

RDCY Micro Situation Research Report No. 28

It Should Not Be Overestimated

**An Analysis of China's National Debt Level
Using Two Leverage Ratios**

**“Tell China’s Economic and Financial Stories”
Report Series Research Group**

**Chongyang Institute for Financial Studies,
Renmin University of China (RDCY)**

**Global Governance Research Center,
Renmin University of China (GGRC)**

October 13, 2021



Chongyang Institute for Financial Studies, Renmin University of China (RDCY)

Chongyang Institute for Financial Studies at Renmin University of China (RDCY) was established on January 19th, 2013. It is the main funding program that Shanghai Chongyang Investment Group Co., Ltd. donated to Renmin University of China and established the education fund to operate.

As a new type of think tank with Chinese characteristics, RDCY invited dozens of former politicians, bankers and renowned scholars from all over the world as senior fellows, aiming at focusing on reality, advising the country and serving the people. At present, RDCY consists of 7 departments and operates 4 research centers (the Center for Eco-Financial Studies, Global Governance Research Center, China-US People-to-People Exchange Research Center, and China-Russia People-to-People Exchange Research Center). In recent years, RDCY has gained high recognition at home and abroad in the research fields of financial development, global governance, great power relations and macro policies.



Global Governance Research Center, Renmin University of China (GGRC)

Global Governance Research Center, Renmin University of China (GGRC, RUC) was established on March 9, 2017. It is a program supported by the education fund donated to Renmin University of China from Ms. Ma Lin, Chairman of Beijing Jufeng Jinkong Technology CO., LTD. The center is operated by Chongyang Institute for Financial Studies at Renmin University of China (RDCY), with the direction of Mr. He Yafei, Former Vice Minister of Foreign Affairs of the People's Republic of China, Senior fellow of RDCY, and Ms. Zhang Yanling, Former Vice President of Bank of China, Executive Director of ICC and Senior Fellow of RDCY served as Chairman of the Academic Board of the center. The center aims to build a global governance platform for the exchange of high level ideas, to issue high quality global governance research reports, and strive to practice the think tank mission of advising policymakers, enlightening the public, planning strategies and nurturing talents.

Contents

Executive Summary	1
Introduction	6
I. Mainstream Basis and Views of Current Studies on China's National Debt Level	7
II. Two Leverage Ratios Used to Measure National Debt Level and Their Respective Reasonableness: Income Leverage Ratio and Asset Leverage Ratio	12
2.1 Definitions of the two leverage ratios and the reasons for their names	12
2.2 Respective logic of the two leverage ratios to measure national debt level	14
2.3 The reasonableness of the income leverage ratio to measure corporate sector's debt level —— Not very reasonable	16
2.4 The reasonableness of the asset leverage ratio to measure corporate sector's debt level —— More reasonable	18
III. China's Income Leverage Ratio —— Status Quo, International Comparison and Inference	20
3.1 Statistical caliber of data	20
3.2 Status Quo —— Significantly higher for the corporate sector, especially for state-owned enterprises and some industries, than for the government and household sectors, pushing up the overall ratio	20
3.3 International comparison —— Overall on the high side, significantly low for the government sector, basically medium for the household sector, and significantly high for the corporate sector	25
3.4 Inference —— China's national debt level is overall high, too high for the corporate sector, and very low and moderate for the government and household sectors respectively	28
IV. Why is the Corporate Income Leverage Ratio significantly High ? —— Justifiable and Non-justifiable Causes and Their Implications	30

4.1 Four major justifiable causes	30
4.2 Four major non-justifiable causes	43
4.3 The respective implications of the justifiable causes and non—justifiable causes for corporate sector's debt level	49

V. China's Asset Leverage Ratio — Status Quo, International Comparison and Inference **51**

5.1 Status Quo — Similar to the income leverage ratio: much higher for the corporate sector than for the government and household sectors; especially high for state-owned enterprises and some industries	51
5.2 International comparison — Markedly different from the income leverage ratio: overall on the low side; significantly low for the government sector; and on the low side for both the household and corporate sectors	53
5.3 Inference — China's national debt level is overall low, being low for both the corporate and household sectors and very low for the government sector	60

VI. The Process and Mechanism of the Divergence between Income Leverage Ratio and Asset Leverage Ratio **62**

6.1 The divergence lies in the corporate sector — the asset leverage ratio stable while the income leverage ratio jumping	62
6.2 A substantial rise and high volatility in corporate sector's income leverage ratio since 2008	63
6.3 The production mechanism of the divergence	70

VII. Conclusions and Policy Recommendations **72**

Main conclusion: The debt level of China's corporate sector, and in turn for the country as a whole, should not be overestimated	72
Secondary conclusion 1: It is more reasonable to use the asset leverage ratio than the income leverage ratio to measure corporate sector's debt level	72
Secondary conclusion 2: Rather than focusing on debt size, it is better to care about asset quality	73
Policy Recommendations	73

It Should Not Be Overestimated

—— An Analysis of China's National Debt Level Using Two Leverage Ratios

Executive Summary

- The mainstream basis for current studies on China's national debt level, i.e., its national debt burden, is the country's debt/GDP ratio, which is referred to as income leverage ratio in this report. The prevailing view, derived from this metric and its international comparisons, is that the debt level is too high for China's corporate sector, and in turn is high for the country as a whole.
- However, the national liability/asset ratio, which is referred to in this report as asset leverage ratio, should also be used as the basis for measuring the national debt level nowadays as the national balance sheets have been compiled, published and put under constant improvements.
- Now, which one of the two leverage ratios is more reasonable? The income leverage ratio and the asset leverage ratio measure the national debt level from two different perspectives: "flow", which measures the size of national debt burden relative to the size of its GDP; and "stock", which measures the size of national debt burden relative to the size of its assets. Admittedly, both perspectives have their own distinct logic. However, the national debt level is made up of the debt levels of each macroeconomic sectors in the country, and the logic intensity of the "flow perspective" and the "stock perspective" vary by economic sectors: the former is stronger for government and household sectors, and the latter is higher for corporate sector.

- Given the importance and complexity of the corporate debt level, it is necessary to further analyze the reasonableness of the two leverage ratios for measuring the level of debts for the corporate sector. The numerator of the income leverage ratio of the corporate sector is not closely related to the denominator and thus can have multiple economic meanings; the numerator of the asset leverage ratio however is tightly intertwined with the denominator and has a relatively singular economic meaning that deterministically points to the debt level. More importantly, the level of income leverage ratio of the corporate sector is influenced by multiple causes, including justifiable ones, that is, both inevitable and currently reasonable ones. These justifiable causes are bound to drive up the income leverage ratio of the corporate sector, but they do not necessarily imply a higher corporate debt level. Thus, the income leverage ratio is likely to overstate the debt level of the corporate sector. In contrast, the asset leverage ratio is much less affected by such causes and can therefore reflect the corporate debt level more truly.

- According to the Center for National Balance Sheet (CNBS), China's overall income leverage ratio was 247%, and the government, household, and corporate sectors' income leverage ratios were 39%, 56% and 152% respectively in 2019. It can be seen that the income leverage ratio for the corporate sector is obviously greater than that for the government and household sectors, especially for state-owned enterprises and some overdeveloped sectors, leading to a spike in the country's overall income leverage ratio. International comparisons, combined with the data acquired from the Bank for International Settlements (BIS), show that China's income leverage ratio, is overall on the high side, roughly on par with advanced economies yet well above emerging economies; is significantly low for the government sector, lower than all the major advanced economies and most emerging ones; is roughly in the middle for the household sector, on par with advanced economies but above emerging economies; and significantly high for the corporate sector, especially for state-owned enterprises and some overdeveloped industries, substantially above that of all major economies, whether advanced or emerging. The inference from the income leverage ratio is therefore that China's debt level is overall high, too high for the corporate sector, very low for the government sector and moderate for the

household sector.

● Why is the corporate sector's income leverage ratio significantly high? There are multiple causes, partly justifiable and partly non-justifiable. Four justifiable causes include a large share of "heavy economy" in the economy, a high saving/investment rate, dominance of debt financing, and high growth expectations. The large share of the "heavy economy" that stands for the economic sectors with heavy assets, on the one hand leads to a high demand for financing as it inherently requires large-scale financing, and on the other hand results in a high availability of financing because it is easier to secure bank loans and investments by a collateral on heavy assets. The high savings/investment rate means abundant market funds, which meet the financing demand of the heavy economy through capital supply. The dominance of debt financing suggests that most of the funds are raised by debt, inevitably increasing the borrowing requirements. High expectations of economic growth require more debts to finance both current and future production growth. Four non-justifiable causes include the over-representation of state-owned enterprises, overdevelopment and overcapacity for some industries, rapid expansion of local governments' hidden debts, and excess liquidity in the market. What must be recognized is that the four justifiable causes reflect a certain number of essential features of China's economic structure and financial market at the present stage, and the resulting high income leverage ratio of the corporate sector is determined by the nature of the current debt demand, which is therefore inevitable and reasonable and does not indicate that the corporate debt level is too high. In contrast, the four non-justifiable causes reveal the current shortcomings of the country's economic structure and financial market and the higher income leverage ratio caused by them exceed what the debt demand nature at the present stage calls for, and hence it does truly indicate an excessive level of corporate sector's debt level. That is to say, because of the existence of the justifiable causes, the income leverage ratio tends to overestimate the debt level of the corporate sector.

● According to China's National Balance Sheet 2020 issued by CNBS, the asset leverage ratios of the nation and its government, household, and corporate sectors were 59.2%, 18.9%, 10.8%, and 60.2%

respectively in 2019. It can be seen that, similar to the income leverage ratio, the asset leverage ratio of the corporate sector is substantially higher than that of the government and household sectors, and it is also even higher among state-owned enterprises and some overdeveloped industries. But international comparisons see it differ markedly from the income leverage ratio: on the low side across the national, corporate and household levels, and significantly low at the government level. The inference from the asset leverage ratio is that China's national debt level is low for the country, its corporate sector and its household sector, and even lower for its government sector.

- Why is there such a difference? The key is the sharp divergence between the income leverage ratio and the asset leverage ratio in the corporate sector: the former is very high but the latter is low according to international comparisons. The reason for this is that the corporate sector's debts are high relative to the size of GDP and thus lead to a high income leverage ratio, but small relative to its assets and hence make the asset leverage ratio low, suggesting that high debts are backed by high assets. In that case, if the high assets are real or of quality, the debt burden is not big and so the debt level is not high on the corporate sector. Moreover, the justifiable causes that lead the income leverage ratio to overestimating the corporate sector's debt level will not boost the asset leverage ratio because they simultaneously elevate the numerator and denominator of the ratio. These suggest that it is more reasonable to measure the corporate debt level by the asset leverage ratio than the income leverage ratio. It is true that measuring the corporate debt level by the asset leverage ratio can also be problematic if the quality of high assets is low. Hence, rather than focusing on the debt size, it is better to care about asset quality.

- The divergence between the corporate sector's income leverage and asset leverage ratios stems from the fact that the asset leverage ratio has basically maintained stability while the income leverage ratio has risen substantially and been volatile over the past decade or so. The income leverage ratio for the corporate sector has evolved through five stages since 2008. It was soaring from 2009 to 2010 along with the government's RMB 4 trillion investment in expanding domestic demand

to mitigate the global financial crisis; continued to rise from 2012 to 2016 as GDP growth slowed down while debt growth remained high; fell back between 2017 and 2019 due to the government's "deleveraging" policy efforts; rose again in 2020 due to the government's efforts to stabilize the growth facing COVID-19; and fell back again in 2021 as the economy recovered from the pandemic.

- The main conclusion of this report is that, combining the aforementioned inferences drawn from the two leverage ratios, the debt level of China's corporate sector, and in turn for the whole country, while having room for a reduction, should not be overestimated. The two secondary conclusions are that it is more reasonable to measure the corporate sector's debt level by the asset leverage ratio than the income leverage ratio, and that rather than focusing on debt size, it is better to care about asset quality. The policy recommendations involve three aspects: firstly, "deleveraging" should not be done too quickly and fiscal and monetary policies should remain truly proactive and steady; secondly, a general survey of the quality of corporate assets should be conducted to ascertain the real non-performing assets ratio; thirdly, the high debt levels of state-owned enterprises, local government hidden debt projects and some overdeveloped sectors should be effectively reduced.

Introduction

The topic of China's national debt level has been the focus of market attention for nearly a decade. The debt level refers to the burden of debts, being high suggesting high risks, vice versa.

Currently, academics and market entities conclude that corporate sector's debt level is too high, leading to a high debt level for the country as a whole, in China, based on a higher income leverage ratio (debt/GDP ratio) than that of other economies. However, if measured by the asset leverage ratio (liability/asset ratio), the debt levels of the country and its macroeconomic sectors in China, including the corporate sector, are all on the low side. What exactly is China's debt level?

This raises the question of which leverage ratio is a more reasonable measure of the national debt level. What is more important is how and why the two leverage ratios differ in their inferences about the debt level, particularly for the corporate sector, and how to combine the two inferences to arrive at a fair assessment of the national debt level. This report examines the reasonableness of the two leverage ratios and applies each of them to analyze the Status Quo of the debt level and make international comparisons, thereby concluding that the debt level of the corporate sector and in turn of the country as a whole should not be overestimated.

Section I of the report provides a brief overview of the prevailing basis and views of the current research on China's national debt level; Section II analyses the respective reasonableness of the income leverage ratio and the asset leverage ratio to measure national debt level; Section III describes the Status Quo of China's income leverage ratio and makes international comparisons, inferring that China's debt level is overall high and too high for its corporate sector; Section IV probes into the justifiable and non-justifiable causes of the high income leverage ratio for the corporate sector, and then notes that it tends to overestimate China's corporate debt level; Section V explains the Status Quo of China's asset leverage ratio and conduct international comparisons, deriving the inference that the debt levels of the whole country and its macroeconomic sectors, including the corporate sector, in China, are all on the low side; Section VI discusses the process and mechanism of the divergence between the income leverage ratio and the asset leverage ratio for the corporate sector; Section VII presents conclusions and policy recommendations.

I Mainstream Basis and Views of Current Studies on China's National Debt Level

Around 2012, the issue of China's national debt level began to attract market attention. In December 2015, the Central Economic Work Conference put forward five important tasks of cutting overcapacity, reducing excess inventory, deleveraging, lowering costs, and strengthening areas of weakness, among which the one of deleveraging has drawn more attentions to debt levels. Market research on the national debt level has continuously expanded and deepened accordingly.

International organizations such as the Bank for International Settlements (BIS) and the International Monetary Fund (IMF) started around 2010 to promote the measurement of non-financial national debt against its gross domestic product (GDP), i.e., the

non-financial debt/GDP ratio; both the non-financial debt and the GDP are measured in current prices, that is, in nominal terms. Based on this recommendation, and also due to the high availability of data on non-financial debt and GDP, this ratio has so far been the basis for much of China's academic and market researches on the issue of national debt level.

For simplicity, the non-financial debt is hereinafter referred to as debt, and thus the non-financial debt/GDP ratio is reduced to debt/GDP ratio.

There is a wealth of studies done based on the debt/GDP ratio by a bundle of influential research institutions and scholars, such as Li Yang and Zhang Xiaojing^{1,2} from the Center for National Balance Sheet

1 China's National Balance Sheet 2015: Leverage Adjustment and Risk Management (Li Yang, Zhang Xiaojing, and Chang Xin), China Social Sciences Press, May 2015.

2 China's National Balance Sheet 2020 (Li Yang, Zhang Xiaojing et al.), China Social Sciences Press, May 2021.

(CNBS) of the Chinese Academy of Social Sciences (CASS), the Research Group of The People's Bank of China Financial Forum (CFFRG)³, the Chinese Academy of Fiscal Sciences (CAFS)⁴, Ren Zeping⁵, Ji Min⁶, Ma Yong and Chen Yulu⁷, Gao Ruidong and Zhao Gege⁸, Zhou Qiong⁹, Liu Xiaoguang and Zhang Jieping¹⁰, Xu Zhong¹¹, Zeng Gang¹², etc. The CNBS now regularly publishes quarterly data on the total debt/GDP ratio of the country as a

whole and each macroeconomic sector, and takes it as a basis for issuing analysis reports on China's national debt level¹³; the Statistics Department of the People's Bank of China also releases data on this ratio and a debt analysis report¹⁴ from time to time.

Internationally, BIS and IMF regularly publish data on the debt/GDP ratios of selected countries, including China, as well as analytical reports and articles^{15,16},

3 Leverage Structure, Level and Financial Stability: Theory and Empirics (People's Bank of China Working Paper), China Finance Forum Research Group, 24 February 2017.

4 A Prudent Approach to the Rising Macro Leverage Ratio: Corporate Debt Risks Still Cannot Be Underestimated, China Academy of Fiscal Sciences, No. 49, late 2020.

5 The Current Situation, Causes, Resolution, and Impact of China's Macro Leverage Ratio, Ren Zeping from the Evergrande Research Institute, and Ma Jiajin from the Zhejiang University, Gelonghui, May 2018.

6 The Macro Policy Environment for Leverage Reduction, Ji Min, Securities Times, 19 April 2017.

7 Financial Leverage, Leverage Volatility, and Economic Growth, Ma Yong and Chen Yulu, Economic Research Journal, No. 6, 2017.

8 How Do We Judge Monetary Policies by Constructing Monthly Macro Leverage Ratios? Gao Ruidong and Zhao Gege, Everbright Securities Report, 22 April 2021.

9 Where in the World is China's Household Leverage Ratio? Zhou Qiong, Weblog, 17 April 2021.

10 China's Leverage Paradox — Is it Really Impossible for Monetary Policies to Cut Down Leverage While Maintaining Economic Growth? Liu Xiaoguang and Zhang Jieping, Finance and Trade Economics, No. 8, 2016.

11 Addressing Both Symptoms and Root Causes for Deleveraging, Xu Zhong, Caijing, No. 5, 2017.

12 Supply-Side Reform Requires Orderly Deleveraging, Zeng Gang, China Finance, No. 4, 2017.

13 NIFD Quarterly Report on Macro Leverage, Li Yang, Zhang Xiaojing, and Liu Lei, National Institute for Finances & Development, May 2021.

14 China Has Achieved Notable Results in Recent Years in Stabilizing Leverage and Promoting Growth, Ruan Jianhong, and Liu Xi, Statistics Department of the People's Bank of China, May 2021

15 A New Database on General Government Debt, Dembiermont, C., M. Scatigna, R. Szemere and B. Tissot, BIS Quarterly Review, 2015, (3).

16 A Historical Public Debt Database, Abbas, A., N. Belhocine, A. ElGanainy and M. Horton, IMF Working Paper, 2010.

and international rating agencies also analyze and forecast China's national debt level based on this data from time to time.

These studies, both domestic and foreign, have found that China's debt/GDP ratio has risen dramatically over the last decade and is now at a high level through international comparisons, particularly for the corporate sector where it is significantly higher than in other countries. Accordingly, most institutions and academics have inferred that China's corporate sector debt level, and in turn its national debt level, are too high. Internationally comparing, the ratio published by BIS is even higher than by CNBS, and the evaluation done by international agencies on China's national debt level is more negative. International rating firms Moody's and Standard & Poor's both considered China's debt level indicative of a financial crisis in

2017 and accordingly downgraded its sovereign credit ratings^{17,18}.

As for the reasonableness of measuring national debt level by the debt/GDP ratio, many researchers have been aware of it, some of them pointing out its limitations, mainly based on the fact that the debt is a stock variable while GDP a flow variable and that there are other indicators better than the debt as a debt servicing metric. But no in-depth analysis has been carried out so far. Other researchers have noted that the M2/GDP ratio, which is highly correlated with the debt/GDP ratio, has overestimated the extent of "monetary overhang"^{19,20,21} for China due to the industrial structure, the inflation transmission mechanism, and a large share of heavy economy.

A number of Chinese and foreign researchers have also realized the

17 Moody's Downgrades China's Rating to A1 from Aa3 and Changes Outlook to Stable from Negative, Global Credit Research, Moody's Investors Service, 24 May 2017.

18 Standard & Poor's Cuts China Credit Rating, Citing Debt, Joe. McDonald, USA Today, 21 September 2017.

19 The Impact of the Output Structure on Money Demand: A Study based on Provincial Panel Data, Chen Sichong, Li Wenwen, and Xu Qiyuan, The Journal of World Economy, No. 9, 2018.

20 The Fallacy of Monetary Overhang Can be Put to Rest, Xu Gao, Xu Gao Research Institute, August 2021.

21 China's High M2/GDP Ratio is Partly Attributed to the Economic Structure, Liao Qun, Hong Kong Economic Journal, 23 March 2021.

feasibility of measuring national debt level with another ratio, i.e., liability/asset ratio. However, due to the fact that most countries have only recently developed balance sheets and that national-level data on total liabilities and total assets are not as reliable and comparable as more mature statistics on debt and GDP, plus the lack of awareness of the limitations of employing the debt/GDP ratio as a measure of national debt level and the relative merits of the liability/asset ratio in this regard, the debt/asset ratio has not systematically been used to analyze national debt level across the world. In China as well, some researchers have analyzed the liability/asset ratios of industrial enterprises above designated size and listed companies, and compared them with the results of the debt/GDP ratios. But since these companies occupy only part of the entire corporate sector of the country, by these ratios it is hard to measure the debt level of the entire corporate sector, and thus difficult to obtain a comprehensive picture of the corporate sector's debt level, and to make comprehensive international comparisons with the corporate sector and national debt levels of other countries.

As a result, the current studies on China's national debt level are primarily based on the debt/GDP ratio, and international comparisons on top of this ratio have led to a dominant view that China's national debt level is high and its corporate sector debt level is too high.

About the reasons for the too high debt/GDP ratio of the corporate sector in China, many researchers hold that it is caused by the dominance of indirect financing, high savings rate, overcapacity, monopolization of state-owned companies, overdevelopment of some industries, and excess liquidity. However, the most important factor, the large share by heavy economy, is ignored, and no distinction is made as to what a high debt/GDP ratio due to these causes means for the debt level. It is assumed that they all reflect an excessive debt level while in fact this is not the case for part of them, as analyzed in later sections of this report, resulting in the overestimation of the corporate sector and national debt levels.

The following parts will introduce the limitations of the above mainstream basis and views, in particular by distinguishing between the justifiable and non-justifiable

causes of the high debt/GDP ratio for the corporate sector to argue that it leads to an overestimation of China's corporate sector and national debt levels, and then propose that it is more reasonable to apply the liability/total asset ratio to measure the corporate sector debt, and use the debt/total asset ratio calculated from China's national balance sheet to measure the corporate sector and national debt levels and make international comparisons based on them, leading to the conclusion that the corporate sector and national debt levels in China should not be overestimated.

II. Two Leverage Ratios Used to Measure National Debt Level and Their Respective Reasonableness: Income Leverage Ratio and Asset Leverage Ratio

As mentioned in the previous section, the current most-used academic and market measures of national debt level is the debt/GDP ratio, which is referred to hereafter as the income leverage ratio. In fact, with the completion and gradual improvement of national balance sheets, it is only logical that the national liability/asset ratio should also become an important indicator of its debt level, also known as asset leverage ratio in this report. However, the debt levels inferred from these two leverage ratios for the corporate sector and hence for the nation are sometimes quite different. Which is more reasonable? This section will explore this in general terms.

2.1 Definitions of the two leverage ratios and the reasons for their names

Income leverage ratio: Debt/GDP ratio

The national debt/GDP ratio, considering that GDP is national income and our study target is the debt level, is intended to measure the national debt level relative to the scale of national income; and given that leverage has the meaning of prying off each other, it is referred to in this report as the national income leverage ratio. As GDP is more often regarded as a macroeconomic metric, it is not uncommon for the market to call it macro leverage ratio. However, in order to more accurately convey the meaning of GDP, and more

importantly to dovetail effectively with the asset leverage ratio that will be defined below, it is more appropriate to name it as the income leverage ratio.

The national income leverage ratio can be broken down into the income leverage ratios of its macroeconomic sectors, such as the corporate sector's income leverage ratio (corporate debt/GDP ratio), the government sector's income leverage ratio (government debt/GDP ratio), and the household sector's income leverage ratio (household debt/GDP ratio), all used to measure the debt levels in respective sectors.

It can also be decomposed into income leverage ratios for various industries of the national economy, including real estate (property debt/GDP ratio), iron & steel (iron & steel debt/GDP ratio), and transportation & traffic (transportation & traffic debt/GDP ratio). Surely, it can be fractionized by sub-sector, but this is digressing from the original intention of studying the national debt level.

Asset leverage ratio: Liability/asset ratio

In contrast to the debt/GDP ratio,

the national liability/asset ratio is intended to measure the nation's debt level relative to the size of its assets, and is thus referred to in this report as the asset leverage ratio, as opposed to the income leverage ratio. In practice, this ratio is often used for individual companies or industries, and therefore sometimes referred to in the market as micro leverage ratio. It is clear, however, that the term 'micro' is no longer relevant to the study of national debt level and that it is more appropriate to use the term "asset leverage ratio", as opposed to "income leverage ratio", highlighting the leverage effect of assets while removing the meaning of "micro".

As with the income leverage ratio, the national asset leverage ratio falls into asset leverage ratios across macroeconomic sectors, ranging from corporates to households and governments, and can be further broken up into asset leverage ratios across industries. Certainly, it can be decomposed further by sub-sector, but to go too far would defeat the purpose of studying the national debt level in the first place.

CNBS has completed the preparation of the national balance

sheet and published the China's National Balance Sheet 2000-2019 at the end of 2020, from which the asset leverage ratios of the nation and each macroeconomic sector can be calculated, providing a data basis for applying the asset leverage ratio to study the country's debt level.

2.2 Respective logic of the two leverage ratios to measure national debt level

Different perspectives — "flow available for debt servicing" versus "stock available for debt servicing"

Obviously, the numerators of both the income leverage ratio and the asset leverage ratio are indicators of debt sizes, but the denominators are different, with the former being GDP and the latter asset.

In terms of measuring debt level, such a difference in denominators indicates a difference in the basis of debt servicing; the income leverage ratio measures the burden of debt repayment against income (GDP) and the asset leverage ratio measures the burden of debt repayment against asset. In

fact, income and asset are highly correlated with each other, income coming from asset while asset generating income, and the link between the two is the output rate of asset. From this it would seem that the differences are not so much that they are just different indicators used.

However, it should be recognized that GDP is the national income for the year and a flow, and asset on the other hand are the accumulated balance and are a stock. This gives rise to a difference in perspective, whereby the income leverage ratio measures the debt level by "debt servicing via flow" while the asset leverage ratio measures the debt level by "debt servicing via stock".

The logic of "flow available for debt servicing" is obvious

There is a 'flow', in this case GDP or national income, which naturally allows the country to service its debt, so there is an obvious logic to the "flow" perspective, i.e., measuring national debt level with the income leverage ratio. In many cases, the main source of debt repayment is cash flow. For instance, the repayment of household debts relies largely on wage income, government debts

are serviced mainly by tax revenue, and foreign debts are paid back chiefly through foreign exchange earnings. Banks also consider borrowers' cash flow when granting loans. This explains why national debt level is now mostly measured by the income leverage ratio from the perspective of "flow available debt servicing", both domestically and internationally.

The logic of "stock available for debt servicing" seems more obvious

In this report, "stock" means that the nation has asset and can of course pay off national debt. First, "stock" asset generate "flow" GDP and thus indirectly "service debt"; second, in many cases it can be said that without "stock" asset there would be no "flow" GDP, and "stock available for debt servicing" is fundamental to "flow available for debt servicing"; third, "stock" asset can also be liquidated to pay off debt; fourth, "stock" asset are much larger than "flow" GDP in terms of scale, making debt servicing more flexible and sustainable. The logic of measuring the national debt level through the lens of "debt servicing via stocks", e.g., the asset leverage ratio, seems more obvious.

The strength of the logic varies depending on the sectors of economy: 'flow available debt servicing' is stronger for the government and household sectors while 'stock available debt servicing' is stronger for the corporate sector

Overall, there is a clear logic to both of them, but the strength of the logic varies among different macroeconomic sectors, depending on the degree of correlation between income and asset, and the liquidity of asset. If the asset is highly correlated with income and the degree of realization is also high, the 'stock available for debt servicing' perspective is more logical as it combines the possibilities of servicing debts via both income and realization of assets; otherwise, the 'flow available for debt servicing' is more logical.

From this perspective, the government sector's income is mainly derived from taxation, which is not highly correlated with government assets, and government assets are less marketable and thus less realizable; the household sector's income arise more from wage earnings than wealth-related income, and it

is not easy to sell real estate, the main household assets. Hence, "flow available for debt servicing" is more logical than the "stock available for debt servicing" when it comes to measuring government and household sectors' debt levels.

However, in terms of measuring the debt level for the corporate sector, it will be another story. Corporate assets are highly correlated with income, as evidenced by the fact that the return on asset is one of the most important indicators used to examine corporate performance, and that the liquidity of corporate asset is much higher nowadays amid the increasingly developed capital markets than of the government and household sectors. In this way, the corporate assets open up two main channels of debt repayment: income and realized asset, which makes it more logical to measure the corporate sector's debt level from a "stock" perspective than from a "flow" perspective.

As the analysis that follows shows, the debt level of the corporate sector is the main issue for China and therefore whether it should be measured by the income leverage ratio or the asset leverage ratio is of great importance and will determine

how the corporate and national debt levels should be measured. For that reason, in addition to the above logical examination from the "flow" and "stock" perspectives, a more in-depth and comprehensive discussion of the reasonableness of these two leverage ratios in measuring the debt level for the corporate sector is also required.

2.3 The reasonableness of the income leverage ratio to measure corporate sector's debt level —— Not very reasonable

Inferences from the angle of individual firms or industries

It is easy to see that given that debt is closely associated with asset, the income leverage ratio of a country's corporate sector is equivalent to the inverse of the asset output rate or yield rate of an individual firm or industry. However, for individual firms or industries, the asset output or yield rate is generally regarded as an indicator of profitability and not of debt level. So, it is not appropriate to measure the debt level in a nation's corporate sector by the income leverage ratio, as inferred from the perspective of

individual firms or industries.

The numerator and denominator are not closely related to each other and can have multiple economic meanings

The corporate debt and GDP, as the numerator and denominator of the corporate sector's income leverage ratio, are not highly relevant.

Firstly, as mentioned earlier, one is a stock and the other a flow, which do not match; secondly, one is debt and the other national income, which are not directly linked; thirdly, one covers the corporate sector and the other the economy as a whole, which have different scopes; fourthly, one comes from the financial statistics system and the other is taken from the national economy statistics system, which are different sources of data.

Any ratio with a high correlation between the numerator and denominator will have a meaning with high certainty, and vice versa. The numerator of the income leverage ratio is not very relevant to the denominator, so it can be given multiple economic meanings: similar to the M2/GDP ratio, it can be taken as an indicator of a

country's financial deepening, or of a country's efficiency in the use of debt, and now regarded more as a measure of debt level, all with some justifications but subject to varying degrees of challenges.

There is a distinction between the justifiable and non-justifiable causes for the highness of the ratio

It is also because the low correlation of the numerator and denominator that there is a large transition space between the two, which contains many important factors affecting the ratio; if these factors are taken into account the meaning of the two ratios may change.

In terms of measuring the corporate debt, there are many factors influencing the ratio between the corporate debt namely the numerator and GDP namely denominator, making it possible to overestimate or underestimate the true debt level of the corporate sector.

The key point is that some of these factors justifiably lead to a high corporate income leverage ratio, while others serve as the non-justifiable factors of such high

ratio. The causes of high corporate income leverage ratio are thus partly justifiable and partly non-justifiable.

Justifiable causes result in overestimation of debt level

Justifiableness includes necessity and current reasonableness; a necessary and currently reasonable cause is a justifiable cause; non-justifiableness is one that is not necessary or currently unreasonable, and a non-necessary or currently unreasonable cause is a non-justifiable cause.

Thus, a high income leverage ratio led by justifiable causes is justified and does not indicate that the real corporate sector debt is high; only the one with non-justifiable causes is unjustified and truly reflects a company's debts.

As a result, justifiable causes lead to an overestimation of corporate sector's debt level, so that it is not very reasonable to measure the corporate sector's debt level using the income leverage ratio. For a detailed analysis of this, see Section IV.

2.4 The reasonableness of the asset leverage ratio to measure corporate sector's debt level — More reasonable

Inferences from the angle of individual firms or industries

As mentioned earlier, the asset leverage ratio of a country's corporate sector is equivalent to the liability/asset ratio of an individual firm or industry, which is just an indicator of the debt level, and the primary indicator. Therefore, it is more appropriate to use the asset leverage ratio other than the income leverage ratio as a measure of the debt level for the corporate sector, as inferred from the perspective of individual firms or industries.

High correlation between numerator and denominator and relatively certain and singular economic implication

The numerator and denominator of the asset leverage ratio, i.e., liability and asset of the corporate sector, are apparently more relevant than the numerator and denominator of the income leverage ratio.

Firstly, they are both stocks;

secondly, they are directly linked and symmetrical; thirdly, they cover the same corporate sector; and fourthly, both data come from the financial statistics system and are counted in the same balance sheet and closely interlinked.

Precisely because the numerator is highly correlated with the denominator and there is little room for transition between the two, the economic implication of their ratio is relatively certain and singular, that is, the measure of the corporate sector's debt level.

Less influenced by justifiable causes and truer reflection of corporate debt level

More importantly, the small transition space between the numerator and denominator means that there are fewer justifiable factors that distort the meaning of the ratio. For the purposes of measuring the debt level of the corporate sector, this signifies that high asset leverage ratio is less affected by the aforementioned justifiable causes.

Therefore, the asset leverage ratio is less likely to overstate the debt level than the income leverage ratio does and is a truer reflection of the

debt level of the corporate sector. Section V contains further analysis of this for the case of China.

III. China's Income Leverage Ratio —— Status Quo, International Comparison and Inference

3.1 Statistical caliber of data

China's GDP statistics are well established, and the National Bureau of Statistics' GDP statistical method and measurement results have been commonly adopted by various institutions in China and beyond.

The statistical measure of China's total debt in general and by macroeconomic sector varies between CNBS and BIS, but the differences are not significant, as shown in Figure 3.1.

As can be seen, the differences between the CNBS and the BIS in terms of the measure of debt statistics for the household sector are minimal; the differences in the debt statistics measure for the corporate sector and the government sector lie mainly in the attributions of hidden local government debts, with the former being mostly attributed to the

corporate sector and the latter to the government sector.

As for the coverage of the corporate sector, it theoretically should fully cover non-financial corporations, but in practice it is difficult to. CNBS's measurement makes reference to China's economic census data, and 18.57 million businesses were surveyed during the fourth census in 2018, which is the widest possible coverage of the corporate sector so far.

3.2 Status quo —— Significantly higher for the corporate sector, especially for state-owned enterprises and some industries, than for the government sector and the household sector, pushing up the overall ratio

Surging and volatile since mid-1990s

Figure 3.1: Comparison of CNBS and BIS Data Calibers for China's Income Leverage Ratio

	CNBS	BIS	Comparison
Household debts	Household loans in the CNY and foreign currency credits and loans balance sheets of financial institutions	Household loans in the CNY and foreign currency credits and loans balance sheets of depository financial institutions	The former has a somewhat larger statistical caliber, but the difference is not significant.
Non-financial corporate debts	Loans to non-financial enterprises and institutions in the CNY and foreign currency credits and loans balance sheets of financial institutions + entrusted loans, trust loans, undiscounted bankers' acceptances, and corporate bonds in the stock of nongovernmental financing + the stock of government debts in the form of non-government bonds in the balance of local government debts + overseas borrowings	Loans to non-financial enterprises + entrusted loans, trust loans, undiscounted bankers' acceptances, corporate bonds in the stock of non-governmental financing + overseas loans in the BIS International Banking Statistics	"(1) The statistical caliber of non-financial corporate loans and overseas loans for the latter is not explicitly published, and the former's overseas borrowings are estimates. (2) The former includes most of the implicit local government debts (the stock of government debts in the form of non-governmental bonds in the balance of local government debts)"
Government debts	Balance of national debts + balance of local government debts - the stock of local government debts in the form of non-government bonds	Quarterly data obtained by linear interpolation of annual government debts in the IMF World Economic Outlook Database	"(1) The former is generally consistent with the official statistical caliber of government debts, but excludes most of implicit local government debts. (2) The latter's data are estimated values, unable to show real-time changes, include implicit local government debts, and overlap with non-financial corporate debts."
Overall (gross) debts	Household debts + non-financial corporate debts + government debts	Household debts + non-financial corporate debts + government debts	

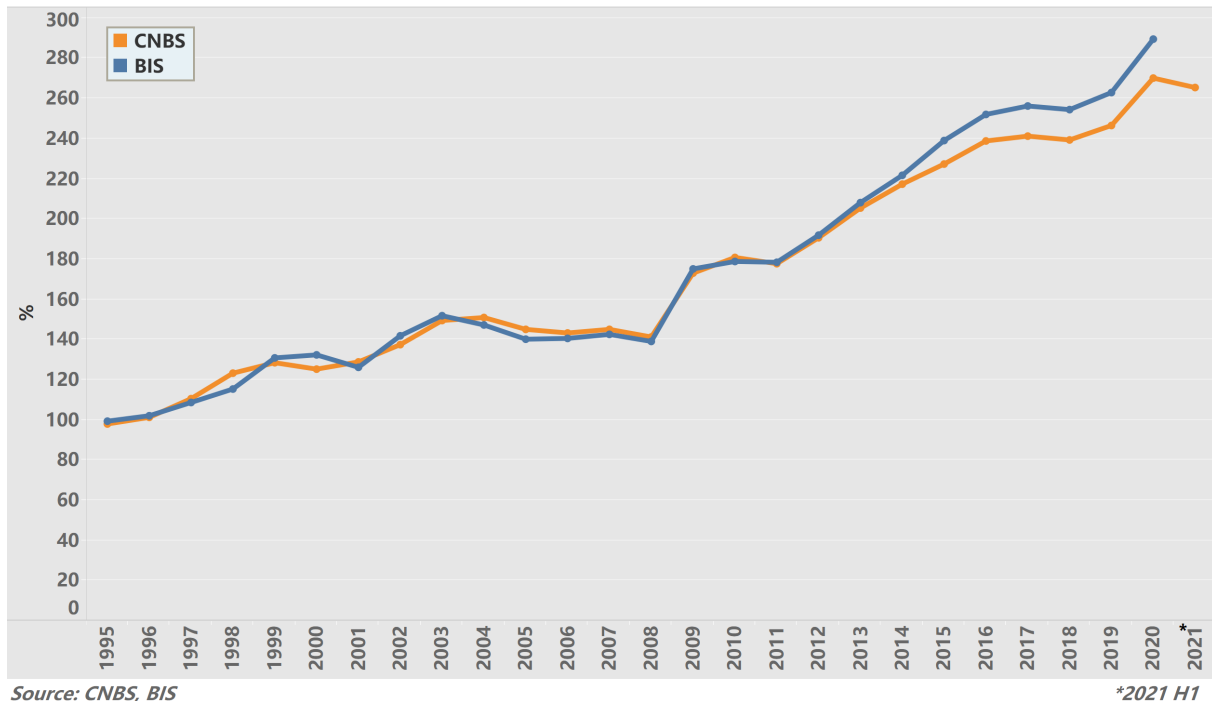
Source: CNBS, BIS

Both CNBS and BIS data show that China's overall income leverage ratio, which sit below 100% until the mid-1990s due to inadequate financial deepening, has since risen notably with increased financial

deepening and the accelerated development of the economy and financial market, as shown in Figure 3.2.

It is also evident that the CNBS and

Figure 3.2: China's Overall Income Leverage Ratio Since 1995



BIS data have diverged in recent years, with the latter being higher than the former, but the difference is still not significant. The data have mutually validated their relative reliability, allowing us to use them either simultaneously or crosswise as required.

It can also be seen that the changes in China's overall income leverage ratio have gone through five phases: steady rise 1995-2003, pullback 2004-2008, jump 2009-2016, steady decline 2017-2019, and fall after spike 2020-2021 due to the COVID-19 pandemic.

The data in 2019 better reflect the real situation

In view of the decline after soaring between 2020 and 2021 under the influence of the COVID-19, the data for 2019 is more reflective of the true status quo and it is more reasonable to use the year's income leverage ratio to study the status quo.

Furthermore, when it comes to international comparisons, as the data for 2020 and 2021 of other countries are not yet available, it is also more appropriate to use the 2019 data for coetaneous comparisons.

Overall close to 250%

In 2019, China overall income

leverage ratio was 246.5%, indicating that the total debt is 2.47 times the GDP of that year.

Sector distribution: Considerably higher for the corporate sector than in the government and household sectors; significantly high in the SOE sector

By macroeconomic sectors, China's corporate, government, and household income leverage ratios were 151.9%, 38.5% and 56.1% respectively in 2019.

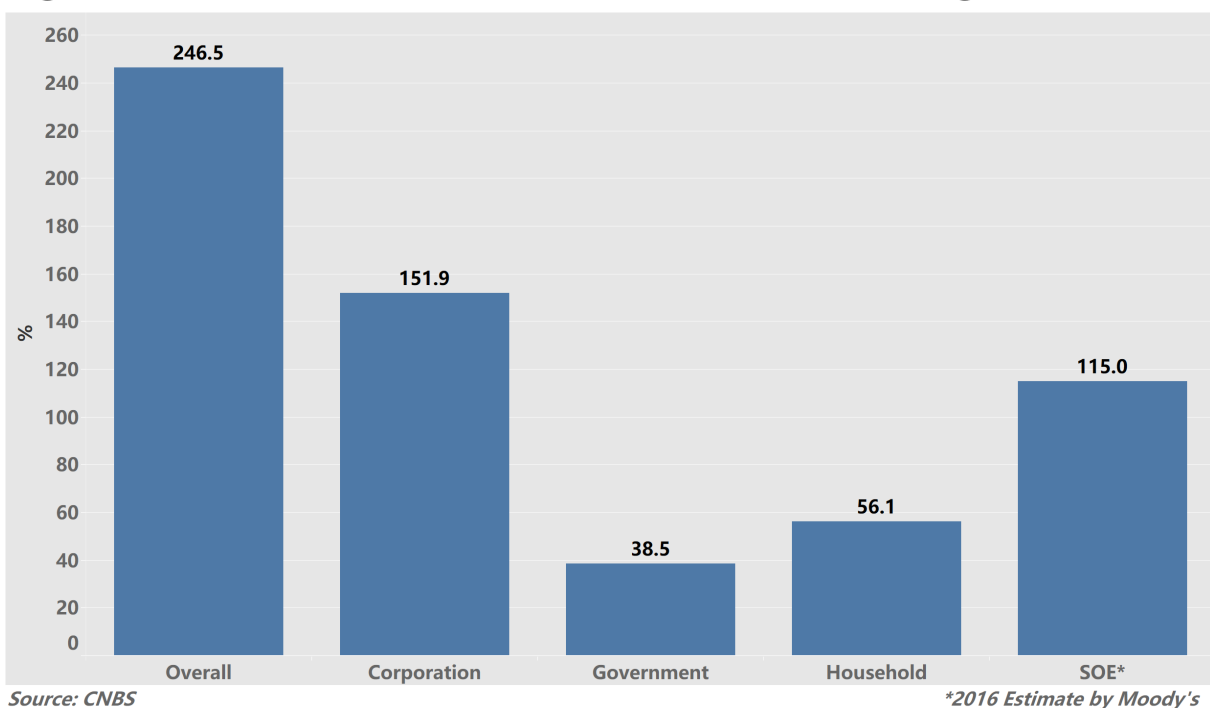
It can be seen that China's corporate income leverage ratio is 3.94 times and 2.71 times the government income leverage ratio

and the household income leverage ratio respectively, implying that the scale of debt in China's corporate sector is 3.94 times and 2.71 times that of the government and household sectors. This inevitably sends the overall income leverage ratio high and is the key to China's debt level.

According to the estimates by the international rating firm Moody's, the income leverage ratio of state-owned companies in China was as high as 115%, pointing to one of the cruxes.

Industrial distribution among the corporate sector: considerably

Figure 3.3: China's Overall and Sectoral Income Leverage Ratios 2019



high in some sectors

It is well known, as shown in Figure 3.4, that the structure of non-governmental financing in China is dominated by debt financing, which is in turn dominated by bank loans. So, the corporate debts in China are mainly borrowings by companies from banks (bank borrowings for short), or loans issued to companies by banks (bank loans for short).

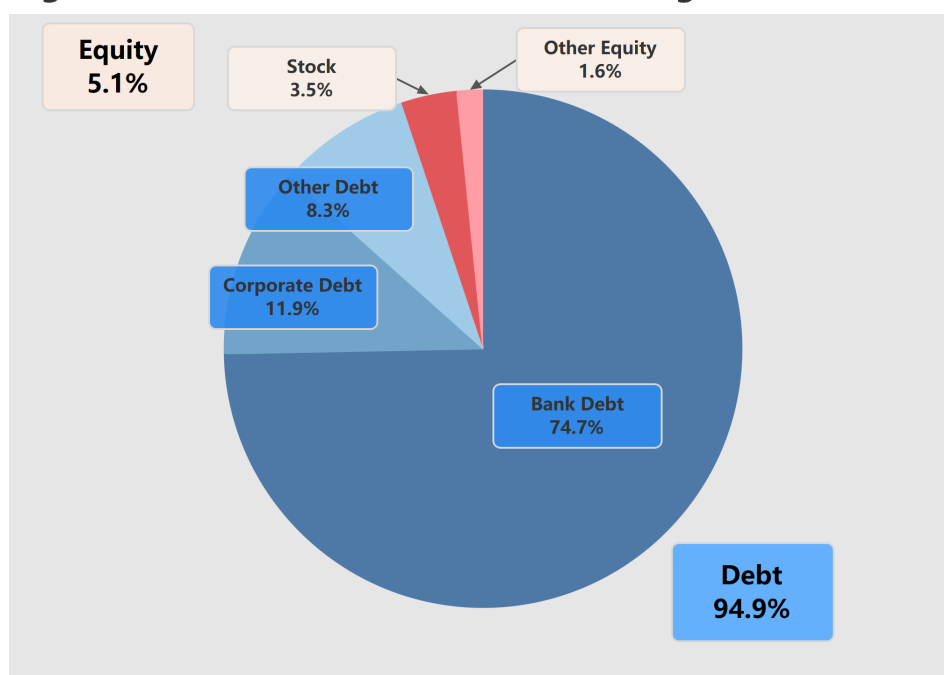
The ratio of corporate borrowings to GDP, i.e., the corporate borrowing balance/GDP ratio, can be used as a surrogate measure for corporate income leverage ratio; X industry borrowing balance/GDP ratio can

be used as a proxy for the income leverage ratio in industry X.

The surrogate measures shown in Figure 3.5 are the proxies of major sectors in 2018.

As can be seen, the income leverage ratio varies across industries and considerably high in the sectors of manufacturing, traffic, transportation and postal, rental and commerce, wholesale and retail, real estate, water conservancy, environment and public administration, electric power, gas and water supply, construction, etc.

Figure 3.4: China's Nationwide Financing Structure 2020



Source: The People's Bank of China

3.3 International comparison —— Overall on the high side, significantly low for the government sector, basically medium for the household sector, and significantly high for the corporate sector

Overall on the high side

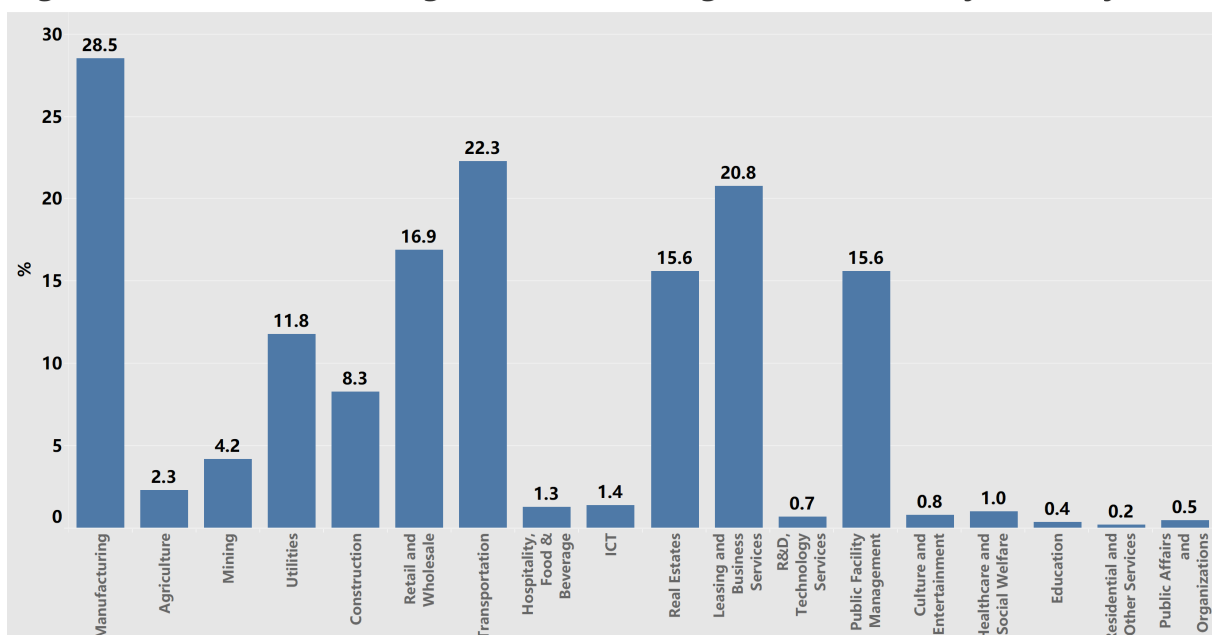
Figures 3.6 and 3.7 show the comparisons of overall income leverage ratios between China and advanced and emerging economies in 2019 respectively.

Comparisons reveal that the overall income leverage ratio in China is slightly below the average of advanced economies, lower than

that of Japan, the UK and the US, about even with that of the Eurozone and Italy, and higher than that of Germany and Korea, but significantly higher than the average of emerging economies, higher than that of all major emerging economies.

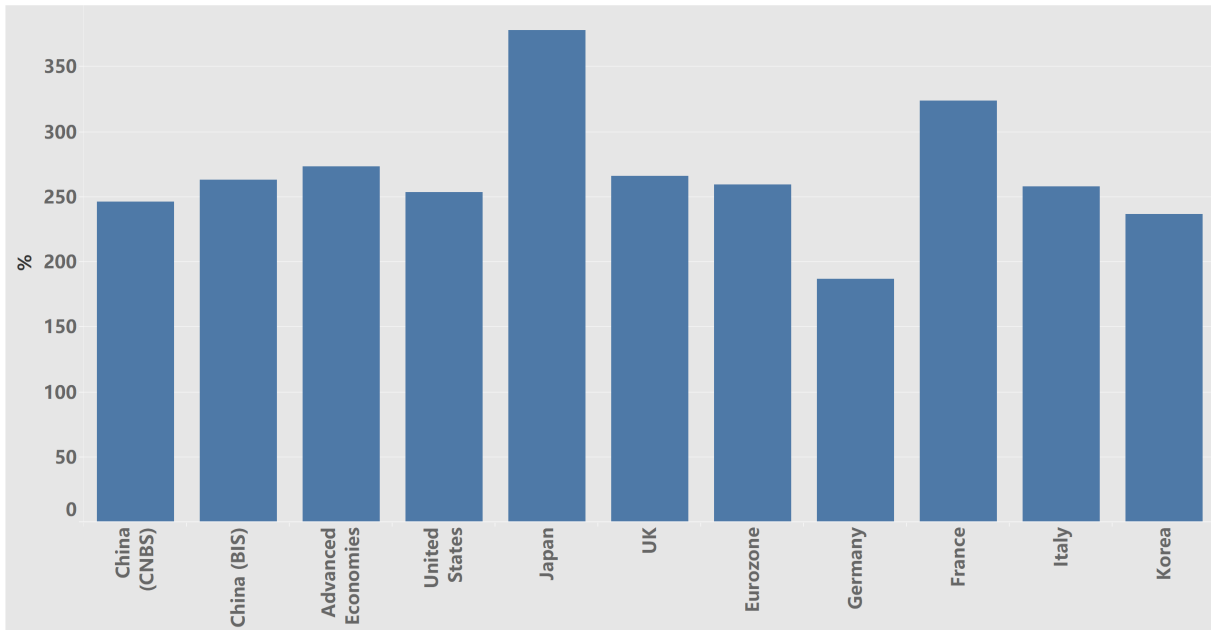
Despite being the world's second largest economy and the world factory, China, an emerging and developing economy with a GDP per capita that is only about a quarter of the average for developed economies, has an overall income leverage ratio on a par with advanced economies and significantly higher than other emerging economies', being on the

Figure 3.5: Income Leverage Ratio According to Bank Loan by Industry 2018



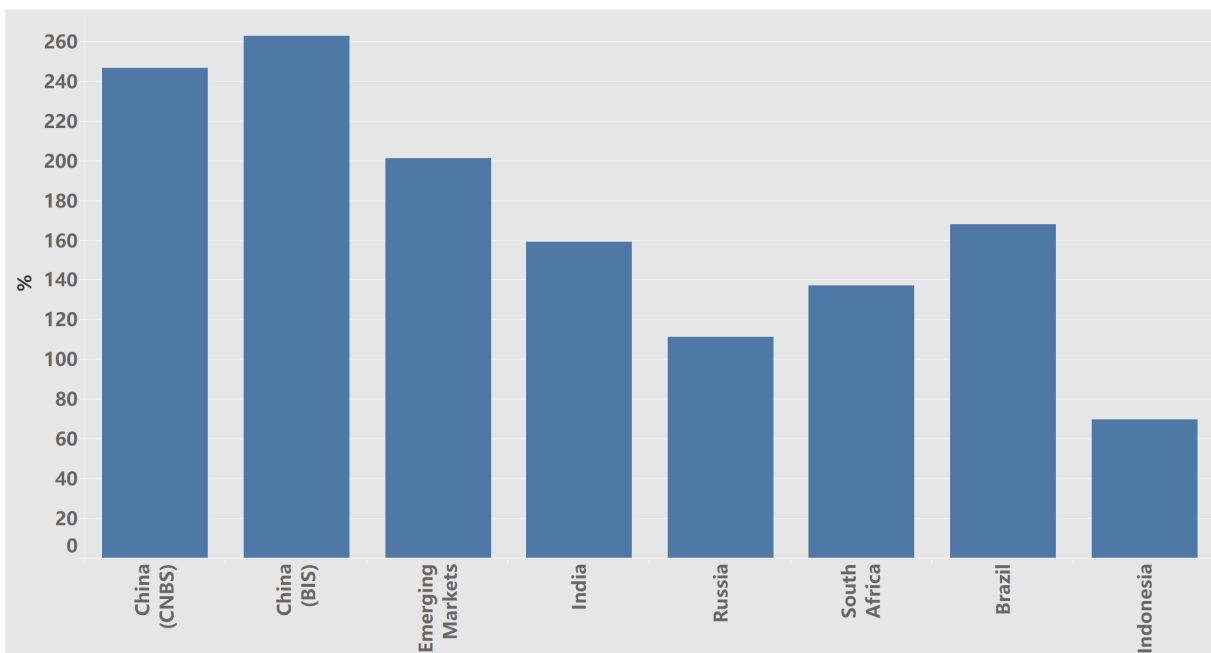
Source: The People's Bank of China

Figure 3.6: Overall Income Leverage Ratios of China and Other Major Advanced Economies 2019



Source: CNBS, BIS

Figure 3.7: Overall Income Leverage Ratios of China and Other Emerging Markets 2019



Source: CNBS, BIS

high side internationally compared.

Significantly low for the government sector

Figure 3.8 shows that China's government income leverage ratio is lower than all advanced economies' and most emerging economies', much lower than the average for developed economies as well as for emerging economies, being significantly low internationally compared.

Basically medium for the household sector

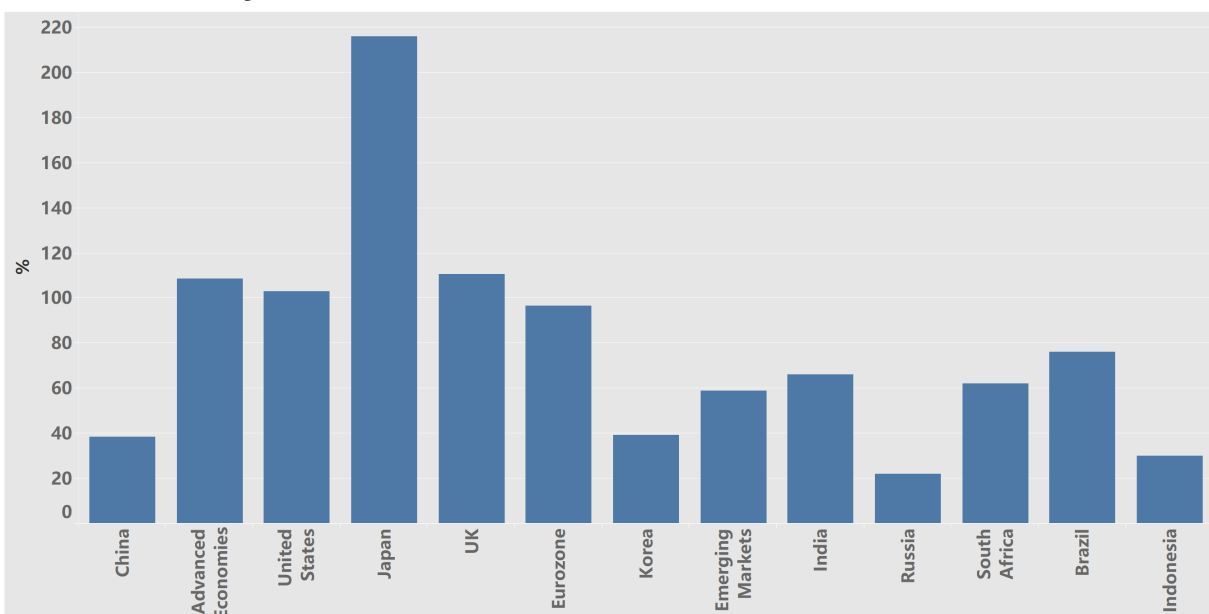
Figure 3.9 shows that China's

household income leverage ratio is lower than most of developed nations' and their average, but higher than emerging economies' and their average, being basically medium internationally compared.

Significantly high for the corporate sector

Figure 3.10 shows that the income leverage ratio in the corporate sector of China is much higher than that of other economies, both developed and emerging ones, being significantly high internationally compared.

Figure 3.8: Government Sector Income Leverage Ratios of China and Other Major Economies 2019



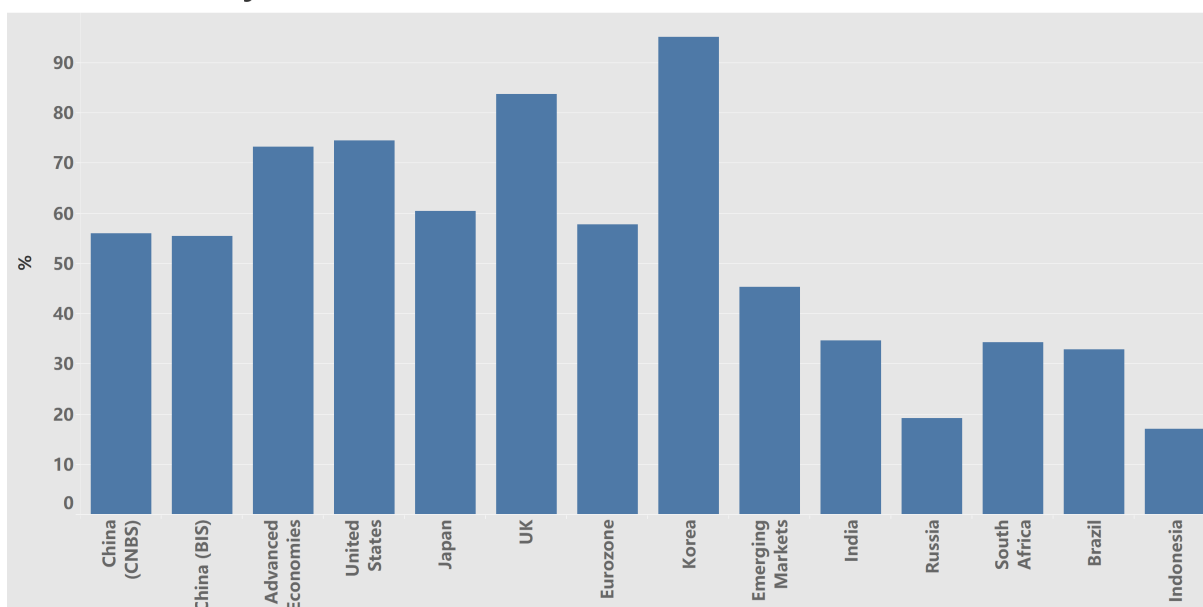
Source: CNBS, BIS, Standard & Poor

3.4 Inference — China's national debt level is overall high, too high for the corporate sector, and very low and moderate for the government and household sectors respectively

The inference made from the

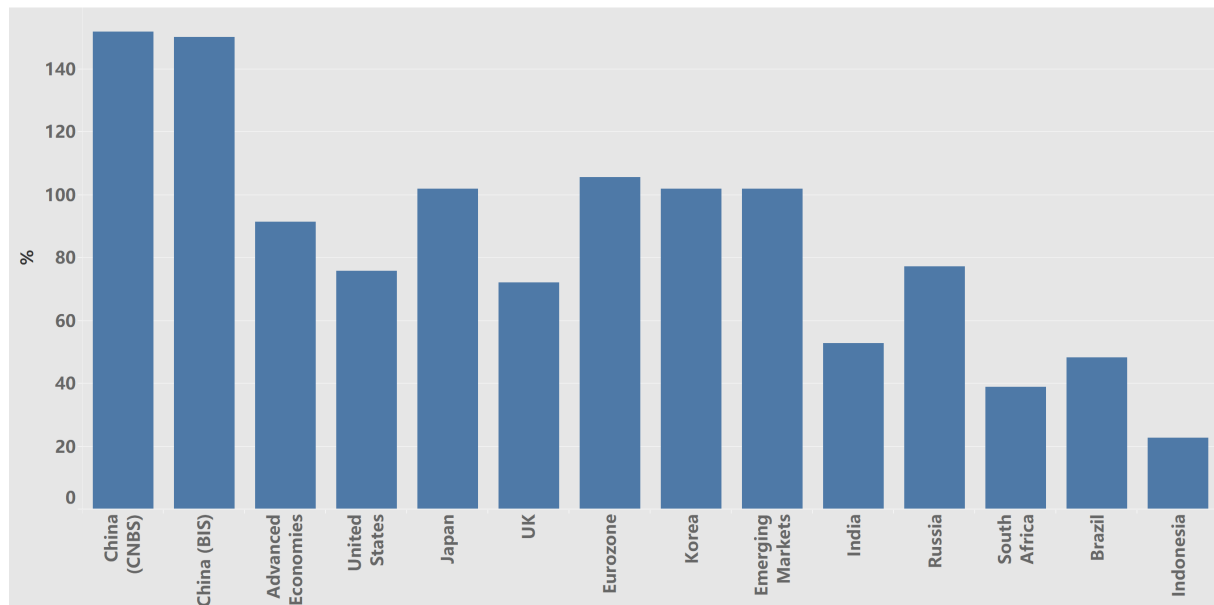
status quo of the income leverage ratio and international comparisons above is that in China, the debt levels of the government sector and the household sector are very low and moderate respectively, within reasonable limits, but that for the corporate sector is too high, which made the overall debt level high.

Figure 3.9: Household Sector Income Leverage Ratios of China and Other Major Economies 2019



Source: CNBS, BIS

Figure 3.10: Corporation Sector Income Leverage Ratios of China and Other Major Economies 2019



Source: CNBS, BIS

IV. Justifiable and Non-justifiable Causes of High Corporate Income Leverage Ratio and their Implications

The analysis in the previous section indicates that the significantly high income leverage ratio for the corporate sector is the main issue of China's national debt level. Due to the importance and complexity of the corporate sector, it is necessary to explore in depth the causes of the significantly high income leverage ratio for the corporate sector. As mentioned above, there are justifiable and non-justifiable causes, which are discussed separately below.

4.1 Four major justifiable causes

Justifiable Cause 1: A large share of heavy economy

Before arguing that the large share of the heavy economy is a justifiable cause of the significant high income leverage for the corporate sector, what constitutes

the heavy economy is briefly explained and analyzed.

With reference to the previous classification of heavy and light industries, the national economy as a whole can be divided into a heavy economy and a light economy.

Prior to 2013, drawing on the practices of the former Soviet Union and Eastern European countries, China's industrial sector had been divided into heavy and light industries. As defined at that time, a heavy industry referred to industries that provided the means of production, such as technical equipment, power and raw materials, to all sectors of the national economy; in contrast, a light industry meant industries that provided the means of subsistence and hand tools. Obviously, the means of production such as technical equipment, power, and raw materials are large in both physical volume and financial

value, and therefore 'heavy'; the means of subsistence and hand tools are relatively small and therefore 'light'. This must be the origin of the terms heavy industry and light industry.

It should be recognized that making products with greater physical and financial values inevitably requires more assets. A heavy industry can therefore be considered as an industry with heavy assets, while a light industry can be deemed as an industry with light assets.

This "heavy" and "light" division of assets can be extended to the whole economy: an economy with heavy assets, which is called heavy economy, and an economy with light assets, which called the light economy.

What are the sectors of the heavy

economy? It is detailed in Figure 4.1.

The heavy economy industries, as previously defined, naturally includes the mining of oil, gas, coal, metal and non-metal, and timber harvesting in the extractive industry; ferrous and non-ferrous smelting and processing, coking and coke, chemicals, chemical raw materials, cement, artificial boards, electric power, oil and coal processing, fiberglass materials, sawn timber, wood-based panels, etc. in the raw material industry; machinery manufacturing, electronics, fertilizers, pesticides, metal structures, cement products, building materials, etc. in the processing industry.

In addition, the real estate business, although classified as a service industry, including real

Figure 4.1: Sectoral Division of China's Heavy and Light Economies

Heavy Economy	<p>Heavy industries: exploitation of oil, gas, coal, metal & non-metal, and timber harvesting; ferrous and non-ferrous smelting & processing, coking and coke, chemicals, chemical raw materials, cement, artificial panels, electric power, oil & coal processing, fiberglass materials, sawn timber, and wood based panel; machinery manufacturing, electronics, fertilizers, pesticides, metal structures, cement products, and other construction materials</p> <p>Construction industry</p> <p>Heavy services: real estate, transportation, storage and postal services, information & communications, wholesale & retail, locomotive repair, water conservancy, environment, public facilities management, etc.</p>
Light Economy	Agriculture, forestry, animal husbandry and fishery, light industries, and most services except for heavy services

Source: RDCY

estate developers, undoubtedly has a large volume of assets, and the construction industry linked to it involves a wealth of heavy construction machinery and building materials, together constituting an important pillar in the heavy economy. Infrastructure is naturally a fixed asset and a heavy asset, so the transportation & traffic, storage and postal services, information & communications, wholesale & retail trade, water conservancy, environment and public facilities management, which are classified as services, are also part of the heavy economy. The wholesale and retail trade too has massive current assets.

The part of the economy outside of the heavy economy is considered light economy; the industries outside of the above-mentioned heavy economy industries are light economy industries, covering the light industries previously defined, the agriculture, forestry, animal husbandry and fishing, and most of service industries beyond the heavy service industries.

The data on heavy and light industries have no longer been available in China, and there are certainly no data on the heavy and light economies defined above.

Let alone other countries. It is therefore necessary to estimate the percentage of the heavy and light economies in China and other countries according to the available data, with some necessary assumptions and adjustments.

First, based on the fact that in 2012, the last year in which heavy and light industries were classified, 70% of China's industry was heavy industry. So, it is assumed that the ratio of heavy to light industries stayed at 7:3 in 2012.

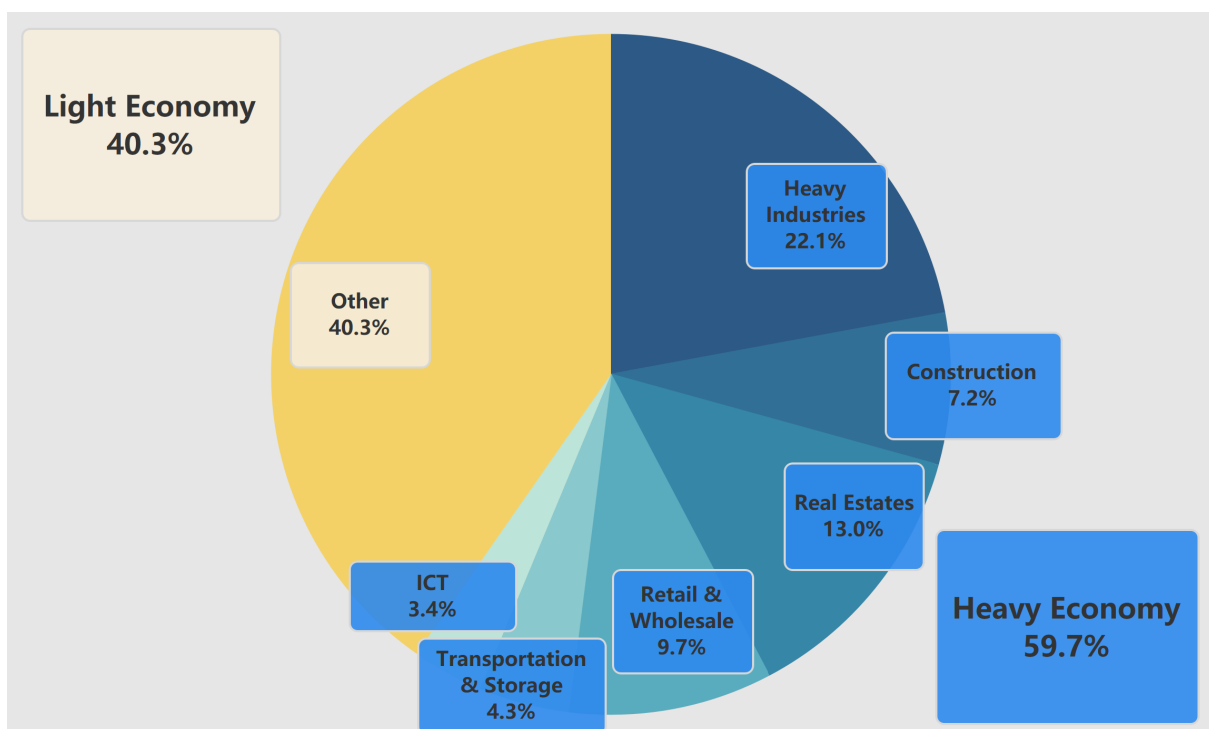
Second, an adjustment is made to the calculation of the value added from ownership of premises, including the value added from housing services, i.e., the added value provided for homeowners, which is covered by real estate activities in China's GDP statistics. This added value is currently calculated using the cost method, which only takes into account housing depreciation, maintenance, and management costs, and is therefore greatly underestimated. Internationally, the market rent valuation method is often adopted, that is, a method of accounting for the value of services provided by resident-owned houses with the money paid for renting houses of comparable size, location, quality,

and type. Considering the spike in house prices in China over the past 20 years or so, the market rent valuation method should now be used. Regarding the value-added of home ownership services calculated using the market rent valuation method, the ratio of value-added of real estate activities including the ownership of premises to GDP adjusted from 7.1% to 13.0% in 2019 according to the ratio of 3.9:1 between the results calculated by the market rent valuation method and the cost method in the article entitled Classification System and Value-added Calculation of Economic

Activities Included in Real Estate by Liu Hongyu and others (Statistical Research, No. 8, 2003), and the value-added of real estate activities including the ownership of premises in Hong Kong in 2019 (15.2% per unit of GDP).

With the above assumptions and adjustments, the estimated proportion of each sector in the heavy economies in China is shown in Figure 4.2 where the industry data from the National Bureau of Statistics indicate that the heavy economy is 60% and the light economy is around 40%.

Figure 4.2: China's Heavy and Light Economies Breakdown 2019



Source: National Bureau of Statistics of China, RDCY

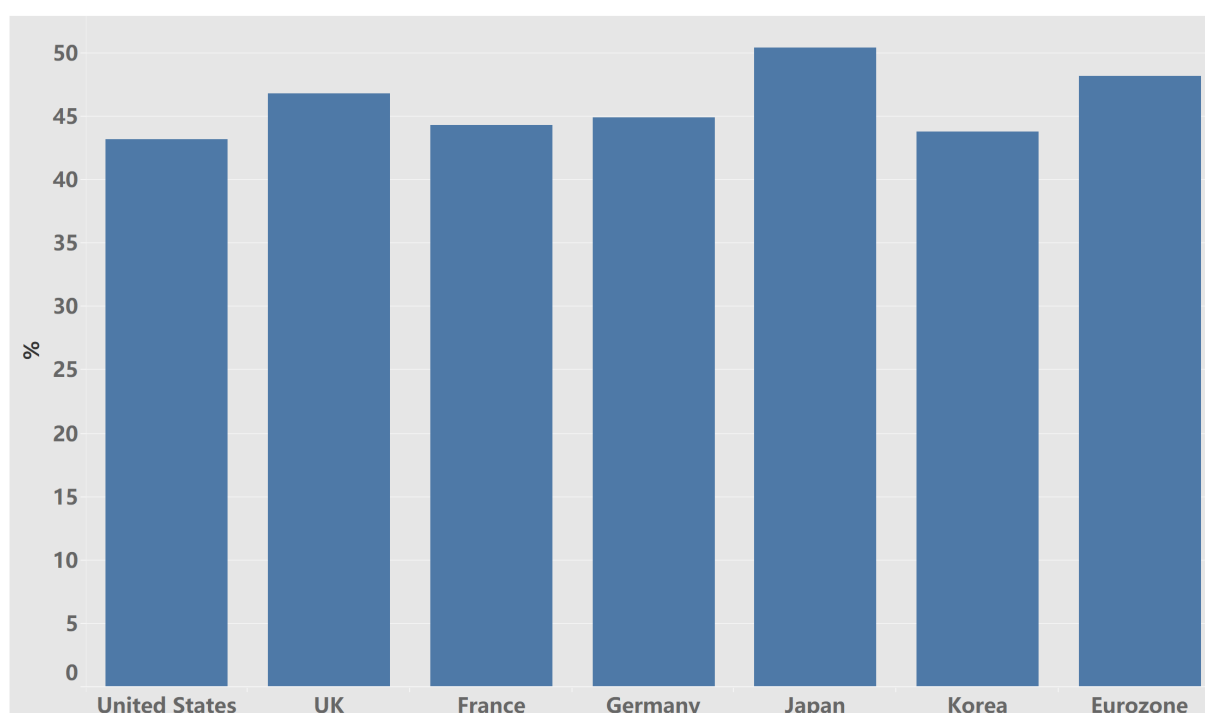
For the purpose of international comparisons between heavy and light economies, assumptions must also be made about the ratio of developed nations' heavy to light industries, given that they never distinguish between heavy and light industries. As is known to all, China, as an emerging economy, has always been focusing on the development of heavy industry, while advanced economies have not only seen a gradual reduction in the proportion by industrial activities, but also a plunge in the share of heavy industry in the industrial activities. The heavy

industry-to-light industry ratio is optimistically assumed to be 4:6.

Figure 4.3 presents the estimate of the weight economy share of major advanced economies in 2019, and it is below 50% in all of these economies but Japan (50.4%). It is however obvious that China has a larger share of heavy economy.

So, what is the relationship between the high share of the heavy economy and the income leverage ratio in the corporate sector? The relationship is close and important.

Figure 4.3: Heavy Economy Proportion in Select Advanced Economies 2019



Source: Statistics Departments of Countries, RDCY

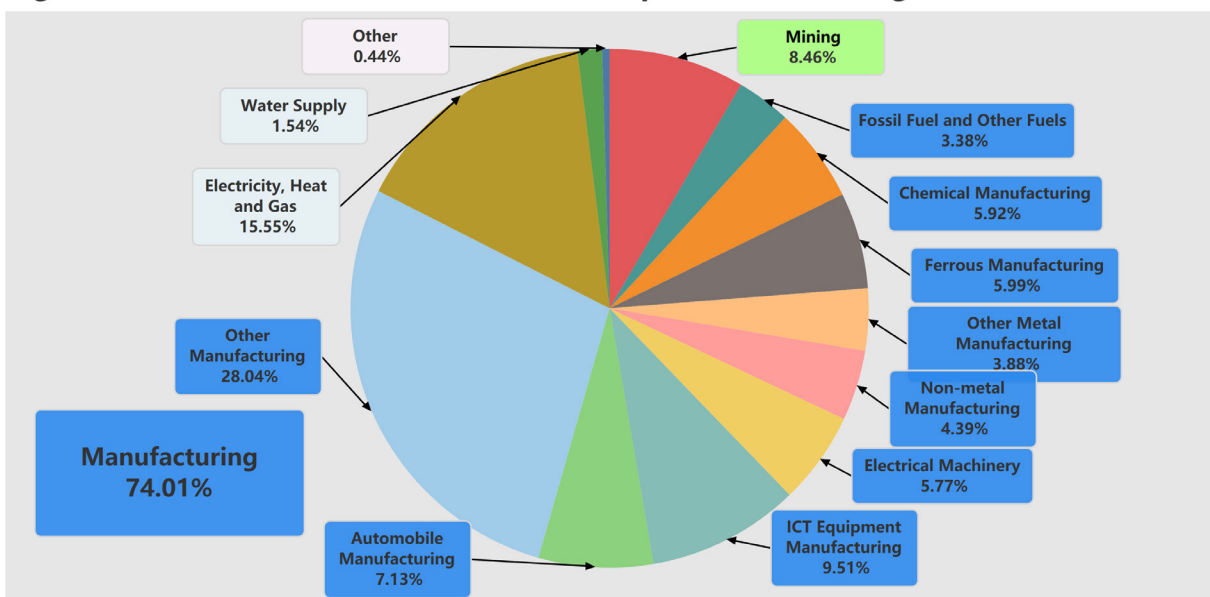
By definition, the heavy economy is part of the economy with heavy assets. In a modern economy with evolving financial markets, however, heavy assets inevitably lead to heavy liabilities. Necessity is above all other things. The formation of heavy assets depends, apart from capital, on borrowings; otherwise, the accumulation of assets would not lead to heavy assets as quickly as it could. Heavy assets are accumulated due to the investment in fixed assets over the years, and fixed-asset investment projects are bound to rely on financing, or it would be difficult to advance or the scale would be greatly limited. As mentioned before, corporate financing is dominated by debt financing in

China, namely getting loans from banks. The next is possibility, and it is widely known that bank loans are mostly conditional on the pledge of assets. The proportion of unsecured loans is very small; the more assets are pledged the larger the loan amount is, vice versa.

Figure 4.4 and Figure 4.5 give the sectoral structure of the total corporate debts in the industries and services in China, both clearly indicating that the size of debts in heavy economy is considerably higher than in light economy.

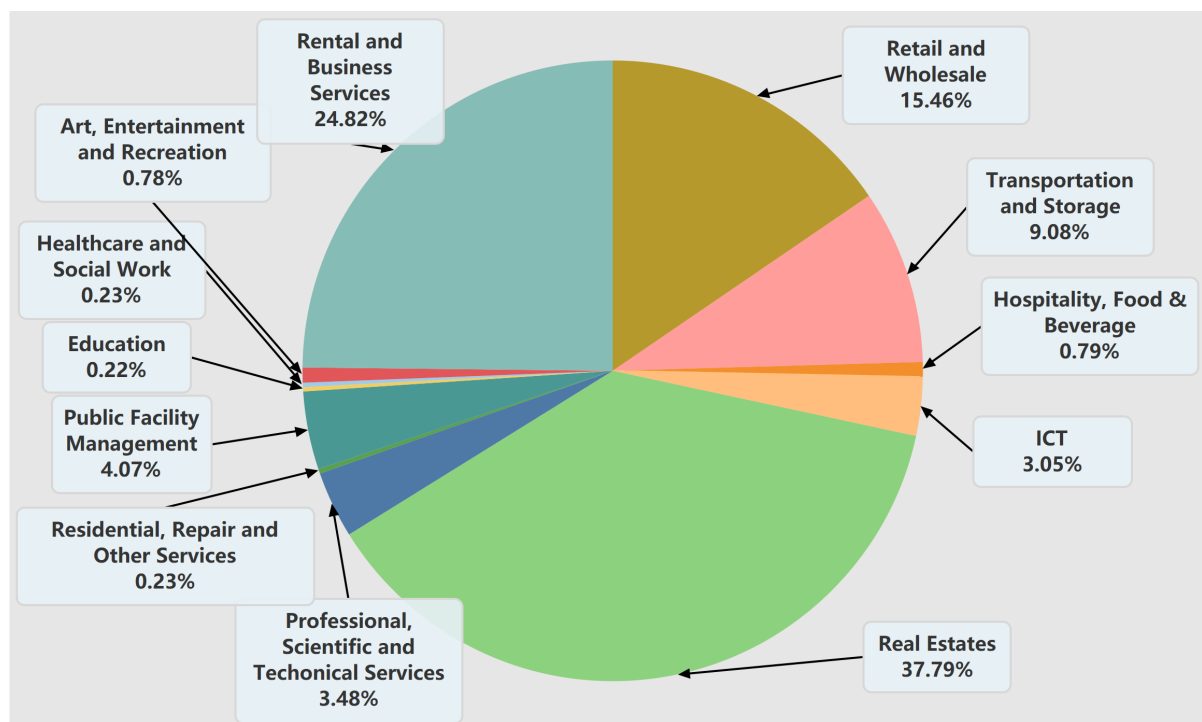
As a result, the large share of heavy economy will inevitably lead to a large scale of debts and thus a high income leverage ratio in the

Figure 4.4 Debt Structure of Industrial Enterprises above Designated Scale 2019



Sources: China Statistical Yearbook 2020, Compiled by RDCY

Figure 4.5: Debt Structure of China's Service Industry 2018



Source: National Balance Sheet of China 2020, Compiled by RDCY

corporate sector, which is a major factor that cannot be ignored of the high income leverage ratio for the corporate sector.

As for the rationality of a heavy economy, though the developing trend of modern economy is to move away from heavy economy and towards light economy, the proportion of heavy and light economies for each country depends on the stage of its development and specific national conditions. The experience of recent economic development has taught us that the modernization of a country's economy is inevitably in the order of industries before

services, and that the process of industrialization must start from heavy industries to light industries. In other words, heavy economy comes before light economy. China is still an emerging and developing economy and still in the stage of heavy economy. India's efforts to bypass heavy economy on its way to the phase of light economy are likely to fail. Moreover, with the world's largest population, an autonomous and comprehensive approach to economic development, and a complete and robust industrial chain, it is difficult for China to do so without a solid heavy economy.

In view of this, the large share of heavy economy in present China is necessary and reasonable, and hence justifiable. Hence, the large share of heavy economy is one, and also the most important one of the justifiable causes of the high corporate income leverage ratio.

Justifiable Cause 2: High savings rate/investment rate

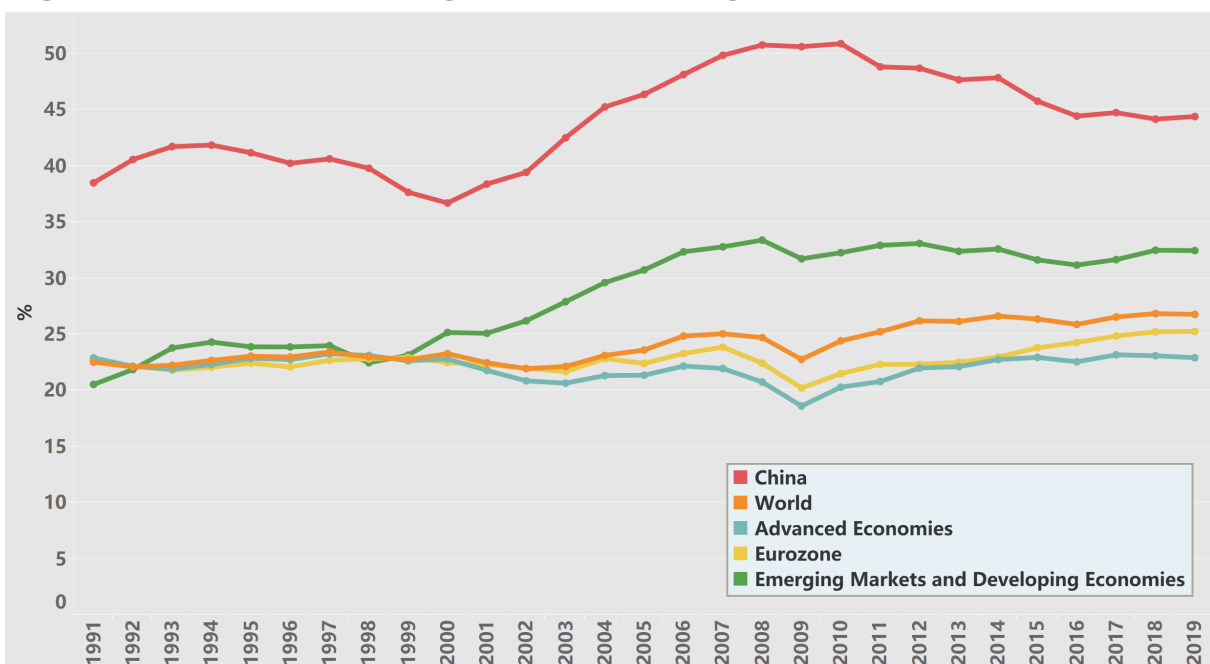
While the large share of heavy economy gives rise to a strong demand and availability for corporate debts, the size of a country's debt also depends on the ability of its financial market to provide funds, which in turn is fundamentally determined by

the country's savings rate, e.g., national savings per unit of GDP.

As well known, high savings rate is an important feature that sets China apart from other countries. Figure 4.6 indicates that China's savings rate, though declining in recent years, is still around 45%, nearly double that of most other countries.

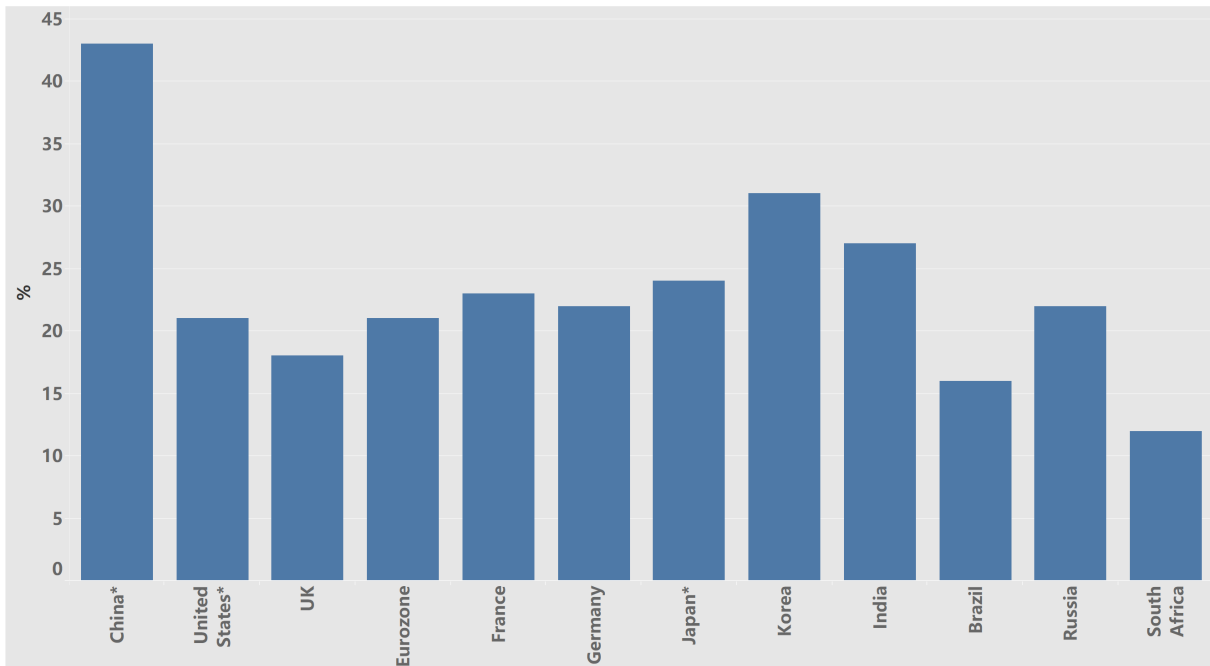
There is no investment without savings; a high savings rate makes a high investment rate namely a high share of capital formation in GDP possible. Indeed, China's investment rate, which has been high since the founding of New China in 1949,

Figure 4.6: China's Savings Rate Much Higher Than Other Economies



Source: National Bureau of Statistics of China, IMF

Figure 4.7: Fixed Asset Investment to GDP Ratio in Major Economies 2020



Source: National Bureau of Statistics of China, World Bank

*2019 Data

has lowered in recent years along with the increasing scale of economic construction, but still maintained high at 43% in 2020, significantly higher than that of other economies, regardless of developed, emerging or developing nations; like the savings rate, it is nearly twice the investment rates of most economies.

The contribution of high investment rates to high corporate income leverage ratios is manifest.

On the one hand, the high capital formation creates large amounts of assets over many years and therefore underpins

the heavy economy. The heavy economy previously described on the demand side of funding is important for the corporate sector's income leverage ratio, whereas the high investment rate supports the high income leverage ratio for the corporate sector on the supply side of funding.

On the other hand, capital formation is the language in the GDP accounting system and in fact what is commonly referred to as fixed asset investment. As mentioned earlier, almost all fixed-asset investment projects of a certain scale require financing, especially those in heavy economic

sectors namely manufacturing machinery and equipment, infrastructure, and real estate investment projects, which always require huge amounts of funds. The amount of financing required for the rapid growth of these heavy economic sectors over the past 40 years, and the amounts of debts they have given rise to, are certainly enormous.

By contrast, the financing and financed debts required for most consumptions are limited even in the countries with developed consumer credits, not to mention that China's consumer credit is still underdeveloped. It is worth noting that the largest consumer credit program in any country is mortgage loans to support housing purchase. Home buying is not a consumer behavior, but primarily an investment behavior and what housing mortgage loans actually bolster up is property investment.

China's high savings rate is one of the characteristics of its economic behavior, an embodiment of the national character, and a result of the Confucian culture or philosophy, which has historically been higher than in other countries and will continue to be so, and is therefore inevitable.

A high investment rate is in turn a characteristic and necessary condition for the rise of emerging economies and is essential in China's historical process of catching up with developed economies and returning to the forefront of the world economy. So, it is reasonable.

The high savings/investment rate and the large share of heavy economy on the other hand are the two justifiable causes of the high income leverage ratio of the corporate sector of China on the supply side and the demand side respectively.

Justifiable Cause 3: Dominance of debt financing

The size of a country's corporate debt is also highly correlated with the financing structure of its financial market. A major difference in the social financing structure between China and advanced economies is that debt financing dominates in China and equity financing dominates in advanced economies.

Debt financing includes bank loans, bonds, and other forms of debt-based financing, which are equivalent to borrowings and must

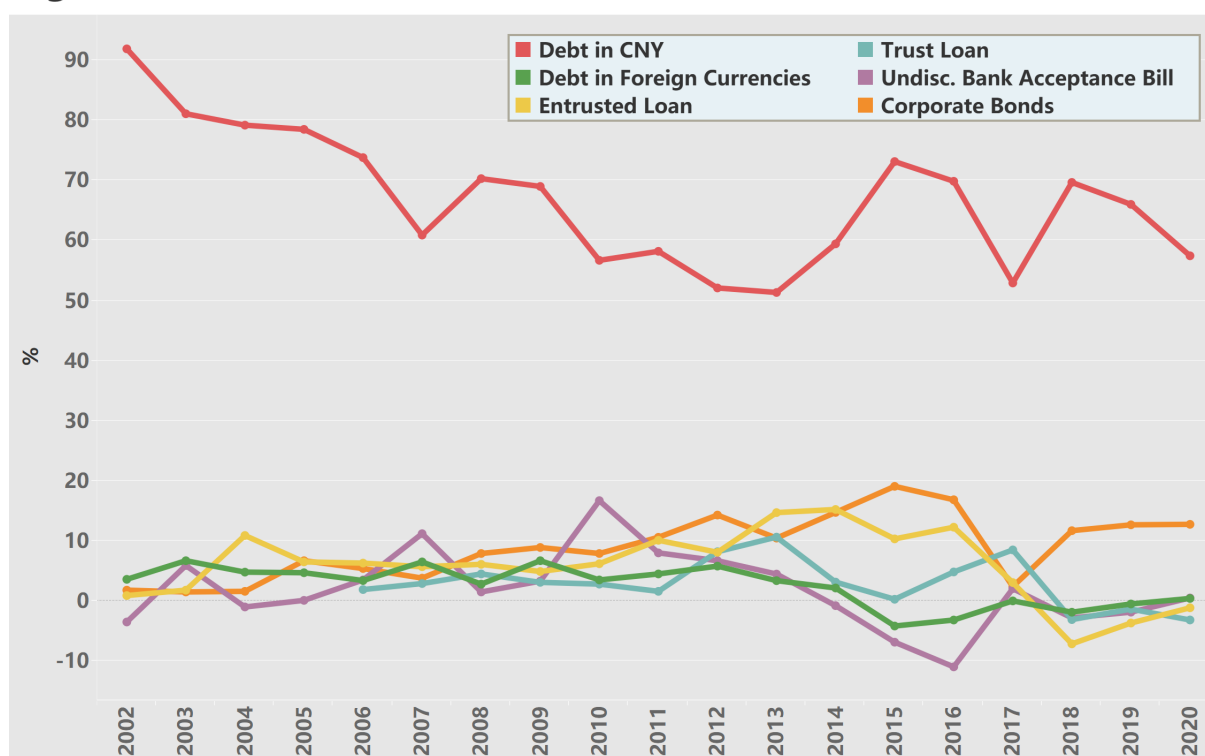
be repaid with principal and interest on schedule, while equity financing is carried out through the primary and secondary stock markets, in exchange for the transfer of equities, which is not subject to repayment and does not pay interests.

Figure 3.4 already shows that in 2020, debt financing accounted for 94.1% of the total non-governmental financing in China, of which bank loans made up 74.7%, bonds 11.9%, and other forms of debt financing 8.3%, whereas equity financing occupied only 5.1%.

Other forms of debt financing, including entrusted loans, trust loans, and undiscounted bankers' acceptances, once grew rapidly but have weakened substantially in recent years as a result of shadow banking restrictions.

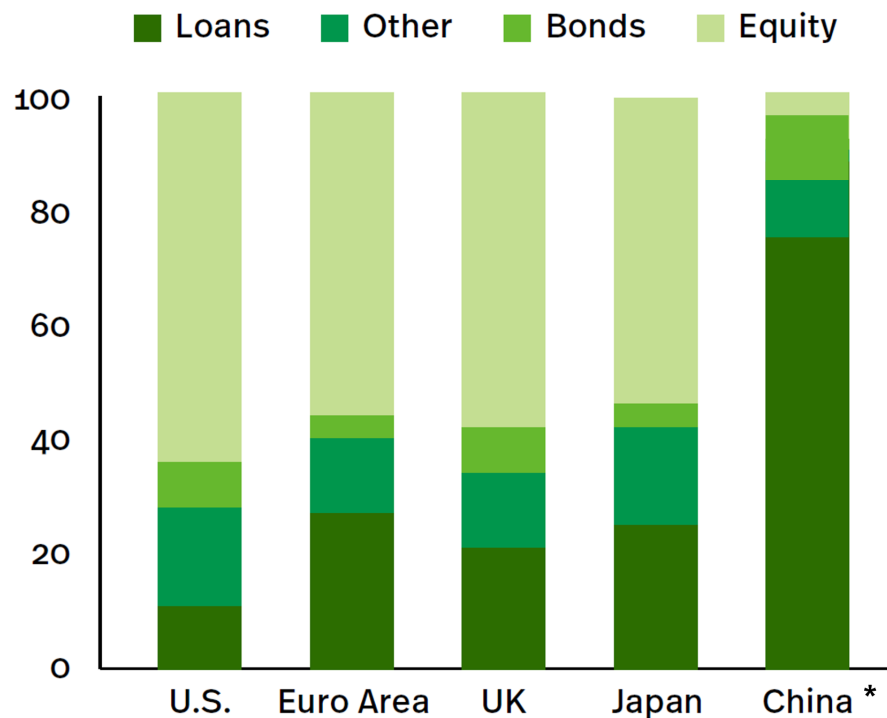
The social financing structure in advanced economies is just the opposite of China's, dominated by equity financing and supplemented by debt financing. In the US, equity financing makes up roughly 70% of total social financing, while in the Eurozone, the UK and Japan this ratio is 55-60%, all considerably higher than the 5% or so in China.

Figure 4.8: China's Nationwide Debt Structure 2002-2020



Source: The People's Bank of China

Figure 4.9: Financing of Non-Financial Corporations 2019



Source: OECD, European Central Bank, Bank of Japan, National Bureau of Statistics, The Federal Reserve
*2020 Data

Debt financing will inevitably create debts; more debt financing will inevitably lead to higher debt balances, and the dominance of debt financing is bound to push up the income leverage ratio of the corporate sector.

The dominance of debt financing reflects the fact that China's social financing structure and financial markets are still a long way from modernization and that there is a risk of default compared to equity financing. However, it is inevitable and currently justified in relation to the fact that China is still in an emerging and developing stage

and the history of financial market reforms is short. This is also or even more so in other emerging economies. Hence, the dominance of debt financing is also an important justifiable cause of the high income leverage ratio for the corporate sector of China.

Justifiable Cause 4: High economic growth expectations

Over the past 40 years, China's economy has grown by an average of 9.2% a year, much faster than other economies, either developed or emerging, and substantially ahead of the global average

economic growth.

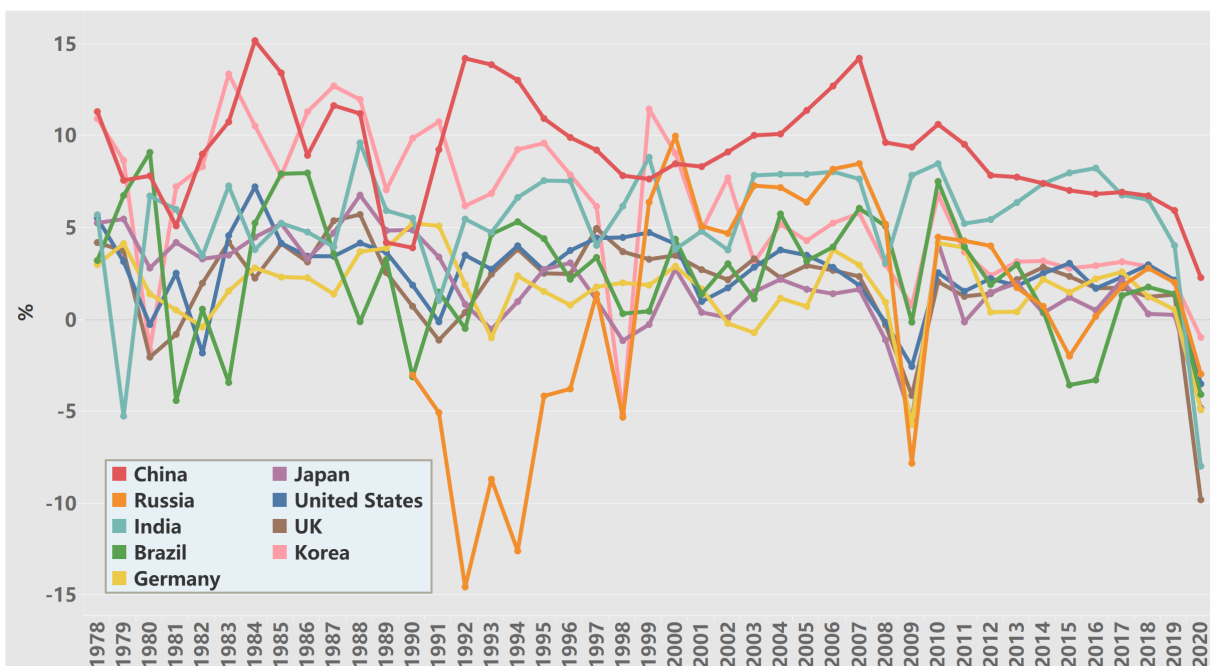
Fast economic growth naturally leads to fast growth in debt demand; fast economic growth also means high returns on investment, further stimulating debt demand.

Statically, this does not affect the income leverage ratio, as the numerator total debt increases simultaneously with the denominator GDP. Dynamically, however, according to the rational expectation hypothesis of modern macroeconomics, companies are rational expectants in the long run and eventually able to anticipate

the trend towards continued rapid economic growth in the future based on the momentum of past and current high economic growth; so, they consider not only the funding needs of current high growth but also the funding needs of future continued, rapid economic growth in advance when it comes to financing, making their debt demand exceed the funding needs corresponding to the current economic growth. This will certainly cause the debt to grow faster than the economy, thus increasing the income leverage ratio.

As previously mentioned, the high

Figure 4.10: GDP Growth Rates of China and Other Major Economies 1978-2020



Source: World Bank

growth rate of China's economy is inevitable and it is reasonable for companies to expect continued, rapid economic growth. Thus, high economic growth expectations are also a justifiable cause of the income leverage ratio of the corporate sector.

The four justifiable factors described above in fact reflect some of the essential features and provisions of Chinese economy and financial markets at the current stage. This is just where the justifiableness lies, and will continue to exist for a long time.

4.2 Four major non-justifiable causes

Non-justifiable Cause 1: Over-representation of state-owned enterprises

Despite more than 40 years of enterprise reform, China's state-owned enterprises still account for a disproportionately large share of the economy, much larger than in other economies, particularly in heavy economy industries such as energy, communications, utilities, and heavy chemicals.

The state-owned economy as per percentage of GDP is around 10% on average in the world and mostly

Figure 4.11: SOE as Percentage of GDP in 2017: Direct Estimation

Industry	Value Added (RMB 100 million)	Assumed proportion of SOEs in value added in the sector (%)	Estimated value added of SOEs in the sector (RMB 100 million)	Estimated share of SOEs in total value added (%)
Agriculture, Forestry, Animal Husbandry, and Fishery	64660	4.6	2974	0.4
Industry	278328	21.1	58727	7.2
Construction	55314	38.5	21296	2.6
Wholesale & Retail	77658	36.9	28619	3.5
Transportation, Warehousing & Postal Services	37173	77.3	28722	3.5
Hospitality, F&B	14690	8.8	1299	0.2
Finance	65395	88.0	57548	7.0
Real Estate	53965	24.6	13275	1.6
Others	173571	7.7	13308	1.6
Total	820754		225768	27.5

Source: How much do China's state-owned enterprises contribute to GDP and employment? Zhang Chunlin, World Bank Research Report, July 2019

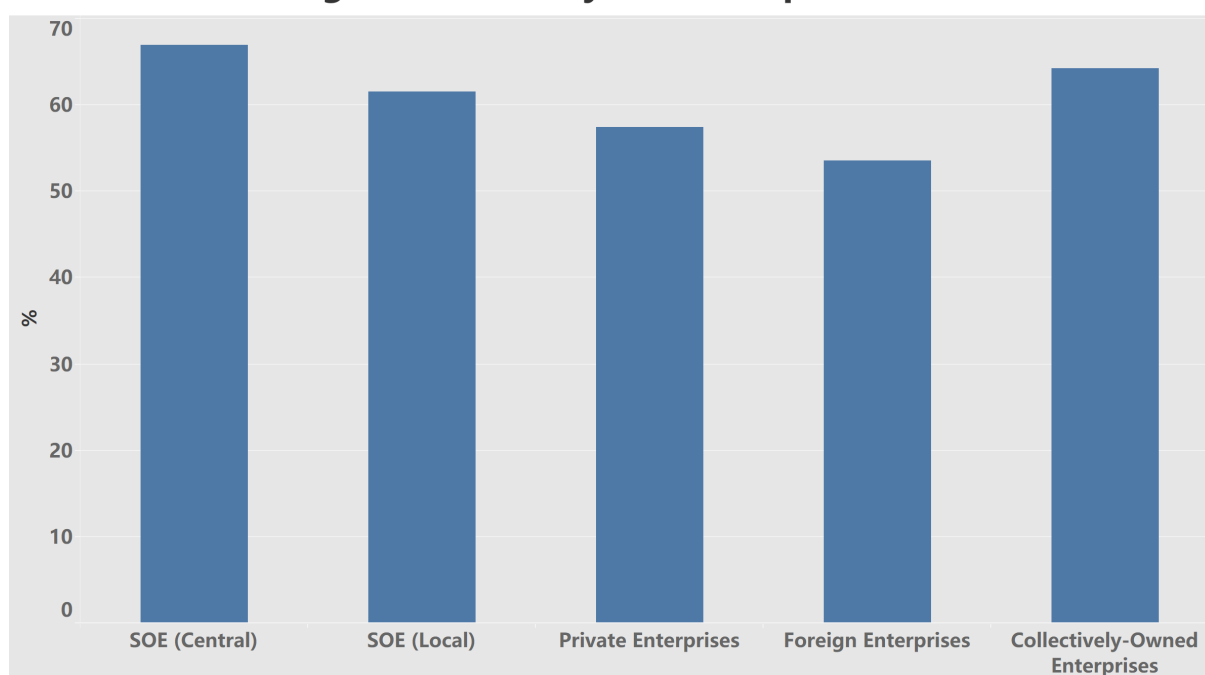
below 5% in developed economies. However, the World Bank estimates that the share of the state-owned economy in GDP in China was still as high as 28%, with that in industrial value added being 21%, in 2017.

Since they are mostly in heavy economy, the financing needs of state-owned enterprises, as mentioned earlier, are high. More importantly, though less productive and economically efficient than private companies, SOEs are undeniably the backbone of the national economy and are therefore vigorously supported by

the government. Because of this, their market share, and in turn their revenues and profits, are guaranteed to a great extent, and the government will guarantee the minimum amount set once troubles occur. In recognition of this, banks and investors alike have a taste for them, making it much easier for SOEs to obtain financing than private companies.

As shown in Figure 4.12, industrial SOEs are significantly higher than private and foreign-invested companies in terms of liability/asset ratio.

Figure 4.12: Leverage Ratio of Industrial Enterprises above Designated Scale by Ownership 2019



Source: Wind

It can be seen that the vast scale of state-owned enterprises is a non-negligible cause of the high income leverage ratio in the corporate sector in China. While it is inevitable that SOEs still outnumber other sectors at the current stage, this phenomenon indicates that the enterprise reform in China is not put in place against the goal of shrinking the state-owned economy and boosting the private economy. So, it is a major non-justifiable cause of the high income leverage ratio for China's corporate sector.

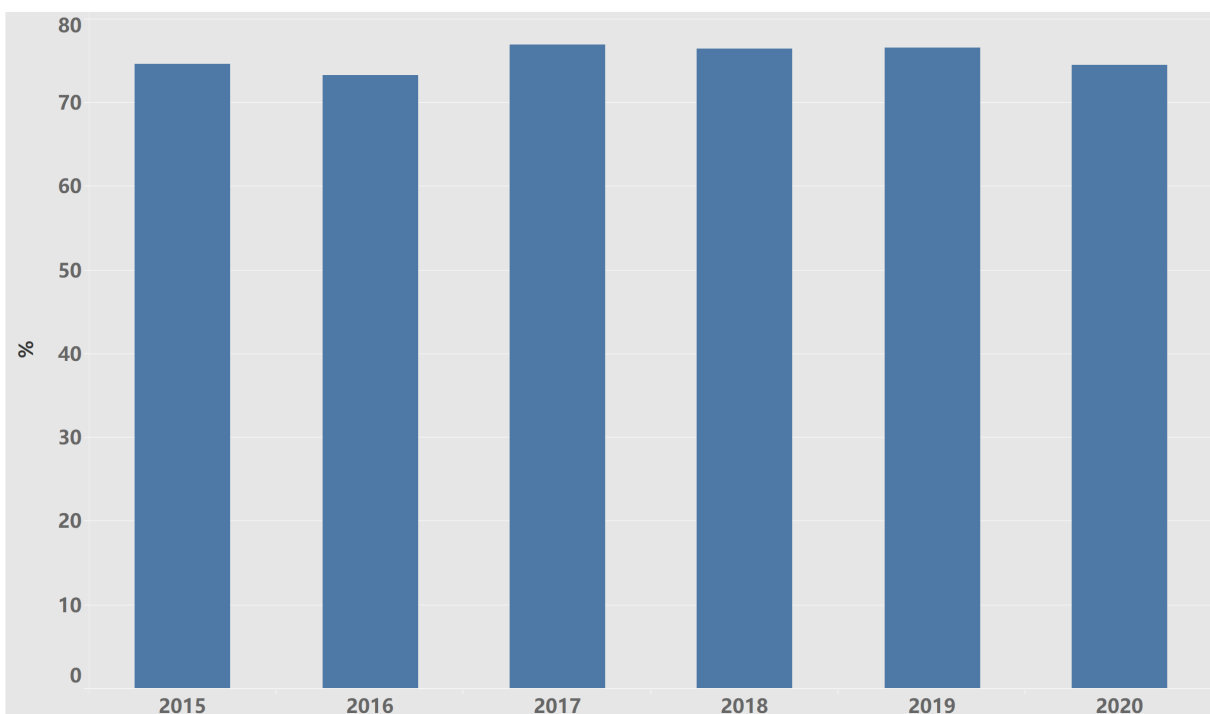
Non-justifiable Cause 2: Overdevelopment and excess

capacity of some industries

In the context of rapid economic development, all sectors of China's economy have grown fast over the past 40 years or so. However, some industries have overdeveloped resulting in excess capacity and low capacity utilization.

Despite that excess capacity has been reduced over the past years after several rounds of rectification since 1990, the problem remains unresolved and there is still excess capacity in industries such as real estate, coal, petroleum processing, iron and steel, non-ferrous metals,

Figure 4.13: China's Industrial Capacity Utilization Rate 2015-2020



Source: National Bureau of Statistics of China

transportation and traffic, storage, coal power, and public utilities, etc. These industries mostly belong to heavy economic industries.

As a result, the present capacity utilization of China's industrial sector as a whole is about 75%, less than the international average of 80%.

Most of the companies with excess capacity are in the heavy economy sector, and will certainly take up a lot of capital to increase the debt piles as they are still operating.

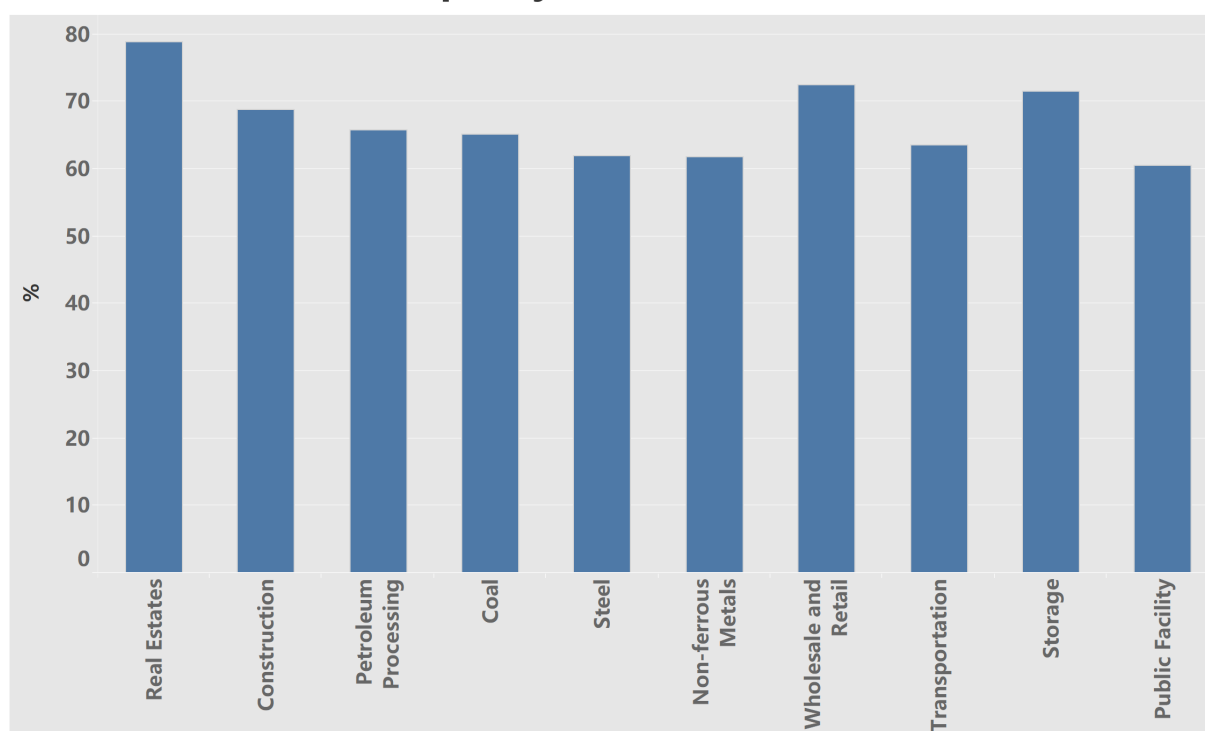
Figure 4.14 shows that the gearing

ratios of these sectors are all greater than 60%.

However, these industries are unable to carry out normal production and operations due to the poor marketing of products, and thus are unable to generate the added value that they should and make contribution to GDP in a way that corresponds to their high debt level.

The result will inevitably push up the income leverage ratio of the corporate sector.

Figure 4.14: Asset Leverage Ratios of Select Industries with Excess Capacity in China 2019



Source: National Bureau of Statistics of China

Overdevelopment and overcapacity are certainly unhealthy phenomena in economic development, so they are another important non-justified cause of the corporate sector's high income leverage ratio.

Non-justifiable Cause 3: Hidden local government debts

Notably, most of China's hidden local government debts (mainly held by local government financing vehicles, LGFVs) have been counted in corporate debts since 2015, so the numerator of China's corporate income leverage ratio includes hidden local government debts, which naturally increases the numerator and the leverage ratio.

It is debatable as to whether the hidden debts of local governments

should be included in corporate debt. As LGFVs are also registered in the name of companies, it is not inappropriate to consider them as state-owned enterprises.

However, local financing platforms are special SOEs engaging in local infrastructure construction that should be undertaken by local governments, receiving implicit guarantees from local governments, and thus having stronger debt needs and debt availability than ordinary SOEs. In addition, the projects they finance are more inefficient as quasi-government projects and contribute low to GDP, at least in the short term.

At the same time, international comparisons reveal that other

Figure 4.15: Estimates of Outstanding Hidden Local Government Debts in China

	Estimate Agency	Estimate (Trillion CNY)	Estimate Year
International	BIS	8.9	2017
	IMF	19.1	2016
	S&P	30-40	2018
Domestic	National Institute for Finances & Development	30	2017
	Institute of World Economics and Politics, CASS	24	2017
	Tsinghua University Institute of Finance and Taxation	47	2017
	Haitong Securities	32	2017
	Shenyin & Wanguo Securities	43	2017
	Lianxun Securities	37	2018

Source: Estimators as shown in the table

countries have no or little hidden local government debts, and if they do, it is classified as government debts other than corporate debts, which also pushes up the level of corporate income leverage in China relative to other countries from a statistical perspective.

Thus, hidden local government debts are another non-justifiable cause of the high income leverage ratio of China's corporate sector.

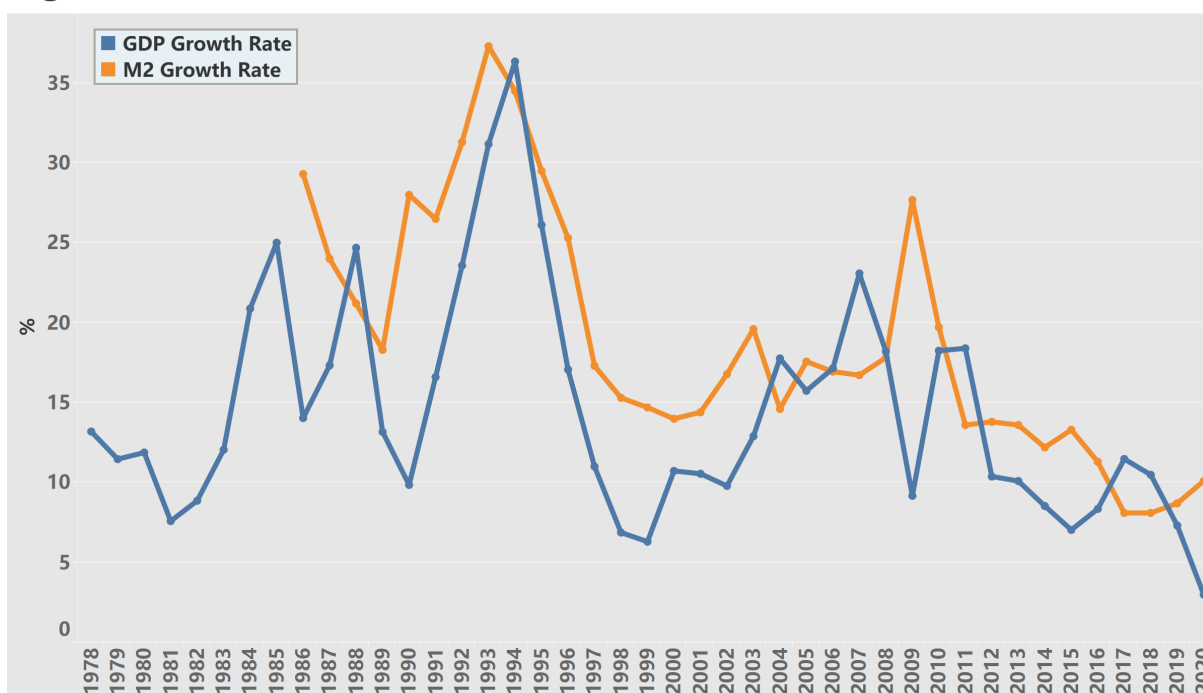
Non-justifiable Cause 4: Excess liquidity

Excess liquidity has been a widespread phenomenon and

a serious problem in the global economy for more than a decade. China is no exception, with M2 (broad money supply) growing faster than nominal GDP in most years, leading to excess liquidity.

Excess liquidity indicates that the supply of money or funds in the market outstrips the demand, resulting in lower interest rates and lower corporate financing costs and, more importantly, making it possible to reverse the relationship between the supply and demand sides of corporate financing in many cases, from the previous seller's market where companies sought bank loans, to the buyer's

Figure 4.16: Growth Rates of China's M2 and GDP



Source: National Bureau of Statistics of China, The People Bank of China

market where banks hasten corporate loans. Naturally, this will greatly increase the availability of corporate debts and prompt companies to borrow money, eventually causing corporate debts to exceed the needs of economic growth, which in turn pushes up the income leverage ratio of the corporate sector.

There are multiple factors for excess liquidity, external or internal.

External factors are global excess money circulating among countries and to emerging markets, particularly the Chinese market, which has the most promising growth prospects, through various means, including funds that enter legally along with China's trades and direct investment surpluses and overseas hot money that enter illegally for the purpose of short-term speculations.

Internal ones are both market-based and policy-induced. The market-based aspect is mainly the impulses of both enterprises and banks in terms of credit and loan, expanding the credit scale in a spiral fashion; the policy-induced aspect is that the monetary policy is sometimes loose and sometimes

tight. If too loose, it would lead to a steep increase in liquidity.

These external and internal factors are both inevitable and non-inevitable, either reasonable or unreasonable. Overall, the non-inevitable element outweighs the inevitable one; the unreasonable element prevails over the reasonable one. So, non-justifiable factors dwarf the justifiable ones.

Thus, excess liquidity is also one of the non-justifiable causes of the corporate sector's high income leverage ratio.

The above four non-justifiable causes reflect the structural weakness of China's economy and financial markets currently exceeding essentials; this is why it is non-justifiable and needs to be corrected gradually through further reforms.

4.3 The respective implications of justifiable causes and non-justifiable causes for corporate sector's debt level

Both the justifiable and non-justifiable causes mentioned above

will inevitably push up the corporate sector's income leverage ratio.

The part pushed up by non-justifiable causes do reflect a rise of the corporate debt level

Regarding the part that is pushed up by non-justifiable causes, since the causes are not justifiable, the results are not justifiable, i.e., not inevitable or currently unreasonable, and do reflect a higher debt level.

Thus, the non-justifiable causes indeed increase the debt level of the corporate sector; the degree to which the resulting income leverage ratio is high does reflect the degree of highness of the corporate debt level in China and the gap between it and other countries.

But the part pushed up by justifiable causes do not indicate an increase in the corporate debt level

The part that is heightened by justifiable causes does not imply an elevated debt level since the causes and results are justifiable, e.g., inevitable and currently reasonable.

The justifiable causes lead

to the overestimation of the corporate debt level

Therefore, due to the existence of justifiable causes, the degree to which the corporate sector's income leverage ratio is high does not necessarily reflect the degree to which the debt level in the corporate sector is also high.

In other words, justifiable causes tend to lead to the overestimation of the corporate sector's debt level. If the effect of justifiable causes were excluded, the corporate sector's income leverage ratio would be significantly cut down, and the gap between China and other countries in this regard would be largely narrowed.

V. China's Asset Leverage Ratio — Status Quo, International Comparison and Inference

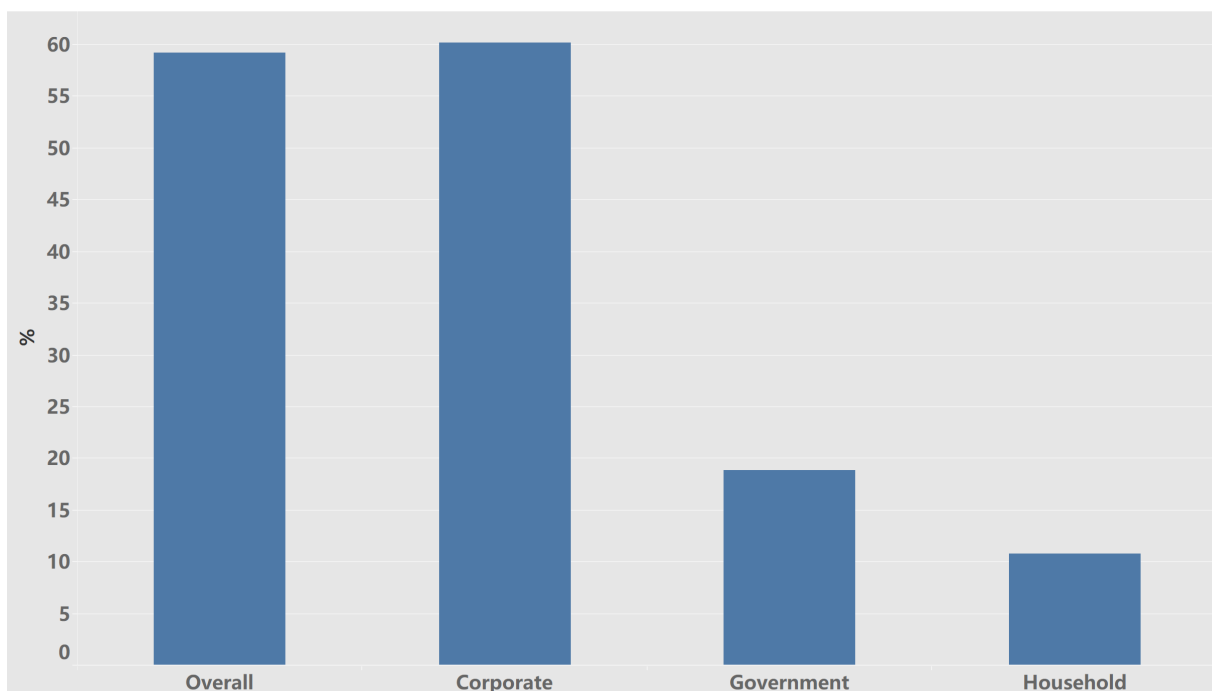
5.1 Status Quo — Similar to the income leverage ratio: much higher for the corporate sector than for the government and household sectors; especially high for state-owned enterprises and some industries

Due to the impact of the COVID-19,

the data of 2019 is used as the current data of the asset leverage ratio.

According to China's National Balance Sheet 2020 issued by CNBS, the overall asset leverage ratio and that in macroeconomic sectors in 2019 are given in Figure 5.1.

Figure 5.1: China's Overall and Sectoral Asset Leverage Ratios 2019



Source: National Balance Sheet of China 2020

Overall slightly lower than 60%

China's overall asset leverage ratio was 59.2% in 2019.

Sector distribution: Considerably higher for the corporate sector than for the government and household sectors; even higher in the SOE sector

By macroeconomic sector, the asset leverage ratios of China's corporate sector, government sector, and household sector were 60.2%, 18.9%, and 10.8% respectively in 2019.

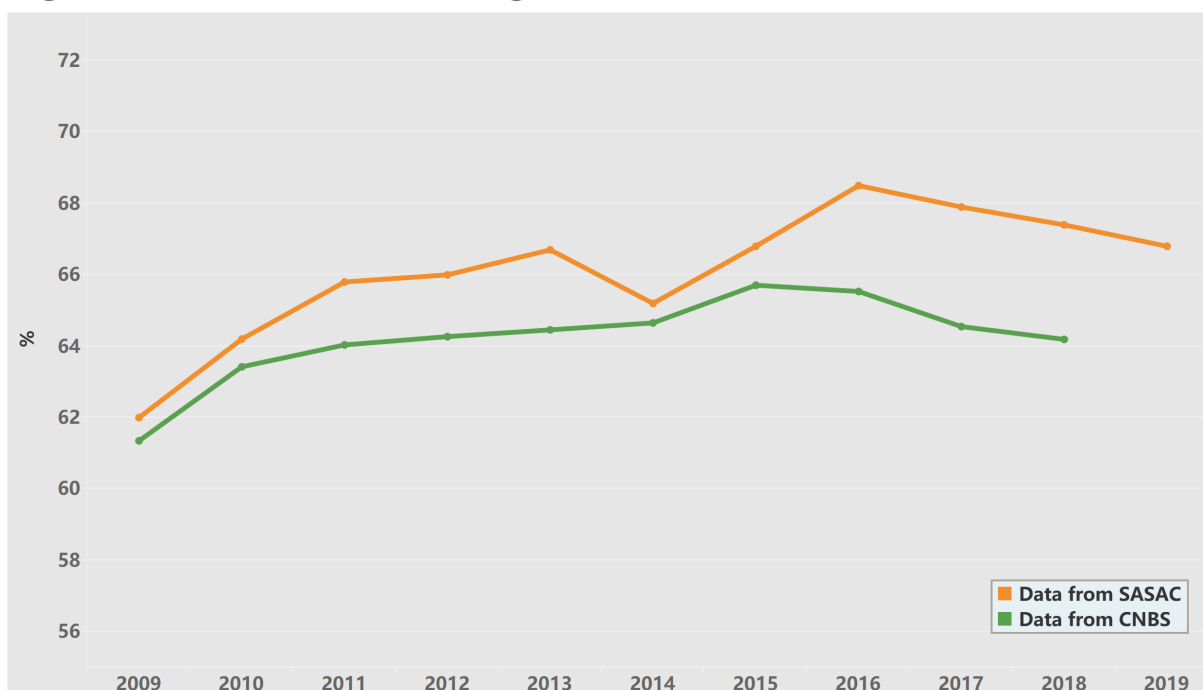
As can be seen, the asset leverage ratio is similar to the

income leverage ratio, with the corporate sector's much higher than the government sector's and the household sector's, with an even higher degree than what the income leverage ratio shows; it is as high as over 65% in the SOE sector.

Industrial/sectoral distribution among the corporate sector: Varying greatly by sector; high in some industries

According to the China Statistical Yearbook on Industrial Sector, China Statistical Yearbook on Construction Sector, and China Statistical Yearbook of Tertiary Sector, the asset leverage ratios for

Figure 5.2: SOE Asset Leverage Ratio 2009-2019



Source: State-owned Assets Supervision and Administration Commission of the State Council, CNBS

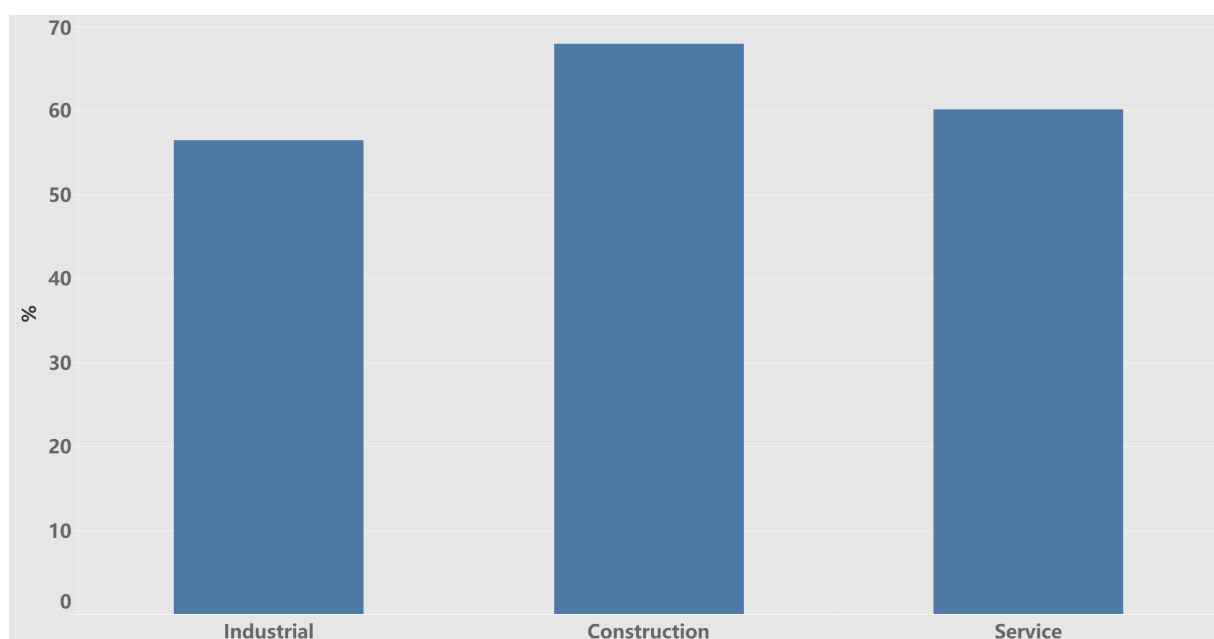
the country's industrial enterprises above designated size, the construction sector, and the service sector were 56.5%, 68.0%, and 60.1% in 2019 respectively.

The data on asset leverage ratio are not available for agriculture, but arguably it is much lower than for industry, construction and services, demonstrating that there is a big difference in asset leverage ratios between the three major sectors, namely the primary (agriculture, forestry, animal husbandry and fishery), the secondary (industry + construction), and the tertiary sectors (services).

According to the China Statistical Yearbook of Real Estate and Wind, the asset leverage ratios in real estate, public facilities, wholesale and retail, coal, iron & steel, transportation & traffic, non-ferrous metals, among other sectors, are greater than 60%, with the top four even higher than 65%.

5.2 International comparison —— Markedly different from the income leverage ratio: Overall on the low side; significantly low for the government sector; and

Figure 5.3: Asset Leverage Ratios of China's Industrial, Construction and Service Industries 2019



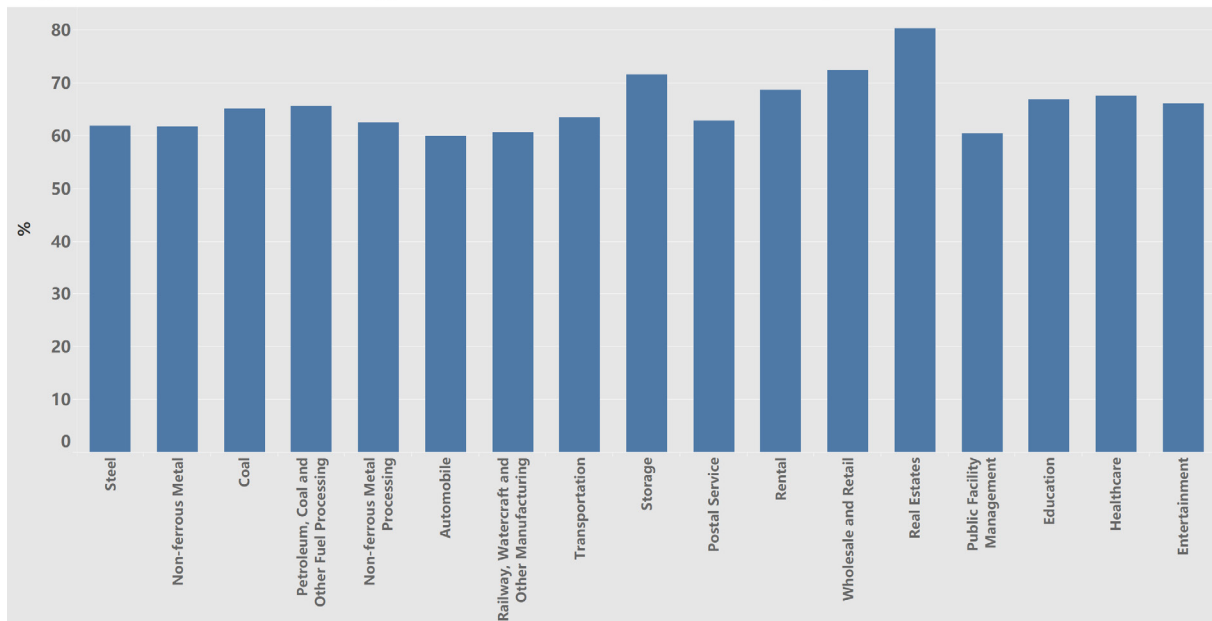
Source: China Industry Statistical Yearbook, China Statistical Yearbook on Construction, China Statistical Yearbook of the Tertiary Industry

on the low side for both the household and corporate sectors

Overall on the low side

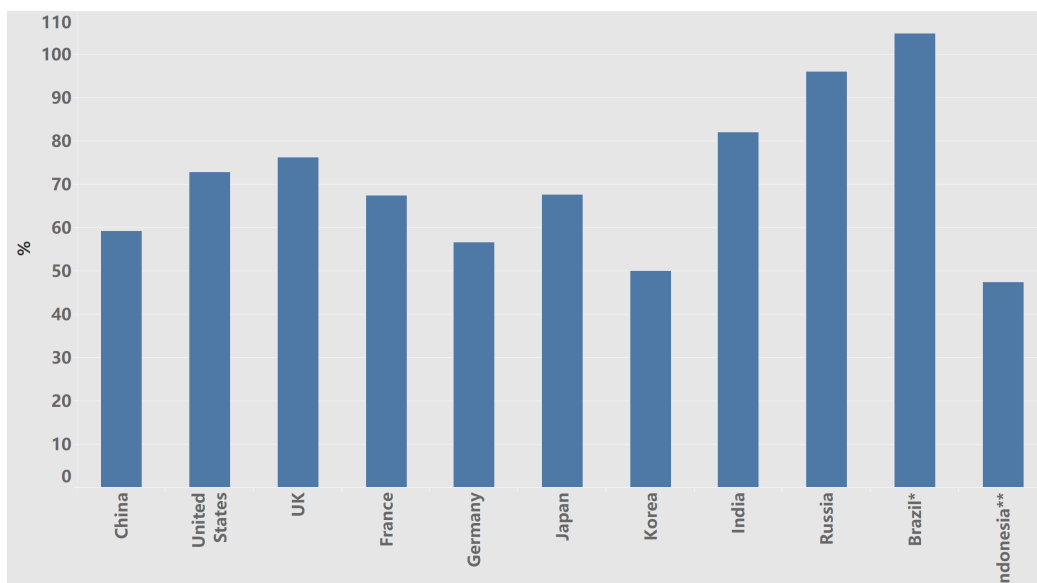
In Figure 5.5, China had an overall asset leverage ratio of 59.2% in 2019, lower than most economies, both developed and emerging, and only higher than Germany, Korea, and Indonesia, being relatively low.

Figure 5.4: Asset Leverage Ratios of Select Debt-heavy Industries of China 2019



Source: China Statistical Yearbook 2020

Figure 5.5: Overall Asset Leverage Ratios of China and Other Major Economies 2019



Source: National Balance Sheet of the Countries

*2018 Data, **2016 Data

Therefore, internationally compared, China's overall assets leverage ratio is on the low side, in sharp contrast to the overall high income leverage ratio which is on the high side.

There are no strict international standards regarding a reasonable level of asset leverage ratio for a country. For individual businesses, it is generally accepted that the appropriate range of asset leverage ratios, or gearing ratios, is 40-60%; if 20% or below, it indicates that the company has a lot of net assets or its assets greatly exceed its liabilities, signaling a large safety factor but inadequate capital utilization, and financing should therefore be considered; if 100% or above, it suggests that the company has no net assets or is insolvent, and the operator, creditor, and investor will take huge financial risks; if 70% or above, it is generally considered to be at the alert level, and financial risks are likely to arise. As can be seen, 70% is the upper warning line and 20% is the lower warning line.

This criterion can also be used when evaluating the size of a country's asset leverage ratio, but only for reference. For example, China's 59.2% is well below the

upper warning line of 70% and at the edge of the appropriate range 40-60%, which is within the safety limit.

Significantly low for the government sector

The asset leverage ratio in the government sector is roughly 20%, far below that of other economies, both developed and emerging. As shown in Figure 5.6, it is even lower than the international level compared with the income leverage ratio being lower than that of advanced countries and on par with that of emerging countries as described in Section III.

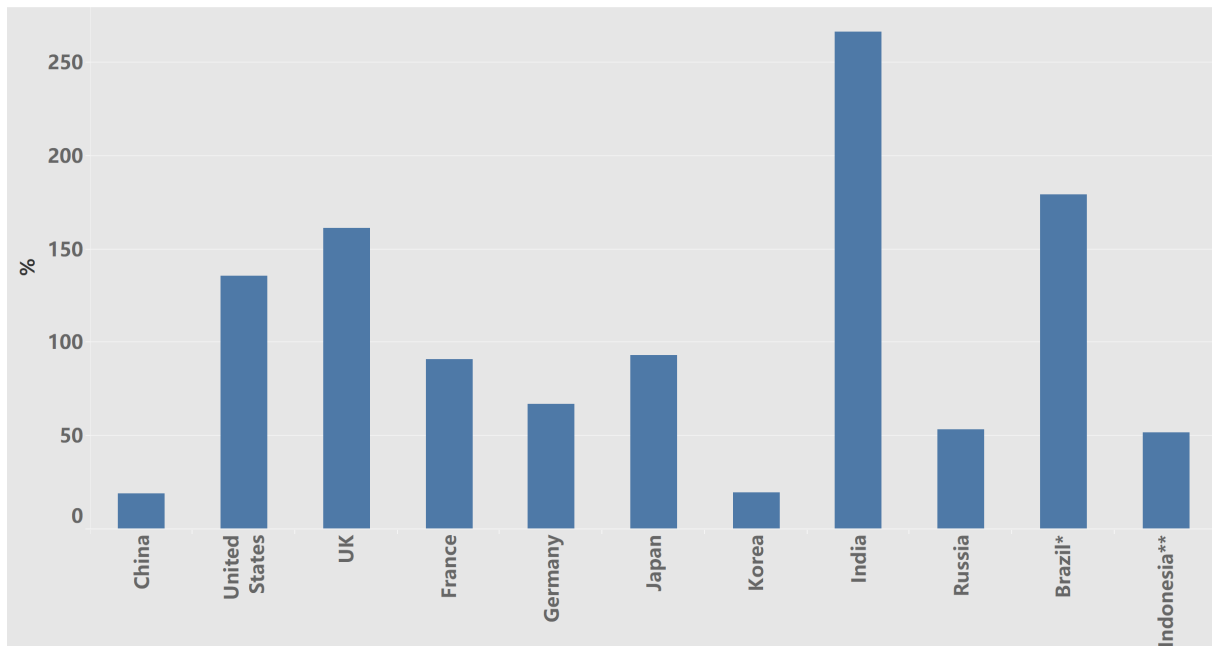
At the low end for the household sector

In Figure 5.7, the household asset leverage ratios of major economies are all in the 10-20% range, and China's 10.8% also in this range, but at the low end, just above Indonesia's.

Also on the low side for the corporate sector

In China, the asset leverage ratio for the corporate sector is also on the low side, as opposed to the significantly high income leverage

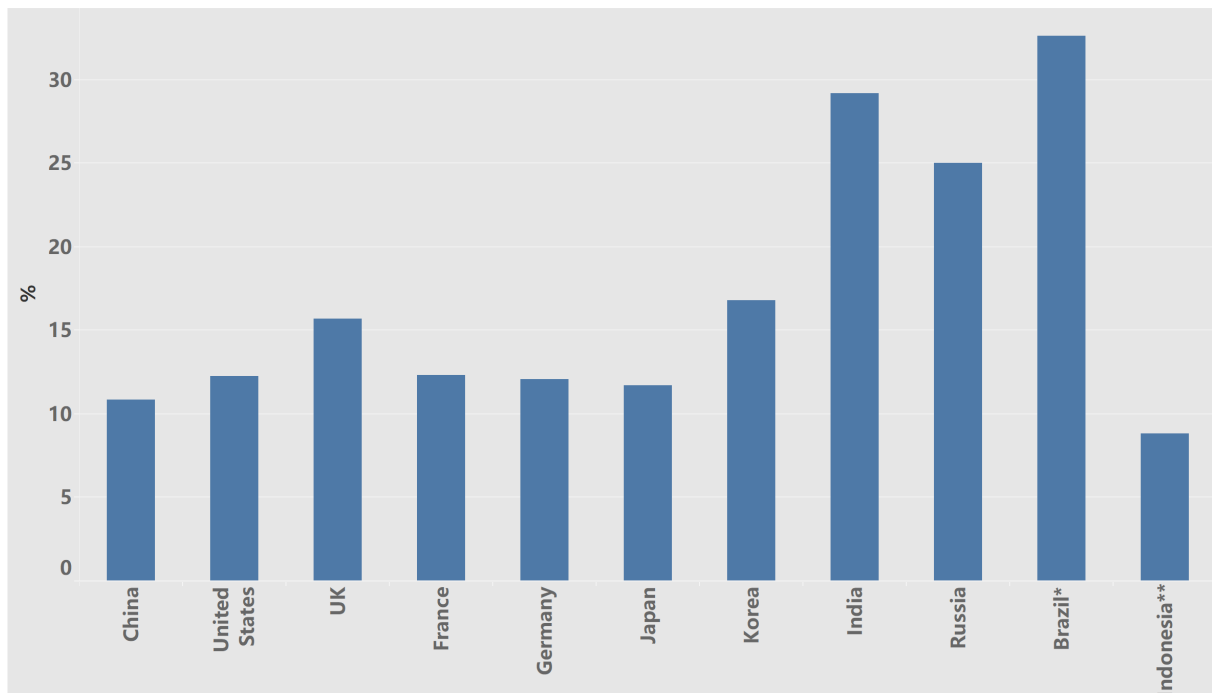
Figure 5.6: Government Sector Asset Leverage Ratios of China and Other Major Economies 2019



Source: National Balance Sheet of the Countries

*2018 Data, **2016 Data

Figure 5.7: Household Sector Asset Leverage Ratios of China and Other Major Economies 2019



Source: National Balance Sheet of the Countries

*2018 Data, **2016 Data

ratio, lower than that of other major economies, as shown in Figure 5.8.

Due to the importance of this result, it is verified below through comparisons of the asset leverage ratios for industrial enterprises above the designated size and non-financial listed companies between China and other economies.

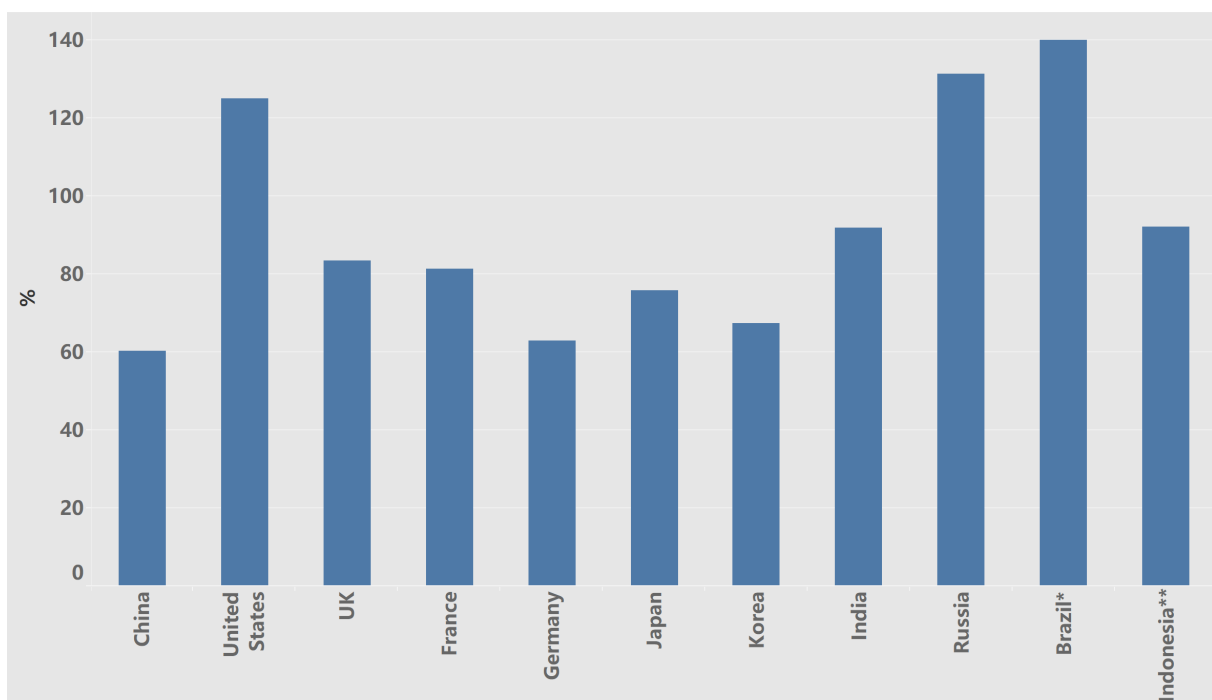
In Figure 5.9, the average leverage ratio of industrial enterprises above the designated size in China was 55.6% in 2019, only about two percentage points higher than the median of the ratios of global industrial enterprises.

Figure 5.10 shows that the average asset leverage ratio of non-financial listed companies was 60.8% at the end of 2019 in China, which hardly differs from the 60.2% corporate asset leverage ratio in the national balance sheet.

As can be seen from Figure 5.11, the median of the asset leverage ratios of listed companies in China was 41% in 2019.

Figure 5.12 is the percentile distribution of asset leverage ratios of listed companies in China and some of other major economies. In 2019 and 2020, the medians of

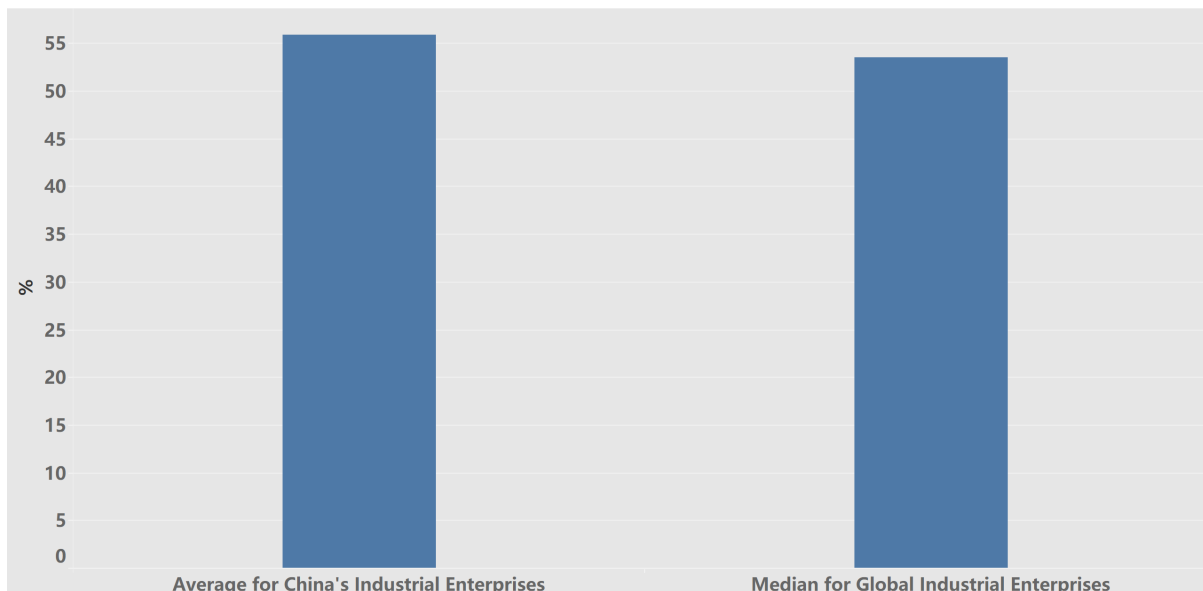
Figure 5.8: Corporate Sector Asset Leverage Ratios of China and Other Major Economies 2019



Source: National Balance Sheet of the Countries

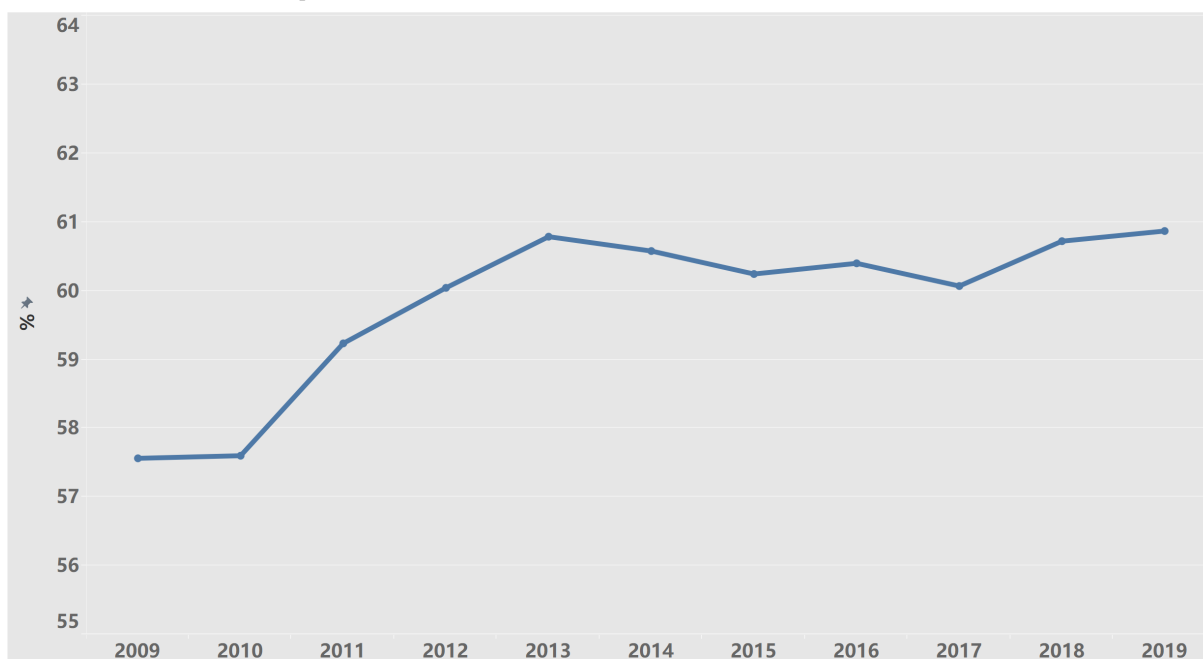
*2018 Data, **2016 Data

Figure 5.9: Compare Average Asset Leverage Ratio Between China's Industrial Enterprises Above Designated Scale with Median Asset Leverage Ratio of Global Industrial Enterprises 2019



Source: Wind

Figure 5.10: Gross Asset Leverage Ratio of Non-Financial Listed Corporations in China 2009-2019

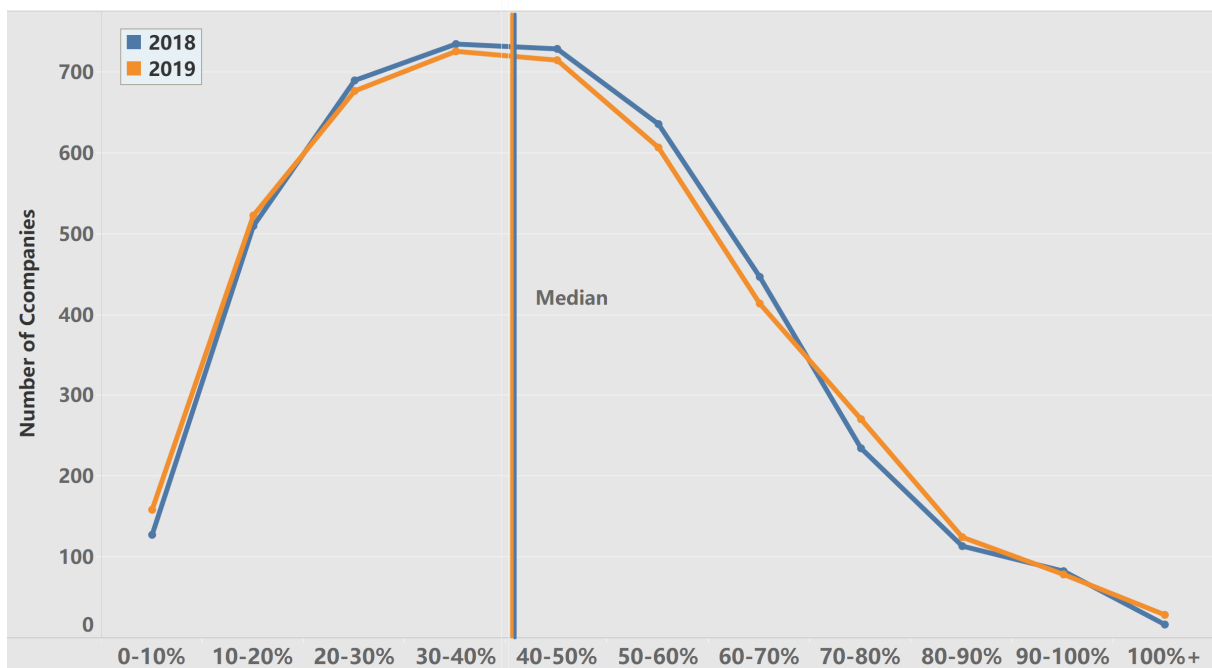


Source: CNBS

the asset leverage ratios of listed companies were 41.0% and 41.3% in China, lower than the 58.0% and 57.6% in the US, the 56.3% and 55.1% in Germany, and the 45.9% and 45.8% in Japan, and only

higher than the 36.7% and 36.4% in the UK, respectively, indicating that the debt level of China's listed companies are not higher than but rather lower than that of most developed nations.

Figure 5.11: China's Listed Companies Grouped by Asset Leverage Ratio 2018-2019



Source: Wind

Figure 5.12 Distribution of Asset Leverage Ratios of Listed Companies in Selected Countries

Quantile	2019					2020				
	USA	Germany	UK	Japan	China	USA	Germany	UK	Japan	China
10%	18.16	17.55	1.42	19.34	15.55	16.12	12.71	1.63	19.11	15.00
20%	30.55	30.05	7.60	27.10	22.84	29.46	27.95	7.42	27.08	21.96
30%	42.00	42.34	15.19	33.89	29.19	40.98	41.51	15.44	33.53	28.58
40%	50.93	49.55	26.96	40.12	35.19	50.14	48.53	25.71	40.07	34.53
50%	58.04	56.26	36.70	45.84	40.96	57.56	55.08	36.37	45.80	41.29
60%	65.88	61.23	43.20	51.30	47.05	65.62	60.89	45.75	51.36	46.98
70%	74.77	68.74	55.50	57.47	53.59	74.22	67.79	55.60	57.19	53.76
80%	85.78	75.43	68.86	64.54	61.05	85.39	74.55	67.18	64.06	61.65
90%	92.47	85.59	85.09	73.66	71.89	91.74	86.72	87.06	73.64	72.05
95%	110.00	99.38	107.10	80.26	81.20	104.04	95.78	102.97	80.95	82.32
Total no. of companies	5067	605	1640	3618	4325	4875	569	1564	3626	4322

Source: Wind, Osiris

5.3 Inference — China's national debt level is overall low, being low for both the corporate and household sectors and very low for the government sector

Given the above, China's national debt level, as measured by the asset leverage ratio, is low for the overall, the corporate sector and the household sector, and even lower for the government sector, all below the levels inferred by the income leverage ratio.

The income leverage ratio is high, in other words, the debt is high relative to GDP, but the asset leverage ratio is low, namely, the debt is low relative to asset, implying that massive debts are backed by massive assets. If such assets are all real or of high quality, i.e., productive, rewarding and liquid, huge debts are not a cause for concern and the debt level is not high.

By macroeconomic sector, both the income leverage ratio and the asset leverage ratio infer that the debt levels for China's government and household sectors are very low and not high respectively, more or less the same. The problem lies in the inference from the two leverage

ratios for corporate sector's debt level, which is too high by the income leverage ratio and low by the asset leverage ratio, varying considerably.

It has been argued in Section II that it is more reasonable to measure the corporate debt level by the asset leverage ratio than by the income leverage ratio, with the main rationale being that the justifiable causes make the latter increase, leading to overestimation of the debt level, but it does not necessarily push up the former and thus does not result in an overestimation of the debt level. In terms of the biggest justifiable cause, the large share of heavy economy leads to high debts, ultimately pushing up the income leverage ratio, but also results in high assets, so it does not necessarily elevate the asset leverage ratio. The same is true for other justifiable causes, including the predominance of debt financing, high savings/investment rates, and high growth expectations.

The justifiable causes such as the large share of the heavy economy as discussed in the previous section are essential features and provisions at the current stage of the rising China economy. Hence,

the inference regarding the high debt level for the corporate sector measured by the asset leverage ratio is more acceptable than that made by the income leverage ratio.

Of course, it is not the case that there is no problem with measuring the corporate debt level by the asset leverage ratio. Two aspects should not be overlooked: first, as mentioned above, even if measured by the asset leverage ratio, the debt levels of state-owned enterprises, some industries, and hidden local government debts are too high; next, whether massive assets are real, i.e., whether they are quality assets, is of concern; if the quality is very low and there is no reasonable output rate and liquidity, the debt level will be high even if there are huge assets. An important aspect of asset quality is the NPL ratio, including the virtual asset ratio.

Both issues must be addressed, but with a different focus and different risk profile than the high debt level relative to GDP as reflected in the income leverage ratio. From the perspective of the asset leverage ratio, it is the asset quality that should be of greater concern.

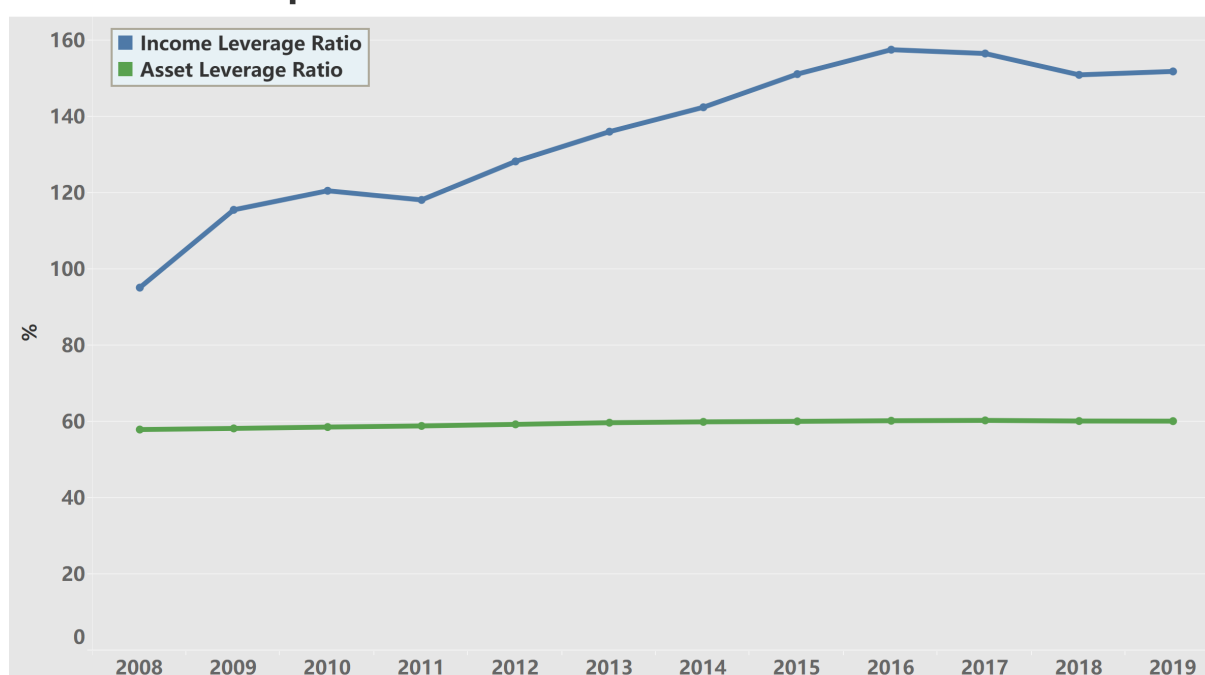
VI. The Process and Mechanism of the Divergence between Income Leverage Ratio and Asset Leverage Ratio

6.1 The divergence lies in the corporate sector: the asset leverage ratio stable while the income leverage ratio jumping

The above sections describe the income and asset leverage ratios in China and their inferential departures on its debt levels. In

fact, international comparisons show that both the government and household sectors in China have both a low income leverage ratio and a low asset leverage ratio, but the corporate sector has a substantially higher income leverage ratio and a lower asset leverage, leading to the overall situation of a higher income

Figure 6.1: Asset Leverage Ratio and Income Leverage Ratio of Corporate Sector in China Since 2008



Source: CNBS

leverage ratio and lower asset leverage ratio, suggesting that the divergence between income leverage ratio and asset leverage ratio lies the corporate sector.

From the variation curve in Figure 6.1, it is clearer that the asset leverage ratio in China's corporate sector has been largely stable with little changes since 2008, while the income leverage ratio of the corporate sector has risen sharply and become volatile.

sector's income leverage ratio since 2008

A spike in 2009-2010 driven by RMB 4 trillion investment

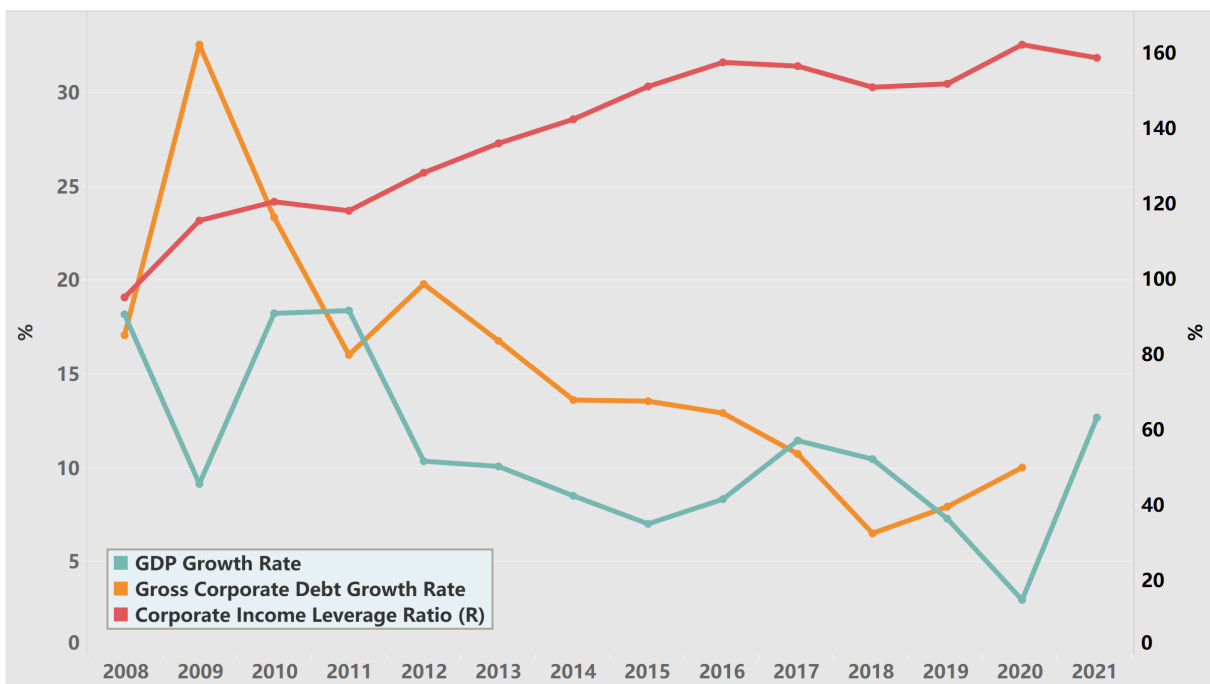
The corporate sector's income leverage ratio surged by 27% in two years from 2009 to 2010.

The balloon can be attributed to a 50% spike in the total corporate debt, as GDP growth (nominal, same below) slowed down but remained high at 29% in these two years.

6.2 A substantial rise and high volatility in corporate

The jump in the corporate debt is a direct result of the Chinese

Figure 6.2: China's GDP Growth Rate, Gross Corporate Debt Growth Rate and Corporate Income Leverage Ratio



Source: CNBS, National Bureau of Statistics of China

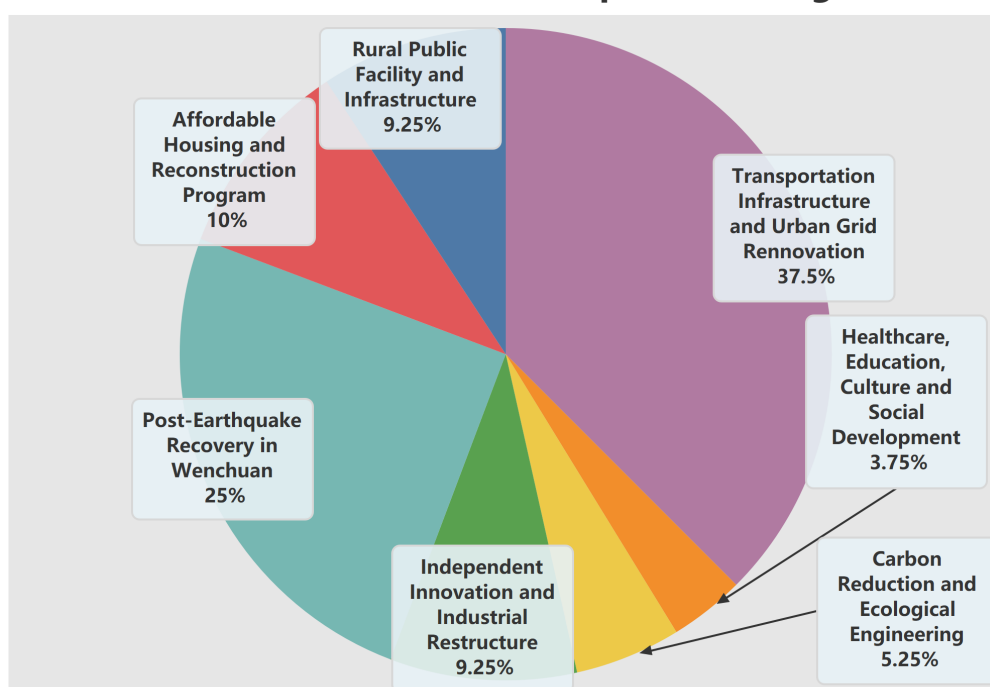
government's 4-trillion-yuan investment program to expand the domestic demand after the well-known 2008-2009 global financial tsunami. The RMB 4-trillion investment, which led to a 29.9% and 12.1% increase in fixed asset investment respectively in 2008 and 2009, was mainly used for the construction of infrastructure, directly creating heavy assets. The problem is that these investments also led to more social supporting investments, most of which relied on debt financing, resulting in a spike in the corporate debts. Huge amounts of assets and debts were generated at the same time,

leading to the typical circular rise of assets and debts.

This round of skyrocketing raised the corporate sector's income leverage ratio by over 100% and began to throw off the asset leverage ratios of other countries and the domestic corporate sector. It's being caused by the RMB 4 trillion investment is an illustration of the contributions resulted from the large share of the heavy economy to the high income leverage ratio of the corporate sector.

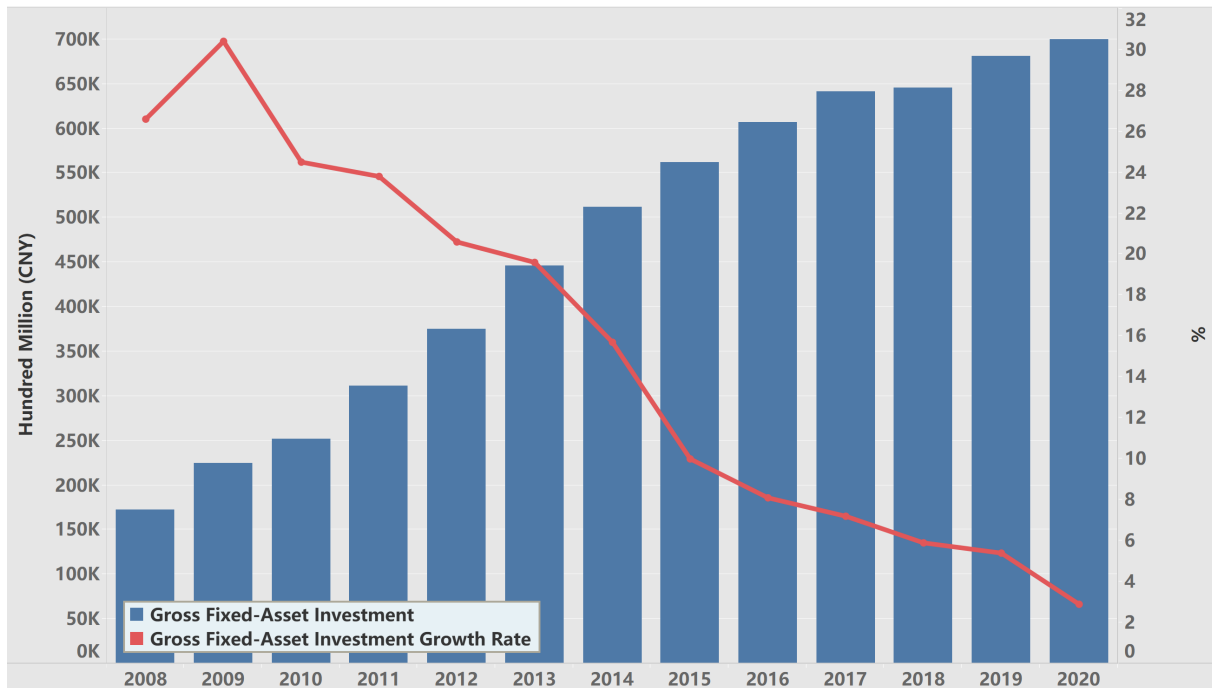
A steady rise from 2012 to 2016

Figure 6.3: Investment Breakdown of CNY 4 Trillion for Domestic Demand Expansion Program



Source: National Development and Reform Commission

Figure 6.4: Gross Fixed-Asset Investment and Its Growth Rate 2008-2020



Source: National Bureau of Statistics of China

as economic growth declined and debt growth remained high

After transient stabilization in 2011, the corporate sector's income leverage ratio continued to rise by 33.3% for five straight years (2012-2016), averaging 5.9% per annum.

During that period, the GDP growth averaged 8.9% per annum, 8.4 percentage points slower than 2006-2011; the growth in the corporate debt, on the other hand, decelerated but remained much higher than the GDP growth.

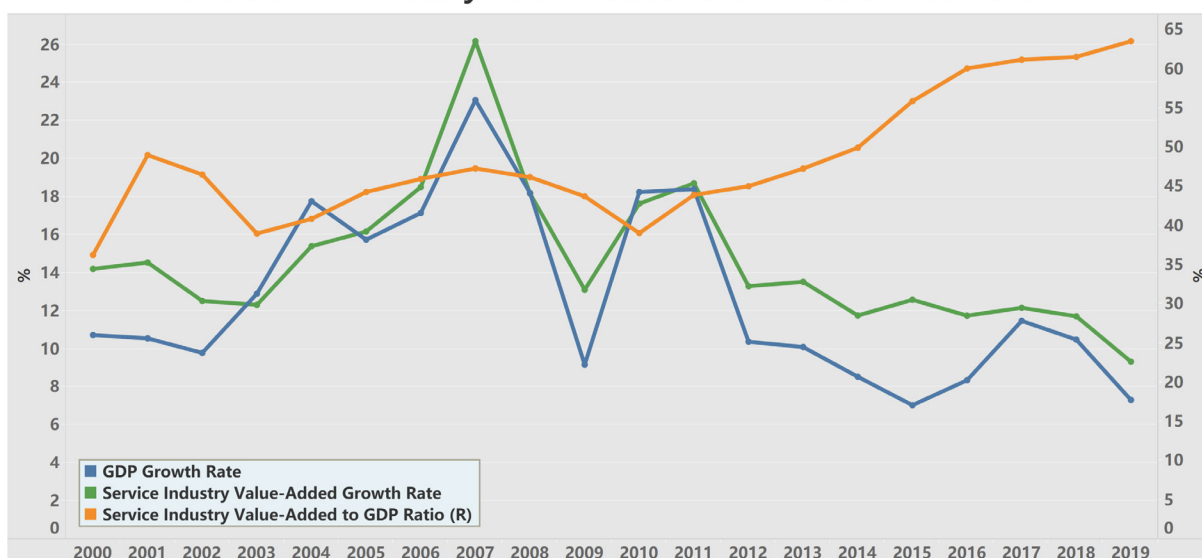
The rising income leverage ratio in the corporate sector of this round is the result of a decline in GDP

growth and a still-high growth rate in the corporate debt.

The decline in GDP growth over the past five years is partly the inevitable result of a historical slowdown in the economy after 30 years super-high double-digit growth, and partly attributable to the increase in the GDP share of the service sector with a low output rate.

According to Rostow's Theory of the Stages of Economic Growth, a country's economic development is bound to go through three major stages: take-off, maturity, and recession. Over nearly 30

Figure 6.5: China's GDP Growth Rate, Service Industry Value-Added Growth Rate and Service Industry Value-Added to GDP Ratio 2000-2019



Source: National Bureau of Statistics of China

years' double-digit growth and the greatest economic growth miracle in human history, China's economy entered a single-digit growth phase from 2010, slowing down from the previous rate to 6.8% in 2019, though still at a high rate of over 6%. This is a historical necessity, dictated by the evolution of its economic development stages.

Correspondingly, as mentioned earlier, a country's economic development is inevitably agriculturized, industrialized, and then service-oriented; after China became the world's second largest economy and the world's factory, the inevitable trend in its economic development is the rise of services after the industry. The tertiary

sector (services) grew by 59.6% between 2012 and 2016, 21.0 and 38.9 percentage points faster than the GDP and the secondary sector (industry + construction) respectively, making its share of GDP rise from 45.0% to 60.0%, thus overtaking the secondary sector to become the top sector of the national economy in 2015.

The emergence of services as the leading industry is an inevitable consequence and an important sign of economic restructuring and modernization. However, in essence, the output efficiency of services is lower than that of industry, which, according to studies, is only about 70% of that of industry, and the transition to

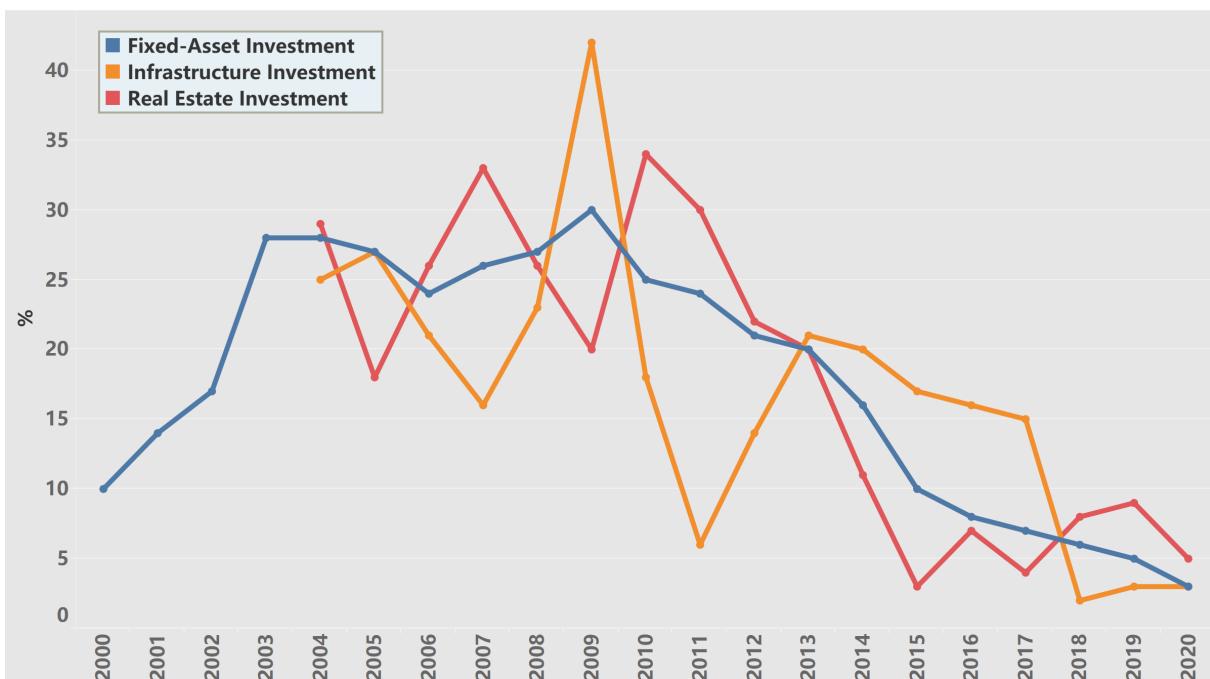
services is therefore bound to reduce the output efficiency of the economy and the growth rate of GDP.

The fact that the growth rate of the corporate debt has slowed down over the past five years but is still much faster than the GDP growth is the combination of multiple economic and market factors, including the further development of the heavy economy, the rise in the valuation of heavy assets, the accelerated monetization of markets, and the intensification of financial deepening.

Fixed asset investment grew at an average annual rate of 14.7% between 2012 and 2016, slowing yet still maintaining a high rate. The investments in infrastructure and real estate raised by 17.6% and 12.3% respectively a year, manifesting another golden five years of infrastructure construction and real estate development in China, a contribution to the further development of the heavy economy.

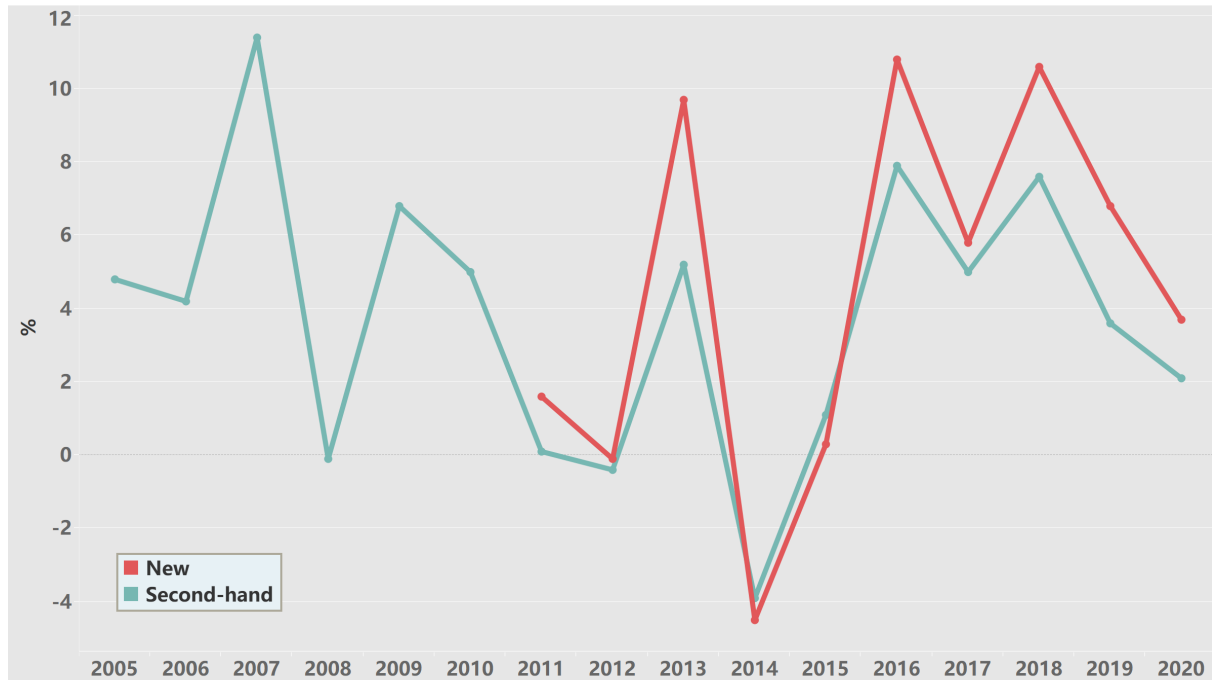
Heavy asset valuations rose at the same time, with real estate prices increasing dramatically,

Figure 6.6: Growth Rates of Fixed-Asset Investment, Infrastructure Investment and Real Estate Investment 2000-2019



Source: National Bureau of Statistics of China

Figure 6.7: Growth Rates of Price Indices of New and Second-hand Homes 2005-2020



and infrastructure valuations also followed suit.

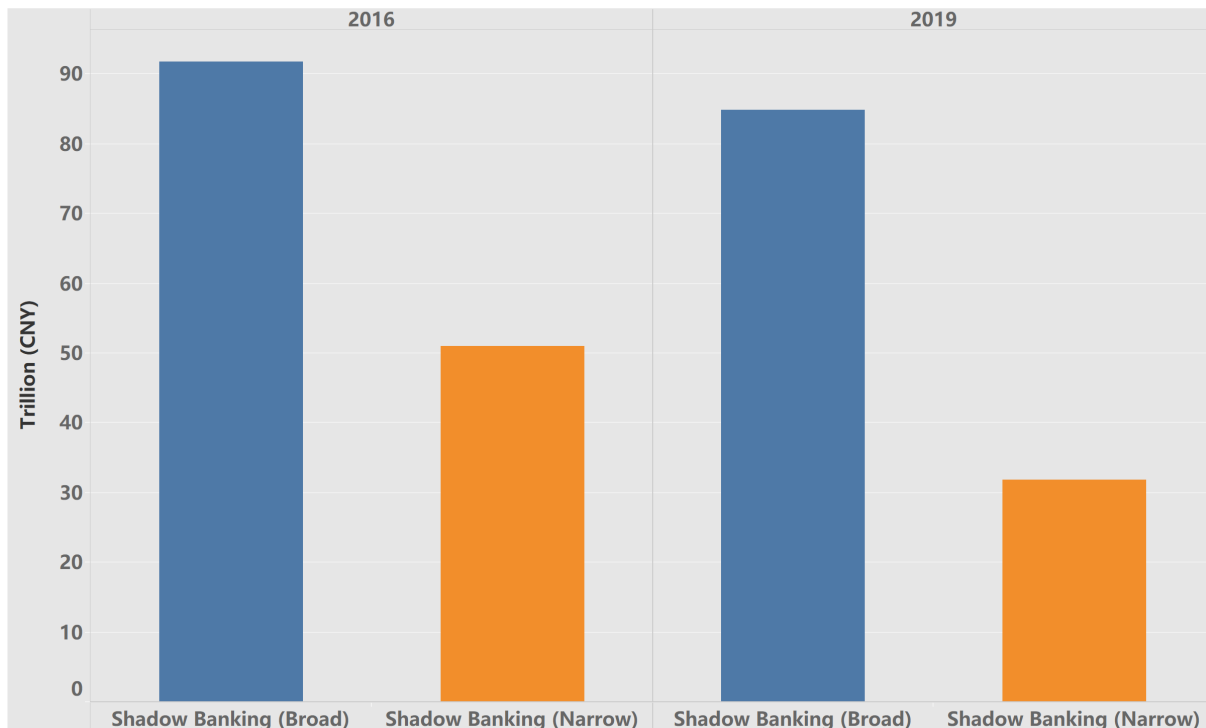
During that period, especially before 2016, it also witnessed a significant deepening of financial markets, driven by the emergence of a wide range of wealth management products or shadow banking services. The scale of shadow banking reduced significantly after 2016 due to the government's rectification efforts, but generalized shadow banking as percentage of GDP remained high at 86% by 2019. The shadow banking system is an important financial innovation,

which, however, has allowed many unqualified firms to obtain loans from shadow banks while contributing to economic growth, thereby significantly raising the corporate debt.

Rollback under the "deleveraging" policy 2017-2019

In the face of rising income leverage in the corporate sector, the central government has adopted a strong "deleveraging" policy for the corporate sector, particularly for state-owned enterprises, since 2016.

Figure 6.8: China Shadow Banking Estimated Size 2016 & 2019



Source: "China Shadow Banking Report" by China Banking and Insurance Regulatory Commission

The "deleveraging" policy has gradually paid off, leading to a slowdown in the growth rate of corporate debts to below 10% from 2017, while the GDP growth accelerated to almost 10%.

As a result, the corporate sector's income leverage ratio fell by a total of 5.7 percentage points over the three-year period 2017-2019, from 157.6% in 2016 to 151.9% in 2019.

Rising again due to the fight against COVID-19 in 2020

In 2020, in the face of the century-worst pandemic, the Chinese

government, like others, has taken powerful actions to stabilize growth, including looser monetary and fiscal policies and a series of fiscal and financial measures to help businesses and individuals severely affected by the virus. The government work report by the premier before the National People's Congress and the Chinese People's Political Consultative Conference in May 2020 proposed to "guide the broad money supply and non-governmental financing scale to grow at a significantly higher pace than last year", a rare occurrence indeed.

Figure 6.9: Vital Steps to Reduce Leverage by Central-administered SOEs 2017-2019

Classification	Restriction	Optimization	Remarks
Gearing ratio below the alert level	Not explicitly required	1. Increase of equity investment: Centrally-administered SOEs raised over 350 billion yuan through the stock and equity markets in 2017; 2. Debt-for-equity swap: Investigations show 36 companies had demands for debt-for-equity swaps, and 17 centrally-administered SOEs signed debt-for-equity swap agreements in 2017. The framework agreements valued 500 billion yuan, and 40% of projects were ready for commencement; 3. Benefits retention: Centrally-administered SOEs reaped over 1.4 trillion yuan profits in 2017.	The alert level varies by industry, 70% for industries, 75% for non-industrial enterprises, and 65% for research and design companies.
Focused category: The gearing ratio is above the alert level, but it is still able to repay debts, liquidate assets, and gain profits.	1. Control of the investment scale: Investments in non-leading industries are prohibited; inefficient operations and business investments beyond financial affordability are rigidly controlled.		
Key monitoring: the debt/asset ratio (or gearing ratio) is somewhat higher than the previous category.	2. Control of risky businesses: Risky businesses are strictly managed, such as accounts receivable and inventory occupancy that should be significantly reduced; all types of advance funds are tightly managed, including external guarantees, entrusted loans, trade financing, etc.		
Special monitoring: the debt/asset ratio is too high and must be stringently managed.	3. Control of financial risks.		

Source: Three Directions and Three Guesses Regarding SOEs Deleveraging, Huachuang Securities, 2020

Growth stabilizing measures led to a strong economic recovery in the second quarter of the same year and a positive real growth of 2.3% that year, the only successful case among the world's major economies, but the corporate debt ramped up as well.

As a result, the corporate sector's income leverage ratio rebounded by 6.8 percentage points to 162.3% in 2020.

Retracement after economic recovery as the pandemic is waning in 2021

In the first half of 2021, the income leverage ratio of the corporate sector retraced to 158.8% as the economy returned to normalcy after the COVID-19 restrictions were relaxed. The retracement is expected to continue in the second half of the year.

6.3 The production mechanism of the divergence

The review above also explains the mechanism whereby the

divergence between the income leverage ratio and the asset leverage ratio arises.

First, corporate debt increases extraordinarily high

The sharp rise in the income leverage ratio is undoubtedly the result of the corporate debt growing significantly faster than nominal GDP. As is known to all, China's GDP grows fast, so a faster growth in debt is undoubtedly an ultra-high pace.

Second, corporate asset grew at essentially the same rate

A stable asset leverage ratio means that asset grow at roughly the same rate as debt; if the numerator and denominator increase at the same rate, their ratio is stable.

Third, the simultaneous hyper-growth of debts and assets is driven by a range of economic and financial factors

These factors include justifiable and non-justifiable causes, as analyzed in Section IV.

Fourth, the output rate of asset or debt is on a downward trend

Both debt and asset grow faster than nominal GDP, indicating a downward trend in the output rate of asset or debt; the downward trend in the output rate pushes up the income leverage ratio while maintaining the stability of the asset leverage ratio.

Fifth, the downward trend in the output rate, on the one hand, is an inevitable consequence of the current stage of economic development and, on the other hand, implies a reduction in asset quality

For one thing, as the scale of the economy continues to expand, the proportion of services with lower output rate rises and the marginal labor productivity of industry declines as an inevitable trend, so the descending asset or debt output rates are the inevitable consequence of the economy's progress to the current stage. For another, the lowering output rate also means a reduction in the asset quality of some industries and enterprises.

VII. Conclusions and Policy Recommendations

Main conclusion: The debt level for China's corporate sector and in turn for the country as a whole, should not be overestimated

As the inference from the income leverage ratio, China's national debt level is overall high, with the corporate sector being too high and the government and household sectors being very low and moderate respectively. However, the existence of justifiable causes has led to an overestimation of the corporate debt level, which in turn causes the overall debt level to be overestimated.

The inference from the asset leverage ratio however obviously differs from such one from the income leverage ratio and states that China's national debt level is overall low, being low for both the corporate and household sectors and even lower in the government sector.

For this reason, there is no major

disagreement between the two leverage ratios regarding the government and household debt levels, which are respectively inferred to be very low and not high.

The disagreement lies in the corporate debt level, where the income leverage ratio is inferred to be too high while asset leverage ratio is evaluated as low. Combining the two inferences, the corporate debt level can be considered high but should be much lower than the too high assessment as inferred by the income leverage ratio, and hence the country's overall debt level should also be lower than that inferred by the income leverage ratio.

The main conclusion of this report is therefore that the debt level of China's corporate sector as well as of the country overall should not be overestimated.

Secondary conclusion 1: It is more reasonable to use the asset

leverage ratio than the income leverage ratio to measure corporate sector's debt level

The economic implications of the income leverage ratio are multifaceted and there are limitations to measuring the corporate debts through the lens of "flow available debt servicing". More importantly, the corporate debt level would be overestimated due to the large share of the heavy economy, the high savings/investment rate, the predominance of debt financing, and the high expectations of economic growth, among other justifiable causes reflecting the nature of China's economy at the present stage.

In contrast, the asset leverage ratio has a more certain and singular economic meaning and is a more comprehensive measure of corporate debt level from the perspective of "stock available debt servicing", especially as it is less influenced by the justifiable causes mentioned above and therefore better reflects the true debt level of the corporate sector.

Secondary conclusion 2: Rather than focusing on debt size, it is better to care about asset quality

The direct reason for the divergence between the income leverage and asset leverage ratios for the corporate sector is that the former considers only the debt size and not the asset sizes, while the latter considers both, indicating that massive debts are financed by massive assets.

This being the case, if the assets are substantial or of quality, i.e., having a reasonable output rate and liquidity, the massive debts are not a problem and the debt level is not high as debt risks are controllable. Of course, if the assets are of low quality or have a low output rate and liquidity, massive debts would become a problem, the corporate debt level would be high leading to sizable debt risks.

Thus, when studying the corporate debt level in China, rather than focusing on debt size, it is better to care about asset quality, i.e., the non-performing assets ratio, especially the ratio for state-owned enterprises, hidden local government debt projects, and some overdeveloped industries.

Policy Recommendations

Recommendation 1: Provided that

the national debt level should not be overestimated, "deleveraging" should not be done too quickly; fiscal and monetary policies should take maintaining growth as the priority and be truly proactive and steady respectively, without an arbitrary tightening, or worse, a sharp tightening.

Recommendation 2: It is advised to conduct a general survey on the quality of corporate assets to find out the true non-performing assets ratio.

Recommendation 3: Effectively reduce the debt levels of state-owned enterprises, some overdeveloped industries, and hidden local government debt projects that see both the income leverage ratio and the asset leverage ratio high.

It Should Not Be Overestimated —— An Analysis of China's National Debt Level Using Two Leverage Ratios Report Research Group

Head:

Wang Wen, Executive Dean of Chongyang Institute for Financial Studies, Renmin University of China (RDCY) and Executive Director of Global Governance Research Center, Renmin University of China

Chief Specialist and Chief Author:

Liao Qun, Chief Economist of Chongyang Institute for Financial Studies, Renmin University of China (RDCY) and Chief Expert of Global Governance Research Center, Renmin University of China

Research Assistance:

Sun Chao, Program Manager of Chongyang Institute for Financial Studies, Renmin University of China (RDCY)

Communications Operations:

Yang Qingqing, Assistant Dean of Chongyang Institute for Financial Studies, Renmin University of China (RDCY)

Yang Yuntao, Deputy Secretary of the RDCY Party Branch, Director of the Operations Department and Editor-in-Chief of the Information Center, RDCY

Wang Xiaoxing, Administrative Assistant, RDCY

Liu Ying, Administrative Assistant, RDCY

Zhan Congcong, Operations Specialist, RDCY

Xu Li, Editor, RDCY

Design Layout:

Liu Yajie, Deputy Director of the Operations Department and Executive Deputy Editor-in-Chief of the Information Center, RDCY

人大重阳“宏观形势”系列研究报告

1. 设立战略新兴产业板的探讨和政策建议 .2014 年 10 月 28 日 . 中国北京
2. 中国金融改革与中小企业发展：以创业创新激发增长潜力（中英文）.2015 年 8 月 2 日 . 中国北京
3. 保障大众民生：行动前瞻 .2015 年 11 月 8 日 . 中国北京
4. 大相变：世界变局与中国应策 .2017 年 1 月 5 日 . 中国北京
5. 大数据时代的智慧城市治理——深圳市宝安区智慧城市治理研究报告 .2017 年 9 月 22 日 . 中国北京
6. 中国相变期：“高架路式”转型升级 2012-2017.2017 年 10 月 19 日 . 中国北京
7. 大接替：国际金融危机 10 周年来的世界经济动能转换 .2018 年 1 月 19 日 . 中国北京
8. 新时代中国的南极战略——基于实地调研的考察与思考（中英文）.2018 年 6 月 12 日 . 中国北京
9. 防疫情、促经济，两手抓两手硬的八点政策建议 .2020 年 2 月 7 日 . 中国北京
10. 疫情影响世界的评估报告 .2020 年 2 月 25 日 . 中国北京
11. 暴跌！暴跌！暴跌！暴跌！暴跌！.2020 年 2 月 29 日 . 中国北京
12. 警报！前方“黑洞”！世界经济陷入“迷航”！.2020 年 3 月 6 日 . 中国北京
13. 全球化病危！怎么办？.2020 年 3 月 13 日 . 中国北京
14. 龙卷风！一夜间，新一轮“大萧条”要来了吗？.2020 年 3 月 16 日 . 中国北京
15. 中国须适应“逆风”崛起 .2020 年 3 月 23 日 . 中国北京
16. 若这是场“文明兴衰级”的全球萧条，中国防波坝在哪？.2020 年 3 月 24 日 . 中国北京
17. 全球化“触底”，中国须“抄底”.2020 年 4 月 15 日 . 中国北京
18. 紧迫的全球团结（中英文）.2020 年 6 月 1 日 . 中国北京
19. 疫情 2.0 颠覆人们十大生活方式 .2020 年 6 月 1 日 . 中国北京
20. 世界抗疫从遭遇战步入持久战——如何应对最坏疫情？.2020 年 7 月 7 日 . 中国北京
21. 数字中国社会演进，现状评价与未来治理 .2020 年 9 月 5 日 . 中国北京
22. 未来五年，改变中国与世界的五大奇点（中英文）.2020 年 11 月 2 日 . 中国北京
23. 后疫情时代全球“蝶形”风险及防范 .2021 年 2 月 5 日 . 中国北京
24. 治愈“后遗症” 后疫情时代的风险评估与展望 .2021 年 4 月 27 日 . 中国北京
25. 培养全球视野的中国接班人——“十四五”视野下的“90 后”与中国改革 .2021 年 5 月 10 日 . 中国北京
26. 中高速可实现——后疫情时代我国经济增长前景（中英文）.2021 年 7 月 30 日 . 中国北京
27. 不应高估——从两种杠杆率看我国国家债务水平（中英文）.2021 年 10 月 13 日 . 中国北京

人大重阳“宏观经济”系列研究报告

1. 走向核心国家——中国大金融战略与发展路径 .2013 年 5 月 25 日 . 中国北京
2. 大金融理论背景下的金融统合监管报告 .2014 年 3 月 12 日 . 中国北京
3. 人民币国际化动态与展望 .2014 年 3 月 31 日 . 中国北京
4. 人大重阳国际惯例研究系列报告之一：“走出去”：国际商务反腐败规则研究 .2014 年 5 月 13 日 . 中国北京
5. 人大重阳国际惯例研究系列报告之二：供应链金融技术的标准定义 .2015 年 9 月 28 日 . 中国北京
6. 经济金融化与均衡杠杆率：美国经验与中国启示 .2015 年 10 月 14 日 . 中国北京
7. 人大重阳国际惯例研究系列报告之三：2016 年版《ICC/ESOMAR 市场、观点、社会调查和数据分析国际准则》.2016 年 12 月 29 日 . 中国北京
8. 中国财政可持续性研究——建立结构性财政平衡 .2017 年 2 月 28 日 . 中国北京
9. 建立现代增值税制——“营改增”改革效果评价报告 .2017 年 3 月 7 日 . 中国北京
10. 改善电商征管环境 构建良性竞争的电子商务税制 .2017 年 5 月 26 日 . 中国北京
11. 缩小政府预算偏离 打牢国家治理的财政基础 .2017 年 10 月 13 日 . 中国北京
12. 兼顾生态效益与经济效益 发挥财政作用促进退耕还林工程持续发展 .2017 年 11 月 2 日 . 中国北京

13. 大接替：国际金融危机 10 周年来的世界经济动能转换 .2018 年 1 月 19 日 . 中国北京
14. 中国 2017 年度财政预算执行报告 .2018 年 3 月 1 日 . 中国北京
15. 中国的金融战略：历史经验、理论指引与未来布局 .2018 年 7 月 13 日 . 中国北京
16. 区块链十周年：发展现状、趋势与监管政策研究 .2018 年 8 月 25 日 . 中国北京
17. 中国各地区财政发展指数 2018 年报告 .2018 年 12 月 27 日 . 中国北京
18. 中国购买力大崛起：改革开放 40 年来的进口侧结构性升级（中英文）.2018 年 12 月 27 日 . 中国北京
19. 中国购买力大布局：“一带一路”与全球市场转型（中英文）.2018 年 12 月 27 日 . 中国北京
20. 中国购买力大塑造：中国进口侧改革与人类命运共同体构建（中英文）.2018 年 12 月 27 日 . 中国北京
21. 我国人均 GDP 排名变动情况及人均 GDP 预测 .2019 年 1 月 28 日 . 中国北京
22. 中国企业税收负担报告——基于上市公司数据的测算 .2019 年 7 月 9 日 . 中国北京
23. 为世界创造价值：大变局时代的中国经贸升级之路（中英文）.2019 年 10 月 16 日 . 中国广州
24. 降低疫情对经济冲击的九条务实提醒 .2020 年 2 月 16 日 . 中国北京
25. 疫情拐点，高度警惕地方“乱作为”风气蔓延 .2020 年 2 月 17 日 . 中国北京
26. 化解“金融铁幕”：美国金融制裁演变与中国应策 .2020 年 8 月 28 日 . 中国北京
27. 以“双循环”逻辑，对冲全球大萧条 .2020 年 9 月 1 日 . 中国北京
28. 新全球链的开启：RCEP 时代的深度影响与中国机遇 .2020 年 12 月 18 日 . 中国北京
29. 防范“灰犀牛”——来自美国、日本、德国房地产发展的借鉴与中国防范系统性风险的政策建议 .2021 年 1 月 21 日 . 中国北京
30. 百年变局视野下的“全球新型货币战争” .2021 年 2 月 24 日 . 中国北京

人大重阳“一带一路”系列研究报告

1. 建设丝绸之路经济带——愿景与路径（中英文）.2014 年 6 月 28 日 . 中国北京
2. “一带一路”国际贸易支点城市研究报告（中英文）.2015 年 6 月 18 日 . 中国北京
3. 坚持规划引领 有序务实推进——“一带一路”建设三周年进展报告（中英文）.2015 年 9 月 26 日 . 中国北京
4. 促进互联互通 共建贸易繁荣——在“丝绸之路经济带”城市国际论坛（2016）上发布的报告（中英文）.2016 年 11 月 14 日 . 中国义乌
5. 中巴经济走廊实地调研报告 .2016 年 12 月 20 日 . 中国北京
6. “造血”金融：“一带一路”升级非洲发展方式 .2017 年 5 月 3 日 . 中国北京
7. 穿越喜马拉雅——中尼铁路可行性与中尼共建“一带一路”调研报告（中英文）.2017 年 5 月 5 日 . 中国北京
8. “一带一路”背景下的中国与中东欧合作：机遇与挑战 .2017 年 8 月 16 日 . 中国北京
9. 美国对接“一带一路”：案例研究与行动指南（中英文）.2017 年 8 月 25 日 . 中国北京
10. 柬埔寨：“一带一路”建设的新样板——关于深化中柬合作的实地调研报告 .2018 年 1 月 10 日 . 中国北京
11. “一带一路”的战略地图 .2018 年 3 月 25 日 . 中国北京
12. 去欧洲，向北走：中俄共建“冰上丝绸之路”支点港口研究（中英文）.2018 年 4 月 17 日 . 中国北京
13. 构建一带一路学：全球丝路学派的理论溯源与时代呼唤 .2018 年 6 月 1 日 . 中国北京
14. “一带一路”五周年：政策视角下的回顾与展望 .2018 年 9 月 17 日 . 中国北京
15. 树立“金融强国”意识，完善“一带一路”金融服务 .2019 年 2 月 26 日 . 中国北京
16. 数字丝绸之路进展、挑战与实践方案 .2019 年 5 月 27 日 . 中国北京
17. 为“一带一路”倡议导航 .2019 年 7 月 11 日 . 中国北京
18. “一带一路学”：现实迫切与理论必要 .2019 年 10 月 25 日 . 中国北京
19. 扬帆向南：中国与太平洋岛国共建“一带一路”的机遇与挑战 .2019 年 11 月 14 日 . 中国北京
20. 新时代的战略大对接：中俄“一带一路”倡议与“欧亚经济联盟”对接的现状、问题及思考（中俄文）.2019 年 11 月 29 日 . 中国苏州
21. 展望“一带一路”七周年 开启高质量发展新阶段（中英文）.2020 年 4 月 24 日 . 中国北京
22. 逆势增长——疫情一周年“一带一路”进展评估 .2021 年 3 月 10 日 . 中国北京
23. 突围前行，高质发展——疫情期“一带一路”进展评估与“十四五”展望 .2021 年 5 月 22 日 . 中国泉州

24.G7 全球基础设施建设计划与“一带一路”比较与中国对策.2021 年 7 月 16 日.中国北京

人大重阳“智库国际影响力”系列研究报告

1. 重塑全球金融治理：G20 面临的挑战及应对——在“大金融与综合增长的世界：第二届 G20 智库论坛”发布的研究报告（中英文）.2014 年 9 月 4 日.中国北京
- 2.A Summit of Significant, Selective Success: Prospects for the Brisbane G20.2014 年 11 月 13-14 日.中国北京
- 3.2016 年 G20 峰会筹备风险评估报告.2015 年 5 月 15 日.中国北京
4. 为增长而合作：构建全球经济协调体系——在 G20 智库论坛 (2015) 发布的研究报告（中英文）.2015 年 7 月 30 日.中国北京
5. 全球治理新格局——2016 年 G20 总结及 2017 年展望（中英文）.2016 年 12 月 22 日.中国北京
6. 重塑欧亚空间：来自中国、俄罗斯和哈萨克斯坦智库的共同观点（中英文）.2017 年 5 月 16 日.中国北京
7. 培育中俄复兴增量——两国智库关于中俄经济金融合作的共同研究（中英文）.2018 年 7 月 16 日.中国北京
8. “对冲”与“楔子”美国“印太”战略的逻辑与中国应对之策.2018 年 8 月 13 日.中国北京
9. 走向成年，行以致远——中非合作论坛（FOCAC）十八年进展与前瞻（中英文）.2018 年 8 月 20 日.中国北京
10. 巴塞尔协议Ⅲ改革、风险管理挑战和中国应对策略.2018 年 9 月 16 日.中国北京
11. 新型智库、科学决策与国家治理现代化.2018 年 10 月 10 日.中国北京
12. 培养全球栋梁之才：来华留学事业 70 年进展、潜力与建议.2019 年 5 月 29 日.中国北京
- 13.G20 机制 20 年：演进、困境与中国应对.2019 年 6 月 23 日.中国北京
14. 全球大变局下的华商历史、现状与未来（中英文）.2019 年 10 月 21 日.英国伦敦
15. 偷师中国？：近年俄罗斯对华认知心态的新变化及其前景展望.2019 年 11 月 11 日.中国北京
16. 智库建设的新长征路 中国特色新型智库七年评估及传播、绩效研究报告——在中国智库国际影响力论坛（2019）开幕式发布的主题研究报告.2019 年 12 月 17 日.中国北京
17. 调动“百万大军”，讲好中国故事——中国智库提升国际影响力的困境剖析与务实建议（第三届中国智库国际影响力论坛（2020）开幕式发布使用，不做对外传播），2020 年 12 月 5 日，中国北京；调动“百万大军”——论中国智库对外传播的进展、困境与政策建议（公开发布）.2021 年 3 月 4 日.中国北京
18. 中外学者看中国共产党百年（中英文）.2021 年 7 月 21 日.中国北京
19. 博鳌亚洲论坛全球新冠疫苗应用图景报告（中英文）.2021 年 7 月 29 日.中国北京
20. “美国第一”？！美国抗疫真相（中英法西）.2021 年 8 月 9 日.中国北京

人大重阳“生态金融”系列研究报告

1. 如何在中国发行绿色债券.2015 年 3 月 24 日.中国北京
2. 关于构建我国绿色金融体系的建议.2015 年 4 月 10 日.中国北京
3. 中国绿色公共采购：效益量化.2015 年 4 月 20 日.中国北京
4. 绿色公共采购如何推动中国可持续发展.2015 年 10 月 28 日.中国北京
5. 绿色金融理论、技术研究与实践进展及前景分析.2016 年 4 月 23 日.中国北京
- 6.2016 中国绿色金融发展报告.2017 年 4 月 15 日.中国北京
7. “一带一路”与全球绿色基础设施投资的未来.2017 年 6 月 18 日.中国北京
8. 特朗普政府的能源与气候政策及其影响：中国的历史机遇.2017 年 11 月 7 日.中国北京
9. 绿色金融中国标准的建设及其国际化路径.2017 年 12 月 21 日.中国北京
10. 全球旗手：中国绿色金融发展评估.2018 年 1 月 29 日.中国北京
11. 金融助力绿色“一带一路”：进展、评估与展望.2019 年 8 月 21 日.中国北京
12. “一带一路”倡议下中国对外投资的绿色化进程：进展与建言.2019 年 8 月 21 日.中国北京

13. “一带一路”绿色投资标尺和绿色成本效益核算 .2019 年 8 月 21 日 . 中国北京
14. “碳中和”中国城市进展报告 2021（春季）.2021 年 2 月 3 日 . 中国北京
15. “碳中和”元年与金融业的绿色升级 .2021 年 3 月 21 日 . 中国北京
16. 后疫情时代中国经济绿色复苏的契机、困境与出路 .2021 年 7 月 11 日 . 中国贵阳
17. 纠正运动式“减碳”：来自欧美国家的教训与启示 .2021 年 9 月 25 日 . 中国北京
18. 碳中和：中国在行动——基于国际形势下的政策布局与行业动态分析 .2021 年 9 月 22 日 . 中国北京

人大重阳“中美人文交流”系列研究报告

1. 特朗普财产评估报告（中英文）.2017 年 4 月 17 日 . 中国北京
2. 特朗普内阁财富与政治政策走向 .2017 年 12 月 24 日 . 中国北京
3. 特朗普政府决策小圈子的财富背景与决策特征 .2018 年 2 月 1 日 . 中国北京
4. WTO 的优等生——中国履行 WTO 承诺评估报告（中英文）.2018 年 8 月 29-31 日 . 美国纽约、华盛顿
5. 共享繁荣仍是可能：中美经贸关系全景报告（中英文）.2018 年 8 月 29-31 日 . 美国纽约、华盛顿
6. 为大国合作筑牢“地基”：中美人文交流四十年的历程、经验与前景 .2019 年 1 月 23 日 . 中国北京
7. 基于博弈视角的中美国家实力消长评估报告 .2019 年 3 月 10 日 . 中国北京
8. 为“一带一路”倡议导航 .2019 年 7 月 11 日 . 中国北京
9. 大国缠斗白热化，中国须养精蓄锐 .2020 年 5 月 20 日 . 中国北京
10. 问卷调查百名中国学者，九成中国学者相信 中国能应对好美国“新冷战”攻势（中英文）.2020 年 7 月 7 日 . 中国北京
11. 从地缘政治经济看中美贸易摩擦及对策 .2020 年 9 月 . 中国北京
12. 美国能把中国怎么着？——2017 年来特朗普政府对华打压的实际效果评估 .2020 年 9 月 20 日 . 中国北京
13. 美国“财务僵尸化”疫情期美元潜在破产危机的评估（中英文）.2020 年 10 月 24 日 . 中国北京
14. 美国“新冷战”政策误区论析（中英文）.2020 年 11 月 7 日 . 中国北京
15. 中美两国三份清单 .2020 年 12 月 1 日 . 中国北京
16. 半脱钩，半紧钩：中美人文交流受阻的利弊评估与重塑之道 .2021 年 2 月 25 日 . 中国北京
17. 不纠错，必失败：拜登政府对华经贸政策评估与前瞻——多边主义治理中美经贸 .2021 年 3 月 24 日 . 中国北京
18. 2/3 相似：拜登百日执政对华政策评估与特朗普比较 .2021 年 4 月 30 日 . 中国北京
19. 美国税改与中国影响：评估与展望 .2021 年 7 月 5 日 . 中国北京

人大重阳“全球治理”系列研究报告

1. 全球治理的十字路口：2017 年 G20 研究报告 .2017 年 7 月 2 日 . 中国北京
2. 再全球化：“共商·共建·共享”理念下的全球治理——中国与全球治理年度报告（2017）（中英文）.2017 年 9 月 30 日 . 中国北京
3. 乘风破浪 行稳致远：上海合作组织十七年进展评估（中英文）.2018 年 5 月 21 日 . 中国北京
4. “一带一路”与上海合作组织：关联、实践与走向 .2018 年 6 月 6 日 . 中国北京
5. 换骨的世界：911 事件二十年来的全球变局 .2021 年 9 月 10 日 . 中国北京



人大重阳
RDCY

中国人民大学重阳金融研究院

Chongyang Institute for Financial Studies, Renmin University of China (RDCY)

网址：<http://www.rdcy.org>

电话：010-62516305

公众微信号：rdcy2013

新浪微博：@人大重阳

地址：北京市海淀区中关村大街59号文化大厦6层

Add: 6th Floor, Wenhua Building, No.59 Zhongguancun Street,
Haidian District, Beijing 100872 P.R.China



微信二维码



微博二维码