

19-7 Fiscal Policy Options for Japan

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For many years, the Japanese government has promised an eventual return to primary budget surpluses.¹ As figure 1 shows, it has not delivered on these promises. Since 1999 (when monetary policy hit the effective lower bound [ELB] on nominal rates), primary budget deficits have averaged 5.4 percent and net debt has steadily increased, from 64 percent of GDP to 153 percent in 2018.

Today the primary deficit stands at 2.9 percent, the overall deficit stands at 3.2 percent, and the ratio of net debt to GDP (using the International Monetary Fund's definition

of net debt) has roughly stabilized at 153 percent.^{2,3} The government has announced its intention of returning to primary balance by 2025. Is it the right goal? We argue that, under current forecasts about the rest of the Japanese economy, primary deficits may be needed for a long time. They are needed not because they are desirable in and of themselves; they are not, and the high levels of debt come with some risks. They are necessary because under current circumstances, they are probably the best tool for maintaining demand and output at potential. We argue, however, that they should be put to better use and show that, for example, measures aimed at increasing fertility—and by implication population and output growth—are likely to more than pay for themselves.

SECULAR STAGNATION AND FISCAL AND MONETARY POLICIES

The fundamental macroeconomic problem of Japan is a particularly virulent form of “secular stagnation” (Summers 2015), with weak domestic aggregate demand and the resulting need for a combination of very low interest rates and budget deficits to sustain demand and output at potential.⁴ Through negative policy rates and quantitative easing

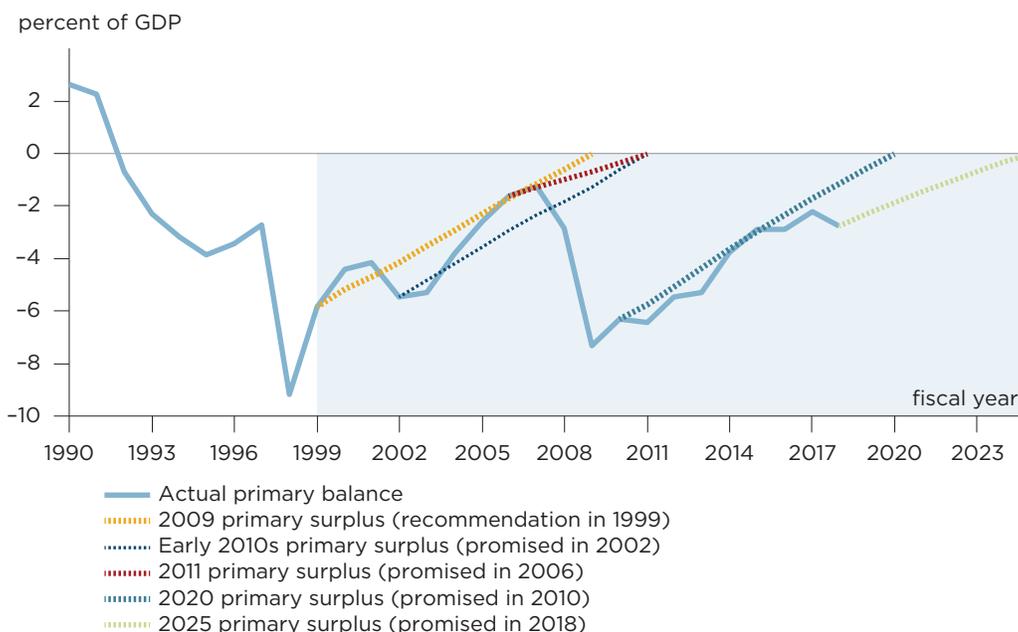
1. Japan started using the primary balance as its fiscal target in 1999. Before then, it targeted overall budget deficits, including interest payments. In 1999 the prime minister's advisory council recommended that primary balance should be achieved in about 10 years. Since then governments have regularly promised to reach primary balance by a certain date. For each date on which a promise was made, we interpolated between the current primary deficit and the target deficit to get the corresponding path of adjustment.

2. The numbers in the second paragraph are for 2018 from the IMF *Fiscal Monitor*, April 2019, www.imf.org/external/datamapper/datasets/FM/1.

3. Observers often refer to the ratio of gross debt to GDP, which increased from 131 to 237 percent over the same period. The number is scary, but for the issues we focus on, it is not useful. Unless the financial assets held by the government have a lower rate of return, are less liquid, or are more risky than its liabilities, net debt rather than gross debt is the right concept (or at least a better concept, given the remaining issues raised by retirement systems and other insurance schemes). The definition of financial assets used by the IMF to go from gross to net debt is conservative and does not include, for example, the value of the equity of public corporations.

The argument is sometimes made that a sufficient level of gross debt is needed to keep the market for government bonds deep and liquid. This issue was a worry in the United States at the end of the Clinton administration, when net debt appeared to be converging to zero. Given the levels of debt in Japan, it does not seem particularly relevant here.

4. To clarify an important semantic issue and a frequent source of confusion: the term “secular stagnation” is used to denote two related, but distinct, phenomena. The first is low output growth, reflecting either low productivity growth and/or low working-age population growth. The second is

Figure 1 Primary balances in Japan, actual and promised

Note: Combined primary balance of the central and local governments (excluding social security funds from the general government).

Sources: Actual primary balance for 1990–2001 from National Accounts of Japan; for 2002–18 from Cabinet Office, “Economic and Fiscal Projections for Medium to Long Term Analysis” (January 2019), www5.cao.go.jp/keizai3/econome/h31eiyaku1.pdf; promised balances from Cabinet Office, “Basic Policy on Economic and Fiscal Management and Reform” (various years), www5.cao.go.jp/keizai/index-e.html; “Fiscal Management Strategy” (June 2010), www.cas.go.jp/jp/seisaku/npu/policy01/pdf/20100706/20100706_fiscalmanagement.pdf; and Economic Strategy Council of Japan, “Strategies for Reviving the Japanese Economy” (February 1999), https://japan.kantei.go.jp/senryaku/990317_report.html.

(QE), monetary policy has done everything it could, but it could not do enough on its own. In this context, running large deficits and accepting the resulting increase in public debt was the right policy. Engineering a large exchange rate depreciation would have been an alternative, but only as a way of exporting the problem of low demand to other countries, which would not have played well with trade partners.

The depth of Japan’s demand weakness can be seen in actual and shadow interest rates. Policy interest rates have been constrained by the ELB, but the Bank of Japan has embarked on the largest QE program of any central bank, decreasing longer maturity rates as well. Since it hit the ELB, in 1999, the Bank of Japan’s balance sheet has been multiplied by a factor of five, increasing from 21 to 101 percent of GDP. As a result of anticipations of both a low policy rate

and Bank of Japan purchases of long-maturity bonds, the yield curve, plotted in figure 2, is negative up to maturities of 10 years.

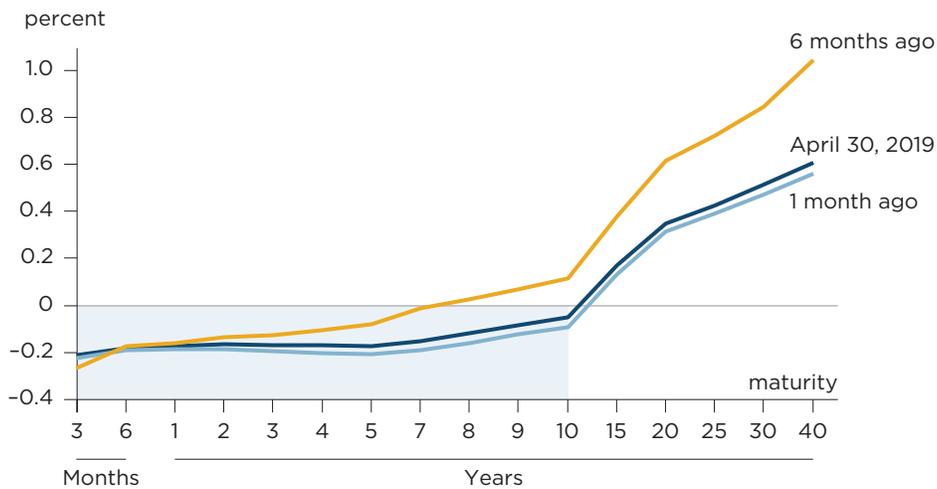
Away from the ELB, the stance of monetary policy is traditionally measured by the policy rate. At the ELB, this measure fails to reflect further decreases in other interest rates from the use of QE policies. To handle this case, researchers have constructed a “shadow rate,” which, conceptually, reflects what the policy rate would have to be to have the same impact on the economy as the set of measures adopted under QE.

Figure 3 shows the evolution of the actual policy rate and of an estimate of the shadow rate (Krippner 2019). According to this estimate, the shadow rate has steadily declined since the late 2000s, falling to a startling -8.3 percent in April 2019 (compared with -4.3 percent for the euro area and 2.3 percent for the United States, derived using the same methodology). The exact number should be taken with a grain of salt, but it is clear that monetary policy has been extraordinarily expansionary since the late 2000s.

It is even more startling when one tries to estimate what the shadow rate might have been in the absence of budget

a low neutral rate of interest, reflecting a combination of high private saving and low private investment. The two are related, in the sense that a lower growth rate is likely to be reflected in a lower interest rate, but they are distinct phenomena; each can exist without the other. Both are present in Japan, but our focus here is on the second phenomenon, the implications of the low neutral rate.

Figure 2 Japanese yield curve for government bonds



Source: Bloomberg.

Figure 3 Policy and shadow rates in Japan, 1995–2019



Sources: Bank of Japan; Krippner (2019).

deficits.⁵ Based on the Economic and Social Research Institute’s short-run macroeconomic model of the Japanese economy (Hori et al. 2018), a 1 percent decrease in the policy rate increases demand by roughly 1 percent, and a 1 percent decrease in the deficit decreases demand by roughly 1 percent. Given the current deficit of about 3 percent, this suggests that, in the absence of a deficit, the shadow rate might be lower by another 3 percent.⁶

5. Rachel and Summers (2019) emphasize this point in the context of the United States.

6. The estimate of the effect on output of a 1 percent increase in the short-term interest rate is -0.38 percent in the first year, -0.94 percent the second year, and -1.2 percent the third year. The effect of a 1 percent of GDP increase in

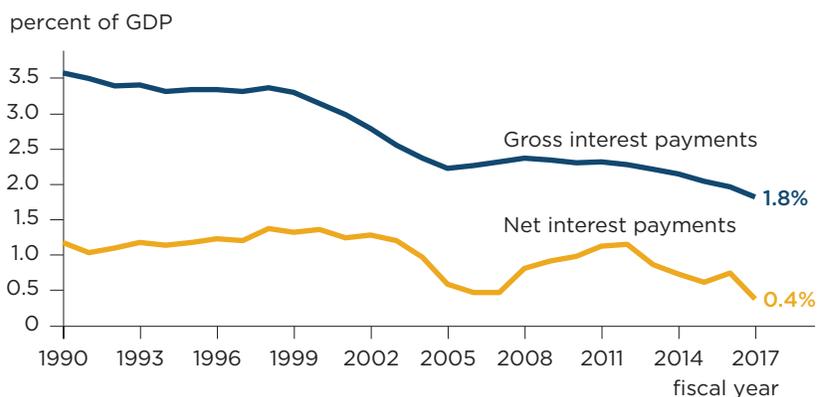
Taking stock:

The primary balance has improved, but it remains in deficit, at 2.9 percent. Net debt is high and roughly stable, at 153 percent of GDP. Nominal interest rates are low, negative up to a maturity of 10 years. Real interest rates are negative all the way up the yield curve. Indeed, real interest rates are forecast to be lower than real growth rates for the indefinite future.

Have these fiscal and monetary policies been sufficient to maintain output at potential (or equivalently, to maintain unemployment at the natural rate)? The standard, but

government investment is roughly 1 percent for each of the first three years.

Figure 4 Ratio of public debt service to GDP in Japan, 1990–2017



Source: National Accounts of Japan.

admittedly noisy, signal of where the economy stands is the behavior of inflation. Since 2018, inflation measured by the consumer price index (CPI) has been running at roughly 1 percent—about 1 percent below the Bank of Japan’s target of 2 percent.⁷ There are two possible interpretations of this fact. The first is that expected inflation is equal to the Bank of Japan target; inflation is thus lower than expected, suggesting the presence of a negative output gap.⁸ The second is that expected inflation is lower than the Bank of Japan target, that inflation is in fact roughly equal to expected inflation, and the output gap is close to zero. Both interpretations have the same general implications for policy—namely, that macroeconomic policy should be more expansionary. In the first case, policies that increase demand and eliminate the output gap are clearly desirable. In the second case, policies that increase demand, lead to a positive output gap, and increase inflation so that the Bank of Japan meets its target are also desirable.

Which interpretation is correct? We view the evidence as supporting mostly the second interpretation, as the various measures of expectations are all close to 1 percent.⁹

7. When the Bank of Japan introduced inflation targeting in 2013, it focused on headline CPI inflation. In 2016 it shifted to a measure close to core inflation (leaving out fresh food prices). Both measures were close to 1 percent in 2018.

8. Take the standard Phillips curve specification $\pi = \pi^e - a(u_n - u)$, and let $\bar{\pi}$ be the Bank of Japan’s target inflation rate. The first interpretation is that $\pi^e = \bar{\pi}$ so $\pi < \pi^e$, so $u > u_n$. The second interpretation is that $\pi^e < \bar{\pi}$ and $\pi^e \approx \pi$, so, by implication, $u \approx u_n$.

9. See, for example, the time series for different inflation expectations series in figure 1 in Maruyama and Suganuma (2019).

Thus we assume in what follows that the current output gap is roughly equal to zero, an assumption close to that made by the IMF (which has a small negative output gap of -0.5 percent in 2018 and -0.2 percent in 2019) or by the Japanese government.

FISCAL COSTS OF PRIMARY DEFICITS AND DEBT

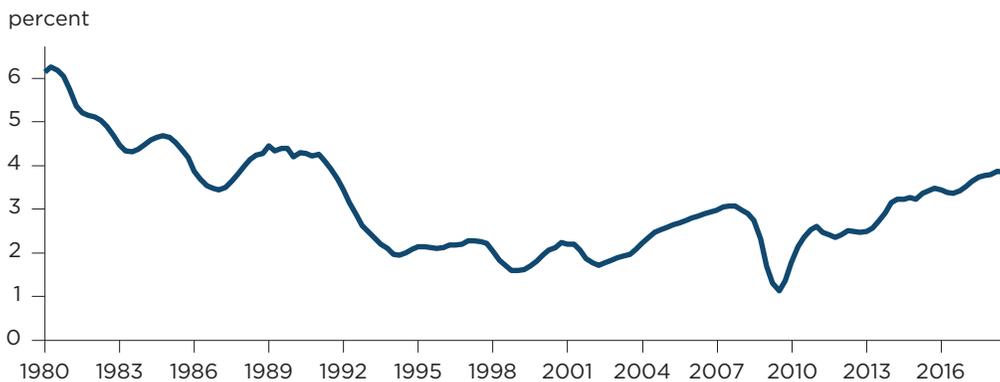
What are the purely fiscal implications of alternative paths of primary deficits, and by implication, alternative paths of debt?

As a general and obvious proposition, lower interest rates imply lower fiscal costs of debt. Figure 4 shows the evolution of the debt service to GDP ratio between 1990 and 2017. The blue line shows the ratio of gross interest payments to GDP; the yellow line shows the ratio of net interest payments to GDP (as net debt is much smaller than gross debt, the yellow line is substantially lower than the blue line). Despite the very large increase in the ratio of debt to GDP over the period, the ratio of net interest payments to GDP in fiscal year 2017 was only 0.4 percent of GDP, roughly one-third what it was in 1990.

The fact that interest rates are not only low but also lower than forecast growth rates has even more dramatic implications. To see this, consider the budget constraint facing the government:

$$\Delta d = (r - g)d - ps$$

where d is the debt-to-GDP ratio; r and g are the interest rate and the growth rate, respectively (both in nominal terms or both in real terms); and ps is the ratio of the primary surplus to GDP. The change in the debt-to-GDP ratio is equal to

Figure 5 Profit rate of nonfinancial corporations in Japan, 1980–2018

Note: The profit rate is defined as the ratio of operating profits to nonfinancial assets. Nonfinancial assets are the sum of tangible and intangible assets at replacement cost and land. Figure plots the four-quarter moving average.

Source: Ministry of Finance Policy Research Institute, Financial Statements Statistics of Corporations by Industry, www.mof.go.jp/english/pri/reference/ssc/index.htm.

the difference between the interest rate and the growth rate times the debt ratio, minus the primary surplus.

The traditional analysis of debt dynamics assumes that the interest rate exceeds the growth rate. In this case, to avoid a debt explosion, an increase in debt must be offset by larger primary surpluses later on, in the form of higher taxes or lower spending. When the interest rate is lower than the growth rate, however, this conclusion does not follow. Put in an extreme way, higher debt may have no fiscal cost:¹⁰ The government can increase the debt, never raise taxes in response, and the debt-to-GDP ratio will not explode but rather decrease slowly over time. Put in a less dramatic way, the government can run a primary deficit forever while keeping the debt-to-GDP ratio constant. For example, assume $r - g$ is -1.5 percent and debt is 150 percent of GDP. The government can run a primary deficit of 2.1 percent and the debt-to-GDP ratio will remain constant. What would happen if the primary deficit were to substantially exceed this level, reaching, say, 3 percent? The debt-to-GDP ratio would increase over time, but it would not explode. Rather, it would converge to $3 \text{ percent} / 1.5 \text{ percent} = 200$ percent. Under current forecasts for growth and interest rates, Japan would end up roughly with this debt-to-GDP

ratio were it to sustain primary deficits of 3 percent in the indefinite future.

In short, as long as interest rates remain very low, the fiscal costs of primary deficits at current levels may be small (we shall come back to the “as long as” part of the proposition and discuss what happens if and when interest rates were to increase much more than is currently forecast).

From the point of the Japanese economy, as opposed to the Japanese government budget, what matters, however, are the welfare costs and benefits of debt. Let’s turn to those.

WELFARE COSTS OF PRIMARY DEFICITS AND DEBT

The traditional answer about the costs of debt is that higher debt crowds out capital, reducing output and consumption in the future; lower debt crowds in capital, increasing output and consumption in the future. In the context of low interest rates, and potential limits on monetary policy, this answer must be revisited. It is useful to proceed in two steps.

Assume first that monetary policy has enough room to sustain output at potential, whatever the path of primary deficits. In this case, the traditional answer holds, with a twist. Higher debt will indeed crowd out capital and lead to lower output in the future. How bad this is for consumption and welfare depends on how productive capital is. If capital is relatively unproductive, less of it may have little welfare cost.

So how productive is capital in Japan? Figure 5 plots the profit rate of nonfinancial corporations, defined as the ratio of operating profits to nonfinancial assets. It shows that the profit rate has substantially decreased since the 1980s but remains substantially above Japan’s growth rate, which

10. This statement, made in Blanchard (2019), may have been misleading and has been sometimes misinterpreted to state that any level of debt is sustainable. This is not the case. The higher the level of debt, the greater the crowding out of capital, the higher the marginal product of capital, and, ceteris paribus, the higher all interest rates, including the rate on government bonds. For some high enough level of debt, the rate on government bonds will exceed the growth rate, and the intertemporal budget constraint will bind. At this stage, the government will need to run a primary surplus to avoid a debt explosion.

is about 0.5 percent today.^{11,12} Blanchard (2019) shows that welfare costs depend on the balance of two relations: the relation between the safe rate and the growth rate on the one hand, and the relation between the average profit rate and the growth rate on the other. The analysis in that paper suggests that, based on the configuration of the interest rate, the profit rate, and the growth rate in Japan today and conditional on output staying at potential, higher debt has a small but positive welfare cost.¹³ Equivalently, lower debt has a small but positive welfare benefit.

The conclusion, however, changes when there are limits on what monetary policy can achieve. Suppose that monetary policy is constrained by the ELB and the limits on what QE can accomplish. Whether or not there is an output gap to start, a reduction in primary deficits and lower debt will then lead to a larger negative output gap, lower investment in response to weak activity, and thus yield welfare costs that are likely to far exceed the crowding in of capital from lower debt when the economy returns, if it ever does, to its long-run potential growth path.

Applied to Japan, this analysis leads to our first two conclusions.

We believe that, short of extremely aggressive monetary policy (for example, purchases of stocks on a large scale), the room for monetary policy to increase demand is extremely limited. Thus, absent spontaneous increases in private domestic or foreign demand (which cannot be excluded but cannot be counted on), decreasing primary deficits would likely lead to a negative output gap, and the welfare costs would substantially exceed the eventual welfare benefits of lower debt.

More controversially, our analysis also suggests potentially increasing primary deficits for some time: Inflation is still far below target. Assuming there is no output gap to

start, increasing primary deficits would lead to overheating, which in the current context would be good. Increasing primary deficits would lead to higher inflation, eventually allow the Bank of Japan to achieve its inflation target, and likely have benefits exceeding the eventual welfare costs.¹⁴

This conclusion is just a first step, however. Many other issues must be considered. We consider four of them:

1. whether it may make sense to maintain primary deficits if and when demand strengthens on its own and the Bank of Japan can get off the ELB;
2. whether, because of potential sharp changes in the underlying interest rates (as a result of changes in underlying fundamentals or a sudden stop on the part of investors), it makes sense to reduce the debt today, even if it comes with a significant welfare cost;
3. whether, even if primary deficits are needed to sustain demand, they can be better used to improve the supply side and increase future potential output; and
4. whether it may make more sense, if public debt becomes very high, to induce the private sector to increase demand, even at the cost of distorting saving or investment behavior, and increase private debt instead of public debt.

THE RIGHT MIX OF RATES AND DEFICITS AWAY FROM THE EFFECTIVE LOWER BOUND

One might take the position that the use of primary deficits for macroeconomic purposes should be limited to the case where monetary policy cannot help—that as soon as demand picks up, and unless there is a good traditional public finance reason to keep running them, primary deficits should be reduced as quickly as monetary policy can compensate and maintain demand and output at potential. This position, we believe, is wrong. There is a case for relying on both primary deficits and higher interest rates, because very low interest rates, such as those now prevailing in Japan, present their own dangers. If aggregate demand needs to be sustained, it may be better to rely more on fiscal policy and less on monetary policy.

Researchers have noted the following possible dangers:

1. Remaining too close to the ELB today increases the risk that the economy will hit the ELB in the future, either

11. The profit rate partly reflects monopoly rents and thus overestimates the marginal product of capital. Some researchers argue that, at least in the United States, the share of rents has increased, so that, by implication, the marginal product of capital has decreased relative to the profit rate. We are not aware of similar studies for Japan and thus ignore rents here.

12. A report from the Japan Center for Economic Research estimates 0.6 percent for long-term real growth, www.jcer.or.jp/jcer_download_log.php?post_id=46019&file_post_id=46033.

13. The analysis in that paper suggests that under plausible assumptions, the sign of the welfare effects depends on which of the two differences, between the growth rate and the safe rate, and between the average marginal product and the growth rate, is larger. For Japan the first difference is about 1.5 percent and the second (under the assumption that the profit rate reflects the marginal product of capital) is about 3.5 percent, suggesting that higher debt is associated with welfare costs.

14. The welfare effects of a positive output gap (overheating) are likely to be positive at least over some range, because the natural level of output is likely to be too low from a welfare point of view. (This is the case in the New Keynesian model, in which the wedge between potential and optimal output comes from the presence of monopoly power. The proposition is, however, more general than that.)

requiring larger deficits than or leading today to expectations of a recession, further decreasing demand today.

2. Very low nominal rates and even lower real rates increase risk-taking. Some higher risk-taking is desirable and one of the ways monetary policy works, but there is also some evidence of excessive risk-taking (Borio and Zhu 2008) and increased bubbles.
3. Very low nominal rates may have little effect on demand, and there may be a “reversal rate” (i.e., a rate low enough that further decreases actually decrease rather than increase demand) (Brunnermeier and Koby 2019).

We see none of these dangers as dispositive, but together they suggest the desirability of increasing rates substantially above the ELB. So we believe it is worth exploring rebalancing the current fiscal-monetary policy mix so that output is maintained at potential through a combination of larger primary deficits and higher rates than is the case today.

WHAT IF INTEREST RATES INCREASE SHARPLY?

Even if debt service is low today, the levels of debt are high. One must worry about what would happen if interest rates were to rise substantially.

Suppose real interest rates increased to 3 percent (clearly an enormous increase in the current context) and real growth rates did not change, so $(r - g)$ was equal to 2.5 percent. Starting from a debt-to-GDP ratio of 150 percent, avoiding a further increase would require a primary surplus of 3.75 percent (2.5 percent times 150 percent), a level that might be politically infeasible. How should such an unlikely, but not inconceivable, scenario affect fiscal policy today?

The first step is to think about how such a scenario could arise. The increase in interest rates could reflect a dramatic change in underlying fundamentals, a surge in private investment, a major decrease in saving by Japanese households, or similar changes in the rest of the world, leading to an increase in interest rates around the world. None of these possibilities seems highly likely: Underlying shifts may lead to a slow increase, rather than an abrupt shift, in neutral rates. In this case, fiscal policy would likely have time to react and reduce deficits, and monetary policy would have plenty of room to decrease rates and offset the adverse effects of consolidation.

The more relevant scenario is that of a sudden stop—a liquidity crisis—in which investors worry about debt sustainability; require a higher rate to compensate for the perceived risk; and by doing so, create the risk that they worried about in the first place.

It has been argued that as long as a country borrows in its own currency, this risk can be avoided. The argument is partially correct.¹⁵ The distinction between the causes of the interest rate increase is important.

If there is genuine uncertainty about solvency—say, because the government is perceived as fiscally irresponsible—there is little the central bank can do. If it purchases the bonds investors are selling by issuing non-interest-paying money, the increase in the money supply is likely to be extremely large. The non-interest-paying monetary base is equal to 11 percent of GDP; having to purchase, say, 10 percent of existing government bonds (an amount equal to 15 percent of GDP) would more than double the non-interest-paying monetary base. It would almost surely lead to high inflation and a decrease in the real value of the nominal debt, which is a disguised form of default.¹⁶ If instead the central bank purchases government bonds by issuing interest-paying money (i.e., central bank reserves), the solvency of the consolidated government (the state and the central bank taken together) will be unaffected. The average risk premium on debt that investors require will remain the same; how it will be distributed between the rate on central bank reserves and the rate on government bonds will depend on the perceived relative seniority of the two: If central bank reserves are perceived as safe, the rate the central bank must pay may not go up, but the rate of government bonds, which would then have junior status, will reflect their increased risk.¹⁷

If the increase in interest rates reflects instead liquidity concerns, the central bank can largely eliminate the risk. In this case, investors’ worries come primarily from worries that other investors will sell rather than from doubts about fundamentals. The forecast increase in the proportion of foreign investors over time (Hoshi and Ito 2014)—investors who

15. What follows is more tentative than the rest of the brief. One of the authors is exploring the issues more formally; some of the conclusions should be seen as educated guesses rather than solid conclusions.

16. This argument ignores the possibility of sterilization. The Bank of Japan can decrease its holdings of commercial paper and corporate bonds to limit the increase in the money supply, but its holdings (about 1 percent of GDP) are small and likely to be insufficient.

17. This statement assumes that government behavior is unaffected. In fact, it may well be: The central bank may indicate that it is willing to intervene only if the government commits to being fiscally more responsible. The fact that the distribution of investors changes, with domestic banks increasing their claims and other investors decreasing them, may also affect the perceived probability of debt restructuring. (We are indebted to Adam Posen for these points.)

are likely to be more prone to selling than domestic investors if they perceive such a risk—increases the probability of such a sudden stop. If, however, a large investor stands ready and able to buy the bonds in unlimited quantities, the initial worries should no longer be justified. Knowing that the central bank will play this role is likely to reduce or even eliminate investors' worries and reduce or eliminate the emergence of sudden stops in the first place (Lorenzoni and Werning forthcoming). The Bank of Japan is already playing this role, by pegging both short- and long-term rates.

As we argued earlier, the risk of a sharp increase in interest rates as a result of fundamentals, leading to worries about solvency, is small. The risk of a sharp increase in interest rates due to liquidity concerns is higher but can be largely eliminated through the commitment of the central bank to stand ready to buy the bonds. Nevertheless, these risks, small as they may be, are higher the higher the level of debt, for two reasons. First, if interest rates go up, the larger the debt the larger the required primary surplus to stabilize debt and the higher the probability that the government cannot achieve that surplus. Second, although there is no reason to think that there is a tight relation between the two, liquidity concerns are probably more likely to arise the higher the level of debt. Should this lead the government to reduce debt and thus decrease primary deficits faster, even if doing so comes at the cost of a more negative output gap? The answer is probably no. If the debt-to-GDP ratio could be reduced to, say, 50 percent relatively quickly, both solvency and liquidity risks would be very close to zero. But no realistic path of primary deficit reduction can reduce debt to such low levels in less than a few decades.

Can the government do anything to limit the risk or limit the adverse consequences of an increase in interest rates? We believe it can do two things. The first is to increase the maturity of the consolidated debt, so that an increase in the interest rate leads to a slow increase in interest payments over time. Doing so would give the government more time to adjust revenues and expenditure to avoid a debt explosion. In this respect, the Bank of Japan's QE operations are counterproductive, as the purchases of long-maturity bonds and their replacement by interest-paying reserves effectively decrease the maturity of the consolidated debt.

Figure 6 shows the change in the maturity distribution of consolidated government debt since March 2013, just before the massive asset purchase program launched in April 2013. The figure shows the sharp increase in zero-maturity debt (excess reserves of banks), which has led to a decline in the average maturity of consolidated debt from 6.4 years in 2013 to 5.5 years in March 2019. It might be better instead to increase the maturity of the debt, even if doing so leads

to slightly larger interest payments, and to offset any adverse effect on demand by slightly larger primary deficits.

The second response is to have a contingent plan to increase revenues, to be used only if and when there is a large increase in interest rates, in order to reduce the risk, and by implication, the perception of the risk that debt might explode (a proposal explored by Lorenzoni and Werning forthcoming). It may be better to be ready to increase the value added tax (VAT) rate when it is needed rather than to increase it now.¹⁸

WHAT SHOULD PRIMARY DEFICITS BE USED FOR?

We have argued that primary deficits should be used to sustain demand, but what primary deficits are used for is equally important. It would obviously be best if they were used to improve potential output, helping both the demand side today and the supply side in the future.

Japan's large primary deficits have not been used to increase public investment. The ratio of public investment to GDP has steadily declined since the early 1990s, from 9 percent in 1993 to 5 percent in 2018 (figure 7).

There are likely to be projects whose risk-adjusted social rate of return largely exceeds the rate at which the Japanese government can borrow.¹⁹ We concentrate on one type of spending—measures aimed at increasing fertility—which strikes us as a good example.

As is well known, Japan has an aging population. Figure 8 shows projections, as of 2017, of the Japanese population, based on four different fertility rates, through 2066. The lowest line is derived using the current fertility rate, 1.45. The lines above show the outcomes for fertility rates of 1.65, 1.8, and 2.0.²⁰

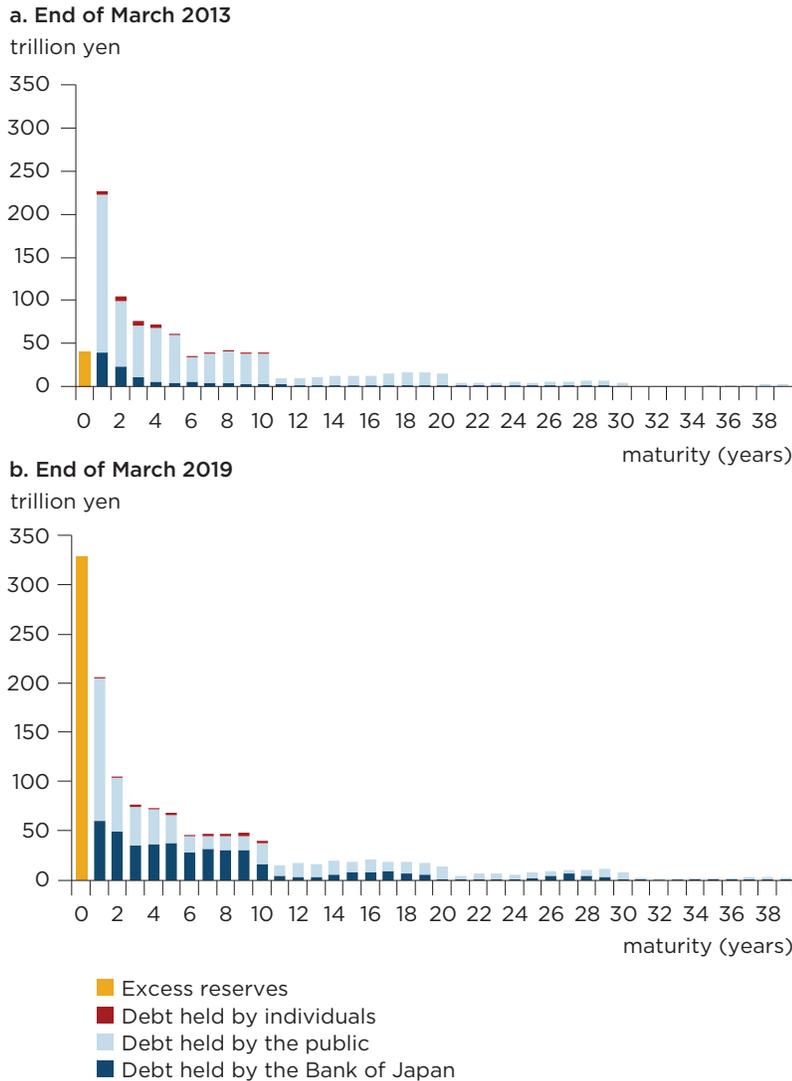
Figure 9 shows the corresponding projections for GDP, computed as GDP per working-age population times the size of the working-age population, under the assumption that GDP per working-age population is the same under all

18. An increase in the VAT rate of 1 percent is estimated to increase government revenues by about 0.5 percent of GDP. Given a ratio of net debt to GDP of 150 percent, an increase in the interest rate of 1 percent would require an increase in the VAT rate of 3 percent to maintain the same overall deficit-to-GDP ratio.

19. There are also likely to be structural reforms that may not affect the budget but increase productivity growth, a point repeatedly emphasized in IMF Article IV reports.

20. While not shown in the figure, which stops at 2066, only under the assumption that the fertility rate is equal to 2.0 does the population eventually stabilize, around 2095.

Figure 6 Maturity distribution of Japan’s consolidated debt, March 2013 and March 2019

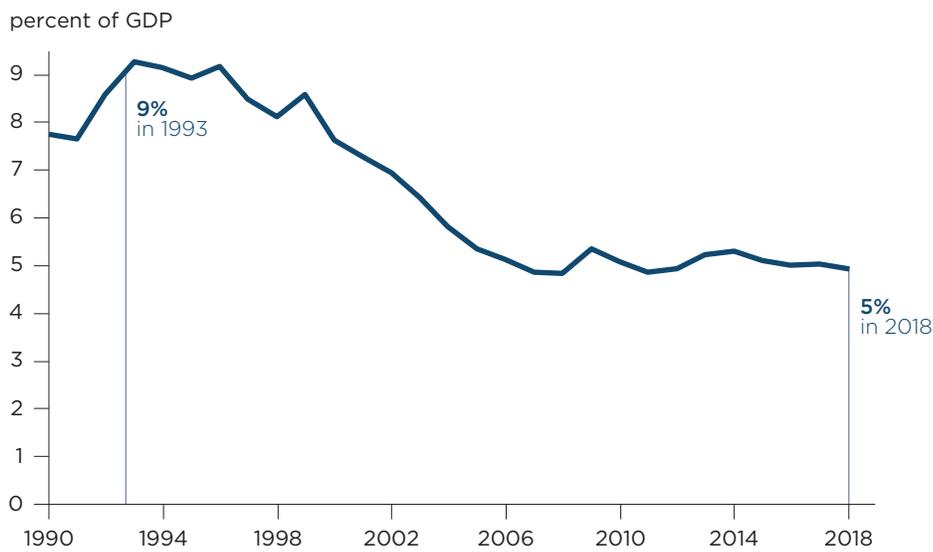


Sources: Debt stock by maturity is from Bloomberg. Debt held by the public is obtained by subtracting debt held by individuals and the Bank of Japan from total debt stock. Debt stock held by individuals is from Bloomberg. Debt held by the Bank of Japan is constructed from Bank of Japan and Ministry of Finance data. Bank of Japan excess reserves are from the Bank of Japan’s time series database.

four scenarios. As the figure makes clear, there is no effect until 2031, when additional workers enter the labor force.

A 2014 study by the Japan Center for Economic Research estimated that if Japan adopted measures similar to those that France has in place (such as public subsidization of child-rearing costs and provision of benefits and income tax breaks that increase with the number of children), it would cost about 1.5 percent of GDP to raise the fertility rate to 1.8 and 2.7 percent of GDP to raise it to 2.1. If these

magnitudes are roughly correct, the rate of return, in terms of increased output, is high. Although the policy would not affect the labor force until 16 years from now, the increase in the rate of growth over the next 30 years in response to an increase in the fertility rate from 1.45 to 1.80 would be 0.19 percent a year; over the next 50 years, it would increase output by 0.32 percent a year. Put another way, net of the additional 1.5 percent of GDP spent on measures aimed at increasing fertility, GDP would be about 6 percent higher in

Figure 7 Ratio of public investment to GDP in Japan, 1990-2018

Source: National Accounts of Japan.

30 years and 17 percent higher after 50 years.^{21,22} Following this report, some measures were adopted, but there is room to do more and to finance the policy change through debt rather than through an increase in the consumption tax, as is now the intent.²³

PUBLIC OR PRIVATE DEBT?

The last issue we take up is an open and provocative question. The fundamental macroeconomic problem of Japan—and the rationale for the aggressive monetary and fiscal policies it has followed—comes from depressed domestic demand. Primary deficits—and by implication, the increase in public debt—have played a major role in sustaining demand and output.

In general, when an economy has to take on more debt, the government is best placed to do so, because it has the power of taxation and is in a better position than private actors to raise revenue if and when needed. This is why, for example, bailouts—which transfer debt from households, firms, or banks to the government—are often desir-

able (leaving out ex ante incentives and the resulting moral hazard).

When public debt reaches very high levels, however, one can question whether it would not be better for the private sector to assume more of the burden. In some cases, there are good reasons to want it to do so. If an economy suffers from excessive precautionary saving, as a result of a lack of insurance, then the solution is clearly to improve social insurance.²⁴ Doing so would induce savers to decrease their net asset position. For a given level of gross assets, they would be willing to take on more debt. One can think of similar distortions affecting firms, and thus of similar measures to induce them to increase investment and take on more debt. Some of these distortions may be present in Japan. If they are, it would be useful to remove them.

The more provocative question is whether in the absence of obvious distortions it makes sense to introduce them in order to either decrease saving or increase investment. Put another way, would it make sense to trade off distortions for lower public debt? We do not know the answer, but we think this question is a relevant one to explore.

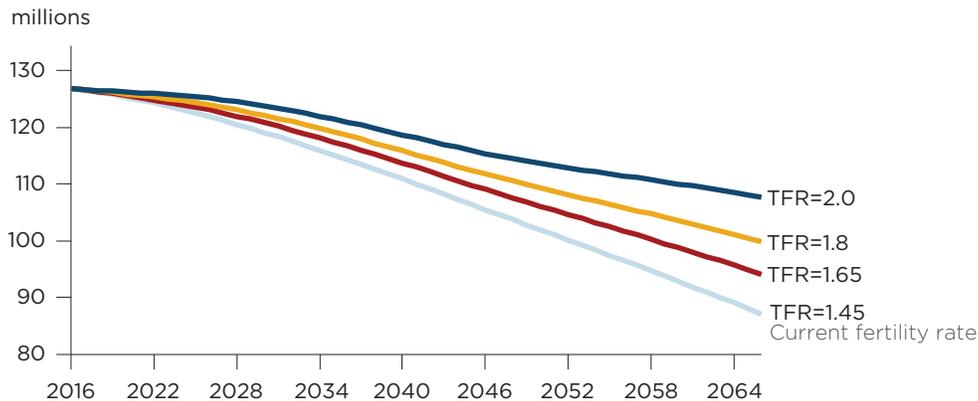
21. Estimating the direct welfare effects requires looking at more than output. Higher growth has different welfare effects whether it comes from higher population or higher income per capita.

22. Increasing fertility would also increase the ratio of the working-age population to the total population, with additional positive effects on the budget.

23. Expansion of free preschool education and higher education support will begin in October 2019, when the consumption tax rate will be raised from 8 to 10 percent. The plan is to raise revenues rather than increase debt to finance the additional spending.

24. The view has been expressed that the uncertainty faced by Japanese households comes in part from high debt and the worry that it may not be sustainable, leading to either debt default or cuts in programs such as social security. This view suggests that priority should be given to decreasing debt and decreasing uncertainty, which would lead to lower precautionary saving and stronger private demand. This variation on the expansionary fiscal austerity theme strikes us as worth exploring but a priori somewhat implausible.

Figure 8 Japanese population under alternative fertility assumptions, 2016-66

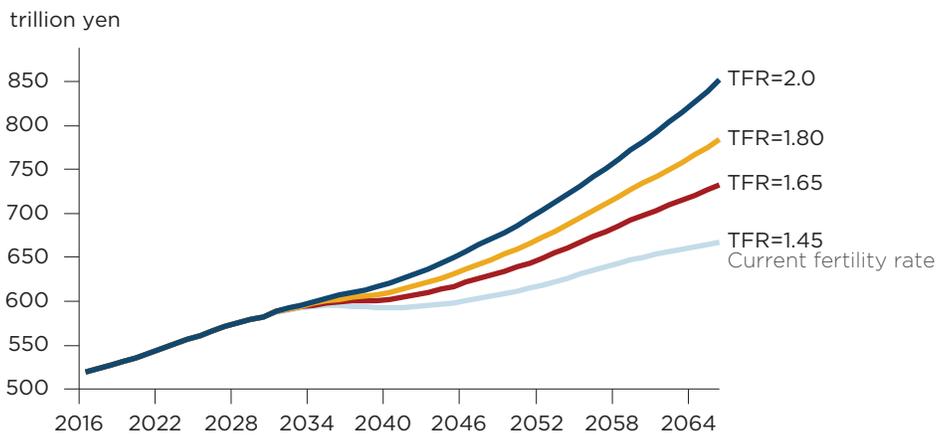


TFR = total fertility rate

Note: The fertility rate is assumed to increase to its target level by 2025.

Source: National Institute of Population and Social Security Research.

Figure 9 Japanese real GDP under alternative fertility assumptions, 2016-66



TFR = total fertility rate

Sources: National Accounts of Japan; Statistics Bureau; National Institute of Population and Social Security Research.

CONCLUSION

In an environment of very low neutral rates, fiscal policy has an essential macroeconomic role to play, even if monetary policy is no longer at the ELB. In the current Japanese environment, there is a strong case for continuing to run primary deficits, perhaps even to increase them and to accept a higher debt level. Primary deficits help sustain demand and output, alleviate the burden on monetary policy, and can increase future output. In short, the costs of primary deficits are small, and the costs and risks of high debt are low.

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