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Changes in National Debt as a Result of the COVID-19 Pandemic

- An International Comparative Perspective -

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The COVID-19 pandemic has led to the expansion of debt in nations throughout the world. With inflation rising and monetary policies tightening in Europe and the United States, there are concerns that private companies and governments holding significant debt will face an increased burden of interest payments, while financial institutions and other bond-holders will increasingly be affected by a decline in the value of their holdings.

This paper will review and analyze the extent to which debt has expanded due to the COVID-19 pandemic from an international comparative perspective, and will also examine future policy issues. From an international perspective, in Japan and many Western industrialized nations, government debt has expanded rapidly due to the COVID-19 pandemic, and corporate debt has also tended to increase. Given this situation, it will be important for each nation affected, including Japan, to consider the impact of rising interest rates on the real economy and the global financial system during a future phase of monetary tightening in Europe and the United States.
In particular, we must bear in mind that Japan's outstanding government debt is enormous even by international standards, and that rising interest rates may reduce the nation's capacity for fiscal expenditure in the future. At the same time, while the non-manufacturing sector in particular has seen a marked increase in debt, it also possesses ample cash resources and deposits with financial institutions. In the case of companies that may become mired in excessive debt, there is an urgent need to create an environment that will facilitate corporate rehabilitation at an early stage*.

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The COVID-19 pandemic has led to a global increase in outstanding government and private sector debt. IMF (2021) indicates that debt surged in 2020, reaching a record high of US$226 trillion, or 256% against GDP, as of the end of the year. As inflation increases, monetary policy in Europe and the U.S. has shifted to monetary tightening and interest rates are displaying a dramatic increase. As a result, there is concern that governments and private sector companies holding significant debt face an increased interest payment burden, while financial institutions and other bond-holders are increasingly affected by a decline in the value of their holdings. This paper will review and analyze the status of increase in debt due to the COVID-19 pandemic based on an international comparison, and in addition will discuss future policy issues.

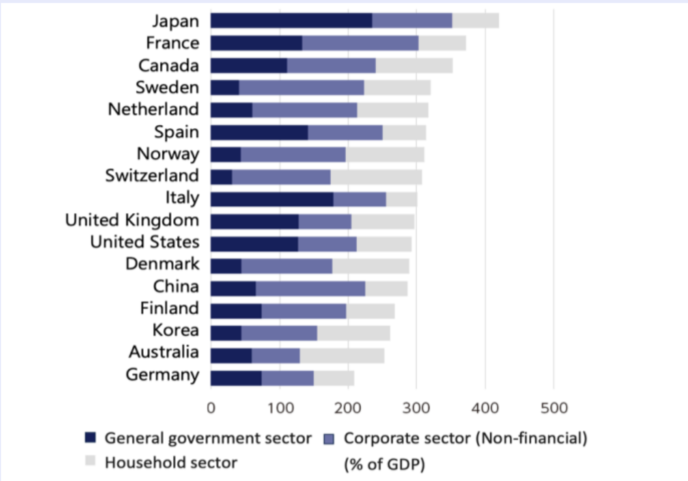
1. International Comparison of the Status of Debt in the Government and Private Non-Financial Sectors

Japan Stands Out With Its High Level of Government Debt

First, looking at the debt-to-GDP ratio of the government sector and the private non-financial sector (private companies and households) combined, we see that Japan has the highest level among OECD nations (Figure 1). In the case of Japan, the extremely high level of government debt stands out. Japan is followed in its level of debt by France, where the outstanding debt of the private corporate sector is high.

It should be noted that the graphs below are as a rule based on market value data for international comparison. However, because only face value data (including accrued interest) is available in the case of China's government sector, face value is used for government sector comparisons (Note 1).

Figure 1: Debt of the government, non-financial corporate, and household sectors as a percentage of GDP (Q1 2021)



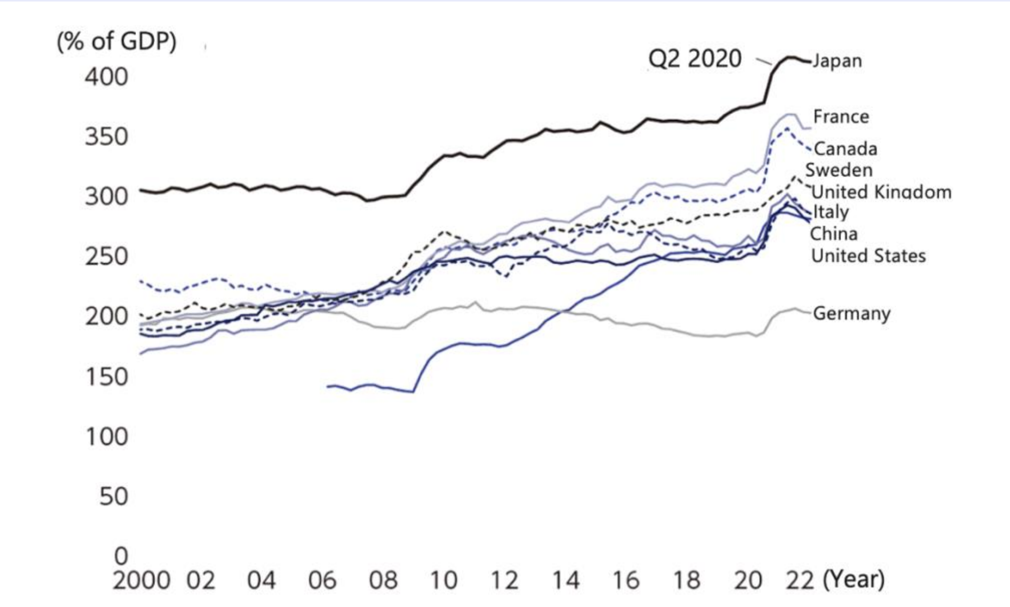
(Note) China's government debt is face value (including accrued interest); all other figures are market value.
(Source) Formulated by NIRA based on BIS total credit statistics.

From a Medium-Term Perspective, the COVID-19 Pandemic Has Already Increased National Debt

Looking at the debt levels of government and private non-financial sectors over a timeline of approximately 20 years, Figure 2-(1) shows that in many nations, the level of debt has already increased significantly as a result of the COVID-19 pandemic. Many nations experienced an increase in debt as a result of the global financial crisis (the "Lehman shock," as it is known in Japan) from 2008, but even compared to that period, a greater number experienced rapid increases in debt in 2020. In these nations, increase in debt in the government sector is particularly marked (Figure 2-(2)), but a similar trend can also be seen in the corporate sector (Figure 2-(3)). By contrast, certain nations excepted, household sector debt, while rising, has not displayed a significant increase (Figure 2-(4)).

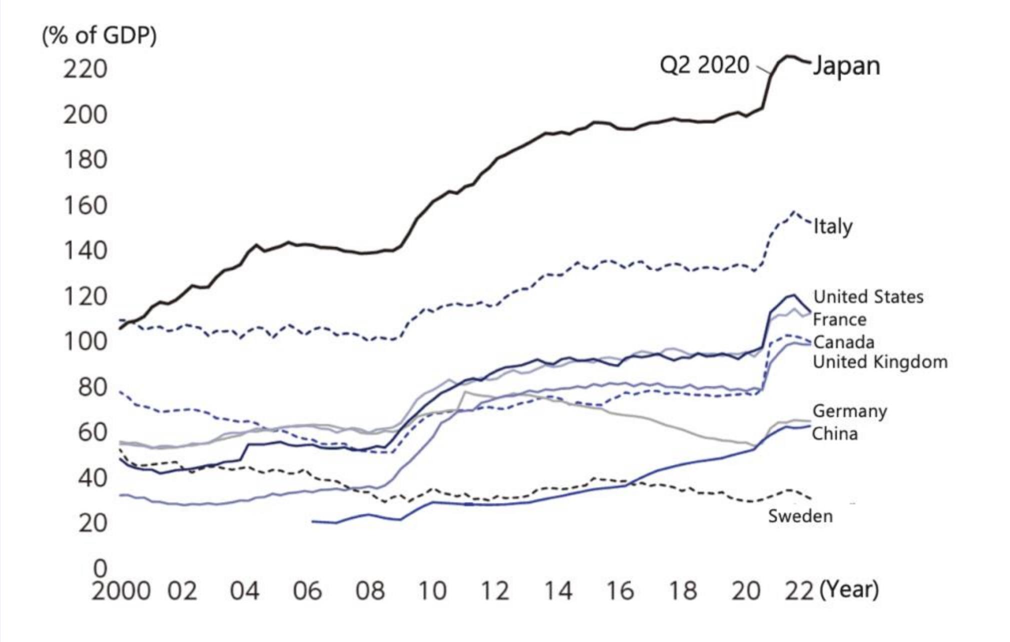
Figure 2: Trends in debt-to-GDP ratios in the non-financial sector

(1) Overall non-financial sector (government, non-financial corporate, and household sectors)



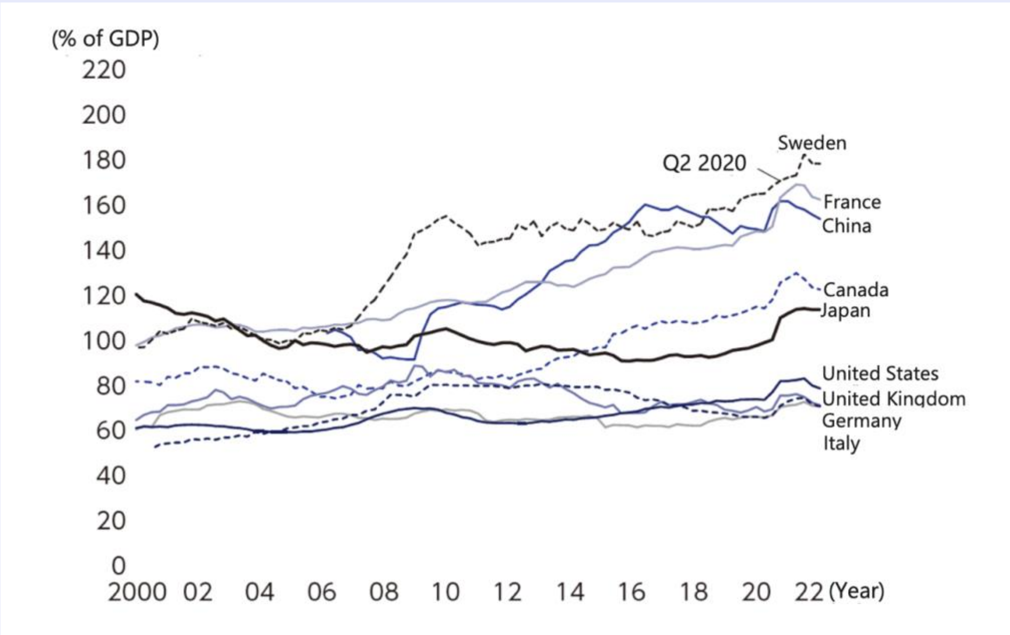
(Note) The figures for China are based on the face value of government debt (including accrued interest); all other figures are market value.

(2) Government sector

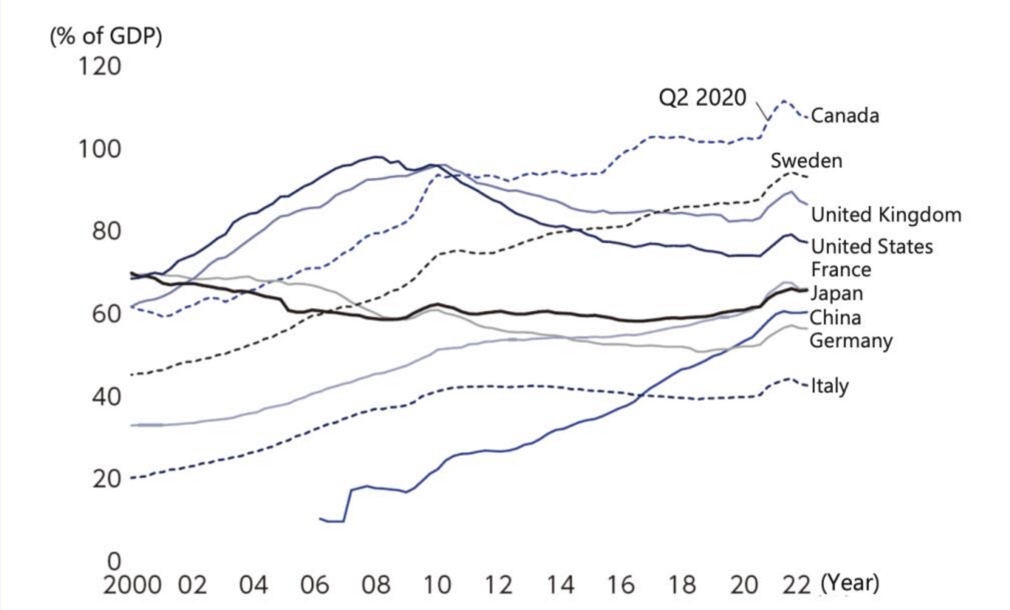


(Note) International comparison based on face value for this graph only

(3) Private sector (Non-financial)



(4) Household sector



(Source) Formulated by NIRA based on BIS total credit statistics

Japan's Outstanding Government Debt Is Also Remarkable for Its Growth

Looking at trends in debt-to-GDP ratios by nation, Japan's ratio has consistently increased, and this has been exacerbated by the COVID-19 pandemic. France and Canada are next behind Japan, and display a similar trend (Figure 2-1).

If we consider the government sector, we see that Japan's debt stands out not only for its high level, but also for the fact that it has grown more significantly than that of other nations in recent years (Figure 2-2). As indicated above, due to limitations on the data available for China, international comparisons of government sectors in this paper are based on the face value of debt for each nation. Government sector debt levels have also increased significantly and stand at high levels due to the COVID-19 pandemic in numerous other nations, including Italy, the U.S., and France. According to a report published by the U.S. Congressional Budget Office (CBO) in May 2022, the U.S. government sector debt-to-GDP ratio is projected to gradually increase in the future due to the burden of interest payments and increased social security expenditure, reaching approximately 1.85 times its current level by 2052.

Looking at the corporate sector, corporate debt in Japan declined and flattened out from 2000, but displayed its first significant increase since then against the background of the COVID-19 pandemic (Figure 2-3). Corporate debt in China grew significantly in the 2010s following the global financial crisis. The figure was among the highest for major nations in 2016, but the level of increase has recently slowed. In addition, corporate debt has also grown significantly in

France in the last decade.

Household sector debt has risen in Canada, the United Kingdom, and the United States due to the COVID-19 pandemic, but the increase in household debt in other nations has not been as high as the increase in the government and corporate sectors (Figure 2-4). However, the sharp rise in delinquency rates for credit card debt and personal loans among low-income subprime borrowers in the U.S. is a cause for concern (Note 2). Note that the overall debt level of U.S. households is about 80% of its level at the time of the global financial crisis.

China's Corporate Debt Levels Have Increased Significantly Over the Medium-Term

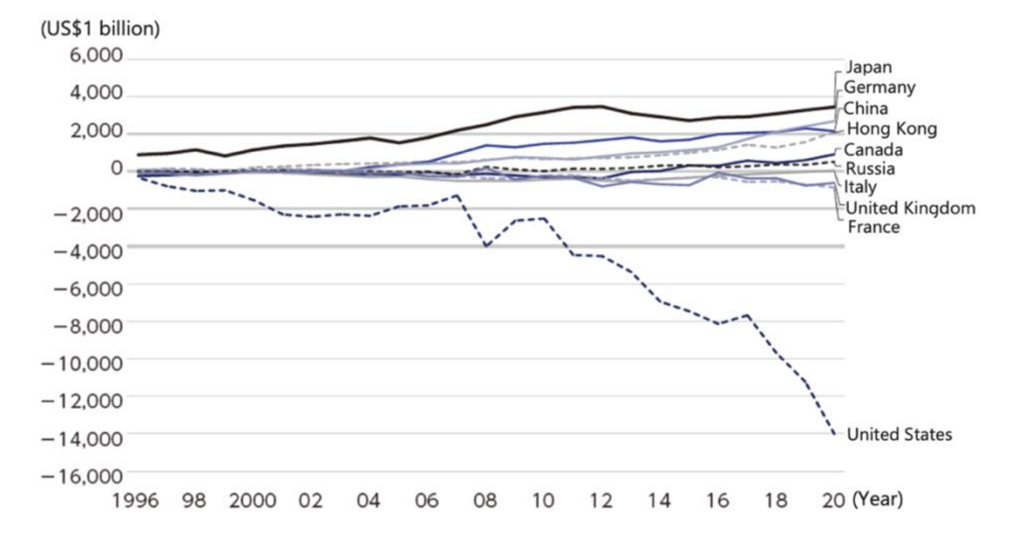
China's total outstanding corporate, household, and government debt as a percentage of GDP grew at a high rate for more than a decade, as shown in Figure 2-1. Figures 2-2, 2-3, and 2-4 show that while the growth of government debt has been controlled in China, outstanding corporate and household debt has grown significantly since the beginning of the 2010s. Subsequently, although there was an increase due to the COVID-19 pandemic, growth in debt has slowed due to the government's deleveraging policy (Note 3).

According to the October 2021 S&P Global Rating report, it is not only certain companies in China's corporate sector that are heavily indebted. In terms of debt quartiles for all global companies, 58% of Chinese companies are highly-indebted. State-owned enterprises in particular have borrowed heavily from domestic banks; the Chinese government provides these companies with “implicit government guarantees.” In addition, the increase in corporate bond issuance by real estate-related and other companies has also contributed to the increase in the corporate sector's debt levels, as highlighted by the deterioration of the Evergrande Group's business conditions in 2021. It has been noted as a problem in the corporate bond market that ratings by Chinese rating agencies are unreliable (Note 4). We have seen defaults by real estate-related companies since 2021 (Note 5), and it should be noted that the corporate bonds issued by these companies are also purchased by foreign investors, and there may therefore be an international risk ripple effect.

While China's external debt is expanding, its external claims on emerging economies, etc. are also increasing. This is resulting in a gradual increase in the nation’s external net assets, making it the next largest creditor nation after Japan and Germany (Figure 3). However, the fact of being an external creditor nation is only one element in making an evaluation, given that the risk-return composition of external assets and liabilities differs from nation to nation. For example, U.S. external debt has in fact increased significantly since the 2010s, as shown in Figure 3, but to date this has not been viewed as a matter of great concern (Note 6).

Taking all of the above into consideration, it will be necessary to pay attention to trends in Chinese real estate prices, the tendency of domestic inflation and monetary policy, and the government's stance in relation to the real estate and excess debt issues in order to determine whether the stability of China's financial system, with its increasing debt, can be maintained in the future.

Figure 3: Trends in net external assets



(Source) Formulated by NIRA based on IMF statistics

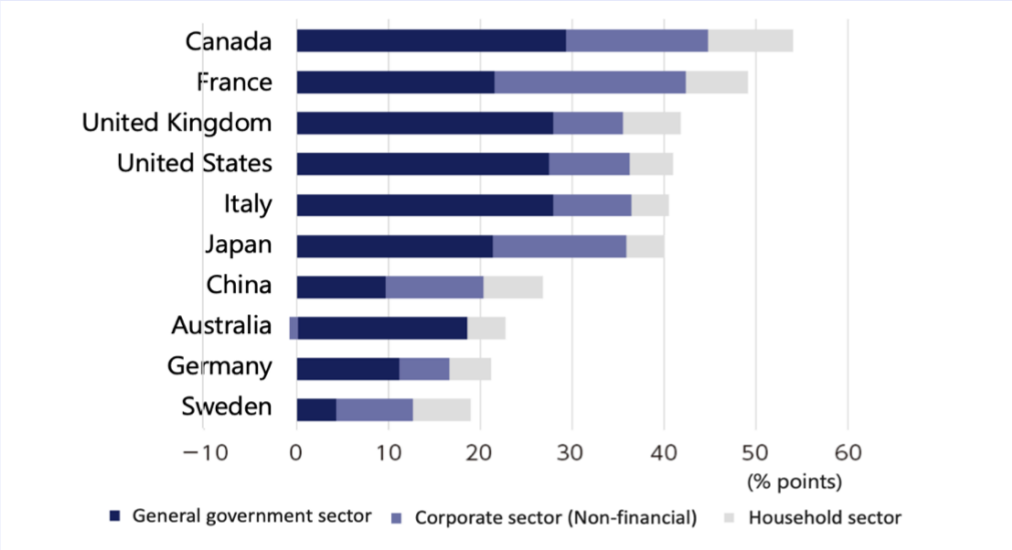
2. International Comparison of Trends in the Growth of Debt and the Corporate Debt Repayment Burden During the COVID-19 Pandemic

Next, looking at changes in debt during the period of the outbreak and rapid spread of COVID-19 (2020), we see that the level of debt-to-GDP ratios in many nations increased significantly in comparison to the period before the advent of COVID-19 (Figure 4). Several major nations saw increases of close to 40 to 50 percentage points, with Canada in particular recording a 54 percentage point increase. This figure is followed by those recorded by France, the United Kingdom, the United States, Italy, and Japan. China recorded an increase of just under 30 percentage points.

Looking at the breakdown of debt growth in each nation considered, the government sector contributed to the growth of debt in most of the nations, accounting for the majority of the increase. In Canada, France, and Japan, the private sector also contributed to the increase in outstanding debt. A consideration of whether levels of outstanding private sector debt are related to GDP growth found no clear correlation (Note 7).

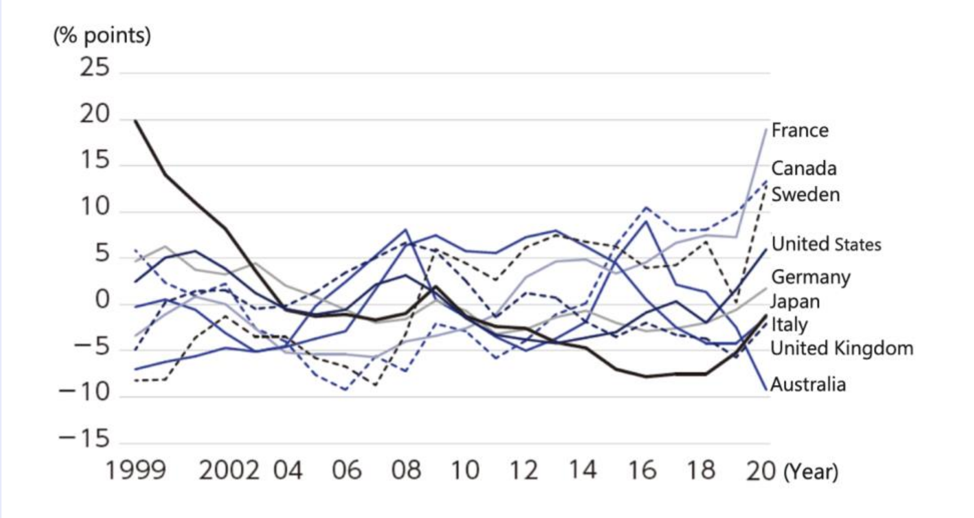
On the other hand, looking at the deviation from the long-term average of the debt service ratio (the ratio of corporate debt service to revenue), which shows the debt service burden of private sector companies, we see that the debt service burden has increased in most nations, in particular France, due to the COVID-19 pandemic (Figure 5). The debt repayment burdens of Japanese private companies are low by international standards. This can be attributed to the fact that the excess debt of the 1990s has been eliminated over the years and that corporate earnings, in particular in sectors such as manufacturing, have been relatively strong due to the depreciation of the yen since the second half of 2012. It should be noted, however, that the debt service ratio began to increase beginning around 2018, and continued to rise during the COVID-19 pandemic.

Figure 4: Change in outstanding debt during COVID-19 pandemic (Year-on-year change for Q4 2020)



(Note) The difference in debt-to-GDP ratios between the Q4 2019 and Q4 2020 values is shown.
(Source) Formulated by NIRA based on BIS statistics.

Figure 5: Trends in debt service ratio



(Note) The debt service ratio is the ratio determined by dividing corporate (non-financial) sector debt service payments by the sum of gross disposable income and interest payments (including the cost of financial intermediation services and dividend payments). For more information, see the BIS database for debt service ratios for the private non-financial sector. The figure shows deviations from the long-term average for 1999-2019.
(Source) Formulated by NIRA based on BIS Statistics DSR

3. Status of Increase in Japanese Corporate Debt Due to the COVID-19 pandemic

Increase in Non-Manufacturing Sector Debt Levels Due to the COVID-19 Pandemic

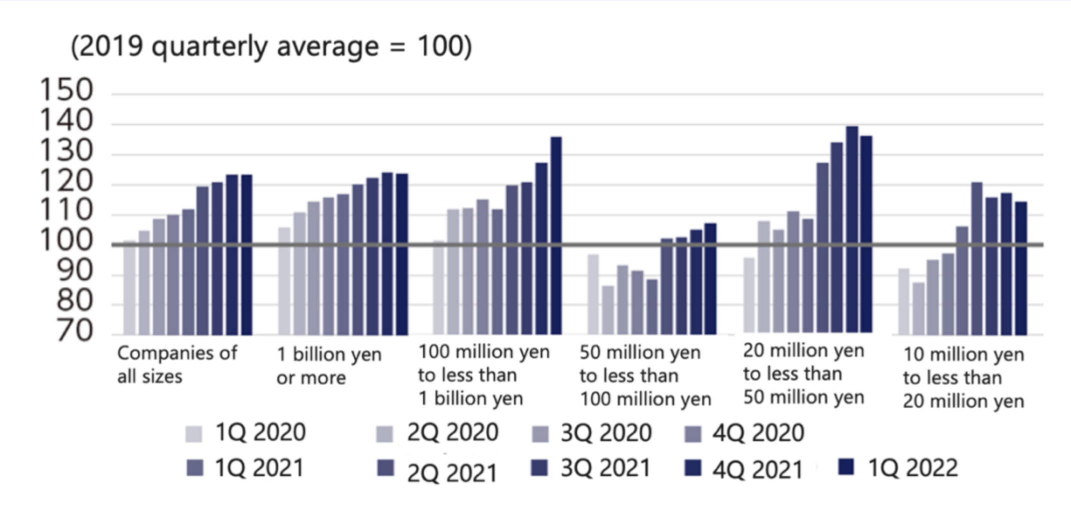
To continue, we will analyze the status of increase in debt among Japanese companies during the COVID-19 pandemic (Figure 6). Looking at changes in the outstanding debt of Japanese companies by level of capitalization, we see that there was a significant increase in the outstanding debt of small and micro businesses with capitalization of less than 50 million yen (Figure 6-1). By industry (companies of all sizes), the increase in outstanding debt in the manufacturing sector is low, while outstanding debt in the non-manufacturing sector has increased, especially from the second quarter of 2021 (Figures 6-2 and 6-3). A survey of the outstanding debt of small and medium-sized enterprises (SMEs) with capital of less than 100 million yen confirms that there has been almost no increase in debt in the manufacturing sector, while debt in the non-manufacturing sector has increased significantly.

In the non-manufacturing sector, outstanding debt has increased in particular in the production, transmission and distribution of electricity, construction, information and communication sectors (Figure 6-4). In the production, transmission and distribution of electricity sector, some major electric power companies aggressively issued bonds as motivation to purchase increased among investors with the expansion of the Bank of Japan's corporate bond-buying operations.

In the construction sector, by contrast, SMEs have significantly increased their borrowing from financial institutions as a hedge against future decline in the market. The information and communications sector also saw an increase in borrowing from non-financial institutions.

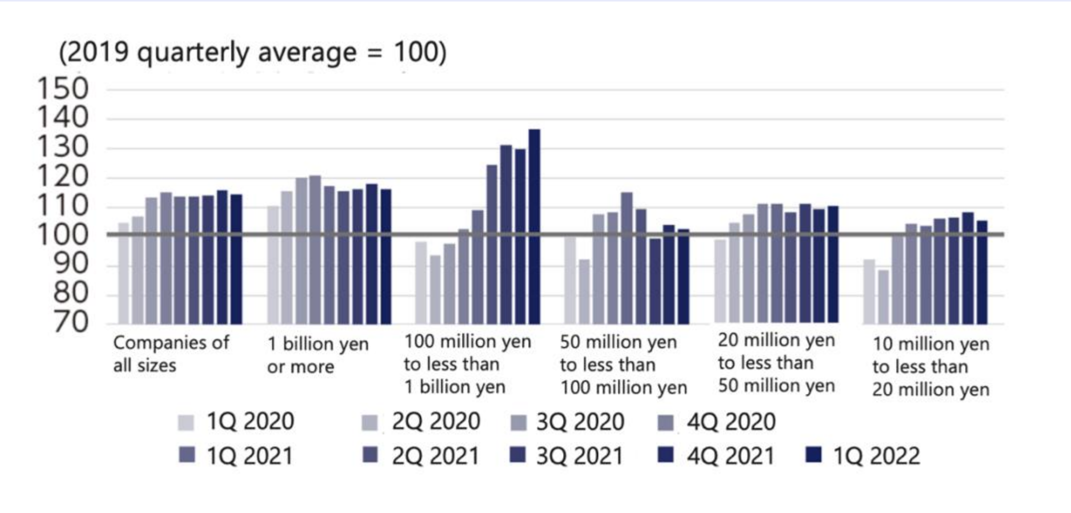
Figure 6: Trends in outstanding debt of Japanese companies during the COVID-19 pandemic (2019 quarterly average = 100)

(1) All industries

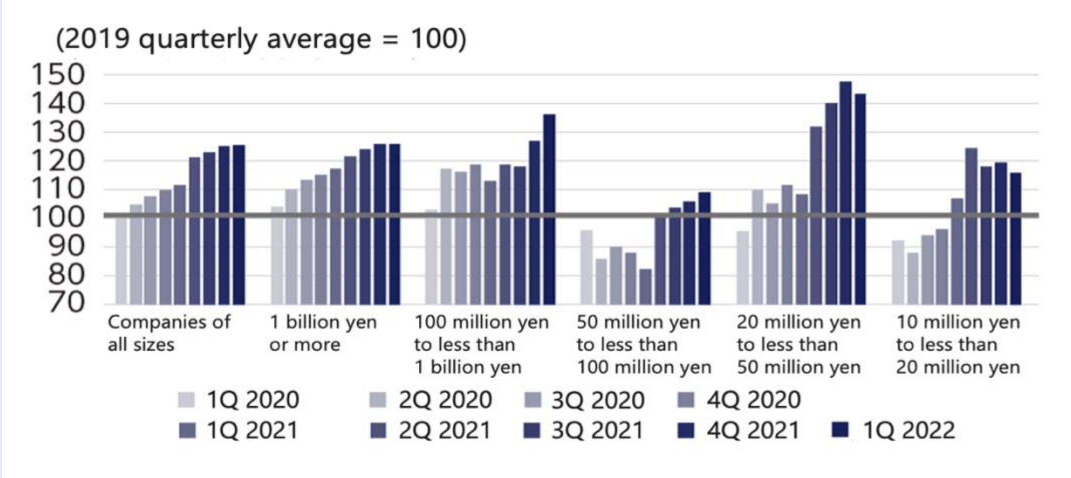


(Note) The breakdown of outstanding debt in 1Q 2020 is approximately 74 trillion yen for the manufacturing sector and approximately 277 trillion yen for the non-manufacturing sector

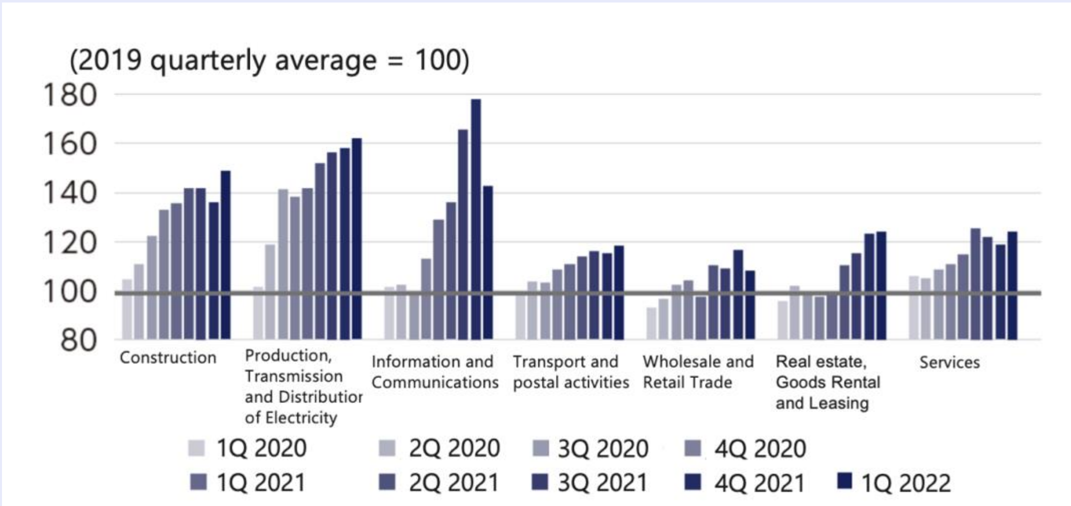
(2) Manufacturing



(3) Non-manufacturing



(4) By non-manufacturing industry



(Note) Excluding the finance and insurance industries.
(Source) Formulated by NIRA based on Financial Statements Statistics of Corporations by Industry (MOF)

The Level of Cash and Deposits Increased Mainly in the Non-Manufacturing Sector and Among SMEs

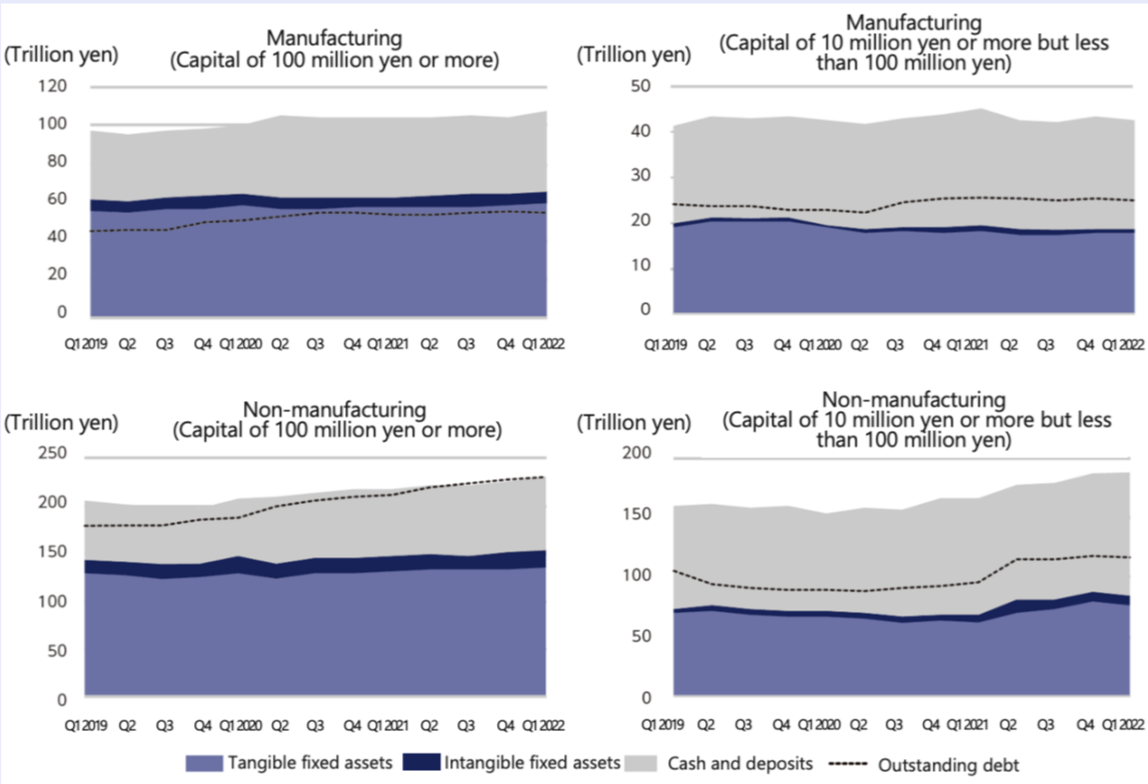
Further to the above, when we consider the relationship between these figures for outstanding debt and figures for tangible and intangible fixed assets, in addition to cash and deposits (liquid assets), based on the balance sheets of companies before and after the COVID-19 pandemic (Q1 2019 to Q1 2022), it is clear that in general, the increase in outstanding debt was greater in the non-manufacturing sector than in the manufacturing sector. The debt level of large non-manufacturing enterprises with capitalization of 100 million yen or more has risen by about

29%, and the relationship between assets and debt also shows a markedly high level of outstanding debt.

The purpose of corporate borrowing during the COVID-19 pandemic was to secure funds; fixed assets did not increase significantly during the COVID-19 period. Cash and deposits increased, and the share of assets these represented also tended to increase slightly. In particular in the case of large non-manufacturing enterprises, cash and deposits increased by more than 20% during the pandemic. Among SMEs in both the manufacturing and non-manufacturing sectors, the share of assets represented by cash and deposits was high before the pandemic, but it also increased during the COVID-19 period, and currently accounts for the greater part of their total assets (Note 8). This suggests that, from a macro perspective, there may be a large number of enterprises that will still have the capacity to make capital investments even as interest rates rise. Some corporate groups may therefore be more seriously affected by the yen's depreciation than by rising interest rates in the future.

Note that intangible fixed assets such as software, data, and intellectual property account for less than 10% of the balance sheets of even large companies.

Figure 7: Changes in the breakdown of assets of Japanese companies before and after the COVID-19 pandemic

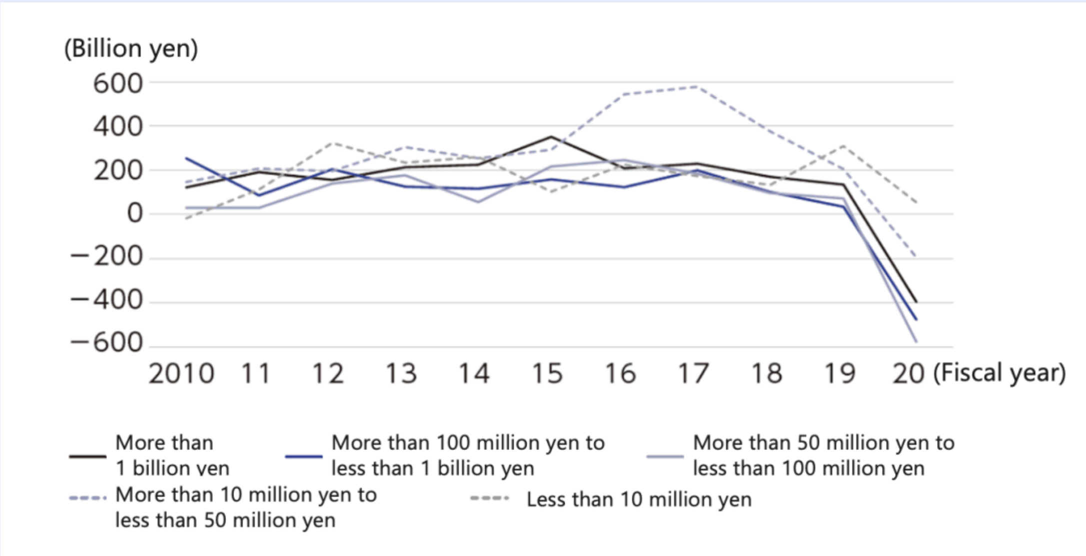


(Source) Formulated by NIRA based on Financial Statements Statistics of Corporations by Industry (MOF).

Increased Repayment Burden for Accommodations, Eating and Drinking Services Businesses

A consideration of cash flow by industry shows a sharp decline in cash flow among companies involved in the areas of food and beverage services and tourism (Figure 8). The Accommodations, Eating and Drinking Services industries were among the industries that were most significantly affected by the COVID-19 pandemic, and irrespective of their level of capitalization, their cash flows deteriorated significantly, raising concerns regarding an increase in debt repayment burden. In addition, NIRA`s "Questionnaire Surveys on the Effects of the Spread of COVID-19 on Telework-based Work Styles, Lifestyle, and Awareness on Telework," a survey of individual workers which the institute is conducting on a continuing basis, revealed a serious situation in these industries. Many respondents (almost 30%) working in the Accommodations, Eating and Drinking Services industries reported a consistent decline in income in 2020 (see Note 9). While this will also be dependent upon the status of recovery of demand in the tourism industry, including inbound tourism, there is concern that some companies will face a considerably larger repayment burden in the future.

Figure 8: Cash flows in the Accommodation, Eating and Drinking Services industries



(Source) Formulated by NIRA based on Financial Statements Statistics of Corporations by Industry (MOF)

Impact on Management of Regional Banks, Etc.

The global rise in interest rates is beginning to affect banks and other institutions in Japan that were forced to invest in foreign bonds due to the extremely low interest rates on Japanese government bonds (Note 10). There is concern that more banks will experience valuation losses on foreign bonds. At the same time, regional banks and similar institutions have a duty to support the revitalization of companies affected by the pandemic. In Japan, it will now be even more necessary to focus on the stability of the financial system while encouraging management reform among small and medium-sized financial institutions.

Summary and Policy Implications

The results of the survey presented here can be summarized as follows:

(1) The COVID-19 pandemic has resulted in a significant increase in the ratio of non-financial sector debt to GDP in many nations around the world. Ratios have risen in both the government and corporate sectors, but in nations in which debt has grown significantly, the increase in government sector debt accounts for the greater part of the increase.

(2) Japan's ratio of non-financial sector debt to GDP is among the highest in the world. A breakdown of debt in this sector shows that outstanding government debt has grown consistently over the past decade, and that the COVID-19 pandemic has added an even greater amount of debt.

(3) Internationally, China stands out for the growth of debt in the non-financial sector as a percentage of GDP over the past 20 years. The growth of debt in the corporate and household sectors in the last 10 years has been particularly noteworthy, but the rate of growth in debt has slowed in the last one to two years, in part due to the effect of deleveraging policies.

(4) Japan's corporate debt-to-GDP ratio is not among the highest in the world, but the debt service ratio began to increase in 2018, and this increase continued over the period of the COVID-19 pandemic.

(5) A breakdown of Japanese corporate debt by industry and company scale shows a noticeable increase in the non-manufacturing sector and among SMEs. In addition, cash flows for companies in the areas of food and beverage services and tourism have declined, and there is concern that repayment burdens may increase. A high level of borrowing to secure funding has led to a further accumulation of financial assets in the form of cash and deposits, in particular in the non-manufacturing sector and among SMEs.

The policy implications of these results are as follows:

(1) Outstanding debt increased in many nations around the world, and as we entered 2022, the level of inflation rose, in particular in the United States and Europe. Given this expansion of debt and the existence of financial imbalances, we should pay close attention to the impact on both the real economy and the financial system during phases of interest rate increase.

(2) First, in the U.S. and Europe, central banks need to carefully pursue monetary tightening while carefully considering limiting their scope of action in order to avoid stagflation. Consideration should be given to the fact that the rising interest payment burden in the private corporate sector will also force private firms to restructure, and the scale of private sector debt may become a drag on economic recovery. The growing repayment burden on households, including low-income households, should also be taken into consideration.

(3) As monetary tightening proceeds in various nations and upward pressure is exerted on long-term interest rates, the interest payment burden on the government sector is expected to increase. This would reduce the government sector’s capacity for fiscal expenditure and should be watched closely over the long term.

(4) It will be important to monitor, from the perspective of the stability of the global financial system also, whether increases in interest rates will cause risks to manifest. Given the fact that the risk exposure of financial institutions and the corporate bond market has increased as a result of long-term monetary easing, it will be necessary to pay close attention to the manifestation of credit risk, interest rate risk, and other risks. In addition, the impact on financial markets in emerging nations will also require close attention.

(5) It will be necessary to carefully monitor future trends in China's corporate sector debt, which has increased significantly since 2010, in order to determine whether it will act as a drag on China's economic recovery and how it will affect global financial markets.

(6) Japan's government sector debt-to-GDP ratio is one of the highest in the world. If this situation is left unchecked, rising interest rates will reduce the capacity for future fiscal expenditure. At the same time, because investment to stimulate growth is also necessary, it will be important to pursue modes of expenditure that contribute to further growth.

(7) It should be noted that while the Japanese corporate sector has high cash and deposit balances, debt levels are high in the non-manufacturing sector. In the case of companies for which the future manifestation of an excess debt problem is a concern, it will be desirable to hasten the creation of an environment conducive to early business revitalization (e.g., facilitating voluntary liquidation, ensuring that executive guarantees do not become a

bottleneck, and establishing active labor market policies). At the same time, it also suggests that in the medium term, firms of all sizes will need to invest in intangible assets.

(8) The impact on the management of financial institutions of the widening valuation losses on foreign bonds and other securities held by Japanese regional banks and cooperative financial institutions should also be closely monitored in the future.

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Note

* Data analysis for this paper was conducted by Kozue Sekijima, a NIRA Research Coordinator and Research Fellow.

1 According to BIS total credit statistics, market value data on government debt is not available for China. BIS therefore used annual face value data from the IMF's WEO database, and quarterly values were calculated by linear interpolation.

2 See Wall Street Journal (2022) among other sources.

3 In the case of China, it should be noted that it is not possible to determine, based on these statistics, whether the entirety of the recent increase in offshore dollar-denominated corporate bond issuance,

etc., is included. In addition, it is possible that the corporate sector debt includes the debt of companies affiliated with local governments.

4 See Otake and Aoki (2019).

5 For example, Sunac China Holdings Limited, China's third largest real estate company by home sales, announced a default on its offshore corporate bonds in May 2022 (Nihon Keizai Shimbun, May 12, 2022).

6 The expansion of U.S. external debt has been brought about by the rise in stock prices among U.S. companies and the appreciation of the dollar; the fact that yields on external assets have exceeded those on liabilities (such as Treasury securities) is also a factor in the background. It has been argued that the expansion in external debt is not in itself a cause for concern (see, for example, Milesi-Ferretti (2021)). However, a future rise in interest rates may change this perspective.

7 With regard to the nations in Figure 4 (excluding China), the correlation between corporate (non-financial) debt and the rate of change in real GDP from 4Q 2019 to 4Q 2020 is approximately -0.5.

8 Noguchi (2022), based on his analysis of the MOF's Financial Statements Statistics of Corporations by Industry, finds that the reason for the considerable expansion in cash and deposits among Japanese companies before the pandemic was the fact that, from a macro perspective, the retained earnings of the companies up to the advent of COVID-19 were high, and could not be completely absorbed by capital investments. He does not take it to be the case that cash and deposits increased as a result of borrowing, nor that companies were stockpiling profits in cash and deposits.

9 For details, see Toshihiro Okubo and Nippon Institute for Research Advancement (NIRA) (2021), Report on the Third Survey of Workers regarding Telework.

10 For example, Kirayaka Bank (Yamagata City), a subsidiary of Jimoto Holdings, has applied for an injection of public funds (May 13, 2022), in part due to the growing valuation losses on foreign bonds that it holds. Japan's five major banking groups also recorded significant unrealized losses on foreign bonds of 1.7 trillion yen at the end of March 2022, 4.7 times the amount at the end of December 2021 (Nihon Keizai Shimbun, May 17, 2022).

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