53.17%	141,178	75,064
2021	52.85%	141,260	74,652

Figure 8. China Employment Shares of Primary, Secondary and Tertiary Industries

(1978-2021) (Data Source: CNBS)

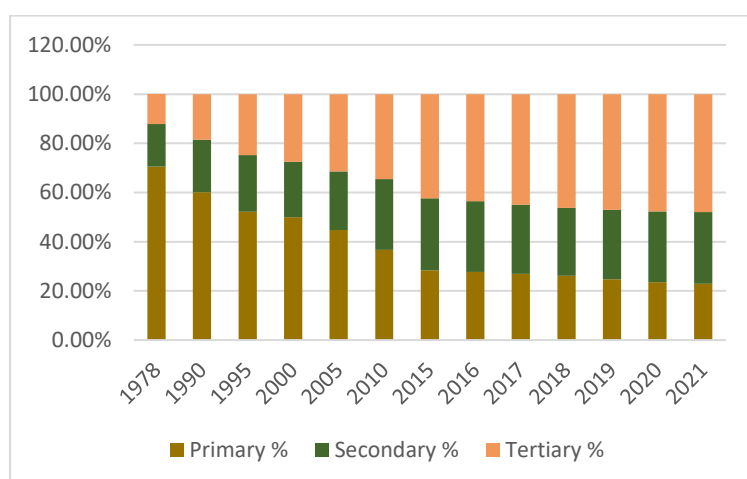


Figure 7 and Table 10 are China's labor forces over years. The ratio of employees to the total population in China is still higher than many other countries; but this ratio has been decreasing in the past decade. Figure 8 is the shares of the labor forces in three industries over years and it shows the shift of the labor forces from agriculture to industrial and then to the service sector. Right now, the agriculture industry hires about 23% of employees, the industrial 29% and the service 48%. Table 11 is the comparison of China's labor share in agriculture industry with the US, Japan, Germany, South Korea and India.

Table 11. Agriculture Share of the Total Employees (2019) (Data Source: WB)

Country	Primary Labor % of Total Employees
China	25.33%
USA	1.36%
Japan	3.38%
Germany	1.21%
South Korea	5.14%
India	42.60%
World Average	26.69%

Table 12. China Employment Shares in Three Sectors (Data Source: CNBS)

Year	Primary %	Secondary %	Tertiary %
1978	70.53%	17.30%	12.18%
1990	60.10%	21.40%	18.50%
1995	52.20%	23.00%	24.80%
2000	50.00%	22.50%	27.50%
2005	44.79%	23.79%	31.39%
2010	36.70%	28.70%	34.60%
2015	28.30%	29.30%	42.40%
2016	27.70%	28.80%	43.50%
2017	26.98%	28.11%	44.91%
2018	26.11%	27.57%	46.32%
2019	24.70%	28.20%	47.10%
2020	23.60%	28.70%	47.70%
2021	22.90%	29.10%	48.00%

China's agriculture sector has been shrinking in the past decades, and its shares of labor and GDP have been decreasing over years. It still has potential to be further reduced. Right now, the sector contributes about 7% of the total GDP while employs about 23% of the total workers. The most crucial issue of China's future development is to reduce employment share in the agricultural sector further more.

4.3. Economic structure-GDP shares of three industries

Figure 9. GDP Shares in Three Sectors (1978-2021) (Data Source: CNBS)

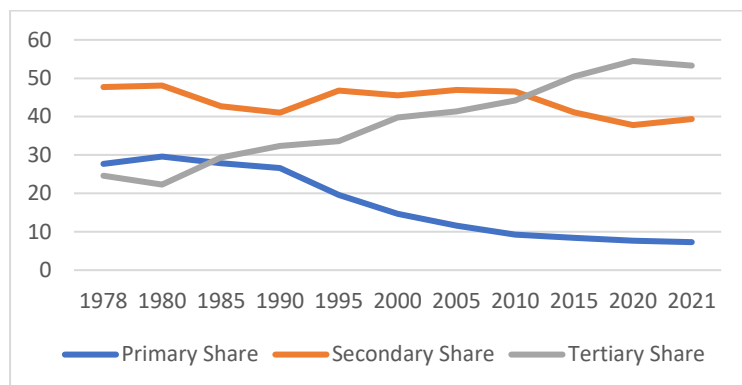


Table 13. China GDP Shares of Three Sectors (%) (Data Source: CNBS)

Year	Primary Share	Secondary Share	Tertiary Share
1978	27.7	47.7	24.6
1980	29.6	48.1	22.3
1985	27.9	42.7	29.4
1990	26.6	41	32.4
1995	19.6	46.8	33.6
2000	14.7	45.5	39.8
2005	11.6	47	41.4
2010	9.3	46.5	44.2
2015	8.4	41.1	50.5
2020	7.7	37.8	54.5
2021	7.3	39.4	53.3

4.4. Economic structure-prospects of GDP and labor shares of three industries

Built on the previous analysis, Table 14 gives the target shares of employment and GDP of three industries. The primary or agricultural sector needs to continuously lower its shares of the labor and outputs in the whole economy, so more labor can be moved to other industries where its productivity is much higher. Also, the agriculture industry has to raise its productivity significantly by adopting advanced technologies and innovations, producing more desirable and higher value products, and better using the economies of scale. To stabilize its secondary or industrial sector, especially manufacturing industry will be essential for China's stable and speedy development as Chen (2015, 2019) emphasized. This industry has the highest

productivity; it provides necessities to its own people as well as to the world. China has been the global manufacturing center and it must maintain this status in the future and make it stronger and more competitive. Further advancing its tertiary or service industry will be logical and natural as all developed economies have experienced. But as earlier stated, the productivity of service industry in China is quite low. Thus, it must improve both the size and efficiency of this industry in the forthcoming years.

Table 14. China Target Shares of Labor and GDP of Three Industries in Coming Decades

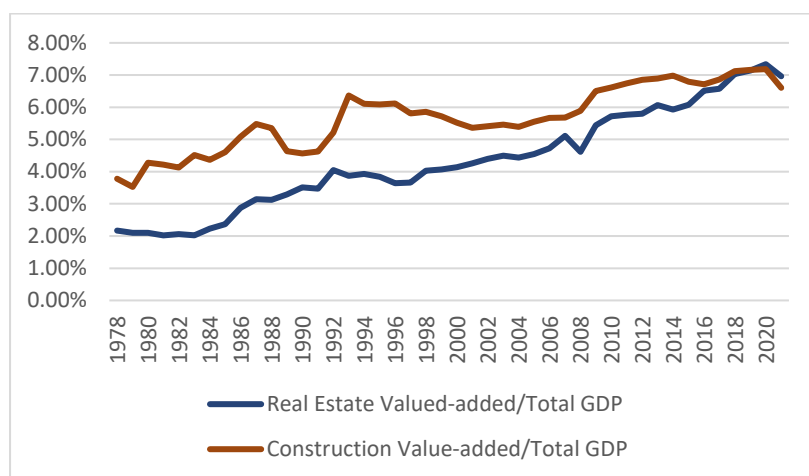
	Primary		Secondary		Tertiary	
	GDP Share	Labor Share	GDP Share	Labor Share	GDP Share	Labor Share
Current	7.3%	22.9%	39.4%	29.1%	53.3%	48.0%
Target in 12-15 Years	3-5%	10-15%	30-35%	20-25%	60-67%	60-70%

4.5. Real estate and construction sectors

The real estate and construction are two increasingly influencing sectors to China's development in the past decades. Figure 10 is their annual contributions to the total GDP from 1978-2021. On average, the Real Estate's value-added to GDP ratio was 4.33% from 1978-2021 and it has been about 7% recently; the Construction's value-added to GDP ratio was 6.61% and it has been also around 7% in the past decade. In the past two years, the Real Estate sector has surpassed the Construction sector, but that should be temporary. When the lockdown resulting from the COVID-19 is over and the government starts further stimulating the economy, the investment in infrastructures and so construction will jump quickly. These two important sectors will continuously play significant roles in China's economic development; nonetheless, their contributions to GDP growth will be gradually decreased years later and especially after the urbanization rate diminishes and the total population goes down.

Figure 10. Real Estate and Construction Contributions to GDP (1978-2021)

(Data Source: CNBS)



V. China's major challenges and problems

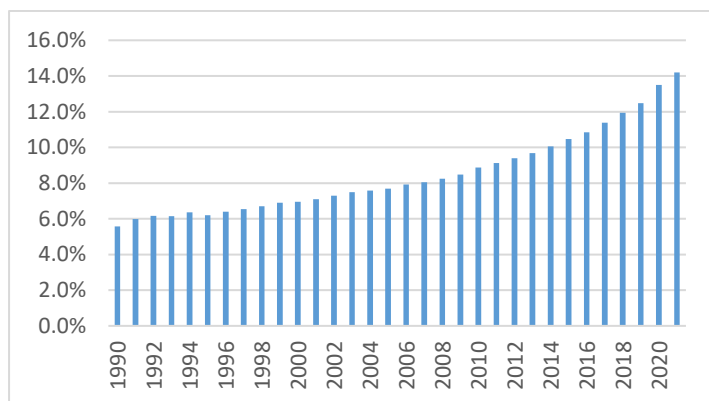
As briefly mentioned in the beginning, China is facing and will be facing many challenges and problems. These issues will affect China's future development. They could be both threats and opportunities.

5.1. Aging

Aging is a serious problem to China. As Table 10 shows, the total # of employees have been decreasing since 2018. Its total population has not risen much since 2018. The following figure is the aging ratio, total people of 65 years or older to total population. In 2021, this ratio was 14.2%. Aging is a severe economic problem. It leads to having less labor force so affects economic growth as previous analyzed. It also significantly changes domestic product and service markets. Kids, young people and seniors' demands for products and services are quite different. With increasing aging, the total demand for luxury and fashion products will be lower. Traveling and related services will be impacted as well. Aging is also a social problem. The society has the responsibility to take care of all seniors. Then governments need to invest in all these related projects and services, including healthcare and special accommodations. Such spending is necessary and additionally promotes the economic development. On the other hand, investing in other areas will be less since the total available resources to the governments are fixed and limited in the given time period. Because of aging, many young people and especially young couples have heavy burdens to take care of their loved parents and grand-

parents; as a result, they will have less time to devote to their work as well as have possible financial burdens.

Figure 11. China Aging (65 or Older) Population Ratio (1990-2021) (Data Source: CNBS)



5.2. Income and wealth gaps

The second problem is the income and wealth gaps among regions and groups of people. This has been a global problem. China has eliminated the absolute poverty generally according to the government's announcement. This is a great achievement. But for almost 70% of population, each earns RMB 2,000 (equivalent to less than US\$300) or less a month, that is barely to support their daily basic lives. In fact, about 40% of all population, each earns RMB 1,000 or less a month. There are many rich people and families, including billionaires; nonetheless, ordinary people and families are struggling. This, like the aging problem, is not only an economic issue but also a serious social issue. Better and more equal sharing of income and wealth in the economy promotes the social justice, help stabilize the community and stimulate economic growth. Nevertheless, mandatory and governmental over-actions and measures against rich groups and people will not solve the problem, but entice hatreds and discourage people's hard-working, innovations and entrepreneurship.

5.3. Environment

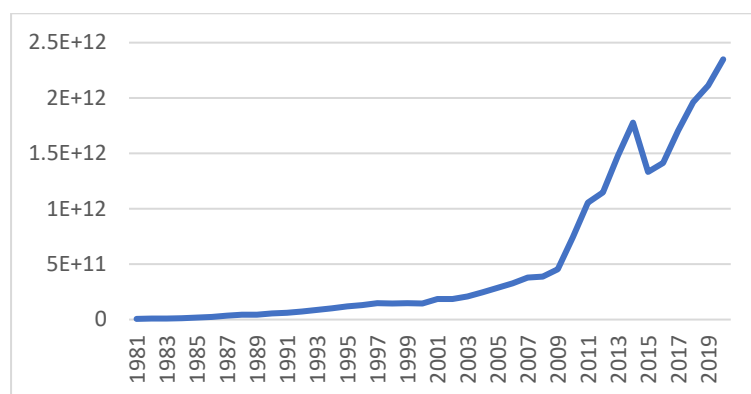
China is having a serious challenge in environment. Pollution has been a severe issue that threatens people's health and impedes economic development. China has set up its pollution emission targets, peaking carbon emission before 2030 and achieving carbon neutrality by 2060. Such pledges are encouraging. To reach these targets requires its dramatic policy changes and strong and effective plans and actions. Economic growth will be adversely impacted by

environment regulation and policy changes. On the other hand, this will also provide new opportunities, particularly chances for new technology, innovations and new industries.

5.4. Financial system and debts

Financial stability and reform of its financial system are crucial to China's long-term development. Many economies suffered from financial crises repeatedly, such as 1990s Asian Financial Crisis and the 2007-2008 Financial Crisis. As Chen et al. (2017) stated, preventing any potential financial crisis will be the key for China to avoid the middle-income trap and become a high-income economy. Huge debts held by governments, businesses and individuals could be a threat. Many financial crises are resulted from the debt problem. Currently, China's external debt to GDP ratio is about 16%. External debts are the ones the country owes to non-resident creditors. China's national (central government) debt to GDP ratio is close to 75%. These ratios are not too high, compared with many others like Japan, whose external debt ratio is closed to 100% and the national debt to GDP ratio is near 270%, but its fast rising is troubling. In addition, business and individual debts are fast jumping in China over years (Pettis 2022, Dollar et al. 2021).

China has to implement effective measures to control its fast rising debts. Feasible and precautionary financial regulation is critical to reduce the systemic financial risk and prevent a nation-wide financial crisis. The world has learned from recent crises and adopted applicable financial regulations. China has to evaluate these measures and take ones that fit its conditions. China also needs to reform its financial system to better support stable economic and social development and benefit all. Private enterprises contribute more than 50% of tax revenues, 60% of gross domestic product , 70% of technological innovation, 80% of employment, and 90% of total firms; but these private companies have much less access to financing, compared with the state-owned ones.

Figure 12. China Total External Debts (1981-2020) (Data Source: WB)

5.5. Innovation and new technology

Innovation and technology advancement are the solutions to many economic and social problems. China has achieved big jump in innovation and technology development in the past decades. In some areas, like wireless telecommunications, artificial intelligence, express train, and e-commerce, China has been the global leader. However, China is still far behind developed economies like US, Japan and Germany in many technologies and innovations. Successful innovation and technology advancement need governments' assistance, including financial support. But the best the governments can do is to protect private properties and intellectual property rights, and create the business environment that encourages fair competition and rewards risk-taking and innovation. More importantly, its relevant policies and practices must be consistent, persistent and transparent.

5.6. Urbanization

Urbanization has impelled China's economic and social development meaningfully. In 2021, China's urbanization rate was close to 65%. In the past decades, each year, this rate has been raised by more than 1%, on average. However, in coming decades, the improvement of urbanization and so its contribution to economic growth will go down gradually. The urbanization rate in the US is about 83% and it is 78% in Germany. The possible up limit of urbanization in China will be about 75%, given its history, culture and diversity. Then the focus 8-10 years later should be on modernizing the cities and towns and improving people's living conditions there.

5.7. Education and especially higher education

Education is the foundation to an economy's advancement. More and better educated people provide needed human capital to the economy. More than one third of people have at least bachelors' degrees in most developed economies and in the US, this ratio is about 35%. Education and especially higher education in China has made remarkable and unprecedented progress since 1978. It has about 10 million college graduates each year recently. But its total college graduates to the population is yet low and the percentage of people with at least a bachelor's degree is less than 10%. Therefore, China has to continuously invest in education and provide the dream opportunity of college education to more young people.

5.8. Manufacturing

Manufacturing development is vital to the China's prospect. As Chen (2015, 2017) and Chen et al. (2019) emphasized, China's path toward the high-income and advanced economy is to keep and improve its competitive advantage of manufacturing industry and develop it to be the strongest from the largest. Manufacturing is crucial because it meets people's needs; it is important since it provides many good paid jobs. It is significant because it brings foreign currencies from export. The technology and quality level of manufacturing industry in addition is the symbol and indicator of a country's overall strength. China has had its difficulty in manufacturing lately. There is increasing competition from other countries, like Vietnam and India. Many foreign-owned manufacturers have moved from China to other countries. Rising costs are the main problem. China has realized the importance and challenges of the manufacturing industry. Taking practical actions to improve its competitiveness will decide not only this industry's success but also China's future.

5.9. Service industry and cost disease

The service industry becomes larger when an economy advances from low to middle, and then to high-income level. As earlier pointed out, the service productivity generally is less than the industrial and much lower than the manufacturing. Thus there is a so-called Baumol's cost disease as Chen (2016a) discussed. The wages in jobs without productivity gains still rise since the competition for workers with jobs that have experienced productivity gains and thus can raise salaries. Therefore, a less productive sector is forced to raise the salary to attract or retain its employees because the other sector increases the salary resulting from its productivity improvement. Consequently, the profit margin is worse to this less productive sector. Currently, the service sector in China counts for about 53% of total annual GDP and hires 48%

of total employees and the industrial sector is 39.4% and 29.1%, respectively. As explained earlier, the service sector will constantly grow and its share of the GDP will be about 60-67% and labor share of 60-70% eventually. In this process, the service industry has to pay attention to its productivity and especially avoid this Burmol's cost disease. The opposite problem is that the manufacturing industry has had the trouble to attract and retain employees due to the fact that there are many job opportunities in the service industry. Competition among industries and among firms is natural and good in the market economy, but such competition should be used to enhance overall productivity and competitiveness of the whole economy.

5.10. Global environment

An economy's development depends on its own conditions and efforts and it is also associated with global environment. Globalization has made all economies deeply interdependent. As the second largest economy, China contributes to the global growth and on the other hand, it relies on the world's development. COVID-19 tells that all of us are global village citizens, and that no country and no one can escape from potential suffering associated with the pandemic or other severe disease. Presently, the global conditions are not favorable to China; tariffs and distrusts among countries, and anti-globalization movements in the world are the barriers that impact China's trade, investment and economic development. China has to work with global leaders and all other countries to solve disputes, enhance communications to let the world better understand China, its objectives and intentions, and further develop more equally benefit-sharing relationship. In order to deal with increasingly complicated international relationship and problems, China first has to take good care of and solve its internal problems (Dollar et al. 2021). Then it will have the ability to handle the external issues. The openness and reform have led to China's past marvelous progress and success and that will still be true to China's future. Particularly, establishing and implementing the market-oriented economic system will be the foundation to China's long-term, stable and sustainable economic development.

VI. Conclusion

This study focuses on whether China will be able to remain stable and high economic growth in coming decades. It applies the expenditure approach and value-added approach for GDP measurement to explore China's growth potential. Historical and latest data are analyzed to show the relevant factors' contributions to China's development in the past and what will be

their potential future contributions. Then, target development ranges of these factors, the final consumption, investment, net export, agricultural, industrial and services, are discussed and the future economic growth rate is estimated, accordingly.

The paper further reviews challenges and problems that China is and will be facing. It discusses issues of rising aging and income gaps, and limits and slowing down of urbanization. It emphasizes the importance of innovation and advanced technologies to China's development and necessity to invest more in education and especially increase the ratio of people with bachelor's degrees. It analyzes the high debts and financial risk and reforms needed to reduce and control such risk. The paper, moreover, examines challenges and issues that manufacturing and service industries are facing and explore how to overcome these problems. Then, it reviews global issues and challenges and explores what China should do.

This study concludes that China will be able to achieve 5.5-6.5% annual growth rate on average by 2030 if it enables to avoid any potential financial or economic crisis and without any disaster like COVID-19; and then its growth will slow down to about 4-5% in the following ten years. Its future development will depend fully on increases of domestic consumption and investment, further shifts of labor from the agriculture to other sectors, and productivity improvement. Export is still important to its economy but net export's contribution to GDP growth will be very limited and mostly negative. The service industry will constantly grow and its shares of the GDP and employment in the whole economy will rise; however, China's future relies more on its manufacturing industry, from the largest in the world now to become the strongest in the future. The urbanization rate will rise further and so push the economic development, but 8-10 years later, it will diminish gradually and its economic effect will be marginal. Further and comprehensive openness and reform will be the key to solve many economic and social problems and especially establishing and implementing the market-oriented economic system will be crucial to China's long-term, stable, sustainable and inclusive economic development.

REFERENCES

- Baumol, William. J. (1967), “Macroeconomics of Unbalanced Growth: the Anatomy of Urban Crisis;” *Am Econ Rev*, 57(3), pp. 415-426.
- Blumstein, Carl, et al. (1980), “Overcoming Social and Institutional Barriers to Energy Conservation;” *Energy*, 5 (4), pp. 355-371.
- Chen, Y. (Bill), and N. Qiao (2022), “An Analysis of China’s Economic Growth: The Effects of the WTO and the RCEP;” *Int’l Journal of Business and Economics*, forthcoming.
- Chen, Yueyun(Bill) (2019), “The Business Cycle and Economic Crisis—when will China Experience them?” *Journal of Advances in Economics and Finance*; 4(2), pp. 60-78.
- Chen, Y. (Bill), Li, X., Pu, C., & Lin, L. (2019), “The Relationship of the Manufacturing Growth with the Financial Industry and Real Estate Industry;” *the Journal of Business and Economic Policy*, 6(2), pp.38-47.
- Chen, Yueyun(Bill), et al. (2017), “The Productivity, Economic Structure and Middle-income Trap—can China Avoid this Trap?” *Journal of Applied Business and Economics*, 19(11), pp. 78-103.
- Chen, Yueyun (Bill) (2016a), “International Comparisons of Service Industry-What China Can Learn from Other Countries;” *Journal of Advances in Economics and Finance*, 1(1), pp. 53-71.
- Chen, Yueyun(Bill) (2016b), “International Comparisons of Agriculture Industry-what China can Learn from Others;” *Int’l Journal of Agricultural Economics*, 1(2), pp. 45-56.
- Chen, Yueyun(Bill) (2015), “China’s Path to the Sustainable, Stable and Rapid Economic Development: from the Largest to the Strongest Manufacturing Country;” *Journal of World Economic Research*, 4(5-1), pp. 8-19.
- Chow, G. C. (2002), *China’s Economic Transformation*, Wiley Publishing.

China's economic prospects: Can China achieve stable and high economic growth in coming decades?

Chow, G. C. (2006), "Globalization and China's Economic Development," *Pacific Economic Review*, 11: 271–285.

Coase, Ronald (1937), "The Nature of the Firm," *Economica*, 4(4), pp. 386–405.

Dollar, David, et al. (2021), "Global Clout, Domestic Fragility;" *IMF Finance and Development*; June.

Howarth R, and Andersson B. (1993), "Market Barriers to Energy Efficiency," *Energy Economics* 15:262–72.

Huang, Yasheng (2010), "Debating China's Economic Growth: The Beijing Consensus or the Washington Consensus," *Academy of Management Perspective*, 24(2), pp. 31-48.

Levine, Ross (1999), "Law, Finance, and Economic Growth;" *Journal of Financial Intermediation*, 8(1/2): 36–67.

Lin, Justin Yifu, Cai, Fang and Li, Zhou (2003); *The China Miracle: Development Strategy and Economic Reform*; Hong Kong: Chinese University Press.

Lin, Justin Yifu(2012), *The Quest for Prosperity: How Developing Countries Can Take Off*, Princeton: Princeton University Press.

Lin, Justin Yifu(2012), *New Structural Economics: A Framework for Rethinking Development Policy*, Washington, World Bank.

Lucas, Robert (1990), "Why doesn't Capital Flow from Rich to Poor Countries?" *American Economic Review* 80 (2): 92–96.

Metcalf, GE. (1994), "Economics and Rational Conservation Policy;" *Energy Policy* 22: 819–25

Morrison, Wayne M. (2019), "China's Economic Rise: History, Trends, Challenges, and Implications for the United States;" *US Congressional Research Service Report*, June.

- Peerenboom, R. (2014), "China and the Middle-income Trap: toward a Post Washington, Post Beijing Consensus;" *Pacific Review*, 27(5), pp. 651-673.
- Pettis, M. (2022), "The Only Five Paths China's Economy Can Follow;" *China Financial Markets*, Carnegie Endowment, April 27;
<https://carnegieendowment.org/chinafinancialmarkets/87007>
- Putterman, L. (1995), "The Role of Ownership and Property Rights in China's Economic Transition;" *The China Quarterly*, 144, 1047–1064.
- Rajah, R., & Leng, A. (2022), "Revising Down the Rise of China. Lowy Institute Analysis;" *Lowy Institute*, March 15; <https://www.lowyinstitute.org/publications/revising-down-rise-china>.
- Ramo, J C. (2004), *Beijing Consensus*, Foreign Policy Centre, London.
- Romer, Paul (2010), "Which Parts of Globalization Matter for Catch-Up Growth?" *American Economic Review*, 100 (2), pp. 94-98.
- Romer, Paul (1994), "The Origins of Endogenous Growth;" *Journal of Economic Perspectives* 8, 3-22.
- Romer, Paul (1990), "Endogenous Technological Change;" *Journal of Political Economy* 98, S71-S102.
- Solow, Robert M. (1957), "Technical Change and the Aggregate Production Function;" *Review of Economics and Statistics* 39 (3): 312–320.
- Solow, Robert M. (1956), "A Contribution to the Theory of Economic Growth;" *Quarterly Journal of Economics* 70 (1): 65–94.
- Swan, Trevor W. (1956), "Economic Growth and Capital Accumulation;" *Economic Record* 32 (2): 334–361.
- Tyers, Rod and Jane Golley (2010), "China's Growth to 2030: The Roles of Demographic Change and Financial Reform;" *Review of Development Economics*, 14 (3), 592-610.

China's economic prospects: Can China achieve stable and high economic growth in coming decades?

Williamson, O. (1975), *Markets and Hierarchies: Analysis and Antitrust Implications*. The Free Press, New York.

Yao, Y. (2014), "A New Normal, but with Robust Growth: China's Growth Prospects in the Next 10 years;" *Think Tank 20: Growth, Convergence and Income Distribution: The Road from the Brisbane G-20 Summit*, 71–76.

Zhou, Na, et al. (2021), "Analysis on the Sources of China's Economic Growth From the Perspective of Cleaner Production;" *Sage Open*, 11(2), pp. 1-12.