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China: the challenge of de-leveraging

By John Greenwood

Introduction and Overview

- The decade 2010-2019 saw a highly unusual financial phenomenon evolve in China – the build-up of leverage at the same time as monetary growth and inflation decelerated.
- This paper sets out to answer two associated questions: (1) Given that increased debt and leverage are normally associated with faster money growth and inflation, how was this possible?
- And (2) how can China de-lever its economy without losing the advantages of lower monetary growth? What would be the most painless way to deleverage?
- The answers to the first set of questions require some study of the role of shadow bank financing in China and elsewhere.
- To assess some historical episodes where a similar set of circumstances has arisen, I examine two main cases: (a) Japan in the 1980s, and (b) the US in the 1920s.
- Japan experienced rapid money growth during its bubble of the late 1980s combined with financial liberalisation which helped promote the build-up of leverage. The attempted solutions were a disaster, an example not to follow.
- By contrast the US experienced very low money growth in the 1920s but considerable non-bank financing and the build-up of leverage. The solutions in the 1930s were disastrous, both on the monetary side and in relation to de-leveraging.
- Neither case is an exact parallel of China's circumstances today, but in combination they offer good lessons for resolving the problems China currently faces.
- If China is to avoid another inflationary episode while reducing leverage, the clear implication of these case studies is that the pathway ahead is for a long and slow de-leveraging process.

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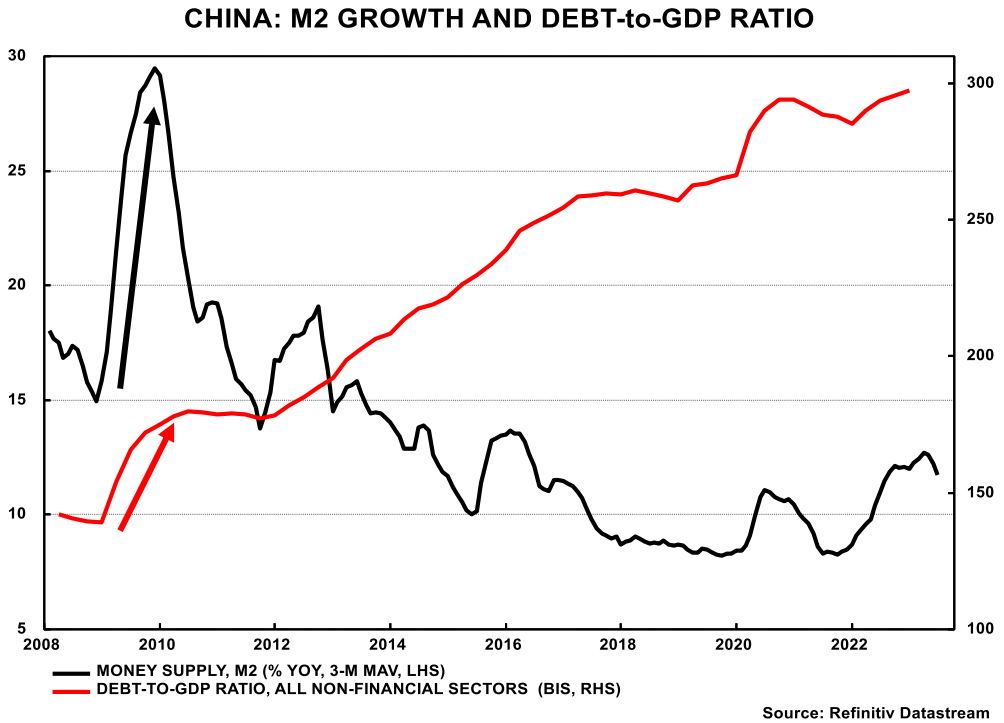
1. Introduction: an outline of China's leverage problem

The decade 2010-2019 saw a highly unusual financial phenomenon evolve in China – the build-up of leverage at the same time as monetary growth and inflation decelerated. While the sustained reduction in inflation was highly desirable, the increase in leverage was not a good outcome. Accordingly, the problem now is how to go from the current high level of leverage to a lower level without having an unnecessarily harsh monetary or credit squeeze. This Newsletter will explain how the present situation came about, consider some historical parallels, and set out the options available to China's policymakers.

2. China's Build-up of Leverage, 2010-19

China's leverage problem started with the CNY 4 trillion fiscal stimulus plan launched in November 2008 to counter the global financial crisis (GFC) that had just begun to hit global trade and hence China's export-oriented economy. As Figure 1 demonstrates, the surge in government infrastructure spending in 2009-10 was accompanied not only by a sharp increase of debt (see red arrow), but also by a near-doubling in the rate of monetary growth (black arrow) as the state-owned banks were encouraged to finance provincial government debt issuance with new credit.

Figure 1. China built up leverage while reducing monetary growth.



In a narrow sense the stimulus plan achieved exactly what it set out to do: a doubling of share prices, a surge in property prices, an economic recovery, and a rise in the inflation rate from 1.2% in December 2008 to 6.5% by July 2011. However, the resurgence of inflation soon brought along other problems, notably the start of shadow bank lending. This happened in part because the authorities failed to liberalise bank deposit interest rates. Bank deposit rates were held at 3% while

inflation helped to push yields on shadow bank products to 6% or more. The result was that the banks were unable to offer competitive yields on deposits to individual and corporate customers who were therefore tempted to place funds in higher yielding asset and wealth management products (AMPs and WMPs) such as entrusted loans, loan trusts, and peer-to-peer lending.

Figure 2. Contributors to the Build-up of Chinese Leverage.

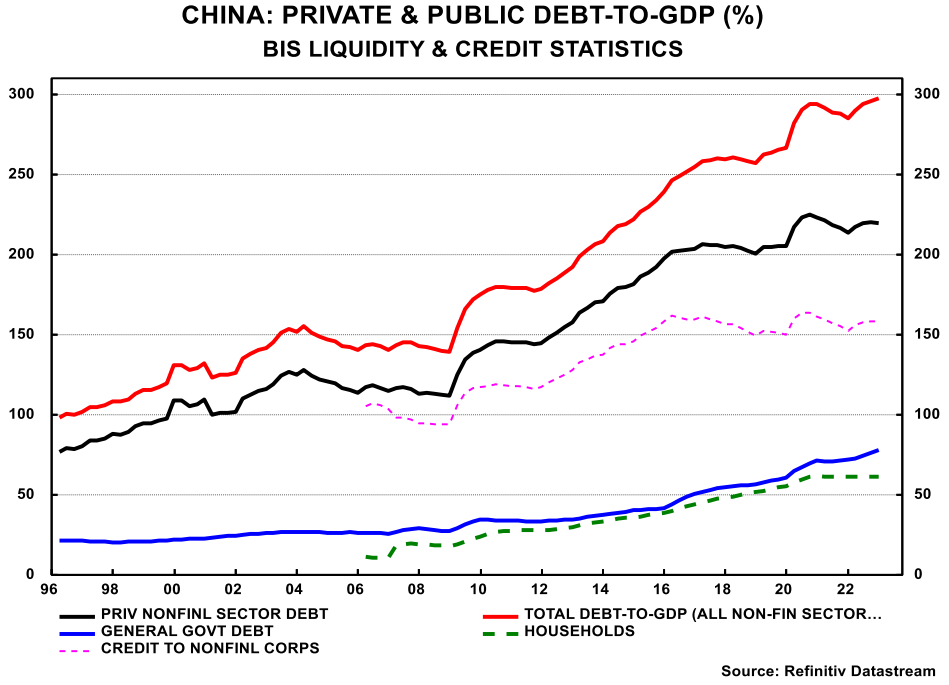


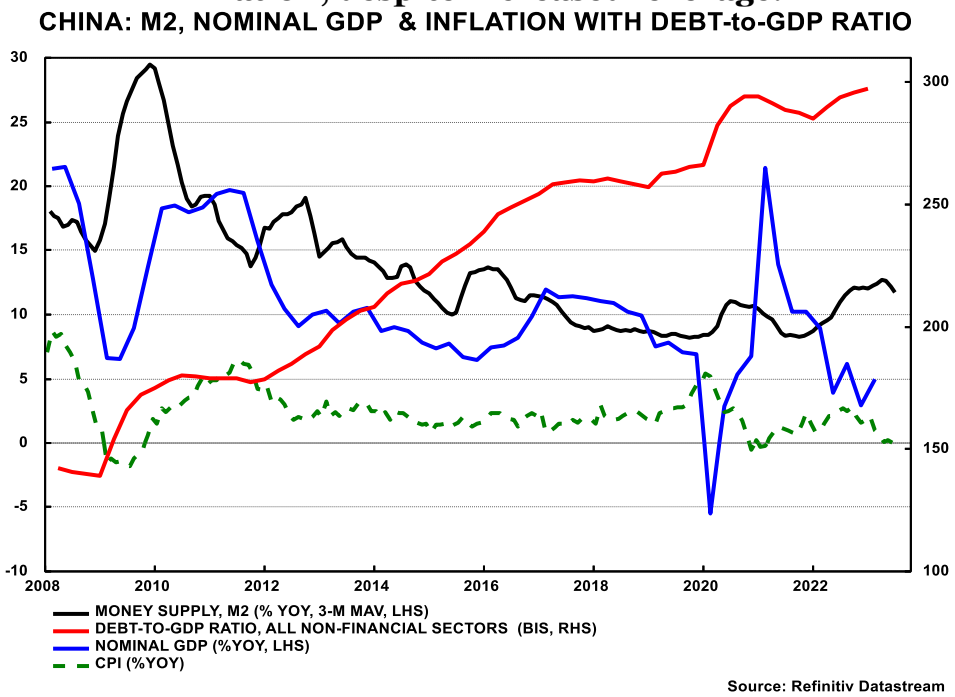
Figure 2 shows the components of overall debt growth by sector: the household, non-financial corporate, and government sectors. While total non-financial sector debt (in red) increased from 139% of GDP to 254.4% between 2008 and 2016 (a rise of 115.4 percentage points), non-financial corporate debt made the largest contribution, rising from 93.9% of GDP in 2008 Q4 to 159.5% in 2016 Q4, a rise of 65.6 percentage points. At the same time household debt increased from 17.9% to 44.2%, or a rise of 26.3 percentage points. Government debt increased from 27.1% to 50.8% over the same period, a rise of 23.7 percentage points.

From about 2016 the government became much more concerned about debt and leverage, and policies were gradually introduced to restrain or reduce the growth of leverage. In Figure 2 the black line (private non-financial sector debt) clearly flattens out in 2016-19 after a period of steep ascent. The three red lines policy restraining leverage in the real estate developers was introduced in August 2020 (see p.15).

So how was it that leverage could grow so much without an accompanying rise in money growth? The answer is that the debt that comprised the leverage was growing outside the banking system. The original credit was provided by a bank to a borrower who may have placed the funds with a shadow banking entity which in turn lent the funds to another borrower or intermediary. In this way the growth of shadow bank lending constituted repeated **layering** of bank-originated credit. Since the funds

were utilised either in onward lending to other non-bank intermediaries or in the purchase of assets such as apartments (which the government initially encouraged), the activity generated by the funds did not directly affect final spending on goods and services, and hence did not directly push up inflation or draw the attention of the authorities in the way they might otherwise have done if the whole chain of activity had remained on banks' balance sheets. This explains why the whole process was allowed to build up to a level where the amount of leverage only forced the authorities to pay attention when it became a threat to financial stability.

Figure 3. Slower money growth, lower nominal GDP growth and reduced inflation, despite increased leverage.



Source: Refinitiv Datastream

As mentioned earlier, the dominant trend of slowing broad money growth in the decade 2010-2019, when combined with a slowing real GDP growth, produced – after 2012 – lower inflation, as shown by the green dashed line in Figure 3.

3. Case studies of the build-up of debt and leverage.

Before turning to discuss how China may be able to resolve the problem of excess leverage it is worthwhile to consider one or two other case histories where debt and leverage have accumulated either in the presence of or in the absence of rapid monetary growth.

3.1 Japan in the 1990s and early 2000s.

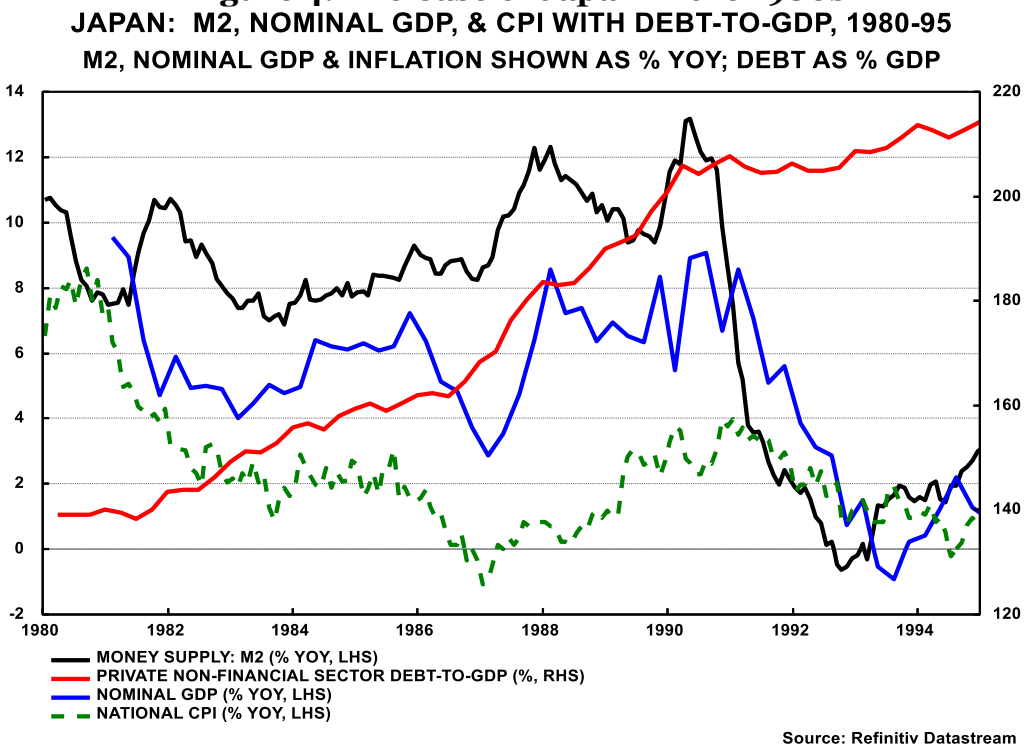
The first case to consider is Japan in the 1980s when debt accumulated against a background of moderate monetary acceleration. It should be noted, however, that Japan enjoyed a golden decade of growth and stability in the aftermath of the inflation that had been generated in 1973-75. The high inflation of these years was primarily a result of policy mistakes in the wake of the break-up of the Bretton Woods system of fixed exchange rates, ***not*** -- as is so often claimed – simply a result

of the OPEC price hikes of late 1973 and 1974 (the "first oil crisis"). Concerned that Japan's export-oriented economy might be irreparably damaged by yen appreciation after President Nixon's announcement of the closing of the gold window on August 15, 1971, the Japanese authorities lowered interest rates and allowed a very rapid acceleration of money growth in the period 1971-73. This was the source of the 23% increase of Japanese consumer prices in 1974. A component of the price increase was the surge in imported oil prices, but without the monetary fuel to drive spending power, Japan could not have experienced such a serious episode of inflation.

In the wake of the painful inflation, the Japanese authorities resolved to manage policy better in future. Accordingly, in July 1974 the Bank of Japan announced a target for broad (M2) money growth and continued to do so for most of the next decade. The results were exactly what you would expect from a seminar on monetary economics. Inflation gradually subsided towards 4% p.a. while growth recovered to the new potential growth rate, also around 4% p.a.

But in 1985-86 the Japanese economy was destabilised again, this time by the two currency agreements of September 1985 (the Plaza Agreement) and February 1987 (the Louvre Accord). Instead of remaining focused on stabilising domestic spending by maintaining steady money growth, Japan's political leaders foolishly agreed to prioritise currency movements against the US dollar, derailing domestic monetary policy by foreign exchange market intervention. Yen appreciation caused nominal GDP to slump in 1986-87 (as shown by the blue line in Figure 4). The authorities now responded by initiating a burst of rapid money growth and an extensive programme of financial liberalisation. Japanese M2 growth accelerated from 8% p.a. in 1985 to double digit growth in 1987-90 (see the black line in Figure 4).

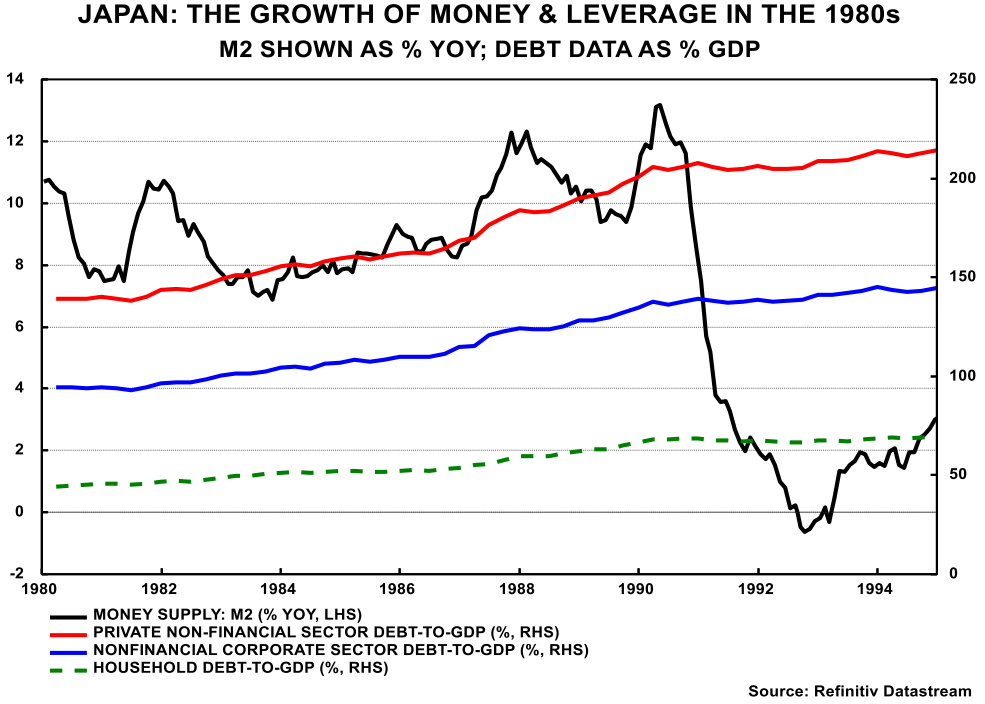
Figure 4. The Case of Japan in the 1980s



Source: Refinitiv Datastream

It was this combination of monetary acceleration and financial liberalisation that created the notorious Japanese asset bubble of 1986-90. As Figure 4 shows (in the red line), the private non-financial sector's ratio of debt-to-GDP grew from 162.3% in 1986 Q1 to 205.9% by 1990 Q1, an increase of 43.6 percentage points in the space of just four years.

Figure 5. The Contributors to Japanese Leverage in the 1980s.



Source: Refinitiv Datastream

For our purposes here two facts are relevant to the China story. First, there was a considerable growth of non-bank financial intermediaries such as "*Jusen*" (*Jutaku Kin'yu Senmon Kaisha* or specialist housing lenders[1]) outside the banking system and a parallel growth of "*Zai-tech*" or financial engineering among non-financial companies during these years in Japan. Today we would label this activity "shadow banking".

Second, the increase in leverage was spread across both the corporate and household sectors, as shown in Figure 5. Non-financial corporate sector debt increased from 109.8% of GDP in 1986 Q1 to 137.6% in 1990 Q1, while household sector debt increased from 52.5% to 68.3% over the same period.

The unravelling of Japan's asset bubble had many elements, but the key forces were (1) the collapse in the demand for loans and the consequent parallel decline in the money supply (M2), and (2) the complete failure of the authorities either to recapitalise the banks or assist in the de-leveraging process.

[1] Seven firms had been established in the 1960s mainly as subsidiaries of city banks. In 1996, six of the seven Jusen failed because of non-performing loans (NPLs), which accounted for 49% of their total loans. They were bailed out by the government, but not until after the financial crisis of 1997.

(1) Japan's attempt to boost aggregate demand by fiscal spending in the 1990s.

It is often claimed, particularly by Richard Koo and advocates of his balance sheet recession thesis[2], that large fiscal deficits were the correct solution to the problem of excess private sector savings surpluses, or inadequate aggregate demand in Japan in the 1990s as households and firms attempted to pay down debt. The problem with this argument is that, like the balance of payments which always balances *ex post*, sectoral surpluses and deficits of savings over investment will always sum to zero *ex post*. Both are accounting identities. However, the summing to zero of component elements of aggregate demand does not ensure adequate growth of nominal spending or nominal GDP to avoid deflation.

More importantly, government spending or fiscal transfers financed by taxation or by borrowing do not have significant short-run multiplier effects since they take resources from the private sector to fund spending by the public sector. Spending by the government is increased, but spending (on consumption or investment) by firms and households is reduced by a roughly equal amount. Also, in the long run such transfers are generally damaging to economic growth because they reduce the share of the economy that is subject to market forces.

The only way to increase aggregate demand is by financing incremental spending – whether by the private sector or by the public sector – by the creation of additional money, either by the commercial banks or by the central bank. The monetary theory of income determination holds that aggregate nominal spending is a relatively stable function of the nominal quantity of money (with a variable lag). The functional stability derives from the relatively stable demand for money balances, or the inverse of income velocity in the quantity theory's equation of exchange, MV= Py. In my research I have found the trend of velocity to be generally stable around a downward slope of 1-2% p.a. for developed economies and 2-5% p.a. for emerging economies.

(2) The failure of the Japanese authorities to assist in the deleveraging process.

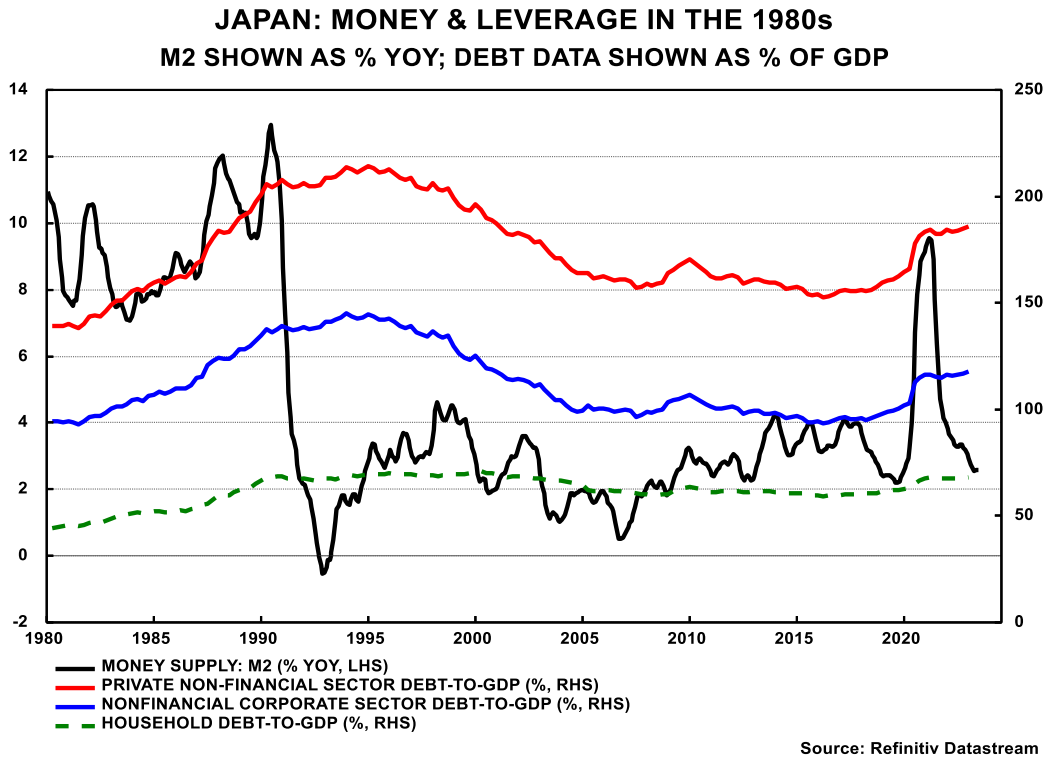
Figures 4 & 5 above showed how the Japanese private sector had become substantially more leveraged during the bubble years, 1987-90. Therefore, once the bubble burst it was natural for private sector firms (including banks) and households to deleverage and repair their balance sheets in the process. This could imply a reduction of debt through repayments financed by the sale of assets (or, for a firm, raising more capital) or it could imply a reduction in consumption spending and the repayment of debt from income. It is clearly easier for firms to deleverage than for households.

There are many measures by which to assess corporate and household indebtedness but here I will continue with the simple debt-to-GDP ratios used above. Figure 6 shows the peaking of non-financial sector corporate debt-to-GDP in 1993-94 and the

[2] See "The Holy Grail of Macroeconomics: Lessons from Japan's Great Recession"(2008) or "The Escape from Balance Sheet Recession and the QE Trap"(2014), both by Richard Koo. In my view his insight on the diagnosis was accurate and ground-breaking, but his prescription does not solve the problem.

deleveraging that extended for just over a decade until 2007, followed by a brief upswing in 2008 due to the GFC, and then continued deleveraging again until 2016. (The increase debt ratio in 2008 was due mainly to the fall in GDP, not an increase in the amount of debt taken on by the corporate sector).

Figure 6. The long, slow deleveraging by the Japanese corporate sector.



The low rate of broad money growth in Japan in the three decades from 1991 until 2019 is shown by the black line in Figure 6. What does the quantity theory of money say about this? Supposing Japan had an inflation target of 2% p.a. (which was officially introduced by PM Abe and Governor Kuroda in 2013), that the economy was capable of 1% p.a. real GDP growth, and that income velocity had a trend rate of decline of 2.3% p.a., we can calculate the appropriate money growth rate. Substituting these numbers into the growth form of the equation of exchange MV=PY we have:

$m + v = y + p$,
where lower case letters represent growth rates for M, V, Y and P.
Solving for "m", the growth rate of money, we get:
$m = 1 + 2 + 2.3 = 5.3\%$.

In other words, to achieve a 2% inflation target, M2 growth of 5.3% p.a. would be needed. But Figure 6 shows this was never achieved. In fact, during these years M2 growth averaged only 2.6% p.a. – only half of what was needed.

It is true that during these years Japan maintained zero interest rates (or ZIRP) from 1997 onwards, then introduced QE from April 2001 until April 2006, and later pursued "QQE" from 2013 onwards, adding in yield curve control (YCC) from 2016. Yet throughout these episodes, while the balance sheet of the Bank of Japan may have grown hugely, the growth of money in the hands of the public (M2) averaged only 2.6% p.a. There should be little wonder that, until the temporary upward shift of M2 growth during the Covid pandemic, Japan has been in a persistent state of deflation or near-deflation with near-zero interest rates.

The relevance of Japan's monetary stagnation during these three decades to China's situation today is that deleveraging is far more difficult under conditions of slow money growth or tight liquidity. If the Japanese authorities had been able to engineer a faster rate of money growth, both firms and households would have been able to deleverage more rapidly. One way to have achieved this result would have been to re-arrange the Bank of Japan's QE or QQE operations so that the Bank purchased securities from non-banks instead of from banks. This would have ensured that the counterpart to the growth of deposits was growth of reserves for banks rather than growth of loans. The net result would have been an expansion of money growth that would have facilitated deleveraging without its normal counterpart of increased lending and leverage.

To sum up Japan's experience in the 1990s and the early 2000s and its relevance for China today, it is clear that the Japanese authorities persisted in vain with large budget deficits and fiscal transfers (building up government debt) while they failed to ensure adequate money growth. The result was nearly three "lost decades", meaning anaemic growth of nominal GDP, comprising weak real GDP growth combined with deflation or near-deflation of the overall price level.

For China today it means that the authorities must above all ensure continued adequate growth of broad money and not be misled into expanding the role of government any further by operating large fiscal deficits. This also implies that any de-leveraging must be facilitated within a framework of steady growth of nominal GDP, itself enabled by stable – adequate but not excessive – growth of broad money.

3.2 The experience of the US in the 1920s.

We started this discussion of China with the observation that China had experienced something very unusual in the decade since 2010 – the economy had leveraged up at the same time as money growth was gradually slowing down and inflation was kept at a very low level (with the sole exception of the African swine flu episode in 2018-19). I attributed this to the growth of shadow banking, which itself had resulted from the failure to raise or deregulate interest rates at a time of rising inflation (2010-11). The question to be addressed now is whether there are any other historical examples of economies that have experienced the same kind of contrasting growth of money and leverage?

The only example of this contrast that I have been able to find – so far – is the United States in the 1920s. It is well known that the "roaring twenties" were a period of

financial and real estate speculation, but what is not so well known is that this was also a decade of low money growth and negligible inflation.

Figure 7. US Money Growth and Inflation were Low in the 1920s

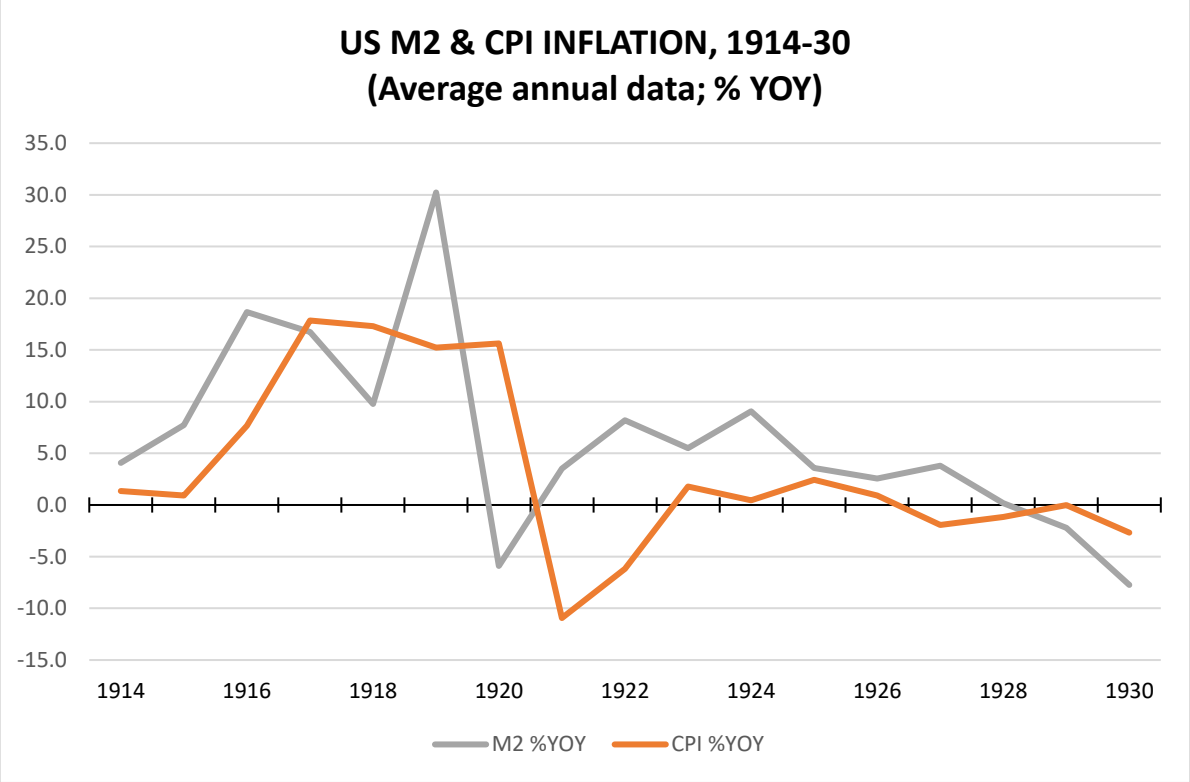
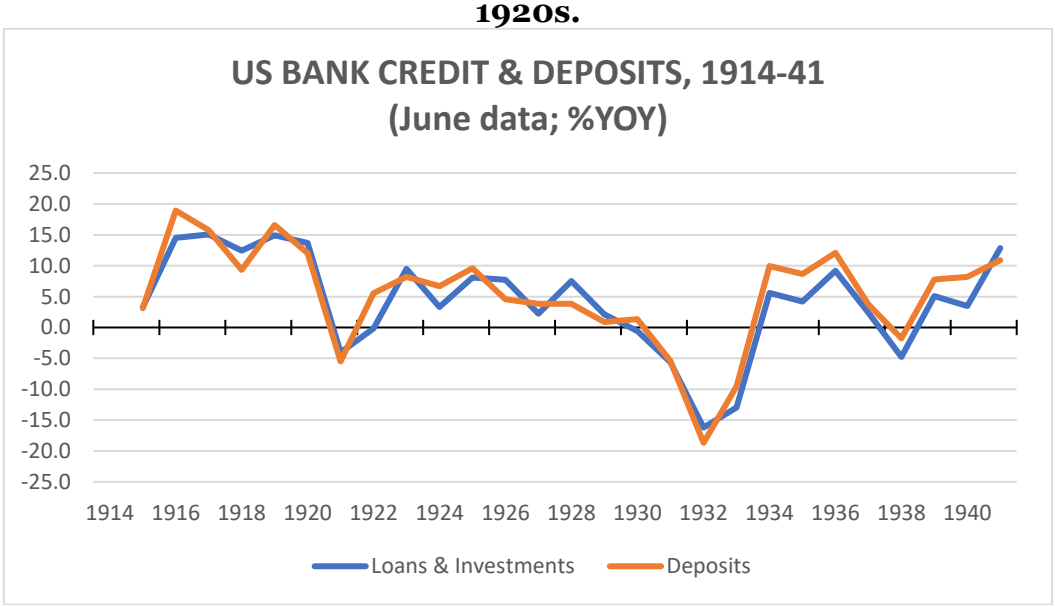


Figure 7 shows the growth rates of M2 and CPI inflation in the period 1914-30. After the wartime surge in money growth (1916-19) and its immediate post-war slump (1920), M2 settled down to average just 3.8% p.a. during the years 1921-29. Inflation, measured two years later to allow for the lag in effect between money growth and its impact on CPI inflation, averaged -1.0% p.a. in the years 1923-31.

Figure 8. US M2 Growth Mainly Reflected Bank Loan Growth in the 1920s.



Moreover, the growth of US M2 money, which was comprised 87-92% deposits in the 1920s, was primarily driven by bank credit growth, as shown in Figure 8. Total credit growth by sector as a percentage of GDP is shown in Figure 9 from 1929. The speculative activity in the stock market is reflected in the rapid growth and high share of broker loans by banks in Figure 10. (NB This was in the days before Glass-Steagall, so banks were able to own brokerages.) Data for real estate lending, for

Figure 9. Corporate and household debt high in 1920s, despite low money growth

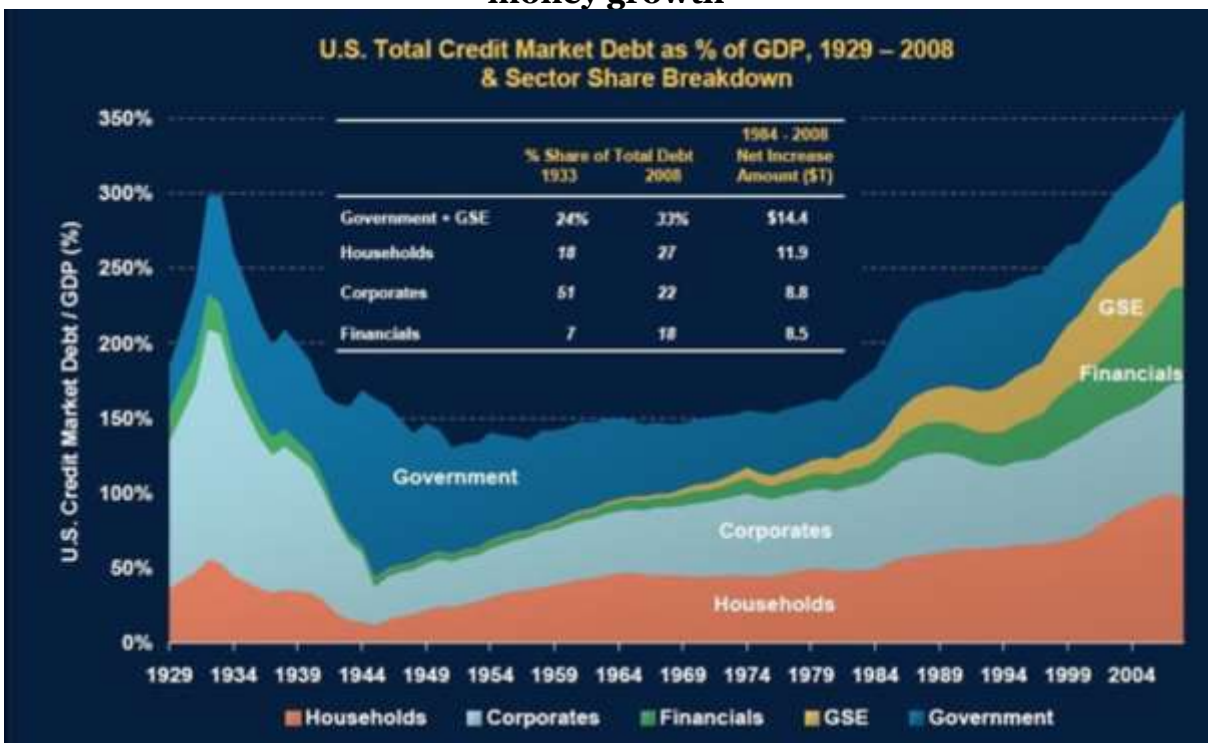
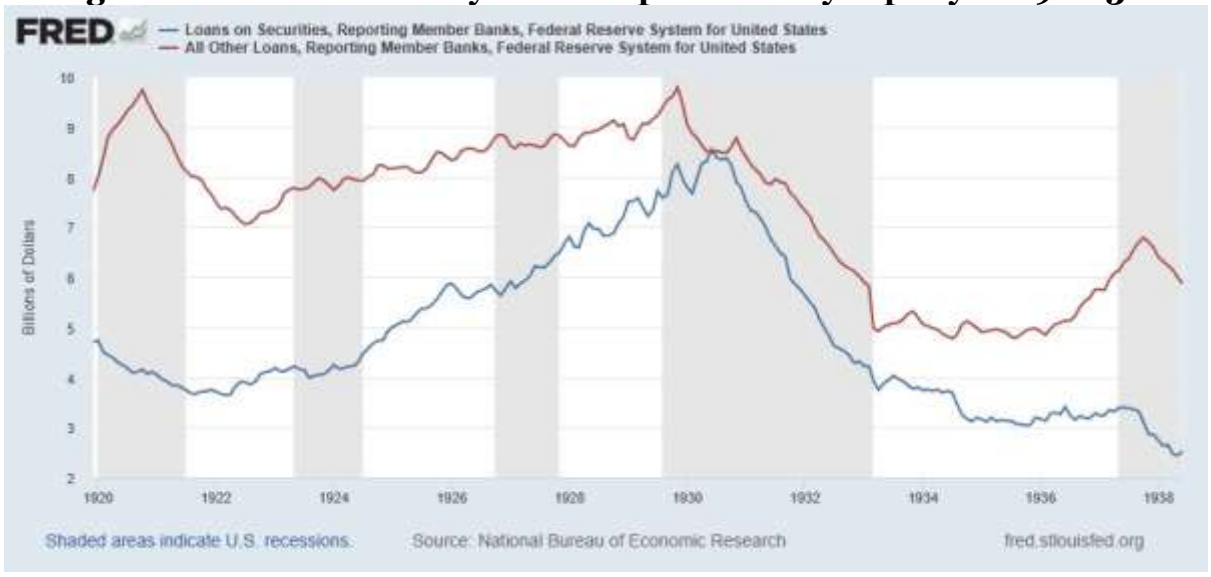


Figure 10. Broker loans by banks expanded very rapidly in 1922-30.



which the decade was also famous, is not so readily obtainable. Nevertheless, we know from written accounts of the period and numerous anecdotes that lending was very actively promoted by real estate developers and building and loan associations.

The data in Figure 10 are astonishing. Between December 1921 and December 1929 total loans by banks expanded by 52.8%, but within that, total loans on securities increased by 112% whereas all other lending increased by just 23.8%.

One area of non-bank lending for which data is available is local building and loan associations. In 1920, membership (i.e., depositors) had more than doubled to nearly 5 million and assets had grown more than 150 percent to $2.5 billion. By 1930, despite the financial crisis of the preceding year, membership was up to 12.3 million, and assets totalled $8.8 billion (similar to the value of broker loans at banks). With the real estate boom in California and other western states, assets grew at 47.1% p.a. from 1920 to 1930 in the West compared with 25.1% for the nation as a whole.

Following the crash of 1929 and the ensuing Great Depression, a large number of building and loans closed; the number of associations dropped from 12,342 in 1929 to 8,006 a decade later. These closures did not result from depositor runs, but from other effects of the Depression on the banking sector. Because many building and loans required short-term lending from banks (given that their assets were mainly longer-term mortgages), the widespread extent of bank failures led to a short-term credit crunch for the associations. It is reasonable to assume, also, that the sharp drop in nominal real estate prices contributed to building and loan closures.[3]

At an aggregate level, the "solution" to the leverage problem in the US in the 1930s was the worst of medicines. Money growth contracted for four successive years, credit growth also contracted (as shown in Figures 9 & 10), the economy went into deep recession, unemployment increased to 25.6% and consumer price deflation persisted for the four years, 1930-33 (1930: -2.7%; 1931: -9.0%; 1932: -10.3%, and 1933: -5.2%). De-leveraging occurred but was accompanied by bankruptcies and widespread unemployment. Nobody would have voluntarily selected this outcome.

Although the disastrous Great Depression was not a deliberate choice of the authorities (the Treasury and the Fed together), it is clear today that one reason why it happened was that the Federal Reserve simply sat on its hands most of the time, insisting the interest rates were already low enough. Instead, the Fed could have purchased securities in a manner similar to the QE policy adopted in 2009-14, thereby boosting M2 money growth and substantially alleviating or even reversing the recession. However, because the Fed did not actively undertake such credit easing or monetary expansion, asset prices slumped, the economy contracted, and goods and service prices fell for four years consecutively.

4. The Lessons for China Today

China's problems today are not an exact replica of either Japan's problems in the 1990s or the problems of the US economy in the early 1930s. Nevertheless, there are numerous common elements. First, like Japan in the 1980s and the US in the 1920s, leverage has grown to an uncomfortably high level. Second, much of China's leverage

[3] This paragraph and the preceding one are based on a paper from the Federal Reserve Bank of Richmond: (2019) David Price and John Walter: "It's a Wonderful Loan: A Short History of Building and Loan Associations."

is concentrated in the real estate sector, as well as among corporates and households – exactly as it was in both Japan and the US. Third, because China's money growth has been – for the most part – restrained, inflation is not a problem, whereas inflation was a problem in Japan in 1990, but not in the US in 1930. Finally, the People's Bank of China (PBC) today does not lack either the tools or the knowledge if a faster rate of monetary expansion was thought to be desirable. By contrast, the BOJ under Governors Sumita (1984-89) and Mieno (1989-94) had no intention of allowing any further period of easy money after March 1989 (when rates were raised), and the Fed in the early 1930s had mistakenly adopted the view that monetary conditions were already easy enough (based on the low level of nominal interest rates).

How then should the PBC operate in the current environment? What should its priorities be?

In my judgement the PBC should continue to pursue price stability (i.e., stability of the CPI or goods and service prices) while at the same time facilitating de-leveraging by the corporate and household sectors.

In Japan's case the Japanese authorities made errors with respect to both objectives. First, they (the BOJ) overtightened monetary policy as is evident not in interest rates but in the catastrophic collapse of M2 growth from 13.2% year-on-year in May 1990 to -0.6% year-on-year by October 1992. It was the declines or decelerations of M2 that precipitated the Japanese recessions of 1991-93, 1997-98 and 2001-02. Second, they (the MOF) mistakenly boosted fiscal spending but achieved no sustained or significant increase in nominal or real GDP.

Second, the Japanese authorities did next to nothing for most of the 1990s to assist with private sector de-leveraging. The government, for its part, failed to insist on (or assist in) the recapitalization of the banks until after the financial crisis of 1997-98, and the BOJ's continued tight money (i.e., low money growth) made it much more difficult for private sector firms or households to repay debt. In short, Japan's example offers numerous examples of what not to do, and for that reason alone the Chinese authorities can learn from the lessons of Japan.

In the case of the US in the 1930s, first the decline in the money supply by one third between 1929 and 1933 scuppered any possibility of price stability and made de-leveraging far more difficult and painful than it would otherwise have been with stable or rising prices. If inflation is typically the friend of the debtor, deflation is surely his or her nemesis.

Second, with respect to de-leveraging, the federal government under President Hoover established the Reconstruction Finance Corporation (RFC) in January 1932 which played a modest role in alleviating the depression. Funded largely by the US Treasury, the RFC was not able to affect monetary growth, and in this sense was an agent of fiscal transfers rather than a source of new money for the economy. But the RFC had two distinct features: it was intended to make loans to state-chartered banks and small banks in rural areas that were not part of the Federal Reserve

System, and it also was able to make loans on the basis of collateral that the Fed and other lenders could not accept. In addition, it was authorised to make loans to railroads, mortgage associations, and other businesses, but the publication of the names of loan recipients beginning in August 1932 (at the demand of Congress) significantly reduced its effectiveness, because it appeared that political considerations had motivated certain loans. Amendments to the original legislation in July 1932 allowed the RFC to provide loans to state and municipal governments for the purpose of financing projects like dams and bridges. The money was to be repaid by charging fees to use these structures. To help with unemployment, a small relief program was created that was to be repaid by tax receipts.

However, the scale of these programs was limited. Households faced unemployment and bankruptcy with little support from the government, while firms failed resulting in fire-sales of assets, widespread layoffs, and debt and equity losses. The combination of household and corporate collapse dragged down banks whose fortunes were exacerbated by periodic runs. Although President Roosevelt expanded the role of the RFC in 1933, it was not until broad money resumed a positive growth rate in early 1934 that the economy finally started to recover.

Turning to the specifics of China today, the PBC needs to ensure monetary growth is adequate to keep inflation around its 3% target and the government as a whole needs to have a pro-active program to de-leverage several sectors of the economy.

According to June 2023 data, M2 growth is at 11.3% year-on-year, having been in the range 11-13% since May 2022. This compares with an average growth of 9.1%p.a. between the start of 2018 and the end of 2021. Using the quantity theory framework outlined on p. 8 we assume China's real potential growth rate is 4.5% p.a. Adopting its trend rate of change of velocity since 1997 of -2.8% p.a., and assuming a continued 3% inflation target, China requires a growth rate of M2 of:

$$m + v = y + p,$$

where lower case letters represent growth rates for M, V, Y and P.
Solving for "m", the growth rate of M2, we get:

$$m = 4.5 + 3 - (-2.8) = 10.3\%.$$

Given that M2 growth already exceeds 10.3% year-on-year, there is little headroom for any acceleration of monetary growth – either to boost economic recovery or to assist with de-leveraging. China's inflation is currently depressed (the CPI was 0% year-on-year in June) relative to what one would normally expect from prior money growth, but it is not advisable to take any risks in this area. The present weakness in the economy may well account for the temporary CPI aberration on the downside.

The limited scope for a stimulatory monetary policy leaves China with just one option: pro-active policies to encourage de-leveraging. Like the US in the 1930s with the RFC (or from 1989 with the Resolution Trust Corporation which was designed to liquidate and re-organise the assets of failed Savings and Loan institutions), China could accelerate the de-leveraging process provided that it was willing to see certain entities or owners take the necessary losses. In Japan in the 1990s neither the

authorities nor the banks were willing to take the losses, with the result that the process stalled. Already the Chinese authorities have made an attempt to enforce some degree of de-leveraging in the property sector with the famous "three red lines" program, which, in August 2020, essentially imposed three balance sheet ratios on heavily indebted property developers. The rules required that :

- Liabilities should not exceed 70 percent of assets (excluding advance proceeds from projects sold on contract)
- Net debt should not be greater than 100% of equity.
- Cash reserves must be at least 100% of short-term debt.

However, given the high levels of indebtedness and the problems of enforcement, the rules have subsequently been partially relaxed, notably in December 2021 when the authorities decided to exempt any borrowing for the purpose of a stronger company acquiring the assets of a more indebted property developer.

Another problem is the overindebted state of numerous provincial and local government entities, and the seeming reluctance of the Beijing authorities to clamp down on politically powerful actors in this arena. Until these problems are addressed in a firm and sustained manner, China seems likely to underperform its potential due to the heavy debt load that the economy has accumulated over the past decade.

In conclusion, the state of China's economy from a cyclical or monetary viewpoint does not make it possible – or at least sensible – to administer any monetary stimulus. Money growth is already sufficiently rapid, and any further acceleration would only increase the risk of inflation over the next 2-3 years. That means that any de-leveraging strategy must be carried out within the bounds of existing aggregate nominal growth. While it would be possible – and even desirable – to set up a governmental or public sector organisation that is tasked with cleaning up the balance sheets of real estate development companies or banks with particular exposures, without monetary expansion such an entity would essentially be a vehicle for fiscal transfers. Does the government really wish to take on the debt and assets of such impaired companies? If not, it must be prepared for a long process of work-out extending over many years.

Summary and Investment Implications

- The decade 2010-2019 saw a highly unusual financial phenomenon evolve in China – the build-up of leverage at the same time as monetary growth and inflation decelerated.
- This paper set out to answer two associated questions: (1) Given that increased debt and leverage are normally associated with faster money growth and inflation, how was this possible?
- And (2) how can China de-lever its economy without losing the advantages of lower monetary growth? What would be the most painless way to deleverage?
- The answers to the first set of questions require some study of the role of shadow bank financing in China and elsewhere.

- To assess some historical episodes where a similar set of circumstances has arisen, two main cases were examined: (a) Japan in the 1980s, and (b) the US in the 1920s.
- Japan experienced rapid money growth during its bubble of the late 1980s combined with financial liberalisation which helped promote the build-up of leverage. The attempted solutions were a disaster, an example not to follow.
- By contrast the US experienced very low money growth in the 1920s but considerable non-bank financing and the build-up of leverage. The solutions in the 1930s were disastrous, both on the monetary side and in relation to de-leveraging.
- Neither case is an exact parallel of China's circumstances today, but in combination they offer good lessons for resolving the problems China currently faces.
- If China is to avoid another inflationary episode while reducing leverage, the clear implication of these case studies is that the pathway ahead is for a long and slow de-leveraging process.
- The investment implications suggest the maintenance of a cautious stance on China's equities, and especially its property developers and banks. However, if the authorities can be relied on to maintain their low but steady money growth rate, then Chinese government bonds should prove to be good investments over the medium term. The currency is much more problematic as it may continue to weaken based on investors' views of the equity prospects.

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