中国金融四十人研究院
CHINA FINANCE 40 INSTITUTE

CF40 Policy Brief

Limited Progress in Sectoral Balance Sheet Restoration: Analyzing Cash Flow and Balance Sheets Across China's Sectors in Q3 2023

ZHU He
CF40 Institute

Abstract: In Q3 China's economy continued its recovery, with major macroeconomic indicators showing further improvement compared to Q2. Private sector investment and consumer activities are gradually returning to normal. However, there still seems to be some gap between China's economic performance and the potential output level. The economic recovery process has exhibited uneven characteristics, reflecting a "zigzagging progress".

Economic performance is inherently tied to the behaviors of economic entities and their mutual influences, with these behaviors significantly influenced by the state of their balance sheets. This report conducts a comprehensive analysis of the overall progress in repairing sectoral balance sheets during the second quarter. Leveraging Q3 balance sheet data, the focus is placed on scrutinizing advancements in balance sheet restoration across sectors, identifying key challenges, and proposing relevant macroeconomic policy implications.

The English version is post-edited machine translation. In case of any discrepancy or ambiguity between the English and Chinese versions, the Chinese version shall prevail.

In Q3 China's economy continued its recovery, with major macroeconomic indicators showing further improvement compared to Q2. Private sector investment and consumer activities are gradually returning to normal. However, there still seems to be some gap between China's economic performance and the potential output level. The economic recovery process has exhibited uneven characteristics, reflecting a "zigzagging progress".

Economic performance is inherently tied to the behaviors of economic entities and their mutual influences, with these behaviors significantly influenced by the state of their balance sheets. This report conducts a comprehensive analysis of the overall progress in repairing sectoral balance sheets during the second quarter. Leveraging Q3 balance sheet data, the focus is placed on scrutinizing advancements in balance sheet restoration across sectors, identifying key challenges, and proposing relevant macroeconomic policy implications.

We found that the cash flow situation in the residential sector improved to some extent in Q3, with efforts still underway to accumulate surpluses. However, this improvement hasn't completely led to a meaningful increase in overall assets. There's also a growing concern about the inverted yield curve in asset-liability returns. In the corporate sector, cash flow improved notably in raw materials and consumer services, positively affecting balance sheets. Yet, capital goods, consumer goods, and producer services didn't see significant improvement in cash flow, and balance sheet quality remained unchanged. The real estate industry's cash flow continued to decline, with unresolved debt issues. Although the government sector's debt expanded, cash flow shrank.

In summary, with a marginally strengthening economic recovery momentum in Q3, the cash flow of some entities is improving at the margin. However, we haven't seen widespread improvement in the balance sheets of different economic entities.

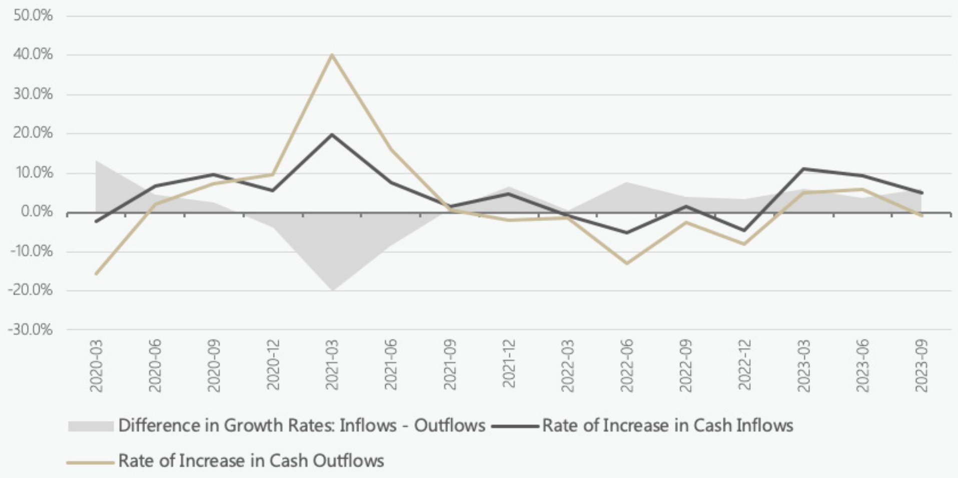
This report will look into the marginal changes in cash flow and balance sheets for household, corporate, and government sectors during Q3.

I. The Household Sector

Let's look at how money is moving in and out of households.

Figure 1 shows the changes in the growth rates of money coming in and going out for Chinese households. Both inflow and outflow rates are decreasing. In Q3, the rate of money coming in grew by 4.9%, a drop of 4.6 percentage points from the 9.5% growth in Q2. The rate of money going out was -1.0%, a decrease of 6.7 percentage points from the 5.7% growth in Q2. So, not only is money coming in still growing faster than money going out, but the decrease in outflow is more significant than the decrease in inflow. This widening gap suggests that households are expanding their savings.

Figure 1: Year-on-Year Growth Rate of Cash Flow for the Residential Sector



Sources: WIND; Calculations by the author.

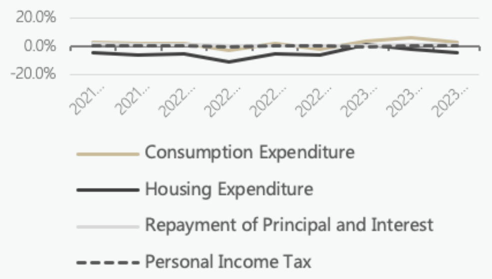
Then, let's look at how the cash flow changed for households in Q3 from a structural perspective.

On the income side, Figure 2 shows that in Q3, wage income contributed 6.0% to the inflow growth, a slight drop from 8.1% in Q2. The main reason for this decrease is the fading impact of the low base in 2022. The two-year annualized growth rate of income in Q3 is 6.4%, improving from 5% in Q2. However, the contribution of new loans to the inflow was -1.1% in Q3, a significant decrease from Q2, and this indicator didn't have a base effect.

Looking at the outflow side in Figure 3, in Q3, consumer spending contributed 2.7% to the outflow growth, down from 6.5% in Q2. Similar to wage income, this decrease is largely due to the fading base effect. The two-year annualized growth rate of consumer spending is 2.4%, showing an increase from Q2. However, in Q3, housing expenses contributed -4.5% to the outflow, a continued decrease from -1.9% in Q2.

Figure 2: Contributions of Various Inflows to the Growth Rate for the Residential Sector

Figure 3: Contributions of Various Outflows to the Growth Rate for the Residential Sector



Sources: WIND; Calculations by the author.

From the above analysis, it's clear that in Q3, people's home-buying habits didn't get much better compared to the same time last year. The drop in spending on homes matches the decrease in new loans. Additionally, since the reduction in home-buying expenses is happening at a faster rate than the decline in new loans, it shows that **households are still saving money by cutting down on non-essential expenses, like buying homes.**

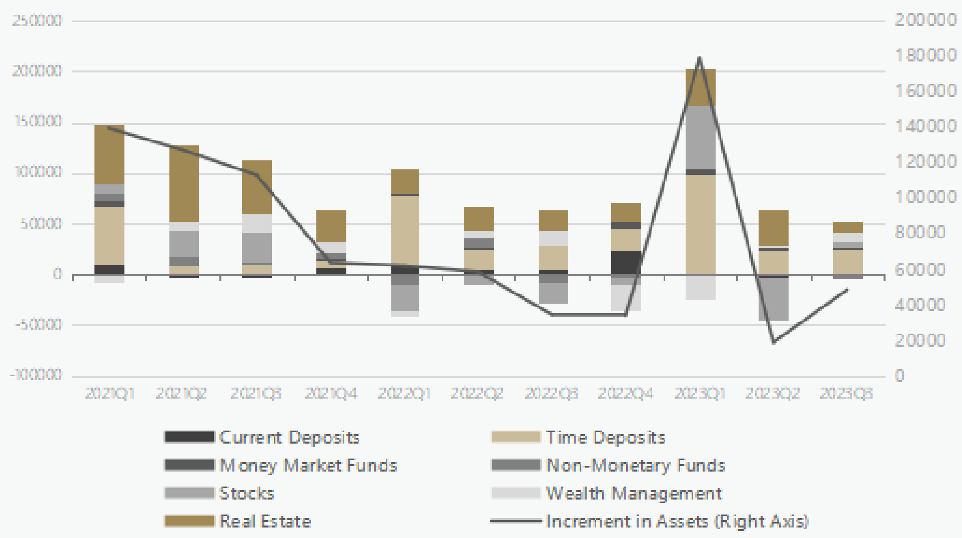
However, despite people's efforts to accumulate surpluses in the last two quarters, there are still two big challenges: the decrease in asset valuation offsetting some of the increase in net assets and the significant inverted yield curve in asset-liability returns.

Looking at the asset side, as shown in Figure 4, in Q3, China's household sector saw an increase of 4.84 trillion yuan in asset increment compared to Q2. Most of this increase came from putting money in the bank and investing in financial products. Fixed-term deposits went up by 2.55 trillion yuan compared to Q2, and wealth management increased by 0.9 trillion yuan. These two things made up more than 70% of the increase in people's assets in Q3.

One interesting thing is that the amount of equity assets (non-monetary funds + stocks) held by households went up by 170.3 billion yuan compared to Q2. This seems a bit strange because the stock market didn't do well in Q3, falling by 2.86% compared to Q2. However, the loss in value doesn't seem to be affecting people's confidence in holding onto these equity assets.

There are a couple of reasons for this. First, the way we figure out how much equity people are holding relies on estimating based on what institutions hold. If there are issues with how much institutions are reporting, then our estimates for what people hold might be too high. Second, positive signals from the government, such as "Revving up the market" and "Let people make money through stocks and funds" may have made people more confident about holding onto equity assets, even though they're not making more money from them right now.

Figure 4: Increment and Structure of Assets for the Household Sector



Sources: WIND; Calculations by the author.

Looking at the money people owe, the pressure on households is going down because of various factors. The central bank lowered policy interest rates and reduced existing loan rates, and people are actively reducing the duration of their debts. Figures 5 and 6 show that since 2023, more of the new loans people are taking are short-term, meaning they'll finish paying off their debts sooner. In August, the central bank the Medium-term

Lending Facility (MLF) rate, leading to a decrease in the 1-year Loan Prime Rate (LPR) and prompting commercial banks to lower interest rates on existing home loans for residents, which made overall borrowing costs for residents go down. The combined effect of these factors is a steady decline in the proportion of residents' debt repayment and interest expenses compared to their income.

Figure 5: Increment and Structure of Liabilities for the Residential Sector

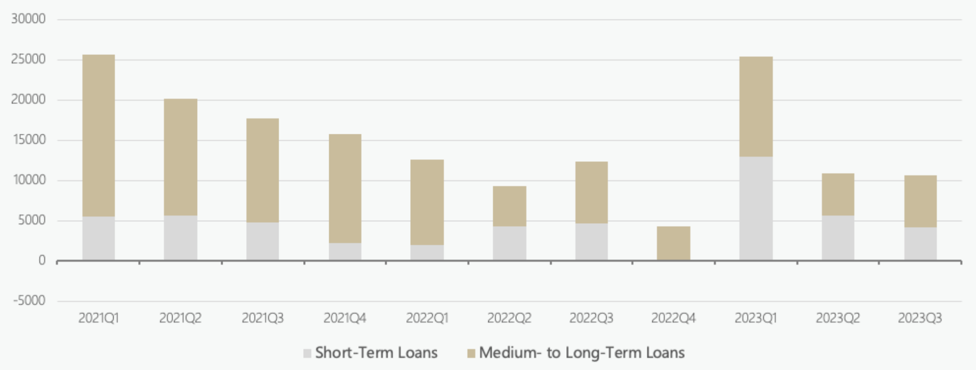
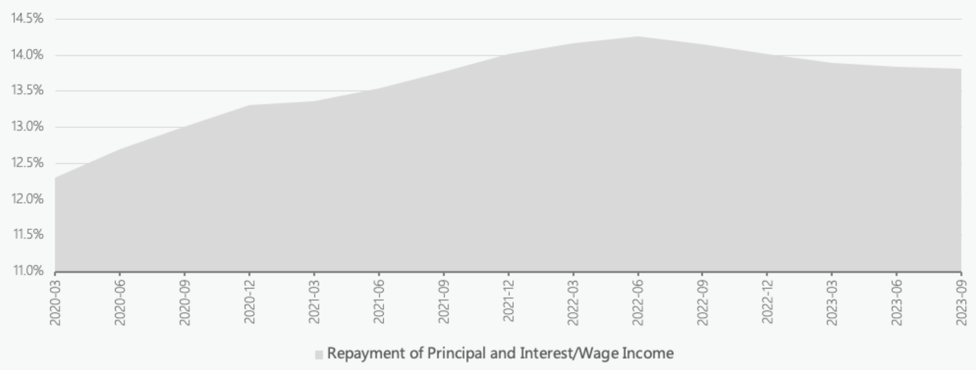


Figure 6: Repayment of Principal and Interest to Wage Income Ratio for the Household Sector



Sources: WIND; Calculations by the author.

Despite households increasing their assets and experiencing a decrease in debt pressure, the improvement in net assets is not very noticeable. As shown in Figure 7, the net asset increment for China's households in Q3 was 3.78 trillion yuan, a slight improvement from Q2. However, when we measure the actual net assets accumulated by households using "net assets/ income," we find that **the real net assets of households are still decreasing in Q3, reaching the lowest point since 2021. An important reason for this is that the decrease in asset valuation has offset the increase in net assets to some extent.**

Figure 8: Net Assets to Regular Income (Wage + Interest Income) Ratio

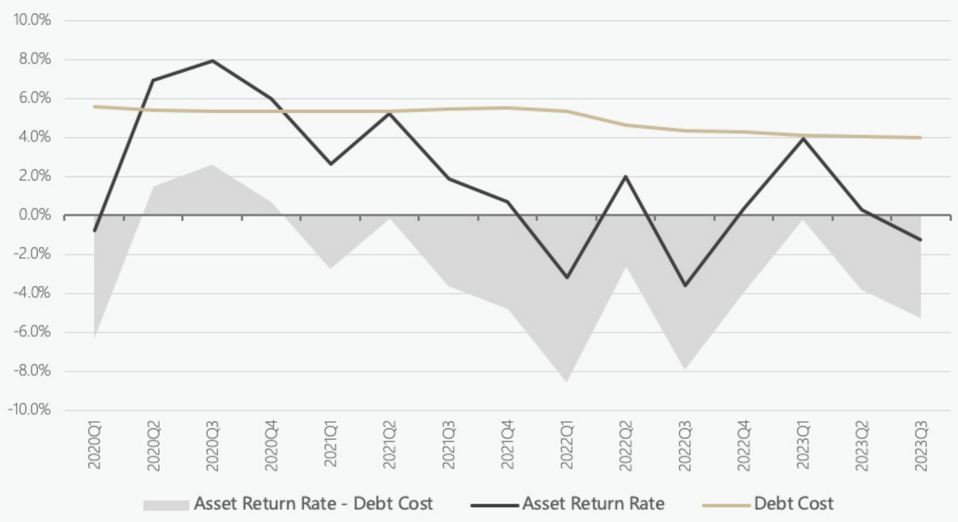
Sources: WIND; Calculations by the author.

In Q3, the valuation of equity assets held by residents decreased by 2.86 percentage points compared to Q2, corresponding to an asset loss of approximately 1.24 trillion yuan. The valuation of real estate assets also decreased by 0.4 percentage points, corresponding to an asset loss of about 1.09 trillion yuan. **If these significant adjustments in asset valuation had not occurred, the asset increment for households in Q3 would have been 7.17 trillion yuan, with the net asset increment also around 6.11 trillion yuan—significantly higher than the second quarter's figures. Additionally, "net assets/income" would have remained largely unchanged from Q2.**

We can also consider the implications of these indicators by taking into account changes in the denominator. If the decrease in "net assets/income" is driven by a higher growth rate in regular income due to improved economic conditions, there might not be much cause for concern. Historically, during periods of high economic prosperity, asset valuation tends to increase significantly, and the accumulation rate of net assets is also higher. These trends are often reflected in the structure of the balance sheet. Looking at the current situation, although there is a marginal improvement in wage income, the growth rate is not high. While households are trying to save money, the decrease in asset valuation has offset the intended accumulation of more net assets, ultimately leading to a further decline in this indicator. Therefore, in this sense, it's challenging to claim that the residential sector's balance sheet has significantly improved in Q3 compared to Q2.

Furthermore, not only are returns on financial assets and real estate decreasing for households, but in Q3, the issue of an inverted yield curve between assets and liabilities worsened compared to Q2. As shown in Figure 9, in Q1 2023, returns on assets for households improved compared to the end of Q4 2022, providing some relief to the issue of assets earning less than debts. However, in Q2 and Q3, returns on assets for households continued to drop, reaching negative territory again at the end of Q3, at -1.3%, a decrease of 1.6 percentage points from Q2. The cost of debts was 4.0%, a decrease of 0.1% from Q2. Compared to Q2, the problem of assets earning less than debts did not improve; instead, it intensified once again in Q3.

Figure 9: Changes in Asset Returns and Debt Costs for the Household Sector



Sources: WIND; Calculations by the author.

II. The Corporate Sector

1. The Industrial Sector

We've divided the industrial sector into three parts: raw materials, capital goods, and consumer goods (see details in Appendix 1). Looking at the cash flow, these three parts of the industrial sector face different challenges in Q3. In Figures 10 and 11, you can see that in Q3, although the year-on-year growth in operating income is still negative for raw materials and consumer

Figure 10: Month-on-Month Growth Rate of Operating Income for the Industrial Sector

Figure 11: Month-on-Month Growth Rate of Total Profits for the Industrial Sector

Sources: WIND; Calculations by the author.

goods, the decrease is much smaller compared to Q2. Raw materials show the most improvement. On the other hand, the growth in operating income for capital goods hasn't changed much. Total profits follow a similar trend, with the most significant improvement in raw materials, followed by consumer goods, while capital goods remain relatively stable compared to Q2.

The improvement in cash flow for raw materials is also reflected in the balance sheet. As shown in Figures 12 and 13, since 2023, both the asset-liability ratios and the proportion of accounts receivable in assets for raw materials and consumer goods have increased compared to 2022, with consumer goods showing the most significant improvement. However, by Q3, the asset-liability ratio for industrial enterprises has remained stable, without further increases. The only noteworthy point is that the proportion of accounts receivable in total assets for consumer goods is still rising, which to some extent reflects that end-demand might not have shown a particularly significant improvement.

Figure 12: Asset-Liability Ratios for Industrial Enterprises

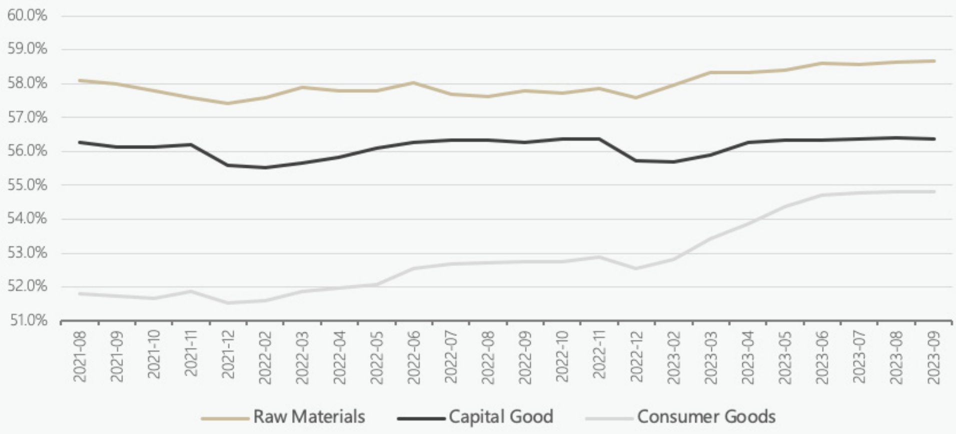
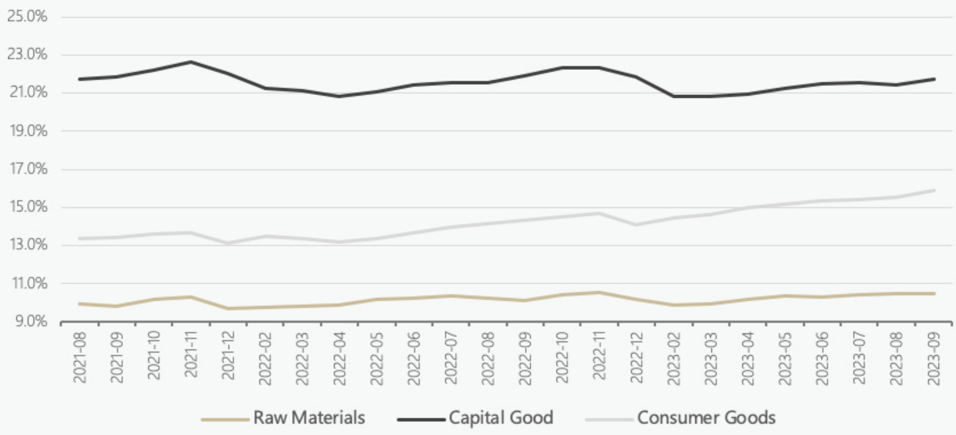


Figure 13: Proportion of Accounts Receivable for Industrial Enterprises



Sources: WIND; Calculations by the author.

Figure 14: ROA for Industrial Enterprises

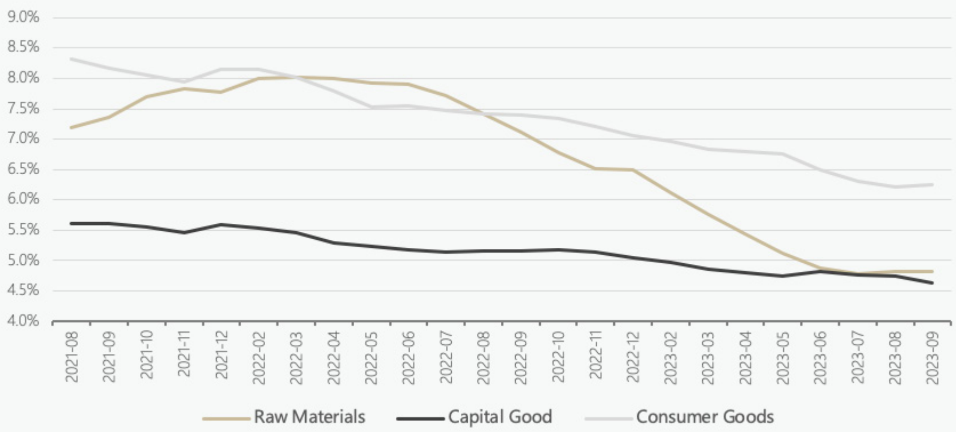
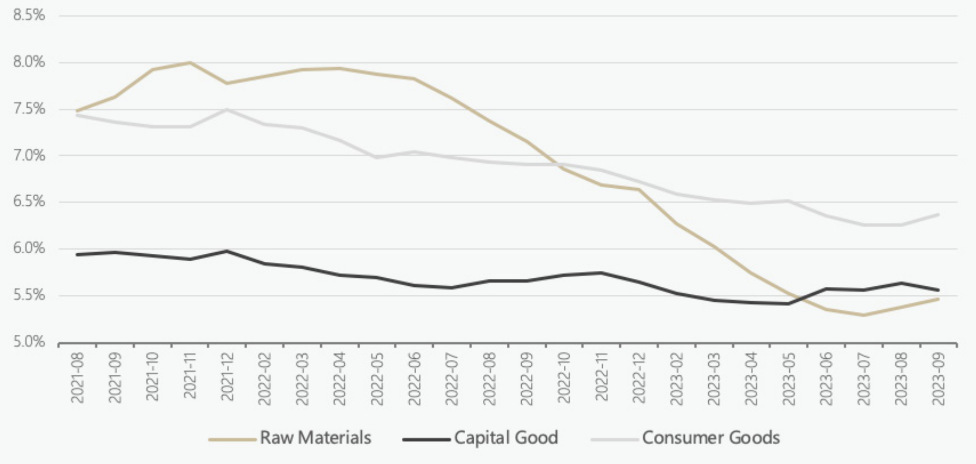


Figure 15: Gross Profit Margin for Industrial Enterprises



Sources: WIND; Calculations by the author.

The performance of ROA and gross profit margin also differs significantly from Q2. As shown in Figures 14 and 15, after a continuous decline for a year, the ROA and gross profit margin for the raw materials sector began to stabilize in Q3. Meanwhile, the improvement in ROA and gross profit margin for consumer goods and capital goods is relatively less pronounced during the same period.

In summary, the cash flow divergence in the industrial sector in Q3 seems to converge. The cash flows of the raw material sector witnessed the most obvious improvement, followed by consumer goods. The improvement in capital goods was less pronounced. However, in terms of fixed asset investment, the performance of capital goods investment in manufacturing investment was significantly stronger than consumer goods and raw materials (Figure 16). Investment in capital goods registered an average monthly growth rate of 14% from the beginning of 2023 till the present, which is an important force in maintaining the resilience of manufacturing investment.

Investment expansion in the capital goods sector not only has begun to diverge from changes in the sector's cash flows but is also difficult to explain in terms of capacity constraints. As shown in Figure 17, capacity utilization in the capital goods sector is not only below its 2017-2019 average level, but also below the level in the same period in 2022. In contrast, capacity utilization in the raw materials sector is at its historical average level. One possible explanation for this is that the current investment expansion in the capital goods sector is mainly supported by policy, while the consumer goods and raw materials sectors have not enjoyed similar policy dividends. If this explanation holds, then the strength of the future recovery in end demand directly determines whether the current policy-driven expansion in manufacturing investment is sustainable in the long term. If the recovery in end demand is not as strong as expected, then the manufacturing sector may face the risk of a new round of overcapacity in the long term.

Figure16: Monthly yoy growth of fixed-asset investment in three sectors

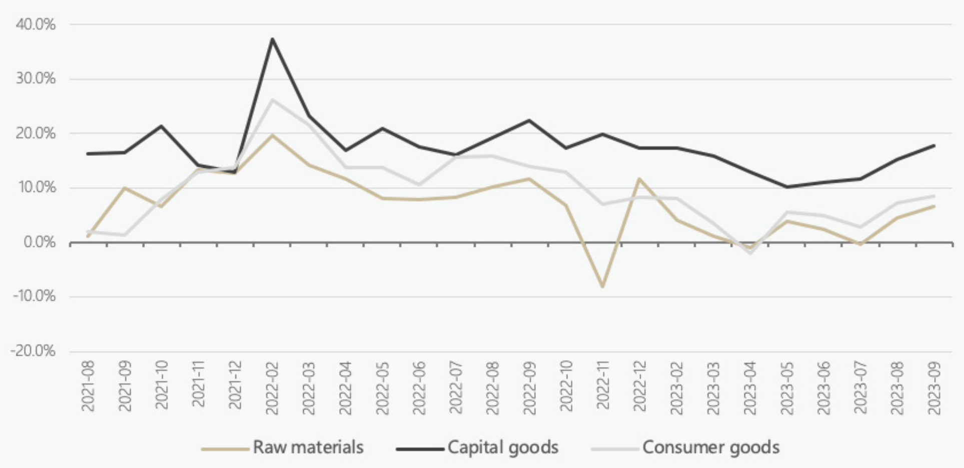
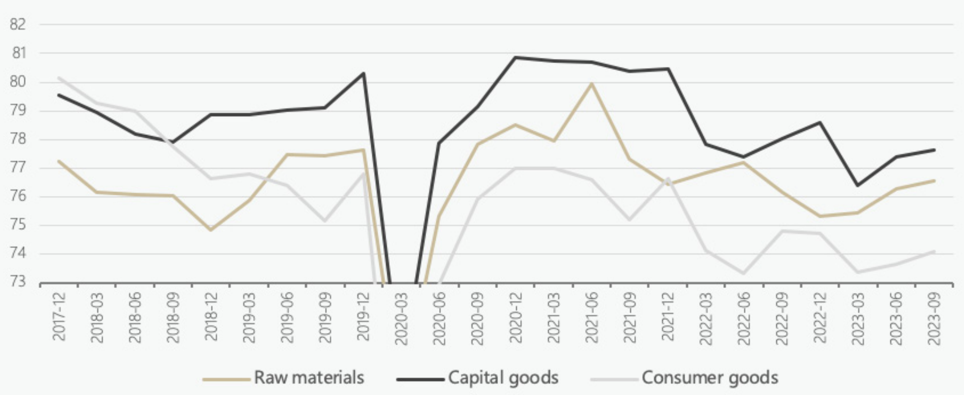


Figure 17:Capacity utilization of industrial companies



Sources: wind; authors' calculations

3. The real estate sector

In terms of inflow, new financing of the real estate sector witnessed a marginal enhancement, but not enough to hedge against the contraction in operating cash flow. In Q3, the yoy growth rate of China's new commercial housing sales was -22%, down by 11.4 percentage points from -10.6% in Q2 and 732.8 billion RMB from the same period last year. As shown in Figure 17, the yoy decline in new commercial housing sales in Q3 remained at around 20%, with no significant improvement. As can be seen in Figure 19, although the financing of the real estate sector seems to have marginally improved in Q3, with the balance of real estate development loans increasing by 70 billion RMB and the net financing of real estate credit bonds at -4.28 billion RMB, the magnitude of this improvement is far from being able to cushion the shrinking operating cash flow.

Figure 18: Sales of commercial housing: monthly value (100 million RMB)

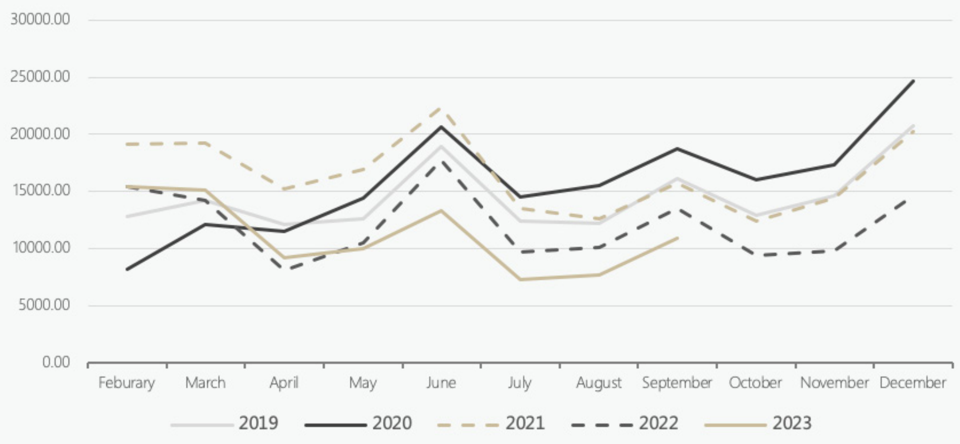
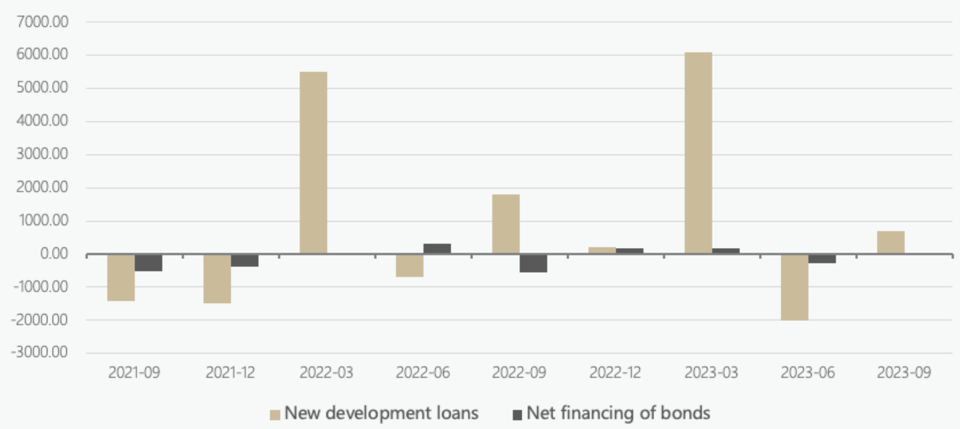


Figure 19: On-budget financing of real estate companies



Source: wind

Figure 20: Growth of new construction floor and completed floor of real estate companies

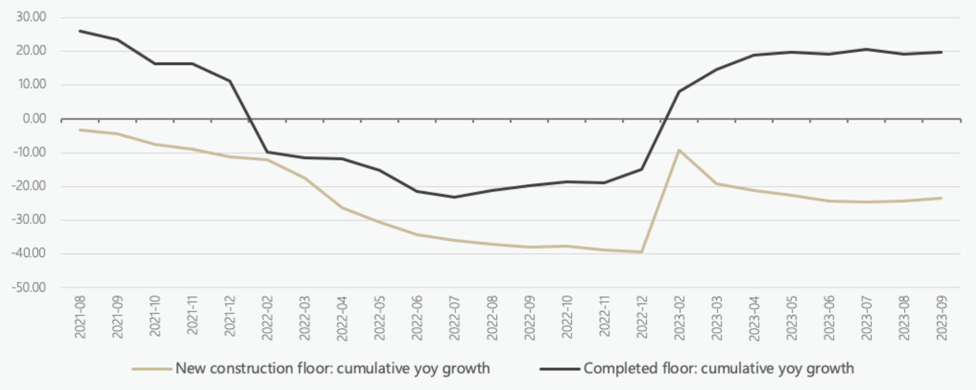
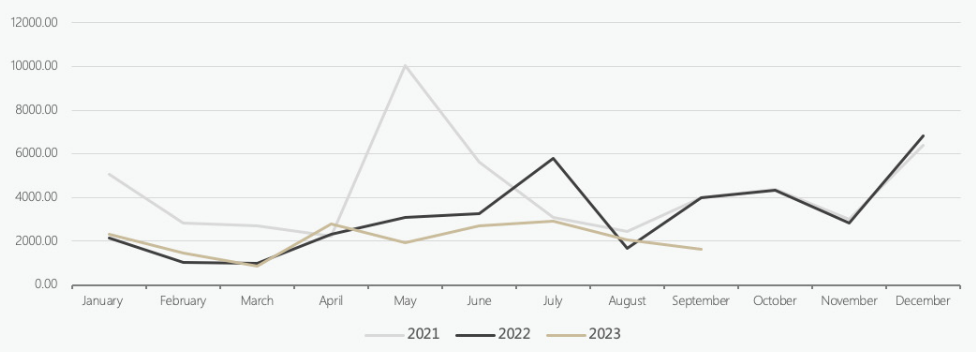


Figure 21: Land transaction value in 100 medium and large cities: monthly value (100 million RMB)



Source: wind

In terms of outflow, spending on new construction and land purchases continued to plummet, while the growth of completed floor remained high. As shown in Figure 20, the cumulative growth of new construction floor in Q3 has started to fall more rapidly since the end of Q1, earlier than the downward movement of home sales. Almost at the same period, growth of completed floor began to rise and remain high. This reflects, on the one hand, spending cut driven by cash flow contraction, and on the other hand, the impacts of house delivery guarantee policy which encouraged developers to prioritize the completion of construction instead of kicking off new construction. However, in the front end, spending on land purchases in Q3 plummeted. As shown in Figure 21, the yoy growth rate of total land transaction value in 100 medium and large cities in Q3 dropped to -42.2% from -14.3% in Q2, only about half of that in the third quarter of 2022.

To sum up, cash flows in the real estate sector continued to deteriorate in Q3. Although we don't have data on real estate debt, as long as debt dose not plunge at the same time, the real estate sector still faces increasing debt pressure. In Q3, large developers like Country Garden and Sino-Ocean Group defaulted on their debts. Since October, the bond prices of Vanke have also continued to experience abnormal fluctuations, indicating that the market is starting to worry the company's potential default and some investors have begun to vote with their feet.

4. The service sector

We divided the service sector into two sub-sectors, producer services and consumer services, as shown in Appended Table 2. Due to a lack of financial indicators for the service sector as a whole in China, we used the financial data of listed companies as a sample to examine changes in cash flows and assets and liabilities of the service sector. We reported the results of two calculations to ensure the robustness of the conclusions, one is the average (ave-) after winsorization, and the other is the median (med-). Since many of the financial indicators we calculated have a prominent seasonal feature, we reported Q3 data from 2019 to 2023 to ensure data comparability.

As shown in Table 1, all indicators of China's producer services sector deteriorated in Q3 compared to the same period last year. In particular, the average ratio of liabilities to assets was 36.2%, slightly higher than 36.1% in the third quarter of 2022; the accounts receivable ratio was 15.9%, an increase from the 15.7% in the third quarter of 2022; and the average interest-bearing liabilities ratio was 31.2%, an increase from 30.8% in the third quarter of 2022 and significantly higher than the same period in 2019 (29.1%). The average asset turnover rate and gross sales margin were 36.1% and 31.9%, respectively, which were also lower than the levels in the third quarter of 2022 (37.8% and 32.4%) and significantly lower than the levels in the same period of 2019 (43.7% and 34%). **This suggests a marginal deterioration in both cash flows and balance sheets to varying degrees in China's producer service sector in Q3, with the sales and trade ratio and asset turnover ratio reflecting a particularly poor cash flow condition.**

Table 1 Key balance sheet indicators of the producer service sector

	ave_Debt-to-asset ratio	med_Debt-to-asset ratio	ave_ accounts receivable	med_ accounts receiv-able	ave_ inter-est-bearing liabilities ratio	med_ inter-est-bearing liabilities ratio	ave_ asset turnover rate	med_ asset turnover	ave_gross sales margin	med_ gross sales margin
2019q3	38.6%	38.0%	17.1%	14.9%	29.1%	26.5%	43.7%	33.0%	34.0%	31.7%
2020q3	37.7%	36.3%	15.0%	12.8%	26.5%	22.3%	38.6%	29.3%	33.4%	32.7%
2021q3	38.0%	35.4%	15.8%	13.8%	29.3%	24.5%	41.3%	31.1%	34.6%	33.8%
2022q3	36.1%	34.2%	15.7%	13.7%	30.8%	26.3%	37.8%	28.9%	32.4%	31.1%
2023q3	36.2%	33.9%	15.9%	14.1%	31.2%	28.3%	36.1%	28.0%	31.9%	30.1%

Sources: wind; authors' calculations

Unlike the producer service sector, the cash flows and balance sheets of the consumer service sector continued to recover in Q3, with all key indicators showing some improvement compared with the third quarter of 2022. In particular, the most obvious improvement was still the cash flow and interest-bearing liabilities ratio. As shown in Table 2, the share of interest-bearing liabilities averaged 33.8% in Q3, down by 1.4 percentage points from the same period in 2022. The average values of asset turnover rate and gross sales margin were 44.1% and 32.3%, respectively, both higher than the same period in 2022 (41.8% and 31%). However, there is still a large gap in most indicators compared to the same period in 2019. For example, the interest-bearing liabilities ratio is still significantly higher than the same period in 2019. This suggests that the consumer service sector still needs to improve its cash flow over a longer period of time to fully repair its balance sheets.

Table 2 Key balance sheet indicators of the consumer service sector

	ave_ Debt-to-asset ratio	med_ Debt-to-asset ratio	ave_ accounts receiv-able	med_ accounts receiv-able	ave_ inter-est-bearing liabilities ratio	med_ inter-est-bearing liabilities ratio	ave_ asset turnover rate	med_ asset turnover	ave_gross sales margin	med_ gross sales margin
2019q3	44.3%	43.5%	7.3%	4.7%	24.4%	23.2%	53.2%	48.2%	30.9%	29.0%
2020q3	45.0%	45.2%	6.6%	4.1%	23.8%	20.6%	43.2%	33.8%	31.7%	32.5%
2021q3	48.0%	47.9%	6.2%	4.5%	35.2%	35.7%	44.1%	36.7%	33.2%	32.1%
2022q3	47.7%	45.8%	5.9%	4.5%	35.2%	36.6%	41.8%	34.5%	31.0%	30.5%
2023q3	47.4%	47.6%	6.2%	4.2%	33.8%	33.0%	44.1%	37.2%	32.3%	31.7%

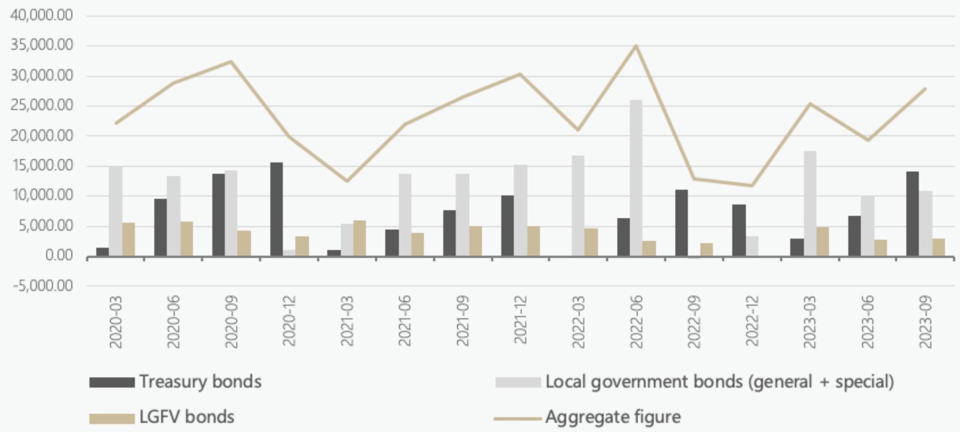
Sources: wind; authors' calculations

III.The Government Sector

In general, the discussion of the government's balance sheet focuses on the liability side because of the lack of asset data that can be tracked continuously and the difficulty of valuing government asset holdings. This is the biggest difference between the government sector and the household and business sectors at the balance sheet level. The question we are most concerned with is the sustainability of government debt. There are many ways to measure the debt sustainability of the government sector, and we adopted the conventional approach, which is measuring existing government debt/ government revenue.

We found that government debt continues to expand at a relatively fast pace. As shown in Figure 21, the net financing of treasury bonds, local bonds and LGFV bonds in Q3 reached around 2,784.5 billion RMB, of which treasury bonds and local bonds accounted for the majority. The sharp rise in net financing of national and local bonds in Q3 is directly related to the pace of debt issuance this year. In terms of the scale of net financing, the scale of government net financing in Q3 was the highest in the past four quarters, substantially higher than the level in the same period last year, and the expansion of local government debt accelerated significantly. It should be noted that these debt figures are based on publicly available data on general government finance, while the exact size of loans that LGVFs have received from banks was hard to ascertain. Therefore, the data do not provide a full picture of the size of government financing.

Figure 22: Structure of general government financing



The continued expansion of debt has been accompanied by a marginal deterioration of revenues in the general government sector. As shown in Figure 23, China's public budget revenues in Q3 were 475.1 billion RMB, slightly below the level of the same period last year, and the economic recovery has not led to an increase in fiscal revenues. The downward pressure on government-managed fund revenues deserves more attention. As illustrated in Figure 24, the revenue from the national government-managed fund in Q3 reached 1,517.7 billion RMB, which was 15% lower than that of the same period last year, and the rate of decrease continued to expand compared with that of the second quarter. More than 80% of the national government-managed fund revenue comes from state-owned land transfer revenue. This portion of revenue has obvious seasonal features, with the fourth quarter of each year being the peak period for the rise of land transfer revenue. Given that the real estate sector is still facing severe cash flow pressure and the trend balance sheet deterioration has not changed, **this part of the revenue may face greater strain in the fourth quarter.**

Figure 23: National public revenue (monthly value, 100 million RMB)

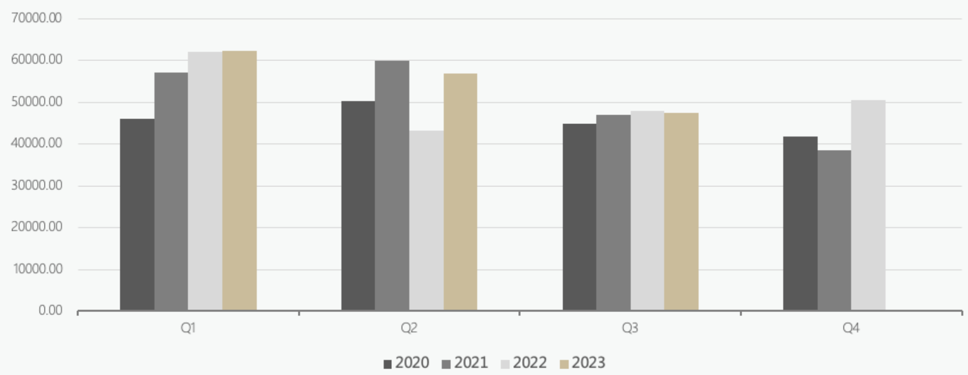
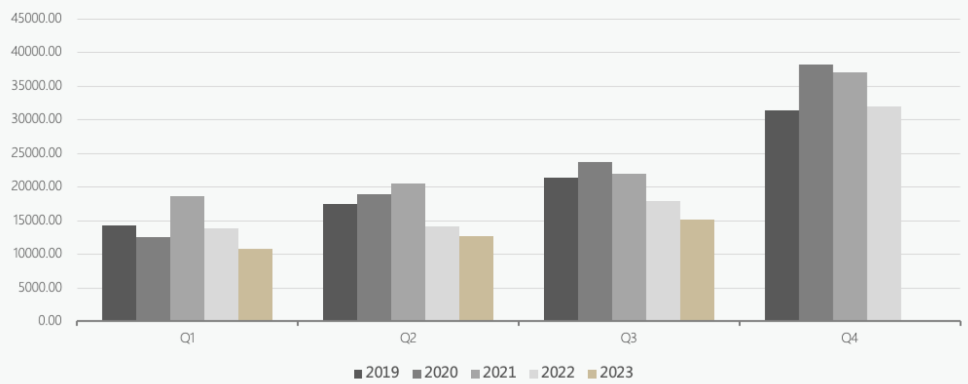


Figure 24: National government-managed fund revenue (monthly value, 100 billion RMB)



Sources: wind; authors' calculations

IV. Conclusion and Policy Implications

The paper examined the Q3 performance of cash flows and balance sheets of China's three sectors, namely, household, business and government, and arrived at three findings.

First, the effectiveness of households cutting non-essential expenditures to accumulate surplus and improve their balance sheet is not pronounced, and the problem of inverted asset-liability spreads is still deteriorating. Marginally, the household sector is still gradually reducing its investment in real estate assets while increasing the holdings of equity financial assets, but the increase in equity assets has not led to an improvement in current yields.

Second, the improvement in raw materials growth of the business sector is better than expected, and the improvement in cash flows of the consumer service sector continues. In comparison, cash flow improvements in the capital goods, consumer goods, and producer service sectors are only modest. Real estate still faces the greatest cash flow pressure and the fastest deterioration of balance sheets in the corporate sector.

Third, the financing pace of the government sector accelerated significantly in the third quarter, partially offsetting the shortfall in government-managed fund revenues caused by the decline in revenues from land sales.

Based on the conclusions above, three implications were summarized to help understand the current macroeconomic and policy conditions.

First, the balance sheet recovery of various economic entities was not evident in Q3, which seems to somewhat diverge from the performance of the economic recovery in the same period. In our view, economic recovery is mainly reflected in improvement at the flow level and does not necessarily lead to balance sheet improvement. To measure balance sheet improvement, many dimensions should be assessed, including optimization of asset structure, increase in asset yields, etc.

Second, enhancement of flow may only be a necessary condition for balance sheet improvement. Against the backdrop of economic recovery, there are marked differences in the cash flow improvement across sectors, and local governments, real estate companies, and producer services haven't witnessed significant cash flow improvements. Conversely, if the behavior of certain economic entities is found to diverge widely from their cash flow and balance sheet performance, such as the expansion of investment in the capital goods sector, the focus should be on the sustainability of such behavior and the risk of resource mismatch and even deterioration of long-term asset quality that may occur in the future.

Lastly, monetary and fiscal policies can play a more direct role in responding to the downward pressure on the economy due to impaired balance sheets of economic entities.

In terms of monetary policy, sharp rate cuts could play an immediate role at least at one level, namely, easing the spread inversion problem in the household sector. It might be a more sustainable process of debt creation if it could effectively stimulate leveraging demand in the household sector.

As for fiscal policy, the central government's balance sheet condition remains healthy and should play a greater role in credit expansion. At the same time, the magnitude of proactive fiscal policy is critical. The current issuance of new treasury bonds and special refinancing bonds for local governments will undoubtedly help improve local governments' cash flows and reduce their debt-servicing pressures, which is a very essential starting point. Given the potential cash flow gaps faced by local governments, more similar measures should be adopted in the future in order to make up as much as possible for the local government's revenue shortfall and translate them into additional fiscal spending. Otherwise, regardless of where such additional fiscal deficits are actually utilized, this potential revenue shortfall will be a key constraint on the expansion of fiscal spending from the perspective of aggregate balance.

Appended Table 1: Categorization of raw materials, consumer goods and capital goods sectors in industrial enterprises

Raw materials and intermediate goods	Capital goods	Consumer goods
Mining	Metal products manufacturing	Agricultural and Food Processing
Petroleum, coal and other fuel processing	General equipment manufacturing	Food Manufacturing
Chemical raw materials and chemical products manufacturing	Specialized equipment manufacturing	Alcohol, Beverage and Refined Tea Manufacturing
Chemical Fiber Manufacturing	Railroad, shipbuilding, aerospace and other transportation equipment manufacturing	Tobacco products manufacturing
Rubber and plastic products manufacturing	Electrical machinery and equipment manufacturing	Textile industry
Non-metallic mineral products manufacturing	Computer, communication and other electronic equipment manufacturing	Textile clothing and apparel industry
Ferrous metal smelting and rolling processing	Instrumentation manufacturing	Leather, fur, and feather products and footwear manufacturing
Non-ferrous metal smelting and rolling processing		Wood processing and wood, bamboo, rattan, palm and grass products manufacturing
		Furniture manufacturing
		Printing and paper products manufacturing
		Printing and recording media reproduction
		Culture and education, industrial, sports and recreational goods manufacturing
		Pharmaceutical manufacturing
		Automobile manufacturing

Appended Table 2: Categorization of producer services and consumer services sectors

Producer services	Consumer services
Wholesale	Retailing
Transportation, storage and postal services	Accommodation and catering
Information transmission, software and information technology services	Residential services, repairs and other services
Leasing and business services	Education, health and social work
Scientific research and technology services	Culture, Sports and Recreation

中国金融四十人研究院
HINA FINANCE 40 INSTITUT