No Solution in Sight for China's Excessive Debt Problem
—Policy Inconsistencies Apparent in Debt-Equity Swap Schemes—

By Yuji Miura
Advanced Senior Economist
Economics Department
Japan Research Institute

Summary

1. China's non-performing loan (NPL) ratio stopped increasing at the end of March 2016 following a recovery in corporate sector performance. The ratio of outstanding total social finance to GDP has remained static since the end of March 2017, and the Chinese government has made some progress towards reducing the level of financial risk. However, the amount of credit outstanding in China's non-financial sector is higher than the average for emerging economies, and not enough is being done to reduce this risk.

2. Two factors make it highly unlikely that the ratio of total social finance to GDP will decrease in the future. First, state-owned enterprises are not working proactively to reduce their debt. Second, there are indications that stimulus measures will again be given priority in China's monetary policy. The basic financial policy goals of the People's Bank of China were previously deleveraging, steady growth, and risk prevention. However, deleveraging was deleted in May.

3. In October 2016, the Chinese government announced a policy calling for the implementation of debt-equity swaps (DES). The Chinese DES policy is characterized by (1) The establishment of implementation agencies that will stand between banks and companies, in order to avoid the concentration of risk in banks, (2) incentives for market financing in order to encourage the investment of household savings in DES schemes, and (3) a focus on state-owned enterprises, reflecting the government's involvement in the process of deciding which companies will be targeted by DES schemes.

4. Expectations toward the DES policy are high, but in practice implementation has been slow. Reasons for this include (1) waning interest in DES schemes among business corporations and banks due to the recovery of business sector performance, and (2) the fact that negotiations between business corporations and banks tend to bog down when the time comes to put agreements into effect. Under the current DES framework, banks could be unilaterally forced to carry risks and will inevitably be reluctant to participate in DES schemes.

5. Another reason for the lack of progress is the standardization of DES schemes with the aim of preventing hasty recourse to the DES option. Steps taken by the government include (1) the establishment of a ceiling for funds sourced from the market, (2) the stipulation of a minimum capital requirement for implementation agencies, and (3) the tightening of supervision over the finances of implementation agencies. The government is cautious about the risk of "reverse selection" resulting in the choice of unsuitable companies as targets for DES schemes.

6. Even if a DES scheme is successfully carried out, issues still remain. First, companies targeted for DES schemes tend to be in the steel and coal industries, which are burdened with excess production capacity. Second, the level of financing from the market has not been as high as hoped because of low rates of return. Third, there is the problem that DES schemes are not stocks but swaps, as expressed in the Chinese phrase *mínggǔ shízhài*, ("looks like stocks, really debt").

7. To solve China's excessive debt problem, the Chinese government will move forward in earnest with sweeping reform measures targeting state-owned enterprises, including the elimination of tacit debt guarantees. However, instead of trying to fix the problems at their root, the government has instead focused on promoting DES schemes. China's DES strategy is structurally flawed by the priority given to rescue rather the potential for rehabilitation and is therefore likely to remain ineffective.

Introduction

Excessive debt has been a problem in China for many years. Both the International Monetary Fund (IMF) and the Bank for International Settlements (BIS) have consistently pointed out that unless China takes radical steps, it could face a financial crisis. More recently, however, they have started to take the view that China may not experience a financial crisis.

In his book *China's Economy: What Everyone Needs to Know*, a Japanese translation of which was published in February (Hakuto-Shobo Publishing Company), Arthur R. Kroeber maintains that because loans in China are backed by deposits, the excessive debt problem will not develop into a crisis. However, is it reasonable to conclude that a financial crisis will not take place simply because loans are backed by deposits? While Mr. Kroeber's book provides a well-written, well-balanced examination of the Chinese economy, the household debt-to-asset ratio (the ratio of total debt to total assets) is not a valid basis for such a conclusion, and Mr. Kroeber has underestimated the risk of a financial crisis.

Chinese households certainly possess vast assets in the form of deposits, and it is also true that their liabilities remain below the level of those assets. However, the entities burdened with excessive debt in China are not households but businesses. For this reason, an analysis of the potential for a financial crisis in China needs to focus on businesses rather than households. While Chinese companies achieved a V-shaped recovery in 2016, their debt-to-asset ratio has not decreased, and the structural tendency to accumulate excessive amounts of debt remains unchanged.

Trade friction between the United States and China has meanwhile intensified, and there is growing anxiety about the future direction of the Chinese economy. According to the IMF, if this trade friction develops into a trade war involving the tit-for-tax imposition of high tariffs, China's GDP growth rate could drop by 0.5%(1). The prevailing view is that a drop of 0.5 percentage points is within the range of China's capacity to adapt and would not cause a major economic slowdown in China.

However, trade friction situation between U.S. and China shows signs of developing into a game of chicken, and there is no room for complacency about future developments. In June 2018, China announced retaliatory tariffs following a U.S. decision to impose additional tariffs on Chinese products worth \$50 billion. In response, President Trump said that he would consider imposing still more additional tariffs on goods worth \$200 billion. These moves point to the possibility of a further escalation of retaliatory measures going forward. Another cause for concern is the fact that potential causes of conflict are spreading into the area of investment.

As a result of these factors, the focus of China's economic policy is shifting toward the maintenance of stable growth. The Chinese government began this change with the announcement at the end of March of tax cuts for semiconductor companies(2), while in April the deposit reserve rate(3) was lowered and the value-added tax (VAT) rate was cut(4). In June, the deposit reserve rate was lowered even further. These measures could cause the supply of money to the real economy to increase again.

The question is whether or not the Chinese financial system has regained enough stability to allow this. In this article we will take a new look at this question. We will first show that while the government's efforts to reduce financial risk have been successful to some extent, there is a high likelihood that the excessive debt problem will not improve. Second, we will analyze the characteristics of China's debt-equity swap (DES) policy, which was introduced as a trump card in the struggle to solve the excessive debt problem. Third, we show that the DES policy is not yielding as much progress as anticipated. Finally, we will look at the outlook for China's excessive debt problem.

1. Results and Current Status of Risk Reduction Measures

The Chinese government has succeeded in halting the rise in NPL ratio and the ratio of outstanding total social finance to GDP, which had been climbing inexorably. However, it has not done enough to curb financial risks, with the result that the excessive debt problem now has the potential to impair economic stability and will remain a heavy burden on Chinese economy.

(1) Halting the Rise of the NPL Ratio

Moves by the Chinese government to reduce financial risk have brought a certain amount of success. The fact that the NPL ratio stopped rising in March 2016 indicates that there has been some progress toward the avoidance of a financial crisis. Of course, the official NPL ratio released by the government has been criticized as being too low to reflect the reality of the situation. According to IMF estimates, the NPL ratio in 2016 was 5.6%, while the percentage of debt at risk, which is defined as debt with a interest coverage ratio (ICR)—calculated by dividing earnings before interest, tax, depreciation and amortization (EBITDA) by interest paid—of 1 or lower was 12.8% (IMF [2017]). Credit rating agencies share this view, with Fitch Ratings stating that China's real NPL ratio is about 10 times higher than the official figure at 15-20%[(5)].

One reason for the poor reliability of figures released by government is a lack of consensus about financial risk in China. However, the NPL ratio for major commercial banks[(6)] at the end of March 2018 was 1.53%, down from a peak of 1.72% at the end of March 2016. As Arthur R. Kroeber points out, the situation now is clearly different from the situation in the late 1990s, when the NPL ratio of state-owned commercial banks exceeded 30% (World Bank [2002]).

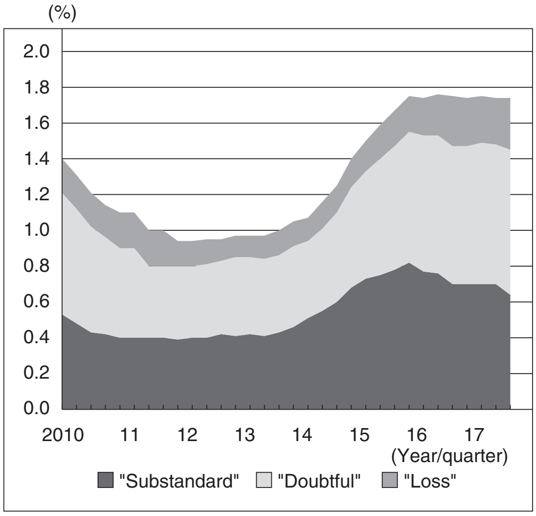
The following analysis is based on figures released by the Chinese government because of issues with other estimates, including the fact that they do not provide time-series data, as well as variation according to the research organization involved. While the NPL ratio released by the government is certainly low, it does reflect trends in the real economy. For example, the government's figure rose when business performance deteriorated in 2015. Another advantage with the NPL figures released by the government is that they can be broken down according to the type of debt and the type of bank.

In China, loans are classified into five categories in descending order of a borrower's repayment capacity. The categories are (1) pass, (2) special-mention, (3) substandard, (4) doubtful, and (5) loss, with loans in the last three categories classed as NPLs. With substandard loans, the lender will incur a loss even if the collateral is seized, while doubtful loans result in relatively large losses in the same situation. Loans in the "loss" category are those for which both principal and interest are literally unrecoverable. While special-mention loans are positioned halfway between the "pass" category and NPLs and are not classified as NPLs, they are really loans at risk of becoming NPLs in the future. The aforementioned IMF estimate of the NPL ratio is close to the sum of the NPL ratio published by the Chinese government and special-mention loans. This figure can perhaps be seen as a rough estimation of the true level of the NPL ratio.

A reduction in the percentage of substandard loans played a major role in halting the upward trend in the NPL ratio (Fig. 1). From 0.82% at the end of March 2016, the ratio had fallen to 0.64% by the end of 2017. However, the doubtful loan ratio rose from 0.73% to 0.81%, and the loss loan ratio from 0.20% to 0.29% over the same period. The percentage of special-mention loans also declined in step with the decrease in substandard loans, from 4.01% at the end of March 2016 to 3.49% by the end of 2017. The NPL ratio, including special-mention loans, was 5.23% at the end of 2017, down from 5.76% at the end of March 2016.

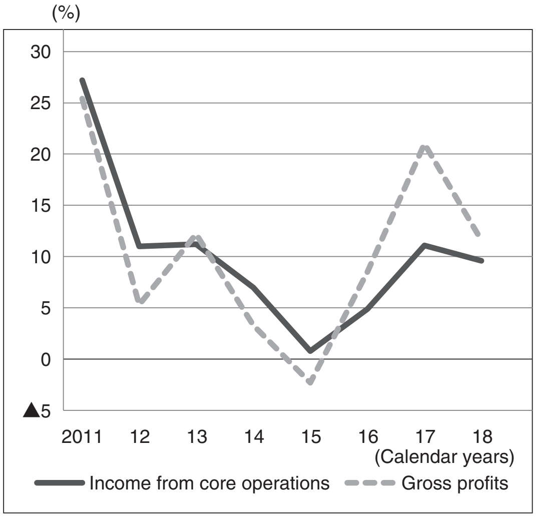
Behind these falls in the ratios for substandard and special-mention loans was a recovery in busi-

Fig. 1 NPL Ratio



Source: Compiled by JRI using CEIC data

Fig. 2 Growth Rate of Income from Core Operations and Gross Profits of Industrial Companies



Notes: Jan.-March for 2018.
Source: Compiled from National Bureau of Statistics Data

ness performance. Business performance figures for the mining and manufacturing sectors, for which detailed statistics are available, show that core business revenues, which are equivalent to sales, increased by 0.8% year on year in 2015. Although gross profit fell by 2.3% over the same period, it recovered in 2016/17 (Fig. 2). Other factors that helped to curb the NPL ratio were the sale of NPLs to asset management companies, the removal of debts from balance sheets through direct write-offs, and the use of debt-equity swaps (DES), as described later in this article.

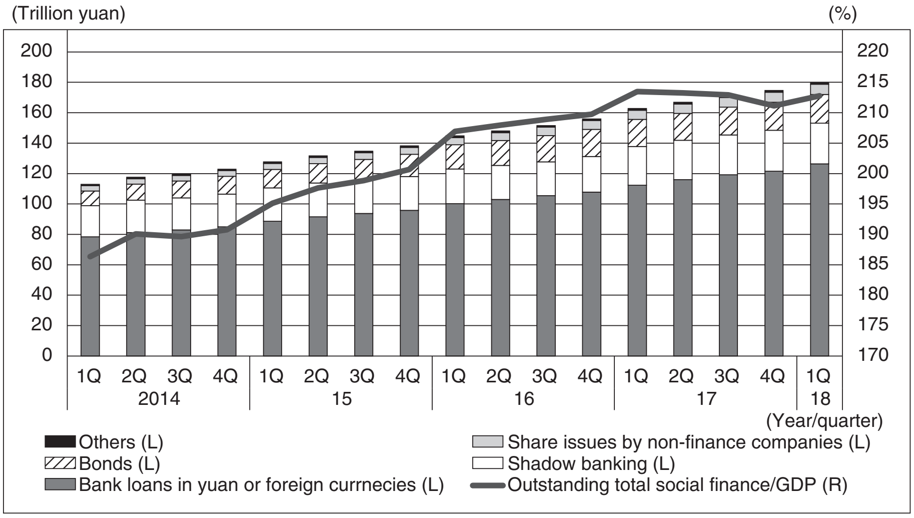
(2) Inadequate Risk Control Measures

Another indicator of whether or not financial risk is receding in China is the outstanding total social finance. A feature of total social finance, which indicates the amount of money that is being provided to the real economy, is that it consists not only of bank loans, but also the off-balance-sheet financial intermediation methods known as “shadow banking”. After a period of continual increase, the ratio of outstanding total social finance to GDP has remained static since the end of March 2017, when it reached 213.5% of GDP (Fig. 3). This suggests that the government’s efforts to curb financial risk have been successful to some extent.

However, China’s ratio of outstanding total social finance to GDP is extremely high compared with other emerging economies. According to the figures released by the BIS, which can be used in international comparisons, the outstanding credit provided to the non-financial sector stood at 256.8% of GDP in September 2017, which is significantly above the 191.9% average for emerging economies. This suggests that not enough is being done to reduce risk.

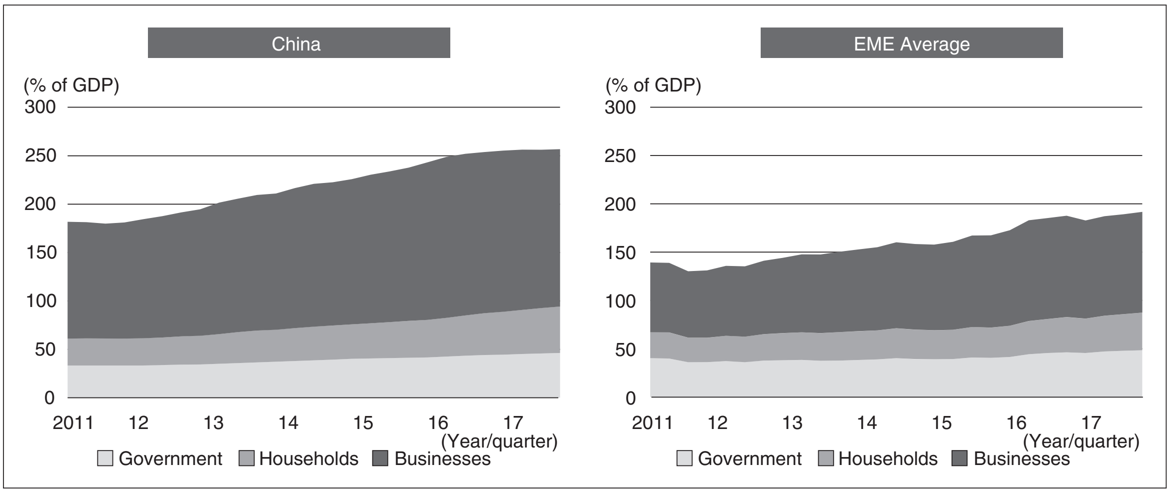
As stated at the beginning of this article, the entities with excessive debt burdens in China are non-financial corporations. According to the BIS, business corporations accounted for 63.3% of outstanding credit to the non-financial sector at the end of September 2017, compared with just 18.7% for households. Outstanding credit to business corporations is equivalent to 162.5% of GDP, which is also extremely high compared with the 104.3% average for emerging economies (Fig. 4). While China’s bloated financial system supports a level of growth not seen in other emerging economies, it can also be a source of economic instability. This illustrates that China’s response to the dilemma of whether to prioritize growth or stability

Fig. 3 Scale of Outstanding Total Social Finance



Notes: Shadow banking is the sum of entrusted loans, trust loans, and bankers' acceptances.
Source: Compiled from People's Bank of China and National Bureau of Statistics Data

Fig. 4 Contributions to the Non-Financial Sector by Type of Economic Entity



Source: Compiled by JRI using BIS data

has been to choose growth.

The Chinese government needs to limit the scale of social financing, and this is the first priority for any policy intended to avert a financial crisis. At 12.8%, China's high-risk loan ratio is not particularly high by international standards and is lower than the ratios for both India (22.0%) and Indonesia (17.5%) (IMF [2017]). Despite this, there is a strong awareness of financial risk in China because of the high balance of social finance, which means that the possibility of a crisis cannot be ruled out if some kind of shock leads to a liquidity shortage.

Those predicting that China is certain to experience a financial crisis or not, are articulate and tend to attract attention. However, the question of whether or not China will experience a financial crisis is ultimately a matter of probabilities and should not be discussed as a choice between zero and 100. We should instead focus on the constantly changing level of risk and financial system stability. While the level of NPLs is still manageable and unlikely to trigger a crisis in the immediate future, the amount of money being supplied to the real economy is clearly excessive, China has not yet reached a situation in which financial risk is receding.

(3) Level of Social Financing Likely to Remain High

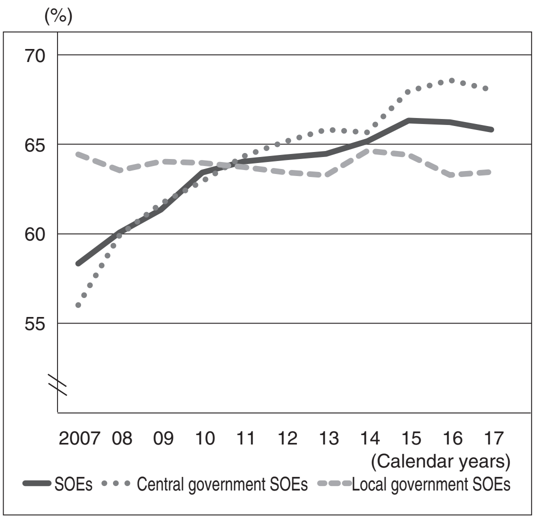
How is the ratio of outstanding social finance to GDP likely to trend going forward? A fall in this ratio would indicate progress toward deleveraging, or debt reduction, and further progress toward the avoidance of a financial crisis in China. However, it would also means an increase in bankruptcies among companies with poor business performance and no prospect of recovery, leading to unemployment, slower economic growth, and other issues in regions that have such companies.

A rise in the ratio would indicate that financial risk is increasing and must be seen as sign that the impact of any crisis would also be greater. The question is whether greater importance should be placed on short-term pain or future risks. The government faces a difficult choice, and the fact that the ratio of outstanding social finance to GDP is static indicates that it has not yet determined the order of its policy priorities.

There is a strong possibility that the ratio of total social finance to GDP will not decline in the future. One reason for this is the fact that state-owned enterprises are not actively working to reduce their debts. The asset-liability ratio of all Chinese SOEs has risen continuously since 2007 and has remained high at the 2015 level of 0.66 since 2016, indicating that there been little change in the SOEs' structural tendency toward excessive indebtedness (Fig. 5). Despite this upward trend in the asset-liability ratio of SOEs, which account for over 70%[(7)] of all debt of non-financial corporations, the ratio of the outstanding total social finance to GDP remains flat. This is because only private enterprises alone are making progress toward deleveraging (Fig. 6).

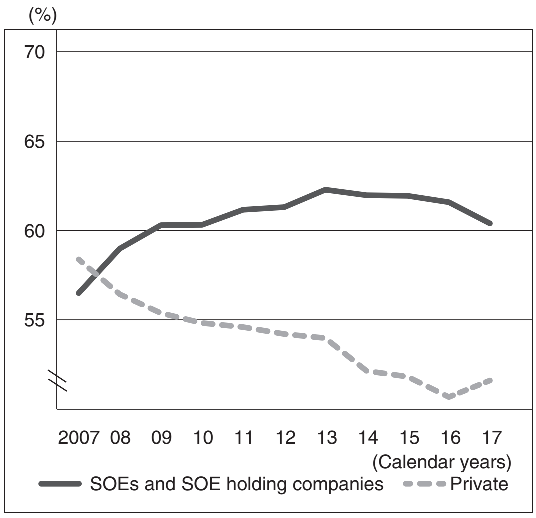
The fact that state-owned enterprises are not proactively trying to deleverage is attributable not only to growth and employment issues, but also to the indispensable role that these companies play

Fig. 5 Asset-Liability Ratios of SOEs



Notes: The figures do not include the financial sector.
Source: Compiled by JRI using MInisrry of Finance data

Fig. 6 Asset Liability Ratios of Industrial Enterprises



Source: Source: Compiled by JRI using NBS data in the economic policies of the Xi Jinping administration. The administration wants to transform China from a large country into a strong country by making its state-owned enterprises stronger, better and bigger. Leading this effort are the central government SOEs enterprises, which are major state-owned enterprises affiliated to the central government. Unsurprisingly, these central government SOEs are more focused on the expansion of their investments through increased borrowing than on debt reduction.

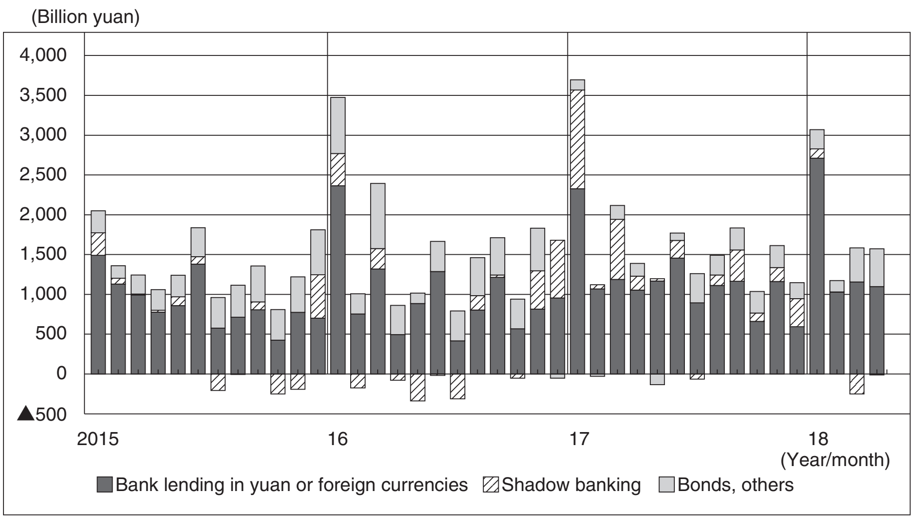
Another reason is the possibility of a sea change in China's monetary policy. Since March, the government has turned its attention to measures designed to underpin the economy, including tax cuts and the reduction of the deposit reserve ratio. If trade friction with the United States intensifies, leading to fears of an economic slowdown, the Xi Jinping administration may postpone its efforts to curb the level of social financing in order to achieve its target growth rate. There are already signs that this is happening.

While new social financing in January-April shrank by 11.5% year on year to 7.1 trillion yuan, bank lending reached 6.0 trillion yuan, which as far as can be ascertained is the highest level on record (Fig. 7). This appears to reflect greater demand for bank loans due to the tightening of restrictions on shadow banking. The basic goals of China's central bank, the People's Bank of China, were previously increased stability, deleveraging, and risk prevention. In May it dropped deleveraging and changed its basic goals to increased stability, structural adjustment, and risk prevention (People's Bank of China [2018]).

2. Structure and Characteristics of the Chinese Version of DES

In October 2016, the Chinese government released a guidance opinion on the positive but orderly reduction of corporate leverage ratios[8] ("the Opinions") and launched a policy based on the conversion of debt into equity through debt-equity swaps (DES). As will be shown in the following analysis, China's DES program has several characteristics that distinguish it from systems in developed economies.

Fig. 7 Scale of New Social Financing (Flow)



Source: Complied by JRI using CEIC data

(1) Banks do not Hold Stocks

The term "DES" literally means to convert debt into equity as a means of rehabilitating corporations that have excessive levels of debt. We will first outline the mechanisms by which DES schemes are implemented in developed economies.

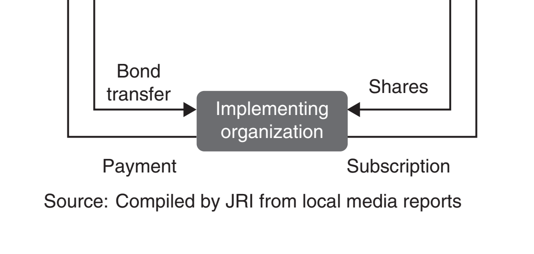
One of the advantages of the DES approach is that it reduces the interest burden on companies as debtors, allowing them to improve their financial positions. Unlike debt, equity does not entail repayment obligations, and instead of interest companies can pay dividends at a level that they can decide for themselves. The DES method also improves companies' external credit status, facilitating access to loans, and can also be expected to improve share prices. As creditors, meanwhile, banks no longer need to provide loan-loss reserves, while as shareholders they can participate in corporate management in order to prevent the companies from succumbing to moral hazards. Finally, once the companies concerned are on track to rehabilitation, banks can benefit from dividends and gains made on share sales.

However, there are also some disadvantages with DES schemes, and the benefits listed above can also trigger problems. From the perspective of the company concerned, corporate rehabilitation through management intervention by a new shareholder is unlikely to be welcomed, since it can be seen as a negation of previous management policies, especially when the replacement of the management team is sought. From a banking viewpoint, the DES approach means the loss of a steady stream of income from interest payments, and if efforts to turn around a company's performance do not go as planned, there is a risk that the shares will become worthless scraps of paper, and that the outcome will be same as bankruptcy and debt write-offs. Another issue is that valuation and sale can be difficult if the shares are not publicly offered.

The design of China's DES program was influenced by an awareness of these advantages and disadvantages, but there are also aspects that reflect circumstances that are unique to China. First, banks and companies are not the sole participants in DES schemes in China. There are also implementing organizations established between the two parties. In developed economies, DES schemes are executed in one of two ways. The first is the investment in kind method, which consists simply of a ledger operation to convert debt into equity. The second is the cash investment method, whereby the creditor pays in cash to subscribe to a new share issue, and the debtor uses that cash to repay the loans. In Japan, the first type of DES scheme is more commonly used, since it is simpler and unlikely to cause tax issues. However, in China the cash investment method is used via a structure based on the establishment of an implementation organization, which is equivalent to a non-bank, between the company and bank (Fig. 8).

The reason for this approach is fear that financial risk could be concentrated in the hands of banks if they hold large amounts of shares. Bank loans are the main form of financing in China, and the proportion of indirect financing is extremely high, with the result that banks tend to accumulate financial risk. Under the DES mechanism, dividends and gains on share sales can only be realized if the company concerned is successfully rehabilitated, so the amount of profit that can be obtained through these schemes is unpredictable, with the result that the bank carries more risk than the company. Implementation organizations were created to provide a buffer in the event of a crisis.

Fig. 8 Basic Framework for DES



Source: Compiled by JRI from local media reports

There is also the risk that banks will slide into capital inadequacy. The Administrative Measures for the Capital of Commercial Banks, which came into force in 2013, stipulate the risk weightings to be used when calculating capital adequacy ratio at 100% for debt and a minimum of 400% for equity(9). This means that once a bank has converted debt to equity, it needs four times more capital. In July 2016, the government relaxed the commercial banking law and adopted a policy of allowing banks to own shares(10). However, share ownership was really not an option for banks at a time when capital adequacy rules were being tightened under Basel III.

Implementation agencies include financial asset management companies established through initiatives by banks, insurance asset management companies, and state-owned capital investment management companies. In addition to the financial asset management companies that they had established in the late 1990s, the big five banks, including the Industrial and Commercial Bank of China, established separate asset management companies for DES schemes (Table 1). The China Banking and Insurance Regulatory Commission also encouraged the establishment of financial asset management companies in regional areas and set a target of two companies per province. The number of companies is believed to have reached 67 by the end of March 2018(11). There are now asset management companies throughout China, including companies established by the big five banks, as well as those approved independently by local governments.

Table 1 Implementing Organizations Established by Major Commercial Banks

(10 billion yuan)

Bank	Established	Name	Capital
Agricultural Bank of China	2016/11	Great Wall Asset Management Co., Ltd.	100
ICBC	2016/12	China Huarong Asset Management Co., Ltd.	120
CCB	2016/12	Cinda Asset Management Co., Ltd.	120
Bank of China	2016/12	Orient Asset Management Co., Ltd.	100
Bank of Communications	2017/1	Bank of Communications Asset Management	100

Source: Compiled by JRI using local media reports

(2) Investing Household Savings in DES Schemes

The second unique characteristic of China's DES program is that it is based on the procurement of funds from the market. In the Opinions, it is assumed that implementation agencies will establish funds in cooperation with other entities, such as private equity funds, and raise funds from the market through bond issues and other means. These approaches can be attributed to lessons learned from the DES schemes of the late 1990s, which turned out to be nothing more than free lunches (*miǎnfèi wǔcān* in Chinese). These earlier DES schemes were government-led initiatives, under which asset management companies (AMC)(12) established with government funding took over NPLs from companies selected by the government. This approach diluted the sense of ownership of banks and companies, and ultimately no progress was made toward the rehabilitation of the companies concerned.

For this reason, the government made it clear from the outset that the present DES program would be market-driven. Under this market-driven approach, the government's role is limited to the creation of an environment to facilitate DES schemes, and it does not intervene in individual schemes, such as by selecting target companies or setting the trading price for debts. All such decisions are left to voluntary negotiations between creditor banks, debtor companies, and implementation organizations. The most important feature of this market-driven approach is the fact that the government does not inject public money into DES schemes, since all decisions are made through voluntary negotiations among the DES parties and are implemented under the responsibility of those parties.

The government's decision to recommend this approach reflects its calculation that it would be a good opportunity to use China's vast household savings in DES schemes. China has one of the highest saving rates in the world, and the outstanding of household savings reached 68 trillion yuan in April 2018 (Fig. 9). Even if ten trillion yuan of China's household savings were used for DES schemes, that would still represent only 14.7% of total savings, which means that defaults on some of the debt would not have a serious impact on savings[(13)]. In addition, this approach was seen as being in tune with the strategy of shifting from savings to investment.

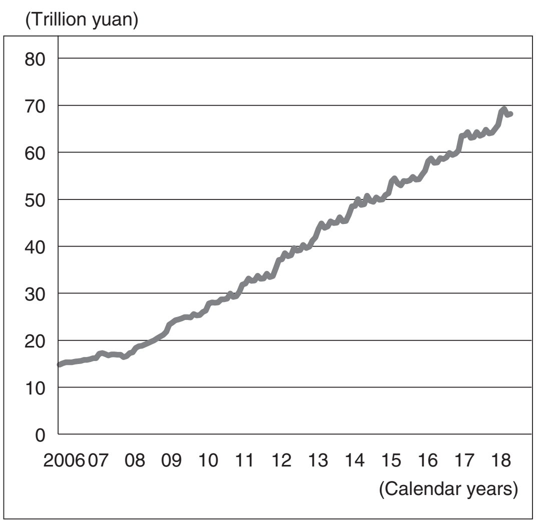
(3) Government Intervention in Company Selection

The third unique feature of China's DES program is government involvement in decisions about the selection of companies to be targeted for DES schemes, with the result that SOEs, including SOEs with little potential for successful rehabilitation, are the main targets. Of the 45 companies for which DES schemes were being implemented untill June 2017, 98% were SOEs (Fig. 10)[(14)]. The level of imbalance and the over-representation of SOEs are apparent from the fact that there are only 18,000 state-owned industrial companies operating on a significant scale, which is just one-twelfth of the total for private enterprises.

As noted earlier in this article, China's DES program is market-driven, and the government has clearly stated that it will not become involved in the selection of companies for DES schemes, and that non-state-owned enterprises would also be selected. In practice, DES schemes are being implemented through negotiation between the parties involved, and there is no evidence that the government is nominating target companies. The preponderance of DES schemes for SOEs despite this situation reflects the fact that few private companies require DES schemes because their access to credit is strictly managed by banks. While private enterprises' share of fixed asset investment has reached 60%, their share of outstanding credit is falling, causing the gap compared with SOEs to widen (Fig. 11). This trend aligns with the data in Fig. 6 and suggests that private enterprises, unlike SOEs, do not operate in an environment where the level of debt can be increased without limit.

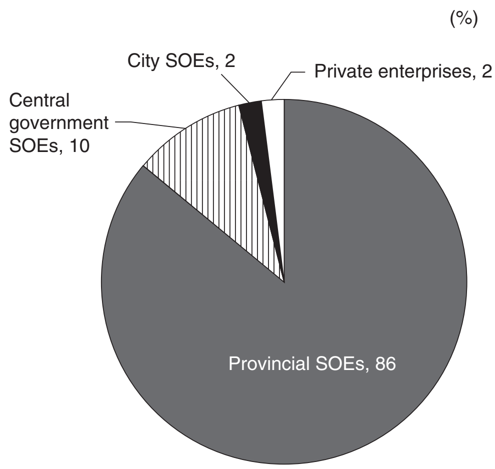
The fact that state-owned enterprises are more likely to become targets for DES schemes can be attributed to traditional policies that have favored

Fig. 9 Household Savings



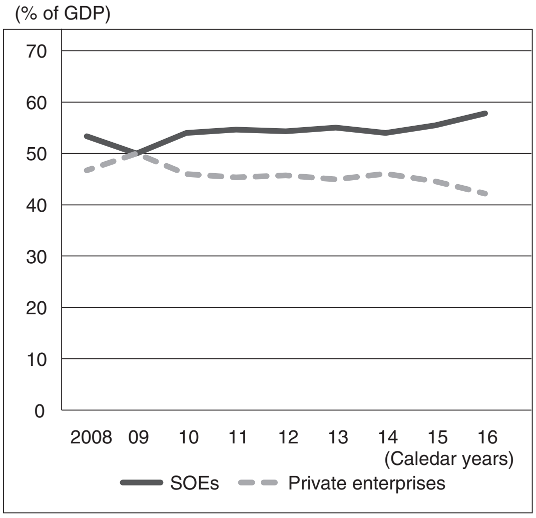
Source: Comipiled by JRI using PBC data

Fig. 10 Ownership of DES Implementing



Notes: As of June 9, 2017 (45 companies, 709.5 bil. yuan).
Source: Compiled by JRI using local media reports

Fig. 11 Non-Finance Companies' Share of Credit Balance



Source: Compiled by JRI from IMF [2018]

the state-owned sector through a process that might be called "invisible intervention". However, it would be fair to say that there has also been visible government intervention in decisions about which companies should be targeted for DES schemes. Corporate rehabilitation may require the replacement of managers and the liquidation of unprofitable operations, which can result in job losses. With SOEs, these measures go beyond individual companies and become political and social problems. For this reason, DES schemes for SOEs cannot be implemented without the approval of the Communist Party of China and the Chinese government.

The government decided that the selection of companies for DES schemes should be based on the market's assessment of whether there is the potential for successful rehabilitation. Clearly it was unreasonable to assume that market would be able to perform this function. As a consequence of government intervention in the selection of companies for DES schemes, the emphasis shifted to selection based on the need for rescue, rather than the potential for rehabilitation, as is the norm in developed countries. This problem was exacerbated as the government encouraged schemes for some companies and banned them for others, thereby reducing the effectiveness of the DES program.

In the Opinions, DES schemes are ruled out for (1) "zombie" companies affected by the continuing stagnation of their business performance with no prospect of recovery, (2) companies that have deliberately delayed debt repayment, (3) companies with excess production capacity, and (4) companies with opaque or complex debt relationships. DES schemes are encouraged for (1) companies that are temporarily experiencing financial difficulties due to the economic cycle but are expected to recover, (2) growth companies with heavy debt burdens, particularly those in strategic emerging industries, and (3) leading companies in industries with excess production capacity, and strategic companies that are important to national security.

Anywhere in the world, the success or failure of the DES approach depends on whether or not the method is limited to companies with the potential for rehabilitation. All the grounds for excluding companies from DES schemes system are reasonable and can be seen as reminders of what is needed to prevent DES schemes from failing. However, we can readily imagine that behind this message is the government's concern that unless it issued a message excluding zombie companies from the DES approach, the outcome would be same as last time.

At the same time, the government was also anxious that no SOE would be selected for a DES scheme based on a strict estimation of the potential for rehabilitation. For this reason, the government has encouraged the use of DES schemes for leading companies that represent their industries, even if those industries are burdened with excess production capacity. The problem with this approach is that by encouraging DES schemes for companies in industries with excess production capacity, which are ineligible due to their positioning under industrial policy, the government has blurred the line between companies for which DES schemes are to be banned or encouraged.

In addition, there are no clear definitions about which companies are positioned as industry leaders. While there seem to be no objections to the positioning of central government state-owned enterprises (known as *Yāngqǐ* in Chinese) as industry leaders, as shown in Fig. 10, 86% of DES schemes target local government SOEs. Because the question of whether or not a business is an industry leader has been left to negotiations between the government and companies, companies for which DES schemes should not have been allowed have instead been selected for the promotion of the DES approach.

3. Expanding Gap between Expectations and Reality

China first began to apply the DES approach 18 months ago. In this section we will examine the results so far and identify some of the issues surrounding the DES system.

(1) Banks Reluctant to Use DES

Expectations toward DES soared after Premier Li Keqiang said the government was considering the introduction of the system in March 2016[(15)]. It was predicted that the first round of DES alone would reach 1 trillion yuan. At the end of 2015, commercial banks were holding NPLs worth 1.27 trillion yuan. Based on this amount, the reduction of NPLs would amount to 270 billion yuan, which would lower the NPL ratio from 1.67% to 0.36%. This led some to believe that the NPL problem could be eliminated overnight[(16)].

In reality, however, the DES process has remained slow. Banks and businesses are believed to have agreed to implement DES deals worth 1.5 trillion yuan by the end of 2017[(17)], but the actual amount executed was just over one-tenth of this[(18)]. As a result, the DES process has contributed little to the reduction of the NPL ratio. The amount of NPLs at the end of 2017 was 1.7 trillion yuan. Even if the DES process had been implemented for these NPLs, the NPL ratio would have been reduced by only 0.1-0.2%.

One reason for slow pace of progress on DES implementation is the waning enthusiasm for the method among both businesses and banks because of a recovery in business performance. With the DES process, businesses face the risk of shareholder intervention in management, while banks risk the loss of dividends and gains on share sales that they expected to achieve if rehabilitation efforts were unsuccessful. The DES approach is used as a last resort to avoid worst-case scenarios, such as bankruptcy or the non-recoverability of loans. Before this course can be taken, both sides need to have a sense of crisis and a belief that there is no alternative. However, this sense of crisis has faded with the turnaround in business performance. In China, even companies seen to be affected by excess capacity problems, such as steel and coal producers, are apparently still able to access loans as before[(19)].

The process has also been affected by a tendency for negotiations between businesses and banks to bog down when the time comes to put agreements into effect. The swap rate for bonds and shares for “normal” loans is supposed to be 1:1, under a mechanism that prevents the shares from being sold for five years. Because there is no guarantee that the share price five years in the future will be higher than the current prices, banks have no incentive to participate actively in the DES process. Discount rates for NPLs are negotiated between the two parties involved, but there has been little progress toward narrowing the gulf between businesses, which propose discount rates favorable to themselves, and banks. A state owned company, Dongbei Special Steel Group in Liaoning Province and its shareholder (the Liaoning provincial government) proposed a swap ratio of 3:1. This was refused by the bank, and the company went bankrupt in October 2016[(20)].

Yet neither businesses nor banks can afford to turn their backs on the DES process, since it is a key policy of the Xi Jinping administration. Parties hastily reached agreement in order to show loyalty to the government, but conflicts of interest came to the surface when they began to work out details for implementation, causing negotiations to stall. That is the real situation in China. The Xi Jinping administration has centralized power. For example, it has abolished the president's term of office to allow long-term rule. Despite this stance, the government has not been able to make progress with the DES process because of the complexities of the actual interests involved.

The real obstacle is on the creditors' side, since banks are naturally reluctant to engage in the DES process under the existing framework. Under the DES system, banks take the lead in setting up financial asset management companies, insurance asset management organizations, and SOE capital management companies as DES implementing organizations, which then play a leading role in restructuring the companies concerned. Even within China, however, doubts have been expressed about the capacity of these organizations to perform this role. Because SOE restructuring has been carried out under government leadership, few financial institutions have the necessary know-how.

Even if there were financial institutions with the required expertise, there is no guarantee that they will be able move the restructuring process forward according to plan. If the government expresses displeasure about the replacement of managers or job cuts resulting from the liquidation of unprofitable operations, the restructuring process would immediately be left in limbo. One reason for banks' lack of enthusiasm toward the DES process is their fear that they could be unilaterally forced to accept risk as a result of government intervention. Paradoxically, it would be reasonable to conclude that the lack of progress under the DES program reflects the fact that market mechanisms are working soundly.

(2) Establishment of DES Standards—Fears of Adverse Selection

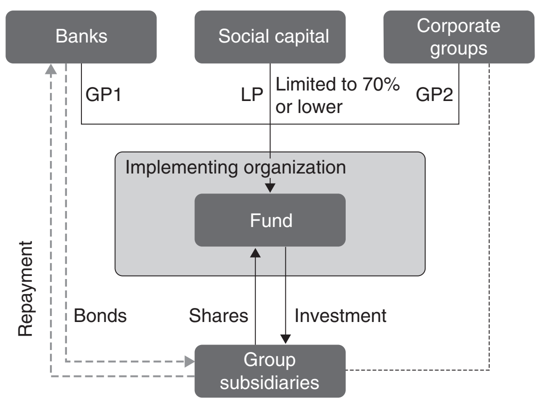
One reason for the lack of progress toward implementation even after agreements have been reached is the establishment of standards to prevent the DES process from being used as an easy way out of problems.

First, these standards limit the procurement of finance from the market. Parties were encouraged to raise market finance in order to implement DES schemes. This was expected to prime the pump for market-led DES schemes by providing an incentive for banks, which have not been enthusiastic toward the DES program. However, the government became concerned that if restructuring was unsuccessful, banks could use this process to transfer risk to investors, thereby undermining their commitment to restructuring.

For this reason, the government issued guidelines at the end of 2016 for special bond issues relating to the conversion of marketized bank loans into equity[21] (hereinafter referred to as "the guidelines"), limiting the amount of finance that could be raised to 70% of the value of the DES scheme. The funds required for a DES scheme can be raised through subscriptions by the bank and the company undertaking the DES scheme to the fund established by the implementing organization, and also from investors. The former are positioned as general partners with responsibility for the formation, investment, recovery, distribution, and liquidation of the fund, and the latter as limited partners who entrust money to the general partners with the aim of realizing capital gains (Fig. 12).

The significance of the guidelines is that they limit the amount of social capital that can be raised from limited partners to 70% of the total fund. For example, China Baowu Steel Group

Fig. 12 DES Money Inflows



Source: Compiled by JRI using local media reports

Corp., Ltd. (Baowu Steel), a steelmaker under the direct control of the central government, and the China Construction Bank together provided 12 billion yuan to meet the initial cost of a DES scheme. The Construction Bank raised a further 7.5 billion yuan, equivalent to 62.5% of the total fund, by selling wealth management products. This approach was taken in response to a crackdown on shadow banking, especially in the form of wealth management products, but the distribution of risk has not proceeded as planned, and it is possible that this is reducing the likelihood that the DES scheme will be executed.

Second, the standards set capital requirements for the implementation organizations established by banks. In September 2017, the government issued the "Administrative measures for commercial banks to establish new debt-to-equity implementation organizations"(22) ("administrative measures"), which set the minimum capital for implementation organizations at 10 billion yuan. The purpose of these measures is to ensure the stability of implementing organizations by preventing banks in a poor financial state from establishing implementing organizations as an easy option. As shown in Table 1 above, implementing organizations established by major commercial banks have capital of 10-12 billion yuan. For small and medium commercial banks, this requirement is a major hurdle to the establishment of implementing organizations.

Third, the standards set requirements for the financial soundness of implementing organizations. In 2016, China introduced Macro Prudential Assessment (MPA) as the framework for a banking supervisory system designed to promote financial soundness (Miura [2018]). Under the Administrative Measures, commercial banks are required to have shareholdings of at least 50% in implementing organizations, and 50% of the operations of those organizations must be devoted to debt-equity conversion. These measures are intended to prevent banks from misusing implementing organizations in order to achieve short-term improvements in their earnings, by bringing the implementing organizations under the MPA framework and ensuring that their financial performance is reflected in the financial performance of the banks that invest in them.

Behind these regulations is the government's concern that market leadership might be used as a pretext for exploiting regulatory loopholes. Chinese companies involved in DES schemes are seen as being exposed to moral hazards. The DES approach was intended as a mechanism for companies that can be expected to turn around their business performance. However, such companies are reluctant to participate in DES schemes because they are optimistic about their future. In contrast, "zombie" companies with no hope of recovery have nothing to lose and are eager to enter into DES schemes in the expectation that their debts will be substantially reduced. This problem of "adverse selection" is an inherent feature of China's DES program.

The same is true of banks. Banks are reluctant to engage in DES schemes targeting companies with future potential, since such companies are likely to repay their debts. However, companies at risk of bankruptcy may be targeted for DES schemes, which are seen as better than restructuring schemes under which loans become non-recoverable. While this approach merely postpones the need to deal with problems, it is attractive to weaker banks. There is ample justification for the postponement of action on problems if the bankruptcy of the company concerned is unlikely from the viewpoint of industrial or employment policies, and if it can ultimately be expected to survive as a result of government intervention.

(3) Emphasis on Steel and Coal, and *mínggǔ shízhài*

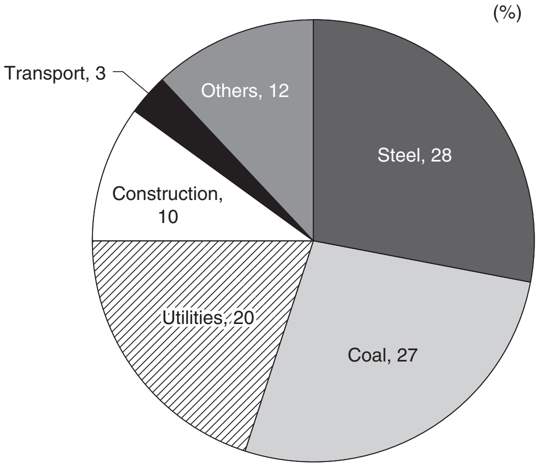
In addition to the lack of significant progress under China's DES program, there are also problems that raise concerns about the outlook for schemes that have already been executed. The first problem that we can identify is the concentration of DES schemes in the steel and coal industries. As of June 2017, 55% of DES schemes related to these two industries which both have excess capacity problems (Fig. 13). None of the schemes appear to target growth companies in emerging industries.

This can be seen as a harmful consequence of the tendency to form DES schemes targeting major companies that lead their industries, even if they are burdened with excess production capacity. Like the industrial companies referred to in Fig. 2 above, the steel and coal industries have staged a rapid recovery since 2016, and companies in these industries cannot be described as "zombies" on the basis of income figures for a single year. In addition, the reduction of excess capacity has reduced the number of companies in both industries, which suggests that companies have merged or been liquidated. However, asset-liability ratios have changed little (Fig. 14), and there is no evidence that companies are making serious efforts to reduce their excessive debt.

Because the need for rescue has been given priority under the DES program, there appears to have been a rush to establish DES schemes targeting companies that would normally have been ineligible, causing the program to become dysfunctional. As of September 2017, 21 coal companies and 10 steel companies are believed to have signed DES agreements worth 350 billion yuan[23] and 150 billion yuan[24] respectively. It seems reasonable to conclude that the original policy of not creating DES schemes for companies burdened with excess production capacity has been overturned.

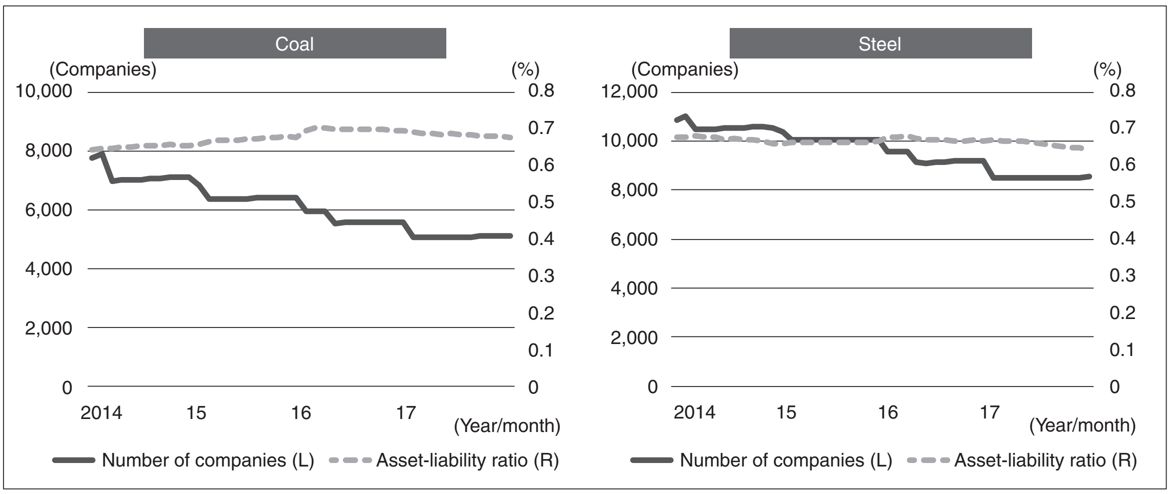
This problem may become even worse now that the government has indicated that it will provide

Fig. 13 DES Breakdown by Industry



Notes: Monetary basis. As of June 2017.
Source: Compiled by JRI using NATIXIS [2017a]

Fig. 14 Number of Companies and Debt Ratios in the Coal and Steel Industries



Source: Compiled by JRI using NBS data

financial support for DES schemes. In July 2017, the government announced a policy of allowing industrial investment funds to participate in DES schemes[25]. “Industrial development fund” is a generic term for government-established funds created to foster emerging industries and support M&A and infrastructure investment. There are many types. For example, the China Integrated Circuit Industry Investment Fund specializes in the semiconductor industry. Although these funds are based on the public private partnership (PPP) model, their use in DES schemes will inevitably strengthen government control over them and is likely to draw them toward companies in which they have previously been prohibited from investing.

A second problem that we can identify is the fact that the procurement of market funds for DES schemes is not going as well as hoped because of low rates of return. Companies in old industries, such as steel and coal, are unlikely to achieve high earnings, and the anticipated rate of return on DES schemes that have already been executed is believed to be around 5%[26]. While this is not lower than the 3-5% anticipated rate of return on wealth management products, the attractiveness of DES schemes to investors is limited because neither the principal nor interest are guaranteed. As long as DES schemes remain concentrated in old industries, the government’s goal of using household savings for the DES program is unlikely to be achieved.

A third problem is the fact that DES schemes are not debt-equity swaps but debt-debt swaps. A significant number of the companies for which DES schemes have been executed have agreed to pay fixed amounts similar to interest payments, and to buy back their shares after a specific period, rather than paying performance-based dividends to shareholders. In China this practice is summed up in the phrase *mínggǔ shízhài* (明股実債), which literally means “looks like stocks, really debt”. There is concern that the *mínggǔ shízhài* phenomenon will cloud the role of shareholders in leading the rehabilitation process, and that because companies are able to raise new finance as soon as their balance sheets improve, schemes will become debt-equity swaps in name only.

Unfortunately there appears to be no effective way to eliminate the *mínggǔ shízhài* situation. This is because the establishment of DES schemes for companies that have no hope of rehabilitation can be seen as a self-defense mechanism for banks. In October 2016, the China Construction Bank agreed to establish a 10 billion yuan DES scheme for Yunnan Tin Group (Holding) Co., Ltd., an SOE in Yunnan Province. However, the scheme was conditional on the repurchase of the shares by Yunnan Tin Group if the rehabilitation targets are not achieved by 2020. With outstanding debts of 35 billion yuan, Yunnan Tin Group has an asset-liability ratio of 83%, which is far higher than the industry average of 55%[27]. The goal of the DES scheme is to put the company on track to rehabilitation by reducing this ratio to 65% or lower. However, the company’s operating revenues in 2017 were 2.9% higher year on year at 34.4 billion yuan, which is far below the target level of 81.0 billion yuan.

Conclusions—DES Expectations Outpace Results

What is the outlook for China’s excessive debt problem? A sudden credit squeeze would have a negative impact on the economy, and it would be unrealistic to see that approach as a short-term solution to the debt problem. The IMF maintains that even if the Chinese government implements policies to limit the growth of credit, outstanding credit to businesses will rise from 255.7% of GDP in 2017 to 270% by 2022 (IMF [2018]). The only solution is to reduce excessive debt gradually over time.

Of course, without policies to curb the growth of credit, outstanding debt will reach 290% of GDP, which is above the average for developed countries. This would not only increase the risk of a financial crisis, but would also magnify the impact if such a crisis occurred. To avoid this situation, China will need to commit to the full implementation of radical measures in three areas: (1) the elimination of zombie companies from the market through the reform of bankruptcy systems and state-owned enterprises, (2) the elimination of tacit government guarantees, whereby the government facilitates lending to SOEs by acting as a backer, and (3) the improvement of the soundness of financial institutions through the reinforcement of the MPA system.

However, the government's attention is currently focused not on the correction of basic problems, but on the promotion of the DES program. It signaled its intention to promote the DES program in January 2018 with the issuance of the "Notice on Specific Policy Issues Concerning the Implementation of the Market-Oriented Debt-Equity Swaps of Banks"(28) ("the Notice"). The Notice, which reflects the government's strong determination to extend the scope of the DES program, states (1) that the program will be expanded to include not only "substandard" and "special-mention" loans, but also "pass" loans, (2) that it will cover not only bank loans, but also other types of credit, such as leases and trust loans, and (3) that the government will encourage the use of wealth management products to raise funds.

It is possible that the government will continue to introduce measures designed to motivate banks and businesses. For example, the deposit reserve ratio was lowered in June, and the government urged the use of the funds freed up by this measure for DES schemes(29). However, regardless of additional measures such as these, the DES program is unlikely to gain traction. That is because these measures fail to offset the structural flaw in DES schemes, which is the fact that banks have no incentive for active engagement in DES schemes that prioritize rescue ahead of the potential for rehabilitation. With China still unable to discover a strategy for overcoming its excess debt problem, the DES program remains in a dangerous situation in which expectations are outpacing results.

End Notes

1. “Trade war with US could be the tipping point for China’s $14 trillion debt-ridden economy”, 24 April 2018, CNBC (https://www.cnbc.com/2018/04/24/trade-war-with-us-may-be-tipping-point-for-chinas-debt-ridden-economy.html)

2. “关于集成电路生产企业有关企业所得税政策问题的通知财税” [Notice concerning corporate income tax policies for integrated circuit manufacturing enterprises], [2018] No. 27, March 28, 2018, Ministry of Finance (http://szs.mof.gov.cn/zhengwuxinxi/zhengcefabu/201803/t20180329_2856715.html)

3. “国人民银行决定下调部分金融机构存款准备金率以置换中期借贷便利” [People’s Bank of China decides to cut deposit reserve ratio for some financial institutions to replace the medium-term loan facility], People’s Bank of China, April 17, 2018 (http://www.pbc.gov.cn/zhengce huobisi/125207/125213/125434/125798/3522107/index.html)

4. “关于调整增值税税率的通知财税” [Notice concerning the adjustment of the value added tax rate], No. 32, April 4, 2018, Ministry of Finance, (http://szs. mof.gov.cn/zhengwuxinxi/zhengcefabu/201804/t20180404_2862283.html)

5. “China’s toxic debt pile may be 10 times official estimates: Fitch”, 23 Sept 2016, CNBC (https://www.cnbc.com/2016/09/23/chinas-toxic-debt-pile-may-be-10x-official-estimates-fitch.html)

6. “Major commercial banks” are the “Big 4” (Industrial and Commercial Bank of China, China Construction Bank, Agricultural Bank of China and Bank of China), plus the Bank of Communications.

7. Chen Mingli, “金融资产管理公司要成为市场化债転股的主体” [Financial asset management companies to be the implementing organizations for market-based debt-equity swaps], May 17, 2018, Sina Financial Network

8. “国家顾问积极适度降低企业的低比率意见” [Opinion of state councilors on the active but orderly reduction of corporate debt ratios], Guofa [2016] No. 54, October 10, 2016 (http://www.gov.cn/zhengce/content/2016-10/10/content_5116835.htm)

9. “商业银行资本管理办法（试行）” [Administrative Measures for the Capital of Commercial Banks (for Trial Implementation)], China Banking Regulatory Commission, June 8, 2012 (http://www.cbrc.gov.cn/chinese/home/docView/79B4B184117B47A59CB9C47D0C199341.html)

10. “国务院关于深化投融资体制改革的意见” [Opinion of the State Council on deepening the reform of investment and financing systems], central government website, July 18, 2016 (http://www.gov.cn/zhengce/2016-07/18/content_5092501.htm)

11. “明理：金融資産管理公司要成為市場化債転股的主体」” [Cheng Ming calls for the establishment of implementing organizations for market-based debt equity swaps, Finance-sina.com website, May 17, 2018 (http://finance.sina.com.cn/meeting/2018-05-17/doc-iharvfhu3846398.shtml?cre= financepagepc&mod=f&loc=3&r=9&doct=0&rfunc=2)

12. In 1999, the government established Orient Asset Management, Great Wall Asset Management, China Huarong Asset Management, and Cinda Asset Management, which were affiliated to the Bank of China, the Agricultural Bank of China, the ICBC, and the CCB respectively. Their purpose was to dispose of NPLs held by their parent banks.

13. "上一轮债転股的操刀手李晓鹏：三种组合拳+配套政策" [Li Xiaopeng (key player in the last round of debt-equity swaps: Triple punch + support policies],(http://finance.sina.com.cn/roll/2016-03-30/doc-ifxqtiwa5355924.shtml)

14. "保险基金参与债券上涨：支持者提名企业混合所有制改革" [Insurance funds participating in debt-equity swaps: helping SOEs to reduce leverage and implement mixed ownership reform], 21Jingxi website, April 13, 2018 (http://www.21jingji.com/2018/4-13/xMMDE0MTBfMTQyODMxMg.html)

15. "李克强総理记者会透露出的八大具体政策走向" [Li Keqiang reveals eight major policy directions in press conference], Central government website (http://www.gov.cn/xinwen/2016-03/17/content_5054553.htm), March 17, 2016

16. *如何看首批万亿债転股？何看首批万亿债転股？* [How will the first trillion in DES be achieved?], Sohu website, http://www.sohu.com/a/70912844_128289), April 22, 2016

17. *降低国有企业杠杆率作为重中之重－国家発改委财金司司长解読国务院常务会议* [SOE deleveraging our top priority—Chairman of the State Council's National Development and Reform Commission], Chinese government website (http://www.gov.cn/guowuyuan/2018-02/07/content_5264773.htm), February 7, 2018

18. "银证券银行业报告：债転股影响正面但有限" UBS Securities Banking Report: Impact of DES positive but limited], China Finance Online (http://bank.jrj.com.cn/2017/10/11180423216807.shtml). October 11, 2017

19. "我国债転股成效、问题与对策" [The effectiveness DES in China, problems and countermeasures], Hexun website (http://bank.hexun.com/2017-11-15/191647266.html), November 15, 2017

20. "China Lays Out Guidelines on Debt-for-Equity Swaps Between Banks, Companies", The Wall Street Journal, October 11, 2016 (https://jp.wsj.com/articles/SB103005436082225641633045823670337220245560)

21. National Development and Reform Commission, "市场化银行债权转股权专项债券发行指引" [Guidance opinion on the issuance of special bonds for the conversion of marketized bank loans] No.2735, December 19, 2016 (http://www.ndrc.gov.cn/zcfb/zcfbtz/201612/t20161226_832531.html)

22. *商业银行新设债转股实施机构管理办法* [Administrative measures for commercial banks to establish new debt-to-equity implementation organizations], China Banking Regulatory Commission, August 7, 2017, (http://www.cbrc.gov.cn/chinese/home/docView/4A559383B88346A68BA28C81A5371D98.html)

23. “21家煤炭企业签署3530亿债転股协议 落地不到两　成” [21 coal companies reach agreement on debt-equity swaps worth 353 billion yuan], Jiemian News website, September 23, 2017 (http://www.jiemian.com/article/1658112.html)

24. “已签债転股协议1500亿 钢鉄行业去杠杆有望加速” [Debt-equity swap deals worth 150 billion yuan signed—deleveraging of steel industry expected to accelerate], Sohu website , September 18, 2017 (http://www.sohu.com/a/192699000_118392)

25. “国家発展改革委弁公庁关于発挥政府出资产业投资基金引导作用推进市场化银行债権転股権相关工作的通知” [Notice of the General Office of the National Development and Reform Commission on allowing government-established industry investment funds to carry out work relating to the promotion of market-based debt-for-equity swaps by banks] (*Fa Gai Ban Cai Jin* [2017] No.1238), July 15, 2017 (http://www.ndrc.gov.cn/gzdt/201708/t20170801_856821.html)

26. See Note 14.

27. “首单地方国企债転股落地 建行募100亿投云南锡业” [First debt-equity swap for local SOE, Yunnan Tin Group and China Construction Bank raise 10 billion yuan], October 17, 2016, China Securities Journal (http://www.cs.com.cn/ssgs/gsxw/201610/t20161017_5072041.html)

28. “关于市场化银行债権転股権実施中有关具体政策问题的通知” [Notice on Specific Policy Issues Concerning the Implementation of the Market-Oriented Debt-Equity Swaps of Banks], Fa Gai Cai Jin [2018] No.152 (http://www.ndrc.gov.cn/zcfb/zcfbtz/201801/t20180125_875121.html)

29. “中国人民银行决定通过定向降准支持市场化法治化“债転股”和小微企业融资” [People’s Bank of China Decides to support market-based debt-equity swaps and lending to small businesses], People’s Bank of China, June 24, 2018, (http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3564334/index.html)

References

(Japanese)

1. Aoyama, S. [2012], *Saimu no Kabushikika ni Tomonau Kazei Mondai ni Kansuru Ichikosatsu—Saimu Shometsu -eki Kazei no Datosei o Meguru Kensho* [A study of tax issues resulting from the conversion of debt to equity—verifying the validity of taxing gains resulting from debt elimination], selected for inclusion in Nozeikyokai, *Zei ni Kansuru Ronbun* [Papers on Tax], No. 8 (https://www.nouzeikyokai.or.jp/files/pdf/ronbun/2012_8/8-1.pdf).

2. Okumoto, S. [2016], *Detto Ekuiti Suwappu (DES) ni Okeru Saimu Menjo-eki to Kazei*—Chusho Kigyo Saisei no Tame no DES no Kosatsu [Debt forgiveness gains and taxation in debt-equity swaps—a study of the DES approach for SME revitalization], in Sozeishiryokan, *Sozei Shiryokan-sho dai 25-kai nyushō sakuhin* [Entries in the 25th Sozeishiryokan Competition], (http://www.sozeishiryokan.or.jp/award/025/z_pdf/ronbun_h28_06.pdf)

3. Financial Services Agency, Bank of Japan [2018], *Bazeru III no Saishuka ni Tsuite* [Concerning the Finalization of Basel III], (https://www.fsa.go.jp/inter/bis/20171208-1/02.pdf],)

4. Miura, Y. [2017a], *Chugoku Zonbi Kigyo no Shijo Taishutsu wa Susumu ka—Shūkinpei Seiken o Machiukeru Shiren* [Will there be progress toward the elimination of China's zombie companies from the market?—A testing time for the Xi Jinping], in Japan Research Institute, *JRI Review*, 2017, Vol.4, No. 43 (https://www.jri.co.jp/MediaLibrary/file/report/jrireview/pdf/9808.pdf)

5. Miura, Y. [2017b], *Kokka Shihon ni Yoru Shihai Kyoka o Hakaru Shukinpei Seiken—Kongo Shoyu-Sei Kaikaku no Shinario o Kensho Suru* [Xi Jinping administration using state capital to strengthen control—verifying the scenario for the reform of the mixed ownership system], Japan Research Institute, *RIM*, 2017, Vol.17, No. 67 (https://www.jri.co.jp/MediaLibrary/file/report/rim/pdf/10184.pdf)

6. Miura, Y. [2018], *Chugoku no Kin'yu Risuku o Zofuku Suru Chusho Ginko—Tsuyomaru Ginko-Kan Shijo to Rizai Shohin e no Izon* [Small and medium banks magnifying financial risk in China—Reliance on the interbank market and wealth management products], in Japan Research Institute, *JRI Review*, 2018, Vol.3, No. 54 (https://www.jri.co.jp/MediaLibrary/file/report/jrireview/pdf/10317.pdf)

(English)

7. Ferguson, N. and X. Xu [2018], *Make Chimerica Great Again*, Hoover Institution Stanford University, Economics Working Paper 18105 (https://www.hoover.org/sites/default/files/research/docs/18105-ferguson-xu-final.pdf)

8. IMF [2017], *People's Republic of China Financial System Stability Assessment* (http://www.imf.org/external/np/fsap/fssa.aspx)

9. James Daniel, Jose M Garrido, and Marina Moretti [2016], *Debt Equity Conversions and NPL Securitization in China: Some Initial Considerations, Technical Notes and Manuals* No. 2016/05, IMF (https://www.imf.org/en/Publications/TNM/Issues/2016/12/31/Debt-Equity-Conversions-and-NPL-Securitization-in-China-Some-Initial-Considerations-43876)

10. Natixis [2017a], *China Corporates: Debt-to-Equity Swaps and Financial Health*

11. ——— [2017b], *Natixis China Corporate Monitor: Chinese Corporates' Financial Health Improving, but Much Less than Global Peers*.

12. Sally Chen and Joong Shik Kang [2018], *Credit Booms—Is China Different? IMF Working Paper*, WP/18/2 (https://www.imf.org/en/Publications/WP/Issues/2018/01/05/Credit-Booms-Is-China-Different-45537)

13. Torsten Ehlers, Steven Kong and Feng Zhu [2017], *Mapping Shadow Banking in China: Structure and Dynamics, BIS Working Papers* No.701 (https://www.bis.org/publ/work701.pdf)

14. World Bank [2002], *East Asia Update: Progress on Financial and Corporate Restructuring*, November 2002 (http://documents.worldbank.org/curated/en/244091468244546312/pdf/282160EA0Update0Progress0on0Financial.pdf)

(Chinese)

15. People's Bank of China [2018], *2018年第一季度中国貨幣政策執行報告* [Report on china's monetary policy in the first quarter of 2018] (http://www.pbc.gov.cn/zhengcehuobisi/125207/125227/125957/3537682/3537621/index.html)