



WHAT TO EXPECT FROM ABENOMICS

Four arrows to target four challenges

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Willem has held a number of other leading academic positions, including Cassel Professor of Money & Banking at the LSE between 1982 and 1984, Professorships in Economics at Yale University in the US between 1985 and 1994, and Professor of International Macroeconomics at Cambridge University in the UK between 1994 and 2000. Willem has a B.A. in Economics from Cambridge University and a PhD in Economics from Yale University. He has been a member of the British Academy since 1998 and was awarded the CBE in 2000 for services to economics.

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WHAT TO EXPECT FROM ABENOMICS

Four arrows to target four challenges

In April 2013, the Bank of Japan surprised global markets by announcing an aggressive package of policy measures aimed at pulling the country out of decades of deflation and sluggish economic growth. A temporary fiscal stimulus of ¥10 trillion announced in January 2013 was quickly followed by decision of the Bank of Japan to raise its inflation target to 2%, which in turn was followed by a commitment of the Bank of Japan under a new leadership to engage in large monetary stimulus through asset purchases over the next two years to reach that target. These actions gave investors hope that the two 'lost decades' in Japan may finally be coming to a close, and led to a sharp depreciation of the yen and significant equity market outperformance.

In the report that follows, Willem Buiter, Ebrahim Rahbari and the Global Economics Team look at the tools they believe Japan's policy makers have at their disposal to combat the challenges which have hobbled the Japanese economy for the past two decades. Officially the Japanese Finance Minister limits Abenomics to "three bazookas", or three arrows in its quiver. These are monetary stimulus and a temporary fiscal stimulus to achieve the new inflation target and close the output gap. Third come structural reforms to put growth "on a sustainable orbit", presumably at a higher rate than the 0.8%pa that Japan has achieved over the last two decades. In addition to these recognised arrows, there is a fourth "arrow" that policy makers don't generally mention: a programme of tax increases and public spending cuts that will ensure the restoration of fiscal sustainability.

The first two arrows look likely to hit their targets, as the announced fiscal-monetary actions come close to 'helicopter money', and a sufficient dose of helicopter money can always boost effective demand and raise the inflation rate by the desired amounts. There remains, of course, the risk that the combined monetary-fiscal policy actions eventually fall short of what is needed to achieve these targets.

Vested interests are likely to continue to oppose vocally and effectively major structural reforms, including the deregulation of the service sectors, opening up to trade and FDI in service sectors, or materially reforming the labour market and relaxing barriers to immigration. Despite the strong vested interest pushback to structural reform, the authors are less pessimistic than the historical record would suggest as domestic and external / global political reasons are indicating that 'this time might be different'.

The Abe administration appears to have a relatively strong political mandate which encompasses aspirations for change and reforms to make Japan stronger economically and politically. Long-standing underperformance may be one factor in opening the reform window, but the increasing political and economic strength of China is likely to be at least as powerful in focusing the minds of Japanese policymakers. The desire of Japanese policy makers to strengthen the geo-political partnership of Japan with the U.S. suggests that external liberalization may catalyse domestic reforms, while the ever-shrinking and by now economically insignificant agricultural sector will gradually be less effective in opposing reforms. The prospects for serious structural reform in Japan are thus better than they have been for a long time, but progress may still be slow and non-monotonic, as the disappointing efforts so far show.

Other than the two planned sales tax increases, the final (fiscal) arrow will likely be used only sporadically during the next few years. Fiscal sustainability will get a useful leg up from the fiscal effects of the BoJ's monetary actions, but a full restoration of fiscal-financial sustainability will likely require market pressure.

What to Expect from Abenomics

Four economic challenges and four solutions

General Price Levels (2010=100)

JAPAN HAS BEEN IN
DEFLATION MODE
SINCE THE MID-TO-
LATE 1990s...

Source: Cabinet Office of Japan,
Citi Research



Nominal GDP Growth Rate

...WHILE GROWTH
PERFORMANCE OF THE
JAPANESE ECONOMY
HAS BEEN POOR

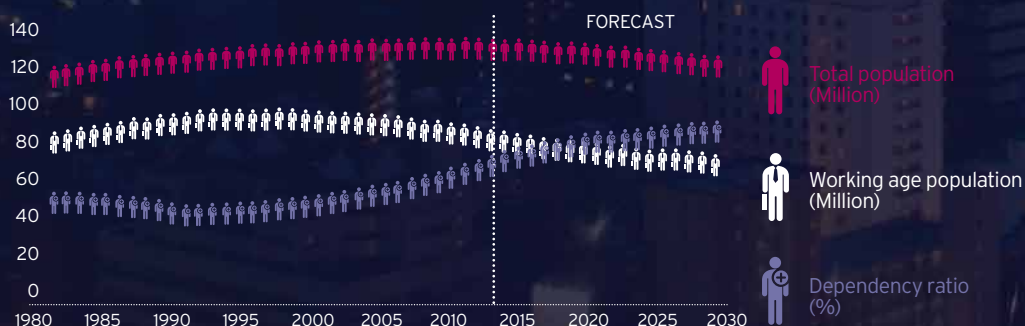
Source: Cabinet Office of Japan,
Citi Research



Population & Dependency Ratio

DEMOGRAPHICS
ARE NOT HELPING
PROSPECTS FOR
GROWTH...

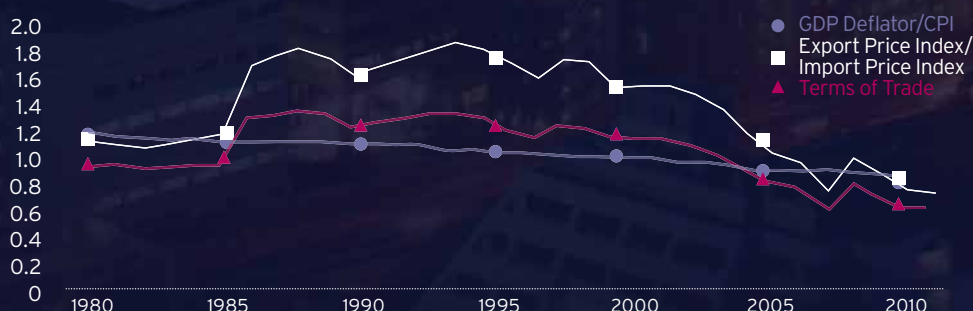
Source: United Nations, Citi Research



External Terms of Trade

...AND SOME ASPECTS
OF JAPAN'S EXTERNAL
POSITION HAVE
CHANGED MATERIALLY

Source: Bank of Japan, Cabinet Office
of Japan, Citi Research





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DECISIVE MONETARY EASING



2

TEMPORARY FISCAL STIMULUS



3

STRUCTURAL REFORMS



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FISCAL CONSOLIDATION POLICIES

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Four arrows for four challenges

Japan's Prime Minister Shinzo Abe faces four economic challenges:

1. ending deflation and achieving a two percent inflation target;
2. eliminating the output gap;
3. reforming the supply side of the economy to permit a faster growth rate of potential output; and
4. restoring fiscal-financial sustainability.

Conveniently, his economic policy quiver also contains up to four arrows — one more than Japan's policy makers acknowledge:

1. decisive monetary easing, including large-scale asset purchases by the Bank of Japan (BoJ);
2. a temporary fiscal stimulus mainly focused on infrastructure spending;
3. a number of fundamental efficiency-enhancing and total factor productivity promoting reforms; and
4. fiscal consolidation policies, of which a sequence of consumer tax increases (confirmed in 1 October 2013) starting in 2014 is supposed to be the first installment.

“Abenomics” refers to the economic policies advocated by Japan's Prime Minister Shinzo Abe

The current Finance Minister, Taro Aso, limits Abenomics to just three arrows (or “bazookas” as he calls them (Aso (2013))): “First, the Bank of Japan eases money. Second, the government comes in, with fiscal policies, stimulating real demand. And third, the government introduces a growth package, including Trans-Pacific Partnerships (TPP), massive deregulations, and other growth plans, putting the growth on a sustainable orbit.” The omission of our fourth arrow — the restoration of fiscal sustainability by introducing a programme of tax increases and public spending cuts spending measures — must have been an oversight, unless the Finance Minister implied that the successful firing of the first three arrows is enough to ensure the restoration of fiscal sustainability without the need for additional dedicated fiscal austerity measures. We believe such a view to be mistaken, at any rate when we restrict ourselves to politically implementable growth-enhancing policies.

The first two arrows have been fired and we expect them to hit their target

The first two Abenomics arrows have been fired. The BoJ is since 4 April 2013 engaged in “Quantitative and Qualitative Monetary Easing” — monetizing large-scale asset purchases of a magnitude that makes even the pre-tapering QE3 Fed look like Ebenezer Scrooge at the start of A Christmas Carol. It also has promised more should its current actions fail to achieve (or look likely to fail) the new inflation target of 2%. A temporary fiscal stimulus of ¥10.3trn (just under 2% of annual GDP) was announced on 11 January 2013 and is being implemented. There can be little doubt that more temporary similar fiscal stimuli will be brought to bear. We are therefore confident that the first two objectives will be achieved roughly in the intended time span. The main risk is the demand-destroying effect of the consumer tax increases. We do, however, believe that the authorities have the monetary and fiscal tools to deal with this and are likely to use these appropriately. The first two arrows will be fired and hit their targets.

The third arrow, structural reform, faces better odds than in the past of being fired in the general direction of the target

We are less confident that a package of supply side measures will be forthcoming that is capable of raising Japan's growth rate of potential output from, say, 0.8% per annum currently to something appreciably better, say 1.5% per annum or more. But we are less pessimistic about the political feasibility of significant supply side reforms than the historical record of inactivity on this front for the past thirty years might seem to warrant. For both domestic and external/global political reasons, this time might be different. Something resembling a third arrow of Abenomics could come out of the quiver over the next few years.

Beyond the recently announced consumption tax increases, the fourth arrow of fiscal consolidation will probably be fired belatedly and awkwardly, but will eventually hit its target.

As far as restoring fiscal-financial sustainability, we expect that apart from the scheduled permanent increases in the consumption tax rates (whose budgetary effects are likely to be offset for the next couple of years by additional temporary infrastructure spending stimuli, as well as fiscal concessions aimed at stimulating corporate capital expenditure and income support measures for poorer households, of the type announced by PM Abe on 1 October 2013), and the fiscal effects of the BoJ actions, little will be done until the markets, fearing either aggressive use of the inflation tax or sovereign debt restructuring, compel the government to act. The fourth arrow of Abenomics will be fired belatedly and awkwardly, but it will hit its target, and in a way that ought not to re-open the old wounds of persistent deflation and excess capacity.

Why action is needed

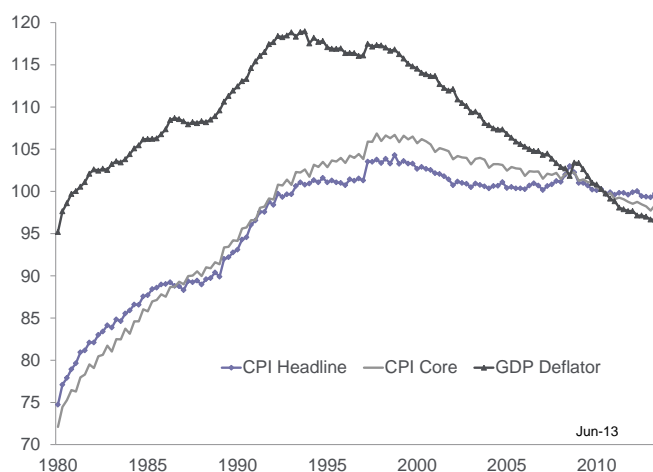
The need for action in Japan to end high-level stagflation is clear

Deflation has become entrenched...

In our view, the need for radical action in Japan is quite clear if a future of high-level stagnation is not considered desirable.

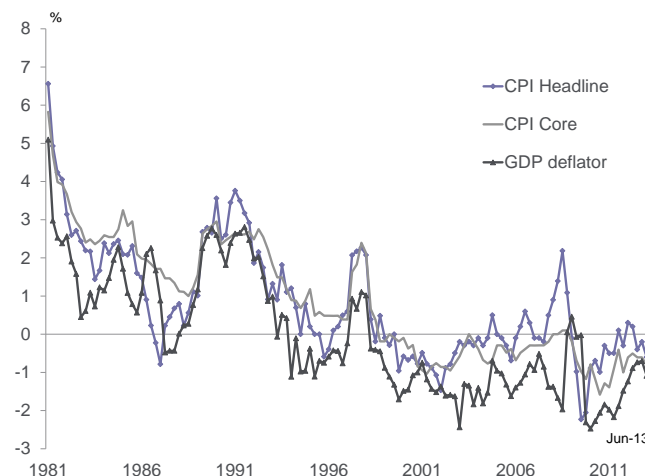
First, deflation in Japan has been entrenched. Figure 1 and Figure 2 suggest (in addition to the desirability of better seasonal adjustment of the GDP deflator) that Japan has been in deflation mode since the mid-to-late 1990s: the GDP deflator suggests negative inflation may have been the norm since about 1995; the CPI, headline and core, suggest deflation became established around 2000.

Figure 1. Japan – General Price Levels (2010 = 100), 1980-2013



Source: Cabinet Office of Japan and Citi Research

Figure 2. Japan – Inflation (YoY), 1981-2013



Source: Cabinet Office of Japan and Citi Research

Deflation is costly because life at the zero lower bound (ZLB) — of the level where short-term nominal interest rates are at or just above zero — is dangerous. We will not address the costs of persistent deflation here other than to note that the main cost of persistent deflation in the case of Japan is that it tends to be associated with nominal interest rates at or near the ZLB or effective lower bound (ELB), which means that negative shocks to aggregate demand are unlikely to be countered as effectively because the central bank's official policy rate cannot be cut further. Thus despite the fact that by now deflation in Japan must largely be expected and therefore reflected in contracts of most forms, deflation is costly in the case of Japan because due to the presence of the effective lower bound (ELB) on interest rates, real interest rates may be stuck at levels that are (or could become) excessively high.¹

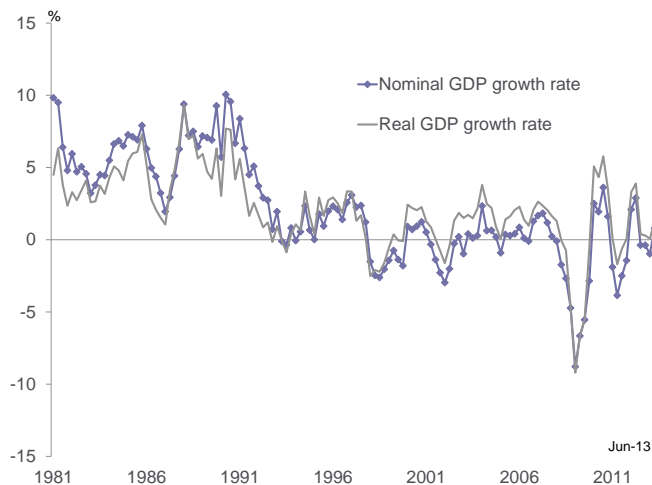
¹ We discussed the costs of deflation at length in Buiter, Murashima and Rahbari (2010). There we highlighted that unanticipated inflation or deflation (or an inability to index-link effectively) can have potentially large distributional costs, but unintended distributional consequences from unanticipated deflation are likely to be second-order when deflation is low and anticipated, as is the case in Japan. The traditional Bailey-Friedman optimal quantity of money cost of persistent and therefore likely anticipated deflation is likely to be low, with the short nominal interest rate at zero. With modest rates of anticipated deflation, both menu costs and the Lucas costs of impairment of the allocative efficiency of the price mechanism associated with either deflation or inflation are also likely to be minor.

Once it has been decided that an escape from deflation is desirable or necessary, the persistence of deflation matters because it is likely to have created deeply embedded expectations of future deflation, making an escape from deflation more difficult but, fortunately, not impossible. Japan is the only major economy that has persistently experienced deflation in recent decades (see Figure 4)

...growth has been poor...

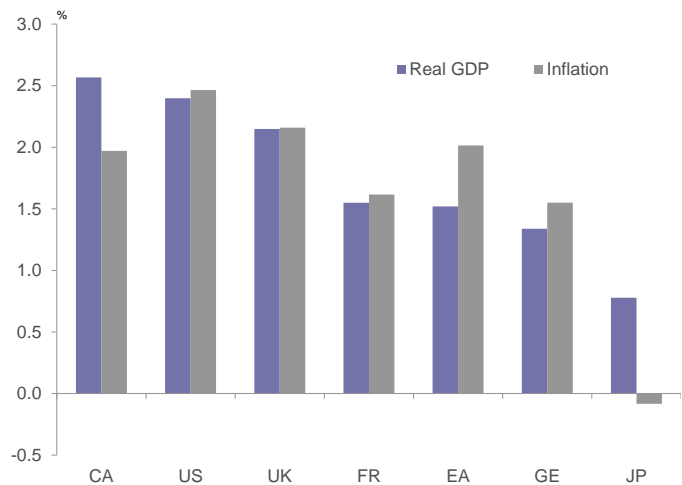
Second, the growth performance of the Japanese economy has been poor, both over a longer horizon (say, the last 20 years) and since the global financial crisis (Figure 3).

Figure 3. Japan – Economic Growth (% YoY, SAAR), 1981-2013



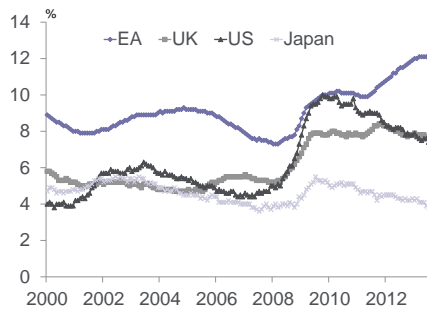
Source: Cabinet Office of Japan, Citi Research

Figure 4. Selected Countries – Real GDP and Inflation (%), 1995-2012 average



Source: IMF, Eurostat, Citi Research

Figure 5. Selected Countries – Unemployment Rate (%), 2000-2013



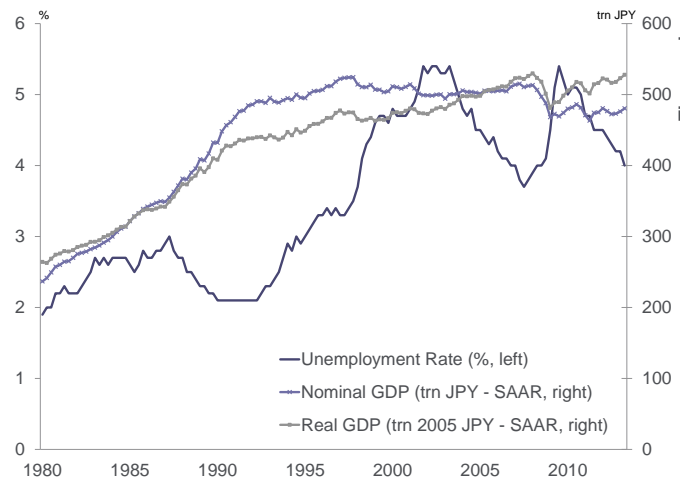
Source: National Sources, Citi Research

Figure 8 shows that real gross domestic product (GDP) in Q2 2013 was still 0.4% below the pre-crisis peak in Q1 2008, having declined by 9.2% between then and Q1 2009. Of course, growth in Japan had been poor prior to the global financial crisis already. The path of both the level and the growth rate of real GDP (see Figure 3 and Figure 6) suggests a downward shift in trend growth between the time of the stock market crash at the end of Q4 1989 and the start of the collapse of land and real estate prices in Q4 1991 (see Figure 7). Since the start of the property market collapse at the end of 1992, the average annual growth rate of real GDP has been approximately 0.85%, compared to 2.5% for the US, 2.4% for the UK, and 1.6% for Germany.

The average post-1992 real GDP growth rate is also a reasonable starting point for estimates of the growth rate of potential output in the future, in the absence of major changes in the supply side of the economy.² Nominal GDP locally peaked in Q2 2007 and has fallen on average by 0.3% QoQ since, leaving it still 6.8% below the peak in Q2 2013 (the post-war peak in nominal GDP was reached in Q4 1997 at a level that is 9.2% above the Q2 2013 level).

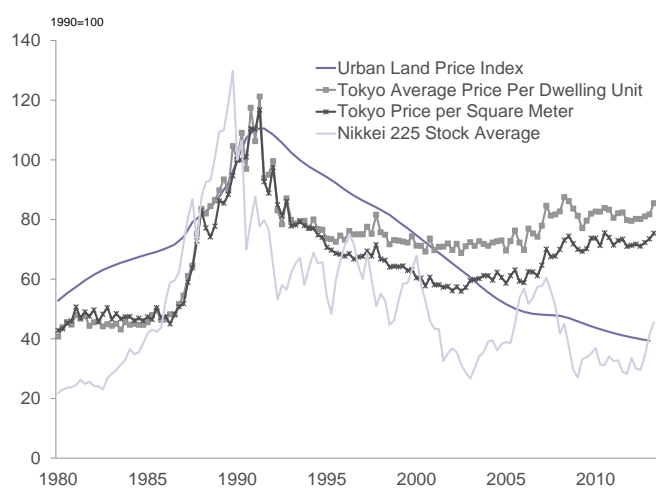
² The estimate of our Japanese colleagues is even lower, at 0.7% potential growth per annum. See [Japan Economics Weekly - Focus of the Second Growth Strategy: Will it raise Japan's potential growth rate?](#), Naoki Iizuka and Kiichi Murashima, 23 August 2013, Citi Research.

Figure 6. Japan – Economic Activity (¥trn 2005) and Unemployment (%), 1980-2013



Source: Cabinet Office of Japan, Citi Research

Figure 7. Japan – Housing and Asset Prices (1990=100), 1980-2013

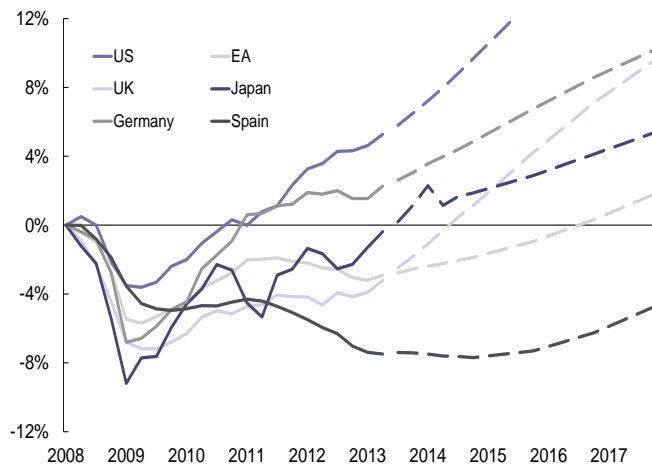


Note: Urban land price based on estimated land prices at 2000 sites in 223 cities. Tokyo price for condominiums only.

Source: Japan Real Estate Research Institute, Bloomberg, Citi Research

The poor growth performance has also affected labour market conditions – unemployment, which used to fluctuate between 2-3% in Japan, has mostly been in a 4.0-5.5% corridor over the last decade (still low by the standards of most advanced industrial countries). Nominal and real earnings have been declining in Japan since the end of the last century (see Figure 9).

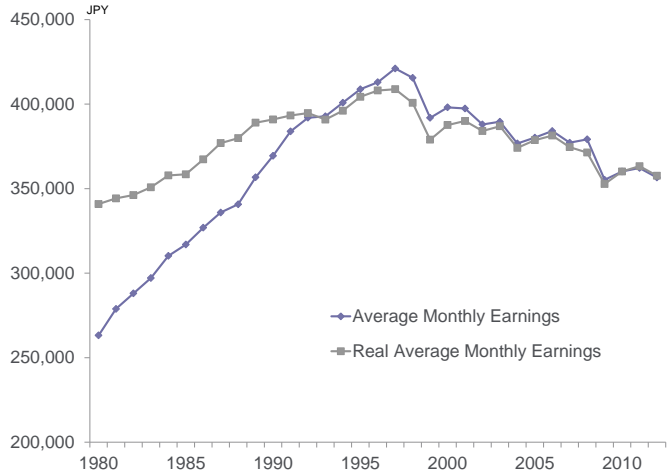
Figure 8. Selected Countries – Real GDP (2008:Q1 = 100), 2008-2017E



Note: Dotted lines are Citi Research forecasts

Source: National Sources, Citi Research

Figure 9. Japan – Labour Earnings Per Employee (¥), 1980-2013

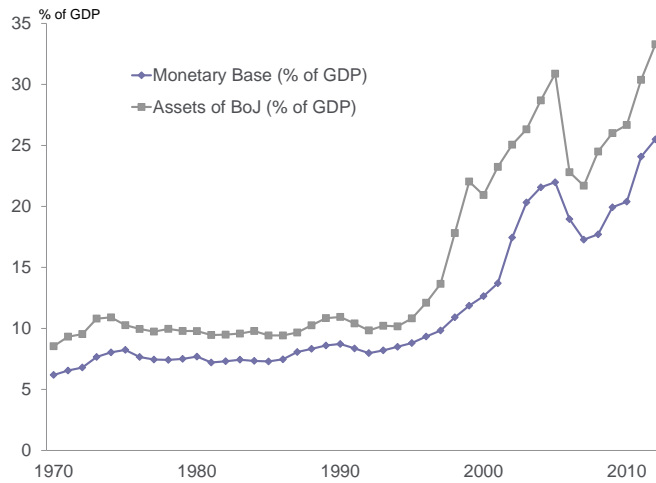


Note: Average monthly cash earnings per regular employee in establishments with 30 or more employees. Real data deflated using CPI (2010 = 100)

Source: Ministry of Health, Labour and Welfare, Citi Research

The sluggish pace of economic growth since the 1990s resulted even despite the BoJ expanding its balance sheet and the monetary base aggressively in response to the asset bubble implosion in 1990 (see Figure 10). However, the response of the private banking sector was much more muted – a reflection of the prevalence of zombie banks until 2003 (see Figure 11).

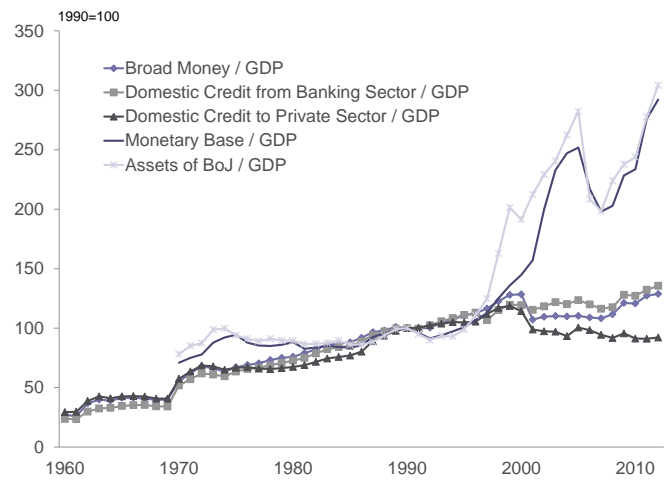
Figure 10. Japan – Indicators of Bank of Japan Activity (% of GDP), 1970-2012



Note: Monetary base includes banknotes and coins in circulation plus required banks' reserves in the central bank.

Source: Bank of Japan, Citi Research

Figure 11. Japan – Money and Credit (1990 = 100), 1960-2012



Note: Broad money includes currency in banknotes and coins in circulation, demand deposits of resident sectors other than the central government, bank and traveler's checks, and other securities. Domestic credit represents the total amount of credit given (loans, bonds, shares) to the resident sectors of the economy. Private sector includes non-financial corporations and households.

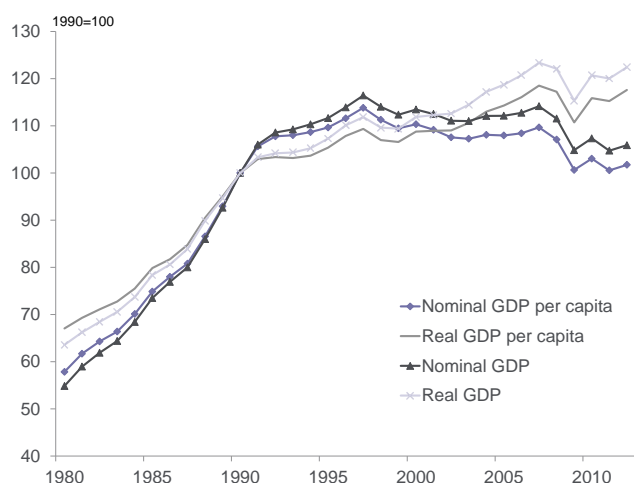
Source: Bank of Japan, World Bank, Citi Research

...the longer-term prospects for growth and for fiscal/ financial stability are bad and getting worse...

Third, and importantly, the prospects for growth may be worsening. Japan's population is aging fast and has declined in absolute numbers since 2011, as shown in Figure 13. Its working-age population has been declining since 1996, and the United Nations forecast that it will fall by another 13% by 2030 and by a total of 31% by 2050 (even though it should be noted that such long-term demographic projections are fraught with uncertainty). There are plenty of reasons to expect a falling population and a rising dependency ratio to be associated with declining output per capita.³

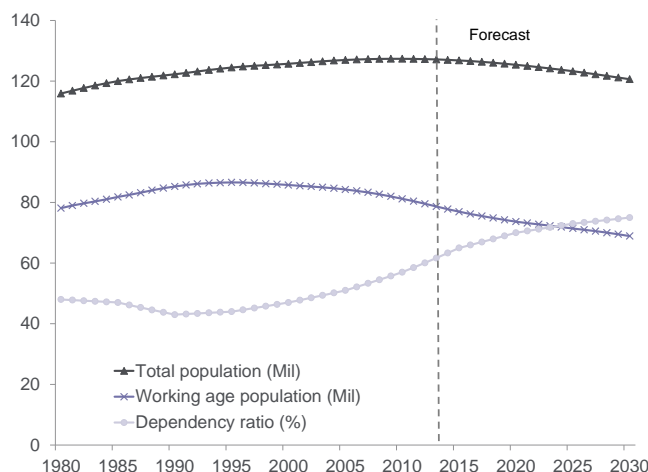
³ It may be legitimate, under highly restrictive conditions, to treat population size as a 'scale variable', with different population sizes not associated with material differences in productivity levels and growth rates. But this really only makes sense when we compare 'parallel universes' – each with a constant population of different size, and with the right age distribution, including dependency ratio (ratio of population that is not of working age to the working-age population), birth and death rates to sustain that population.

Figure 12. Japan – GDP and GDP per capita (1990 = 100), 1980-2012



Source: IMF, Citi Research

Figure 13. Japan – Population (million persons) and Dependency Ratio (%), 1980-2030E



Source: United Nations, Citi Research

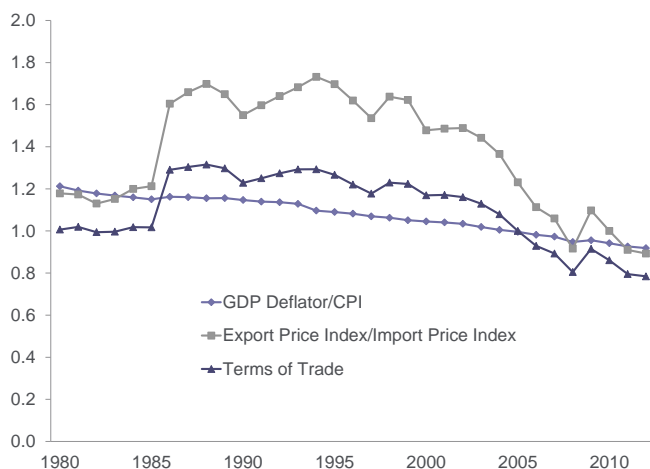
However, the demographic travails have one limited arithmetic upside – the performance of per capita (nominal and real) GDP have been slightly less dismal than their level counterparts.

...and Japan's external position has changed materially with terms of trade deteriorating since 1995, the current account surplus falling to roughly 1% of GDP and its trade balance turning negative

Fourth, some aspects of the Japanese external position have changed materially. Two aspects are particularly relevant, in our view.

The external terms of trade have turned against Japan at least since 1995, as can be seen in Figure 14. A broad index of exported commodities prices to imported commodities prices turns down around 1994. The ratio of the GDP deflator to the Consumer Price Index (CPI) declines steadily since 1980. The ratio of the deflators for exports and imports in GDP turns down from about 1989.

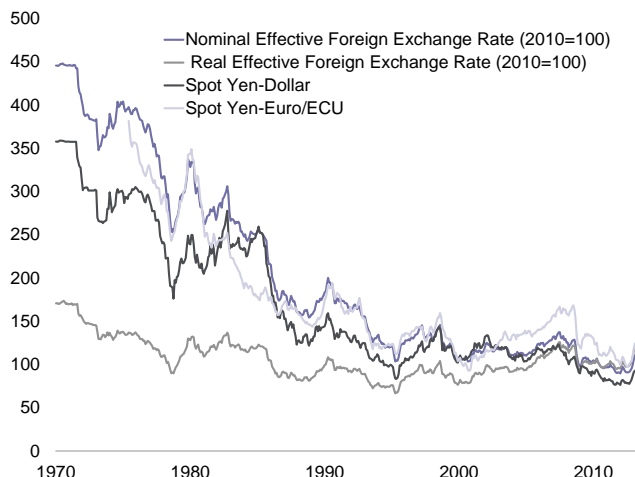
Figure 14. Japan – External Terms of Trade, 1980-2012



Note: Terms of trade calculated as the ratio of exports deflator and imports deflator from national accounts.

Source: Bank of Japan, Cabinet Office of Japan, Citi Research

Figure 15. Japan – Exchange Rates, 1970-2013



Note: Effective exchange rate corresponds to yen's exchange rate versus 42 major currencies. Real exchange rate is CPI deflated.

Source: Bank of Japan, Citi Research

The mercantilist interpretation of Figure 14 would be that Japan has improved its external competitive position over the past decade (or longer). This also rhymes with the fact that the Japanese real effective (trade-weighted) exchange rate (CPI-deflated) has appreciated much less than the nominal (effective) external exchange

rate, as Japanese inflation has been very low. The nominal effective exchange rate has appreciated massively over the more than 40 years shown in Figure 15.⁴ However, the low Japanese domestic inflation rate means that the real exchange rate has appreciated much less over this period.

However, the suggested improvement in Japanese price competitiveness does not invalidate the other face of a persistent decline in the relative price of exports to imports – that every unit of Japanese exports is buying progressively fewer imports, thus depressing the real standard of living achievable with any given volume of domestic output production.

The second external concern is that the Japanese trade and current account surplus have diminished materially. Japan's current account surplus relative to GDP peaked at almost 5% of GDP in 2003/04, but has recently hovered around 1%. Its trade surplus, which peaked at almost 4% of GDP in 1987, first turned negative during 2009 and has now been negative for each of the last 8 quarters, to the tune of 2% of GDP most recently.

Figure 16. Selected Countries – Nominal GDP (trillions), 1990-2012

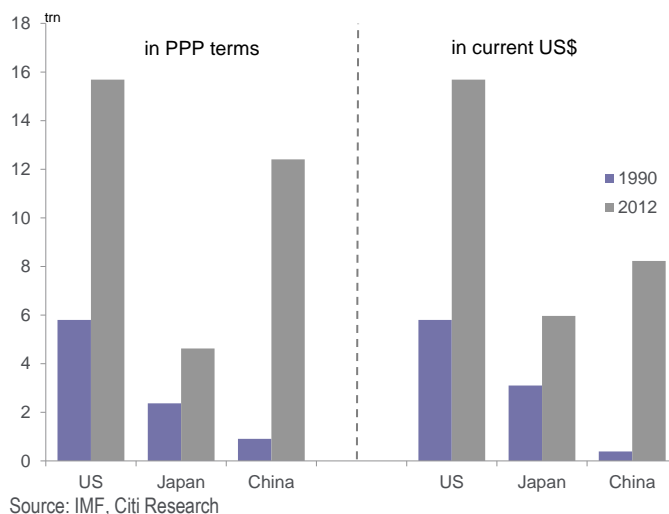
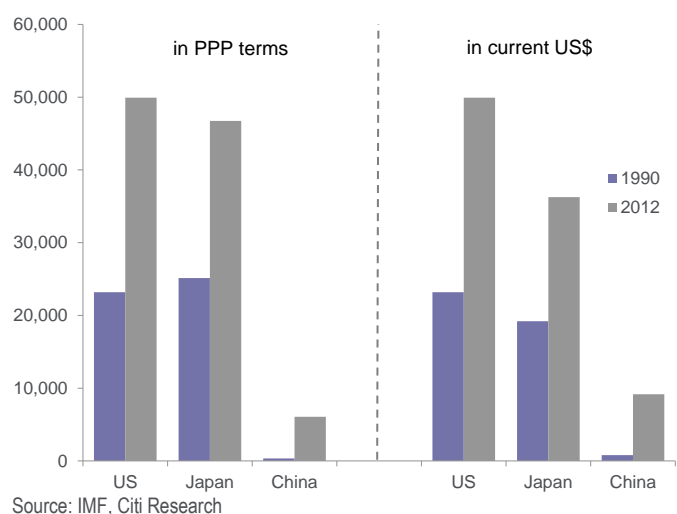


Figure 17. Selected Countries – Nominal GDP per Capita (units), 1990-2012



The economic rationale for prodding Japanese policy makers into action therefore seems powerful. But another factor lies across the East China Sea: the rise of China. Japanese underperformance is much more marked relative to China's performance. In 1990, Japanese nominal GDP in current USD and in purchasing-power-adjusted terms were 8 and 3 times China's GDP, respectively. At the end of 2012, the ratios were 1.4 and 2.5 – in China's favour (according to IMF data). It didn't help that it was widely publicized that China overtook Japan in 2010 to become the world's second largest economy. Where the economics failed to shake Japan out of its decades-long stupor, fear or pride may yet succeed in focusing the minds.

⁴ The two bilateral nominal spot exchange rates in the Figure 15 are defined analogously, as number of yen per US dollar or per Euro/ECU, respectively.

The first two arrows: Why the output gap will be closed and deflation will be ended

The first two arrows of Abenomics have been fired and are likely to hit their target.

* The BoJ is likely to achieve its' inflation target of 2%

* The temporary fiscal stimulus and monetary easing are likely to close the output gap

BoJ asset purchases are roughly twice as large relative to the size of the economy as the Fed's QE3

The first two Abenomics arrows have been fired. Under the current policy of the BoJ that was announced in April 2013 (called "Quantitative and Qualitative Monetary Easing by the Bank of Japan")⁵, it has set out to double the monetary base from ¥135 trillion to ¥270 trillion by March 2015 (equating to ¥60-¥70 trillion per year), mainly by purchasing Japanese government bonds (JGBs), of which about ¥50 trillion are meant to be purchased per annum.

It also announced that it would raise the average remaining maturity of its holdings from about three years to seven years and to change its operating target from the overnight interest rate (which is firmly stuck at the ELB) to the monetary base. This comes on top of changing the BoJ's operationalization of its price stability mandate to 2% for the CPI to be achieved at the earliest possible time, with a time horizon of about two years from April 2013.⁶

With 2012 nominal GDP around ¥475 trillion, JGB annual purchases will be around 10.5% of GDP and base monetary expansion between 12.6% and 14.7% of GDP for at least two years. The Fed's \$85 billion monthly purchases of U.S. Treasuries and agency mortgage-backed securities (MBS) under its QE3 program, amounting to 5.5% of annual GDP, look rather small by comparison — and as Figure 19 shows, the increase in the BoJ's balance sheet size relative to GDP since the financial crisis was in fact larger than for the Fed (and the ECB). The BoJ's balance sheet is expected to be close to 60% of GDP by the end of 2014 (Figure 18).

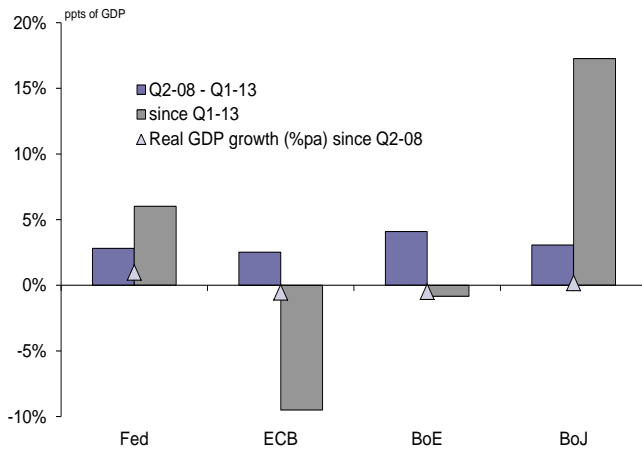
A temporary fiscal stimulus permanently funded and monetised by the central bank can always be made large enough to close any size (negative) output gap. What is more, the Bank of Japan have made it clear that if the currently envisaged scale of the Bank of Japan's balance sheet expansion is insufficient to achieve the new inflation objective it will ratchet up the scale of its interventions.

⁵ See Bank of Japan, "Introduction of the "Quantitative and Qualitative Monetary Easing"", 4 April 2013,

http://www.boj.or.jp/en/announcements/release_2013/k130404a.pdf

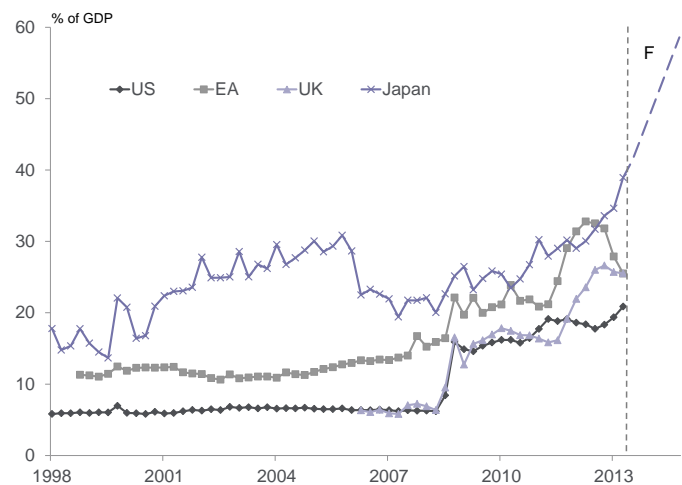
⁶ The official target introduced by the Bank of Japan in January 2013 sets the "price stability target" at 2% in terms of the year-on-year rate of change in the consumer price index (CPI). Previously, the "price stability goal in the medium to long term" was in a positive range of 2% or lower in terms of the year-on-year rate of change in the CPI and the Bank set a "goal" at 1% (see Bank of Japan (2013a)). The 2% target is to be achieved "at the earliest possible time, with a time horizon of about two years" (see Bank of Japan (2013b)).

Figure 18. Selected Countries – Change in Central Bank Balance Sheet Size (% points of GDP)



Note: Balance sheet size corresponds to total financial assets
Source: National Central Banks, Citi Research

Figure 19. Selected Countries – Central Bank Balance Sheet Size (% of GDP), 1998-2014E



Note: Balance sheet size corresponds to total financial assets
Source: National Central Banks, Citi Research

The first two arrows have already been somewhat effective: the yen has depreciated by 25% in real effective terms and unemployment has declined, as output growth rose

The first two arrows have already had some effects. The sharp depreciation of the yen since the last quarter of 2012 stands out: more than 25% in real effective terms.⁷ This is the direct result of the first arrow of Abenomics: the aggressive monetized expansion of the balance sheet of the Bank of Japan. The 2013 temporary infrastructure spending stimulus has been delivered and a further temporary fiscal stimulus (to start in December 2013) was announced on October 1, 2013. Since the beginning of 2013, the combined monetary-fiscal stimulus has boosted growth sharply, at a rate that could close the (negative) output gap in a couple of years. The unemployment rate, which peaked at around 5.5% in July 2009 has since declined again to just below 4%. No doubt the current cyclical recovery will bring down the unemployment rate further.

⁷ See [Abenomics and the Yen – Implications of ¥ Depreciation for Japanese Equities and the Policy's Success](#), Benjamin R Mandel, 20 Sep 2013, Citi Research.

Why the output gap will be closed: Helicopter money works – always

The combined monetary and fiscal actions of the Japanese government and the BoJ are close to “helicopter money” — a temporary fiscal stimulus financed by a permanent increase in the monetary base, which is effective in raising inflation and boosting the output gap – always — as long as the dosage can be adjusted, if necessary

The Bank of Japan seems to have shifted away from the Bundesbankian view of central bank independence – not picking up the phone when the Treasury calls

Helicopter money is a temporary fiscal stimulus permanently funded and monetised by the central bank.

Our confidence that deflation in Japan will end, that the two percent inflation target will be achieved and that the output gap will be closed derives from a combination of economic theory and empirics (sufficiently expansionary monetary and fiscal policy, used in combination, can always boost demand by any desired amount) as well as the political economy judgment that the monetary and fiscal authorities are determined to do whatever it takes to achieve this.

The reason the output gap in Japan will be closed and deflation will be ended is that the Bank of Japan no longer acts as though a central bank is independent only if the Governor does not answer the telephone when the Minister of Finance/Secretary of the Treasury calls. At least since the Bank of Japan was granted operational independence in 1997, it had adhered to this Bundesbankian view of independence, which asserts that cooperation and coordination between the monetary and fiscal authorities inevitably means loss of central bank independence. The fact that this view is logically incoherent – only independent agents can choose to cooperate or coordinate their actions; those who don't have independence get instructed as to what to do – did not diminish the central bank's attachment to it. But since Governor Haruhiko Kuroda succeeded Governor Masaaki Shirakawa on 20 March 2013, a more cooperative phase in the relationship between the Bank of Japan and the Ministry of Finance has started.

The reason this matters is that, in a fiat money economy, a cooperating central bank and Ministry of Finance can always raise the rate of inflation to any level they wish to achieve and can always boost demand by any amount required through the use of the familiar if sometimes maligned tool of ‘helicopter money’.⁸

Helicopter money is a temporary fiscal stimulus permanently funded and monetised by the central bank. In its most classic, Friedmanian form (see Friedman (1969)), either the central bank is legally capable of making direct cash transfer payments to the general public or the Ministry of Finance or Treasury has taken over the issuance of base money from the central bank.⁹

Fiat money — currency that a government has declared to be legal tender — or at any rate the currency component of the base money stock, is irredeemable: it is an asset to the holder/owner but not in any meaningful sense a liability of the issuer, because the owner of ¥ X worth of currency notes can only force the issuer to exchange them for ¥ X worth of currency notes. The empty promise on a £20 pound note, “I promise to pay the bearer on demand the sum of twenty pounds”, clearly reveals the unique joys of being able to issue fiat legal tender. Because currency is irredeemable and typically bears a zero nominal rate of interest, its issuance today does not in any way constrain the future ability of the issuer, the central bank, to either borrow or to issue additional currency. The irredeemability property of currency can be safely attributed also to the other component of base money, (overnight) reserves held by commercial banks and other eligible counterparties of

⁸ See [Global Economics View - Japan: Is There An Exit From The Great Deflation?](#), Willem Buiter et al, 28 Oct 2010, Citi Research, and [Global Economics View - The Great Deflation: Lessons from Japan for the World](#), Willem Buiter et al, 11 Nov 2010

⁹ “Let us suppose now that one day a helicopter flies over this community and drops an additional \$1000 in bills from the sky, ... Let us suppose further that everyone is convinced that this is a unique event which will never be repeated,” (Friedman (1969, pp 4-5))

Helicopter money is different from a conventional fiscal stimulus financed by issuing sovereign non-monetary debt

the central bank.¹⁰ So the monetary base is an asset to the owner but not in any meaningful way a liability of the issuer.

Helicopter money is different from a conventional fiscal stimulus financed by issuing sovereign non-monetary debt, like JGBs, to parties other than the central bank. A transfer payment made directly by the central bank to households in the form of either a check drawn on the central bank, which can, to make it simple, be redeemed at any commercial bank in the jurisdiction of the central bank, will boost the wealth and thus the consumption of the households without reducing the wealth or true net worth of the central bank. This is true even if nominal interest rates in the economy are at the effective lower bound (ELB) for nominal interest rates.¹¹ Away from the ELB, expansion of the monetary base works also through liquidity effects, regardless of how it is brought about. Depending on whether it is brought about through open market purchases by the central bank without any (quasi-) fiscal transfer payments by the consolidated central bank and general government or whether (quasi-) fiscal transfers are involved, it will also work through wealth effects and possibly through income effects. There is a wealth effect of open market purchases only if the growth rate of the nominal stock of base money equals or exceeds the nominal interest rate in the long run.¹² At the ELB the liquidity effect vanishes and a permanent (irreversible) base money expansion always boosts activity through a wealth effect, regardless of whether the additional base money is introduced through (quasi-)fiscal transfer payments or through an open market purchase.¹³ With the nominal interest rate at zero, any permanent (irreversible) increase in the stock of base money satisfies the condition that the long-run growth rate of the stock of base money is at least equal to the nominal interest rate (zero). This is true even if the base money is introduced through an open market purchase of public or private debt.¹⁴

¹⁰ In countries with reserve requirements (typically specifying a minimum ratio of bank reserves to eligible deposits), both required reserves and excess reserves can be viewed as irredeemable 'debts' of the central bank. At worst the central bank can swap them for currency notes at little or no notice. Bank reserves with the central bank can pay interest, at a rate determined by the central bank. This rate can be different for required reserves and for excess reserves.

¹¹ Aka the zero lower bound (ZLB) even though the existence of significant carry costs of currency means that the ELB is somewhat lower than zero, probably around -75 bps.

¹² The solvency constraint or intertemporal constraint of the household sector is, for finite-lived households, that net financial assets are non-negative at the end of the last period. For infinite-lived or dynastic households, it is that the present discounted value (NPV) of its net financial assets be non-negative in the infinite long run. If the central bank buys sovereign non-monetary debt from the households and pays for it with money, the NPV of the terminal value of the household's net financial assets is still zero if the growth rate of the nominal stock of base money is not at least equal to the nominal interest rate used to discount the terminal value of the household's assets and liabilities. When the growth rate of the nominal stock of base money is at least equal to the nominal interest rate (in the long run), there either is no NPV of terminal net financial assets (if the growth rate of the nominal stock of base money exceeds the nominal interest rate) or, if the growth rate of the nominal stock of base money equals the nominal interest rate, the NPV of terminal net financial assets can be a choice variable of the monetary authority. This applies also when the long-run growth rate of the nominal stock of base money and the long-run nominal interest rate are both zero.

¹³ Or equivalent government spending on real goods and services.

¹⁴ Consider the case where the central bank buys a 10-year Treasury Note with base money. The nominal interest rate is zero, now and forever.

In a Keynesian world, fiscal policy on its own through, say, a balanced-budget fiscal stimulus (involving no additional funding needs for the sovereign) can affect demand. The so-called balanced budget multiplier is an example of this. Even in more classical views of the world, pure fiscal policy can boost aggregate demand.¹⁵ Consider the risk that, in Japan, the extraordinarily high level of public debt makes it plausible that a fiscal stimulus in the form of a tax cut funded through non-monetary debt issuance would be saved rather than spent (Ricardian savings behavior). Alternatively, the additional sovereign non-monetary debt incurred through the fiscal stimulus could, at last, awaken the market's fear of a sovereign debt default, causing a sharp rise in yields and a possible contraction of demand.

Away from the ZLB, monetary policy on its own can affect demand through liquidity effects. To permanently raise the rate of inflation, however, a combined monetary fiscal stimulus (a permanent version of helicopter money) is necessary in any conceivably relevant conditions. Even just closing the output gap in a country like Japan is likely to be easier when monetary and fiscal policy are used in combination and in a coordinated manner.

So only transfer payments (or higher exhaustive public spending or tax cuts) that are permanently financed by base money issuance have an unambiguous expansionary effect either through higher household spending generated by higher household wealth or through the higher government demand without any offsetting cut in private demand prompted by the fear that higher future taxes are necessary because of the higher public debt). This helicopter drop of money can always be made large enough to eliminate any negative output gap (defined as the difference between actual output and potential output). With the output gap closed, more limited continued monetary issuance, and appropriate interest rate policy once actual and expected inflation lift the official policy rate from the zero lower bound, will permit the inflation target to be achieved, on average, to the extent permitted by a complex, non-linear, stochastic and steadily evolving dynamic economic system like the Japanese economy.

In the real world, central banks don't have the legitimacy to make transfer payments or to cut or raise taxes. So the helicopter money drop can only be implemented through coordinated actions and credible commitments from the central bank and the Ministry of Finance. The Ministry of Finance/Treasury provides a *temporary* transfer payment, tax cut or boost to exhaustive public spending which it funds by

Even if, at the ZLB, the Treasury Note pays a zero nominal interest rate, the consolidated general government and central bank would still be better off following the substitution of zero interest non-monetary debt by zero interest monetary debt. This is because the solvency constraint of the consolidated general government and central bank requires that the present discounted value (NPV) of its net *non-monetary* liabilities be non-positive. Because of its irredeemability, a non-positive NPV of terminal monetary debt (or of total monetary plus non-monetary debt) is not required for the State. Even if nominal interest rates are zero at all maturities and are expected to remain at that level forever (the ultimate 'sink' liquidity trap) the NPV of terminal *non-monetary* Treasury debt goes up one-for-one with current Treasury issuance. When money is issued instead, the NPV of terminal *non-monetary* Treasury debt remains constant.

¹⁵ For instance, it is true that, since taxes born (or transfer payments foregone) by generations yet to be born will not affect the wealth of those currently alive if there are no operative intergenerational gift or bequest motives, government transfers to household paid by borrowing through Treasury issuance will have some net expansionary effect (because part of the future higher taxes or lower transfer payments will fall on future generations). The magnitude of this "non-Ricardian" mechanism is, however, highly uncertain, unlike the effect of the hand-out of cash.

selling Treasuries to the central bank. For the moment, assume that the central bank treats this purchase of Treasuries as permanent. When the Treasury debt instruments mature, the central bank purchases additional Treasury debt equal in amount (and in all other relevant characteristics) to the maturing debt.¹⁶ The central bank thus permanently monetises this purchase of Treasuries. The permanent increase in the stock of base money is therefore equal to the value of the temporary transfer payment.¹⁷

As noted already, the same effect of boosting demand can be achieved if instead of making transfer payments or cutting taxes the temporary fiscal stimulus takes the form of a temporary increase in public spending on real goods and services. This is in fact the road chosen in Japan, mainly through higher infrastructure spending.

Domestic demand versus external demand

We expect the first two arrows of Abenomics to eliminate the output gap mainly by boosting domestic demand, with some help through a sharply weaker yen, from export demand and the profitability of exports

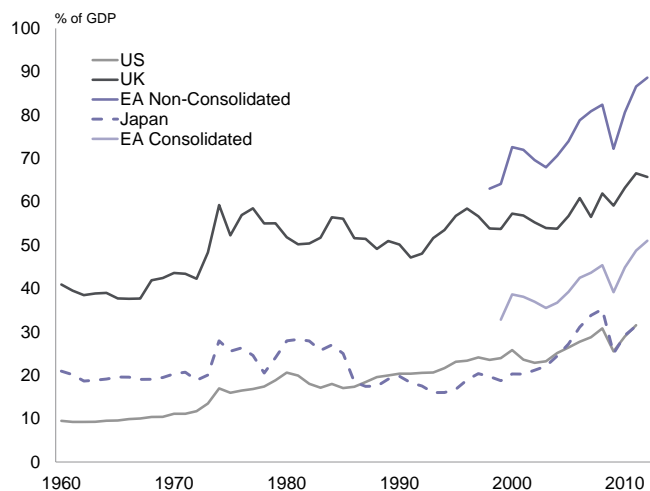
We expect the boost to GDP that will close the output gap over the coming two years to come mainly from domestic demand. The first reason for this is that Japan is too closed to international trade in goods and services to rely on export growth and net exports to do the job of providing a significant boost to GDP. This is clear from Figure 20 below, which shows that with regard to the sum of exports of goods and services and imports of goods and services as a percentage of GDP, Japan is today at the same level as the US, around 31%, well behind that of the Euro area, at 51% and less than half that of the UK, at 65%.¹⁸

¹⁶ Strictly speaking, the Treasury debt purchases by the central bank have to be 'additional' in a counterfactual sense to be part of a helicopter money drop.

¹⁷ Since the Treasury/Ministry of finance is the *de-facto* beneficial owner of the central bank, any profits of the central bank are invariably paid to the Treasury. Since limited liability does not appear to ever have been claimed by a national Treasury/Ministry of Finance when the losses of a central bank exhausted the central bank's conventional equity, we should, for substantive economic analysis purposes, consolidate the flow-of-funds accounts and balance sheets of the Treasury/MoF and the central bank. Any central bank holdings of Treasury debt therefore cancel out against the corresponding Treasury liabilities. If the central bank were to sell to the domestic private sector or to the rest of the world some or all of the Treasury debt it purchased as part of the helicopter money drop, but keeps the amount of base money it issued unchanged, it will have to replace the Treasury securities it sold with private or foreign financial assets. In the consolidated accounts of the central bank and the general government (or the central bank and the Treasury/MoF) the additional Treasury debt owed by the consolidated central bank and general government is exactly matched by the additional private domestic and foreign assets it owns. The distribution of assets and liabilities and of profits and losses between the central bank and the Treasury is only interesting in the blame game of 'who lost what when?' It is of no substantive economic significance. So what makes a helicopter drop of money is a *temporary* fiscal stimulus *permanently* funded through base money issuance.

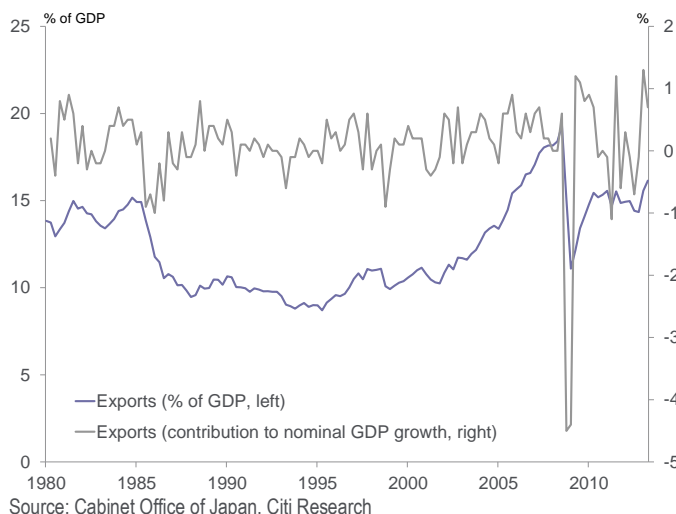
¹⁸ Note that Figure 20 contains two series for the euro area. The directly relevant one is the consolidated series, the series with the lower values of the two, for which intra-euro area imports and exports are netted out. The non-consolidated series, offered purely for educational purposes, fails to net out the intra-euro area trade and thus represents something like an average of the national trade openness indices of the 17 euro area nations. But because euro area member states trade so much with each other, this non-consolidated series (almost 90% of GDP in 2012), materially overstates the openness of the euro area as a whole to the rest of the world outside the euro area.

Figure 20. Selected Countries – Trade Openness (% of GDP), 1960-2012



Source: National Sources, Citi Research

Figure 21. Japan – Exports of Goods and Services (% of GDP), 1980-2013



Source: Cabinet Office of Japan, Citi Research

Export growth only accounts for 14.6% of total GDP growth...

...meaning it's difficult to rationalize a major role for exports in Japan's cyclical recovery

If we look at the arithmetical contributions of exports and imports to GDP growth between Q2 1980 and Q1 2013, we find that of the 71.4% cumulative GDP growth, export growth contributed 10.4 percentage points or about 14.6 percent of the total, which matches nicely with the average share of exports in GDP over the period, which is 12.3% (see Figure 21).

With domestic demand for domestic output (domestic absorption minus imports of goods and services) accounting for more than 85% of GDP growth over the period, it is difficult to rationalize a major role for exports in Japan's cyclical recovery. We recognize that such numerical growth decompositions should not be given a causal interpretation – exports and domestic demand may not, for instance, be independent of each other or they may be driven by common third factors. Nevertheless, it is at least plausible that exports are simply not large enough relative to Japan's GDP to make an export-led recovery a likely option, especially given the modest to moderate growth prospects for global GDP outside Japan over the next few years.

It is interesting that, although the U.S. and Japan have the same degree of openness to international trade (and the U.S. is more open to international capital flows and migration), the notion that QE and other forms of expansionary monetary policy in the U.S. would affect the demand for U.S. output mainly through net exports never gained currency. Perhaps one reason for the different views of the transmission mechanism of monetary policy for the U.S. and Japan has been that the degree of trade-openness (as measured, say by the combined import and export shares in GDP) has been steadily rising in the U.S., from around 10% in 1960 to over 30% today, while the increase in Japan has been much more modest, as is clear from Figure 20.

Private capital expenditure and residential construction strength signal a mainly domestic-led recovery

The increase of Japanese private capital expenditure in Q2 – the first positive change for seven quarters – and the recent evidence on greater strength of residential construction in Japan are also consistent with a mainly domestic demand-led recovery.¹⁹ Exports may play some part in the increase in domestic demand insofar as under pricing to market and with a yen depreciation, unchanged volumes of exports still imply higher yen profits of domestic firms, which given the large domestic ownership of Japanese firms should translate into higher wealth and eventually consumption of Japanese households.

External demand did not react first or in a major way. The response of export and import volumes to changes in the nominal and real exchange rate is subject to considerable lags. The effect on the Japanese price level will in part be through increases in the yen prices of imports and import-competing goods and services. There is a lot of rather inconclusive argument about whether the prices of a nation's exports are sticky in terms of the currency of the country of origin (the typical Keynesian assumption) or in terms of the currency of the destination country – the newer 'pricing to market view' (see Krugman (1987), Atkeson and Burstein (2008)). Clearly, pass-through of yen depreciation into the Japanese price indices (both consumer prices and producer prices) will be greater if the Keynesian view is mostly correct than if the pricing to market view described the data better. Note that the pricing-to-market view has the rather counterfactual implication that the terms of trade will improve for a country whose nominal exchange rate depreciates.²⁰

As always, it is important to distinguish between price *level* effects from exchange rate depreciation (which would show up in real-time data as a temporary increase in the rate of inflation) and permanent effects on the rate of inflation associated with a continuing decline in the external value of the currency. If Japan succeeds in moving from persistent deflation to a persistent two percent inflation rate, and its trading partners do not raise their domestic inflation targets by a similar amount, we would expect a permanent increase in depreciation rate of the yen, roughly equal in magnitude, once the adjustment process has been completed, to the increase in Japan's underlying rate of inflation.

Risks to the achievement of the first two targets

Three risks are that inflation expectations remain inert in response to policy action, the planned sales tax hike saps the recovery in domestic demand or that monetary policy actions will fall short of the amount needed to achieve the inflation target and close the output gap

There are three risks to this outcome that should be addressed: 1) a lack of responsiveness of inflation expectations; 2) the increase in consumption taxes announced for April 2014 and October 2015 saps the recovery out of domestic demand; and 3) monetary policy actions will fall short of the amount needed to achieve the inflation target and close the output gap.

Do inflation expectations respond and what if they don't?

First, moving from persistent deflation to sustained positive inflation at around 2% per annum can be awkward if inflation expectations, of households, corporates and financial market participants, refuse to cooperate, as they well may at first. Japanese inflation expectations are volatile and at times somewhat idiosyncratic.

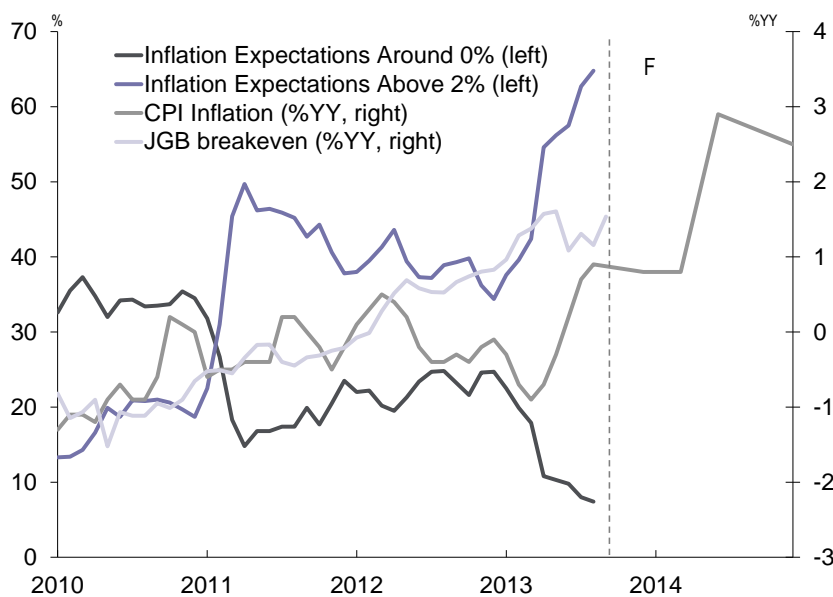
¹⁹ See e.g. "Abenomics fuels Japanese housing growth", Financial Times, September 1, 2013, <http://www.ft.com/intl/cms/s/0/f59c2f76-1140-11e3-a14c-00144feabdc0.html#axzz2dfv1gAJU>

²⁰ Clearly, if the degree and persistence of pricing to market depends on the nature of the shock that drives the exchange rate, the anomaly may be less striking, or could even be absent completely.

Inflation expectations have already started to creep up and policy actions can be made reasonably effective in raising inflation expectations if they had not.

But it may be of some comfort that inflation expectations already seem to have started to respond. As pointed out, for instance, in Mandel and Barnes (2013), market-based measures of expected inflation over a 5-year horizon (based on 5-year JGB breakeven rates) and over a 10-year horizon (based on the 10-year inflation swap breakeven) have risen from negative levels at the beginning of 2012 to around one percent by the end of Q1 2013.

Figure 22. Japan – Inflation (% YoY) and Inflation Expectations (%), 2010-2013



Note: Breakeven inflation for 5 years.

Source: Cabinet Office, Bloomberg, Citi Research

The Bank of Japan's survey-based expected rate of inflation for the next year changed much more dramatically than the longer-term expected inflation rate. The median expected rate of inflation for the next year went from +1% in December 2012 to +3% in both March 2013 and June 2013. The median for the 5-year horizon was 2.0%, 2.0% and 2.5% on the same three dates.²¹ In contrast, in the first survey following the Lehman crisis, released on 7 October 2009, the one-year ahead median inflation forecast was +0.1% and the median for the five-year horizon forecast was at +2.0%.²² The evidence suggests that survey-based measures tend to over-predict future inflation, but that both survey-based and market-based measures respond to recent actual inflation and, at least in the case of the market-based measures, to policy commitments deemed credible by market participants.

Even if inflation expectations did not respond to either policy announcements (including forward guidance – something not yet attempted in Japan) or to the actual track record of inflation, it would remain possible to raise actual inflation by generating and maintaining a sufficiently large positive output gap. From the perspective of efficient resource allocation, an economy in a permanent state of overheating is unlikely to be desirable, so it is encouraging that inflation

²¹ Source, Bank of Japan, Result of the 54th Opinion Survey on the General Public's View and Behavior (June 2013 Survey)

http://www.boj.or.jp/en/research/o_survey/ishiki1308.pdf

²² Source, Bank of Japan, Result of the 39th Opinion Survey on the General Public's View and Behavior (English version released November 11, 2009)

http://www.boj.or.jp/en/research/o_survey/ishiki0911.pdf

The Abe government decided to stick with the planned increase of the sales tax from 5% to 8% in April 2014

The government also announced a temporary fiscal stimulus of 5 trillion yen to partially compensate for the effects of the sales tax increase.

expectations in Japan do appear to respond to recent actual inflation and, to some extent, to (credible) policy commitments to target a particular rate of inflation.

The proposed increases in the national sales tax rate

On 1 October, the Abe government made the final decision to raise the national sales tax from its current level of 5% to 8% in April 2014 after awaiting the latest release of the Japanese Tankan survey. It left intact plans to raise the sales tax further to 10% in October 2015, even though those plans will still need to be re-confirmed in the interim period.²³

Japan has a poor experience with past hikes in the sales tax rate. The last hike from 3% to 5% in April 1997 caused consumer spending to fall 13% in the quarter following the tax hike. The economy went into recession. Of course, the consumer tax rate increase was not the only shock to hit the Japanese economy in 1997. The Asian crisis erupted in July of that year and materially affected export demand for Japanese goods. Also, the previous experience has not been lost on the current Japanese government. To avoid a similar outcome this time, the government has announced a further temporary fiscal stimulus, which will take the form of a temporary boost in infrastructure spending, tax incentives for companies to spend on new plant and equipment and income support for low-income households. A temporary investment tax credit or investment subsidy could have a stronger expansionary impact in the short run than a permanent incentive, if it succeeds in bringing future planned investment forward in time. The size of the temporary stimulus package is roughly ¥5 trillion (\$50 billion). This could offset much of the demand fallout from the ¥8.1 trillion in increased tax revenue the government expects to raise during the first year of the sales tax increase.

It has also been reported that the BoJ has been considering measures to potentially counterbalance any effects of the consumption tax on its objectives. We are confident that the BoJ, even if it does not scale up its monetary interventions in anticipation of the contractionary effects of the sales tax hike, will respond promptly should there be evidence that demand has been impacted adversely. Such additional expansionary measures from the BoJ will probably be able to prevent a recurrence of the 1997 outcome.

Will the BoJ do what it takes to achieve its inflation objective?

There is a risk that the BoJ's action fall short of the measures needed to achieve the inflation target. This could be because the BoJ and its leadership are in fact more ambivalent about the need to escape deflation than their statements suggest.

A related risk lies in a miscalculation by either the Finance Minister or the BoJ or both, about what complementary measures will be needed to accompany the sales tax and cushion its contractionary effect on domestic demand, perhaps because the contractionary effect of the sales tax could be underestimated by the Japanese government and the BoJ. Should these compensatory measures be too limited, the chances that Japan escapes from its deflation trap would fall. These two cases are most closely related when the monetary policy measures needed to achieve the inflation target would be much larger than what is currently planned, potentially making them unpalatable.

It is clearly imperative for Japan to design and develop government budget deficit reducing measures that have the least possible adverse effect on aggregate demand, as significant fiscal tightening has to be undertaken eventually if Japan is to avoid sovereign default or hyperinflation.

²³ The original decision to raise the sales tax was taken by the previous government.

Might this time be different and will supply side reforms be more than a damp squib?

There is a lot of low-hanging fruit on the structural reform front in Japan

The two main objectives of supply-side reform is to boost the effective supply of labour and boost productivity

There is a lot of low-hanging fruit – from an economic perspective – on the Japanese supply side reform tree. But undoubtedly, political opposition by vested interests will be vigorous and could thwart the substantial reforms that would be necessary to raise the path of potential output in Japan to grow much faster than our current estimate of around 0.85% pa. Nevertheless, the chances that Japan will pursue serious structural reforms are higher than they have been for a long time.

Broadly speaking, there are two main objectives for supply-side reform in Japan: 1) to raise the effective supply of labour; and 2) to raise productivity levels, in particular in the non-manufacturing sector (retail and other services and agriculture).

Measures to boost the effective supply of labour

1. Boosting the female labour force participation rate.

As is clear from Figure 23, Japan's female labour force participation rate is below average among the group of advanced industrial countries, and is so despite the fact that the birthrate in Japan has long been among the lowest among the advanced economies (so childrearing is unlikely to be the main reason for this).

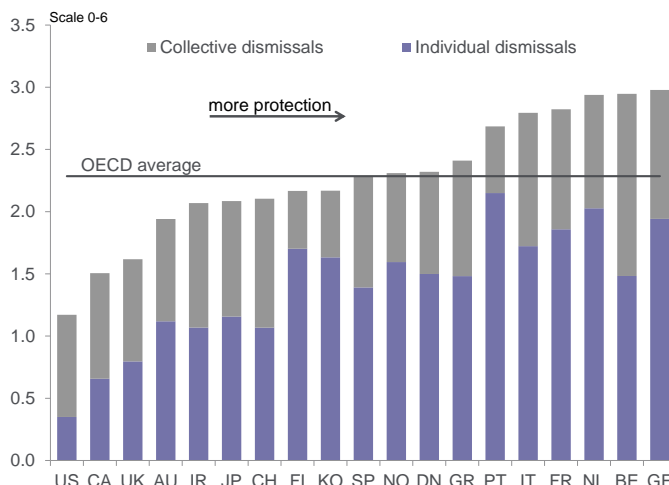
Just raising Japan's female labour participation rate to the average of the 25 nations in Figure 23 would boost it by 5.5 percentage points. Measures to raise female participation rates could include improving the availability of childcare, and tax incentives for second earners and flexible employment, but probably will also have to include major 'marketing' efforts to change social norms about female employment and gender relations.

Figure 23. Selected Countries – Female Labour Force Participation Rate (%), 2003-11



Source: OECD, Citi Research

Figure 24. Selected Countries – Protection of Permanent Workers Against Individual and Collective Dismissals, 2013



Source: OECD, Citi Research

2. Easing labour market rigidities

Japan's formal labour market rules are not particularly restrictive. But the informal rules and conventions amount to extremely high firing or lay-off costs that lead to underutilization of labour in companies where declining demand and/or rising labour productivity make it impossible to utilize the existing labour force fully and efficiently. Ending life-time employment in Japan's large corporates would be part of the desired 'big bang' in labour market deregulation and labour relations.

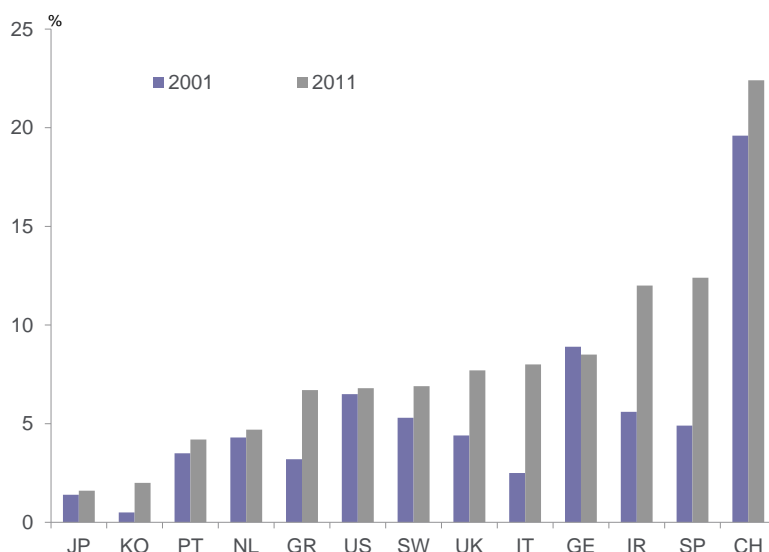
3. Opening up to immigration on a significant scale

Between 2001 and 2011, Japan's foreign nationals share in its population rose from 1.4% to 1.6%. The next lowest country, South Korea, started in 2001 at 0.5% and rose to 2.0%. By comparison, the UK's foreign nationals' share was 7.7% in 2011 and the U.S. was at 6.8%.²⁴

Easing restrictions on immigration could, from a technical, administrative perspective be done at the drop of a hat. From a political perspective it would be very difficult indeed. Differences between the indigenous or native population and would-be immigrants as regards race, ethnicity, culture, religion, politics, class and wealth make immigration a contentious issue almost everywhere, including in every advanced economy with a declining and/or aging population where a conventional economic cost-benefit calculus would seem to favour support for immigration (see e.g. Sheets and Sockin (2013)).

When typically unwelcoming attitudes towards immigration are combined with geographical barriers – the Sea of Japan and the East China Sea are formidable obstacles to illegal migration – the result is a population with a very high share of foreign nationals.

²⁴ The concepts of immigrant, indigenous and native are fuzzy, and the share of foreign nationals in the total population is not an ideal measure by any means. Unfortunately, likely superior measures also provided by the OECD on the foreign-born population don't include Japan. The number of foreign-born residents tends to be higher than the number of foreign nationals living in the countries for which we have both sets of data.

Figure 25. Selected Countries – Share of Foreign Nationals in Total Population (%), 2001-11

Source: OECD, Citi Research

4. Boosting the birth rate

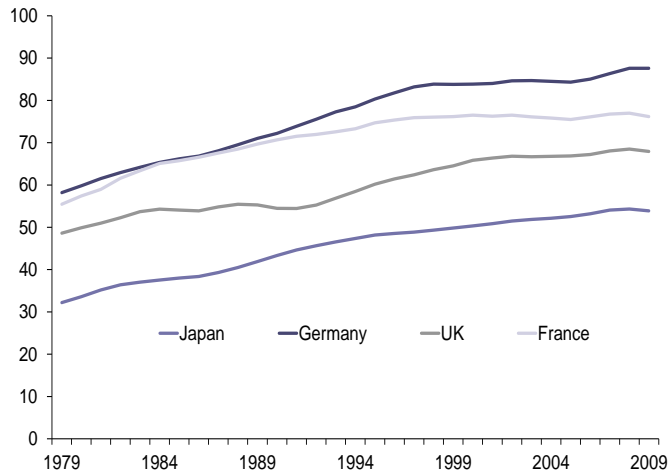
This would positively affect labour supply only with a lag of at least 20 years (longer for highly skilled and educated workers). The immediate impact would be an increase in the dependency ratio (this time by increasing the number of those below working age). It could also cause a temporary reduction in the supply of labour, as childbearing and taking care of young children would reduce the labour force participation rate of younger women and men. The example of countries like Sweden demonstrates, however, that it is possible to combine a high labour force participation rate of women of child-bearing age and of young couples with a high reproduction rate that keeps up with the death rate. This would necessitate some of the measures mentioned above to raise female participation rates.

Measures to boost efficiency and productivity in the service sectors and in the agricultural sector

Japan is a dual economy where world-class manufacturing and a heavily regulated low-productivity service sector exist side-by-side with agriculture

Japan is a dual economy. It has world-class manufacturing, honed in competitive foreign markets, a mostly inefficient service sector and a very inefficient 'bijou' agricultural sector. Much of the service sector is heavily regulated. Both services and agriculture are very effectively protected against foreign competition. In the case of non-traded services, the protectionism takes the form of restrictions on foreign direct investment (FDI). The consequences of this overregulation and protectionism are apparent from Figure 26.

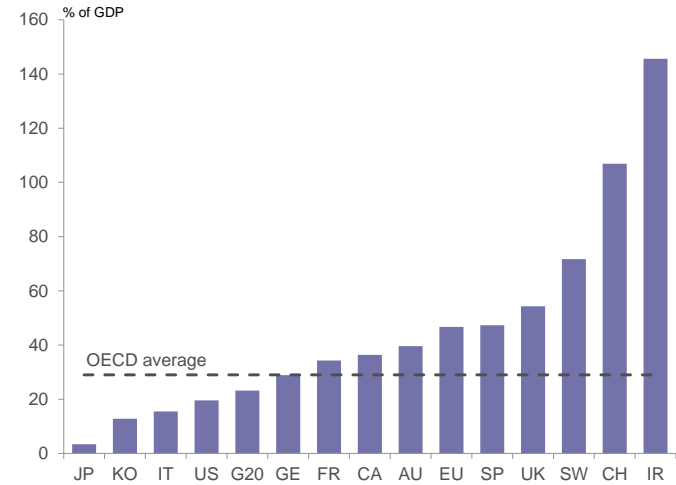
Figure 26. Selected Countries – Non-Manufacturing Productivity (US = 100), 1979-2009



Note: Created based on "EU KLEMS"

Source: Ministry of Economy, Trade and Industry of Japan, Citi Research

Figure 27. Selected Countries – Foreign Inward Direct Investment Outstanding (% of GDP), 2012



Note: Values for France, Italy, EU and G-20 correspond to 2011 due to data availability.

Source: OECD, Citi Research

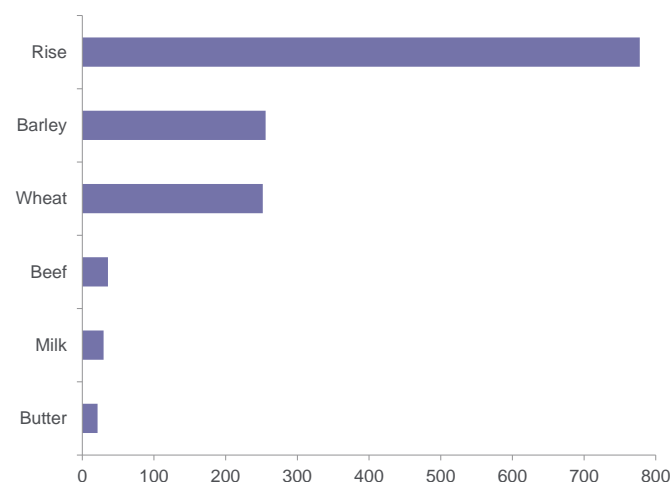
Non-manufacturing productivity in 2009 in Japan was barely 50% of that in the US. With the non-manufacturing sector accounting for more than 80 percent of GDP in Japan, achieving US levels of productivity in these sectors would boost Japanese GDP by 40 percent.²⁵ Of course it would take time and require investment in capital and people, even if all man-made barriers to efficiency were removed, but the figures show the possible boost to potential output Japan could achieve through deregulation and opening up to trade and FDI.

The policies to address this productivity gap are obvious and simply to implement from an administrative point of view. Unfortunately, they are also very controversial politically. They are:

1. liberalise trade in agricultural products;
2. deregulate the service sector, so economies of scale and scope can be reaped;
3. liberalise trade in tradable services; and
4. liberalise FDI in services.

²⁵ In 2011, the share of industry in Japan's GDP was 26%, manufacturing 19%, services 73% and agriculture a negligible 1% (The World Bank, World Development Indicators, 2013 Economy, Table 4.2. <http://www.wdi.worldbank.org/table/4.2>).

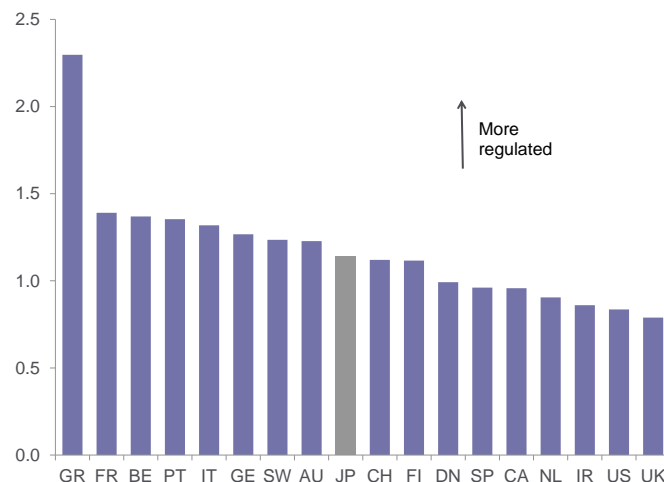
Figure 28. Japan – Average Tariffs on Agriculture Products (%), October 2010



Note: Ad valorem duties

Source: Ministry of Agriculture, Forestry and Fisheries of Japan

Figure 29. Selected Countries – OECD Product Market Regulation Index, 2008



Source: OECD, Citi Research

Why has it been so hard to get serious structural reform in Japan?

Political constraints have stood in the way of effective structural reform in the past

We emphasise that – as is usual – the impediments to structural reform are mostly in the realm of political economy

Vested interest are likely to oppose vocally and effectively the deregulation of the service sectors (which would likely lead to the economic demise of many small family shops and other small family enterprises). This applies to domestic liberalization, but probably even more so to opening up the tradable service sectors to foreign competition through the removal of trade barriers and opening up the non-tradable service sectors through FDI.

Material reforms to increase the supply of labour are generally subject to major political opposition. The lifetime employment system in Japan's large corporates has been seen to as too integral to be reformed. Changes in female labour force participation would require both cultural changes, which tend to be slow in coming, with often vocal opposition from social conservatives.²⁶ Relaxing barriers to immigration in a significant way runs into the twin barriers of xenophobia and vested interests (Japanese workers).

Opposition to the liberalization of the agricultural sector which, at 1 percent of GDP is economically insignificant, has been almost institutionalized in the Liberal Democratic Party (LDP), the dominant partner in the current coalition government as well as Japan's ruling party for most of its post-war history. The LDP has relied on the votes of and represented the interest of the rural constituencies, and even beyond the LDP cultural attitudes towards food and the important issue of food security have given the agricultural lobby sufficient ammunition to fend off any major attempts to free up the sector.

The power of vested interests to oppose major structural reform in Japan is historically strong as it has also been matched with generally weak political mandates. Since 2000, Japan has had eight prime ministers. This is without double-

²⁶ See e.g. Reuters (2013), Japanese Women at Work? Traditionalists Say No. Wednesday, 19 June 2013, www.cnn.com/id/100829850

counting the current PM Shinzo Abe, who took office again in 2012, but already governed in 2006-07. Except Junichiro Koizumi, no Japanese PM since 2000 held office for even two full years.

Finally, external pressure or incentives to reform have mostly been absent. The US, Japan's important main military and strategic ally had been mostly uninterested in Pacific Affairs since the Korean War, with the occasional exception of concern about potential North Korean aggression or Japanese export prowess.

What is different this time?

This time might be different as:

- Japanese PM Abe has a strong political mandate
- The rise of China has changed the political calculus of reform, both domestically and externally
- The agriculture sector has shrunk materially

We already covered the three main differences to past situations where initiatives for structural reform were either missing or failed (generally mostly the former): long-enduring economic underperformance and – even more importantly – the rise of China. The rise of China also plays a part in two other relevant differences to the past.

First, the Abe administration appears to have a relatively strong political mandate which encompasses reforms. PM Shinzo Abe not only won the Lower House election that brought him (and his LDP party back) into power,²⁷ but unlike in the two previous Upper House elections, the ruling LDP-Komeito coalition also carried the Upper House, leading to a 'united Diet'.²⁸ And even though his popularity has also been subject to some volatility, his approval ratings generally remain high – with the exception of PM Koizumi's approval ratings, those of the Abe government are the only ones to maintain above-50% approval ratings for an extended period of time since at least the mid-90's. We suspect that at least part of Abe's appeal – and his resulting mandate – has been his message to try to reinvigorate Japan and that the reinvigoration would require change, so it could be interpreted as a mandate for change.

Second, the rise of China has also changed the external political calculus. As noted, Japan has strong national security reasons for wanting to get closer to the U.S. and has recently joined the group of nations negotiating the Trans-Pacific Partnership Agreement (TPP), as it worries about the growing economic, political and military clout of China and is concerned about a possible nuclear threat from North Korea. The U.S. meanwhile has also decided to 'pivot' towards Asia (and presumably away from Europe and the Middle East) to contain any potential strategic threat China poses to its status in the region and in the world. One way for Japan to strengthen its geo-political partnership with the U.S. is to open its markets to agricultural and service imports and to welcome FDI in its service sectors.

Finally, agriculture in Japan is a dying sector. The average age of Japanese farmers has risen to 66 years, only 420,000 out of Japan's 1.5 million farmers are full-time engaged in agriculture even today and but for the presence of growing numbers of Chinese farm workers (numbering at least 100,000 currently, officially labeled "students" or "trainees"), the agricultural sector would have shrunk even below its current (minute) 1.1% share of GDP (down from 13.1% in 1960 and 2.5% in 1990) and its opposition to reform may ultimately become less effective.²⁹

²⁷ See [Japanese Elections: Political, Economic and Market Impact - A Multi-Asset Investment Perspective](#), Kiichi Murashima et al, 29 Nov 2012, Citi Research, and [Post-election Reactions and Opportunities - A Multi-Asset Investment Perspective](#), Kiichi Murashima et al, 9 Jan 2013, Citi Research.

²⁸ See [Japan Macro Flash - Will PM Abe use his mandate well?](#), Kiichi Murashima and Naoki Iizuka, 22 July 2013, Citi Research

²⁹ The Economist (2013), Farming in Japan, Field Work, April 13th, 2013, <http://www.economist.com/news/asia/21576154-fewer-bigger-plots-and-fewer-part-time->

So far the proposals of the Abe administration for structural reforms have been modest and vague

But the TPP, agricultural reform, some reforms to increase female labour force participation, new forms of urban special trade zones, among other measures, appear plausible to us.

What could be different this time?

The environment for structural reform is thus as fertile as it has been at any point in recent decades in Japan. That leaves us more optimistic about the prospects for Japan than we have been for a long time. But it is still Japan. Vested interests still remain strong. Speedy, comprehensive success is hardly likely, while initial reform successes may yet be scuppered by subsequent failures. For what it's worth, the structural reform efforts of the Abe government so far have been thoroughly unimpressive.

In early June, the Council for Industrial Competitiveness (CIC) announced their first "Growth Strategy", which include plans to: 1) speed up the restructuring of industries (the Industry Competitiveness Enhancement Bill), 2) to develop special economic zones (National Strategic Special Zones), 3) to promote the use of public-private partnerships (PPPs) and private finance initiatives (PFIs), 4) to allow the online distribution of non-prescription drugs, and 5) a proposal for electricity reform.

This agenda has been relatively unambitious (and therefore rightly greeted with some disappointed by markets), and all measures await approval, let alone implementation (even though some measures are likely to be approved in the coming special session of the Diet and to be implemented in fiscal year 2014). Depending on its eventual form, some measures, in particular the special economic zones, maybe somewhat more significant than initially thought.

There has also been a report with reform proposals by the Council for Regulatory Reform (CRR), which cooperates with the CRR on structural reform issues. The report mainly deals with 1) healthcare reform (including permitting online distribution of non-prescription drugs), 2) energy and environmental reforms (including reform of the electricity system), 3) possible employment reforms and 4) measures to help start-ups. Agricultural reforms and trade and investment are also a focus of the CRR.

However, for now, it appears that the CRR proposals are mostly gathering dust, or at least their serious discussion is being pushed back into 2014. Overall progress therefore gives fairly little reason to be optimistic about structural reform prospects.

farmers-agriculture-could-compete. BBC (2013), "The Chinese residents who call Japan home", 12 August 2013, www.bbc.co.uk/news/world-asia-23462312 ..

Figure 30. Japan – Government Agenda on Deregulation, 2014**Employment**

- * Reforms in systems on employment periods and working hours
- * Deregulation in labor dispatch service
- Review of strict employment protection

Agriculture

- * Deregulation aiming at consolidation of patched farmlands
- * Relaxing entry barriers in agricultural industry

Healthcare

- * Medical insurance reform
- * Promotion of home medical care services
- * Reforms aiming at broadening IT usage in healthcare industry

Business startups and IT

- * Deregulation in Media Cloud businesses
- * Deregulation aiming at broadening IT usage in businesses
- Review of the Anti-Trust Law

International trade and investment

- * Deregulation in aviation policy (expanding airport landing slots, etc.)
- Review of strict immigration control (consider relaxing visa requirements, etc.)

Note: (*) are key areas the Committee places their priorities

Source: Citi Research

Changes in the environment make some reform successes likely.

The removal of administrative, tax and other barriers to female employment and the liberalisation of agriculture trade appear particularly plausible to us. The TPP may boost the changes of more widespread liberalisation in tradable services and foreign direct investment.

However, we do see some scope for reforms to gather momentum.

When it comes to material reforms to increase the supply of labour, we have some confidence that the removal of administrative, tax and other barriers to female employment, and raising public spending on child care stand a good chance of being tackled. As regards cultural and attitude changes, that will probably take a while. The pressure on Japan's large corporates and unions to change the life-time employment rules could well rise over time, in our view, even though it probably requires other carrots to overcome the still-substantial resistance and comprehensive labour market reform are unlikely to be among the first reform measures pursued, as PM Abe already indicated.³⁰ Relaxing barriers to immigration in a significant way still seems extremely unlikely.

When it comes to liberalisation, the liberalisation of trade in agricultural products is probably the least unlikely – perhaps surprising from a historical perspective, but for the reasons we already noted above.

The TPP could certainly be a powerful catalyst for change and reform of the non-manufacturing economy. But in addition to the remaining resistance in Japan, it must be recognized that even if Japan were to offer significant trade and FDI concessions in the TPP negotiations, it is by no means assured that any PPP agreement likely to be negotiated (which would have to contain U.S. concessions to imports from Japan and other Asian nations) would be ratified by the U.S. Congress.

Grounds for optimism in this regard can be found in the fact that although the current U.S. Congress appears to be the more inward-looking and isolationist than most of its recent predecessors, with regards to trade in goods and services the recent record is not very protectionist at all, with the United States-Colombia Trade Promotion Agreement, the United States-Panama Trade Promotion Agreement and the United States-Korea Trade Promotion Agreement all passing easily through the House and the Senate in 2011.³¹

³⁰ See <http://www.ft.com/cms/s/0/155852e6-2cf7-11e3-8281-00144feab7de.html?siteedition=intl#axzz2gzz0eVio>

³¹ Late in 2012, both the House and the Senate voted by large majorities to repeal Jackson-Vanik as it applied to Russia and Moldova, thus paving the way for normal trade relations and a non-discriminatory WTO relationship.

The proof may be in the timing

Reform progress may not be linear

Both the politics and the economics in Japan appear to be rather sensitive. Timing may therefore have a very important role to play. That is also the only positive spin we can give on the relatively modest reform efforts of the Abe administration so far. In our view, the Japanese government probably had its eyes on two issues that needed to be resolved before it could tackle structural reforms more seriously. First, there were the Upper House elections that took place in July 2013. Aside from the desired electoral success and confirmation, the majority win in the Upper House (jointly with coalition partner Komeito) gives PM Abe more political room for manoeuvre.³² Secondly, Abe probably was looking for stronger signs that the economy was generating some economic momentum.

This interpretation to us suggests that we may well see a succession of reform efforts over time. The next iteration probably follows this fall, but the subsequent one may have to await the rise in the sales tax that is penciled in for April 2014.

Reforms may still fail, due to timidity, hubris or a weakening political mandate

However, given Japan's track record for structural reform, it would be foolish to count on the success this time around. In our view, there are several reasons why the reform efforts may ultimately fail:

1. PM Abe could be too cautious to push for serious structural reform;
2. PM Abe's mandate for reform could weaken sufficiently over time and prevent him from implementing the kinds of reforms that Japan needs; and
3. Any cyclical upturn in the Japanese economy may lead PM Abe and his peers to mistakenly believe that painful structural and politically costly reform was unnecessary.³³

We conclude that there may be some chance now, unlike in the past few decades, of one or more meaningful supply-side enhancing reforms, which should count as optimism in the Japanese context. Without serious efficiency and productivity enhancements in the non-manufacturing sectors, once Japan hits its capacity constraints, probably in a year or two, sustainable growth will likely be no more than the measly 0.7-0.85% we estimate.

³² See [Japan Macro Flash - Will PM Abe use his mandate well?](#), Kiichi Murashima and Naoki Iizuka, 22 July 2013, Citi Research

³³ A variant of this possibility is that he never really meant to implement any major reforms in the first place.

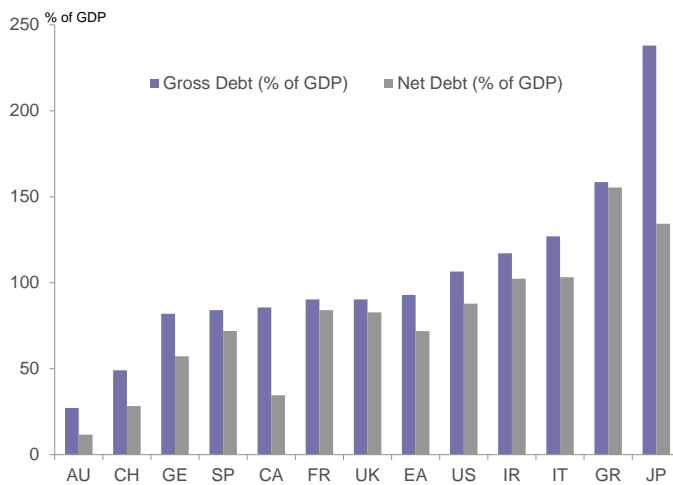
Why the resolution of Japan's fiscal unsustainability will have to wait a little longer

The extent of the Japanese fiscal challenge

Japan's fiscal task is enormous, even compared to other advanced economies

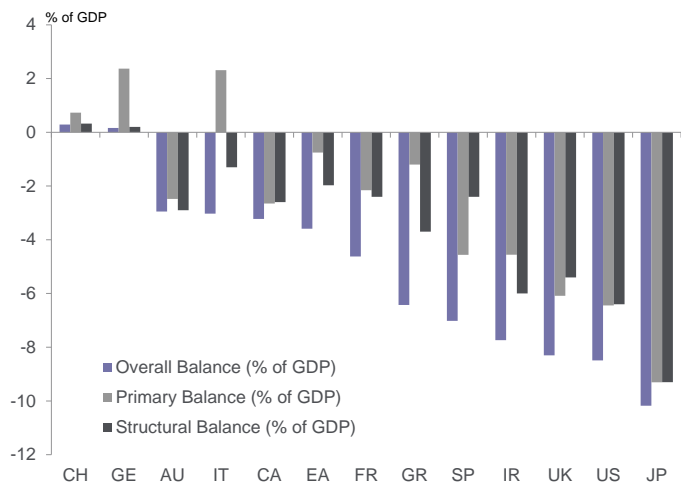
Even by the pitiful standard of most other advanced economies, Japan's sovereign is in fiscal dire straits. Japanese general government gross debt stood at 238% of GDP at the end of 2012 and its net debt at a still-extraordinary 134% of GDP. In addition its general government financial deficit *also* remains very high, at 10.2% of GDP for the headline deficit and 9.3% for the primary deficit. Unlike for many fiscally weak euro area countries, most of this deficit is seen as structural by the main international organisations.

Figure 31. Selected Countries – General Government Debt (% of GDP), 2012



Source: IMF, Citi Research

Figure 32. Selected Countries – General Government Balance (% of GDP), 2012



Note: Fiscal balance excluding financial sector support.

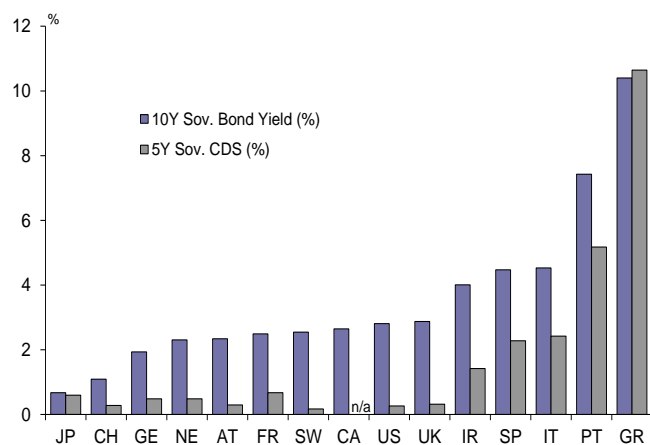
Source: IMF, Citi Research

Both the burden of the outstanding stock of public debt and the size of the general government budget deficit are little short of staggering. This manifest fiscal unsustainability has not spooked markets in the least yet. This is clear both from the level of nominal and real interest rates on JGBs and from the sovereign CDS spreads (see Figure 33 to Figure 36). In fact, (nominal) yields on Japanese bonds are *lower* than those of most other advanced economies (Figure 34). With Japanese inflation expectations picking up and realized inflation slightly up as well, real yields have fallen and turned negative (Figure 35). Japanese credit default swap (CDS) rates are relatively low, too, even though unlike yields they are actually higher than CDS rates for many other advanced economy sovereigns, suggesting that at least some of the default risk is priced.

Despite very high debts and deficits, Japanese borrowing costs remain very low compared to other countries and its own history

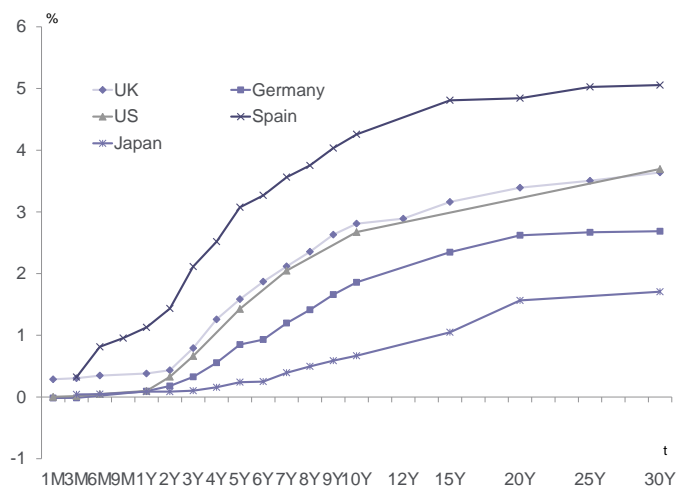
Japanese bond yields are also low in historical perspective, both in nominal (close to all-time lows) and real terms (not quite at all-time lows). Finally, while the yields of most other sovereign bonds have risen in recent months on a mix of expectations of less loose monetary policy and more robust advanced economy growth, Japanese yields have mostly been stable or in fact fallen (Figure 36).

Figure 33. Selected Countries – 10yr Sovereign Yields and 5yr Sovereign CDS (%), Latest



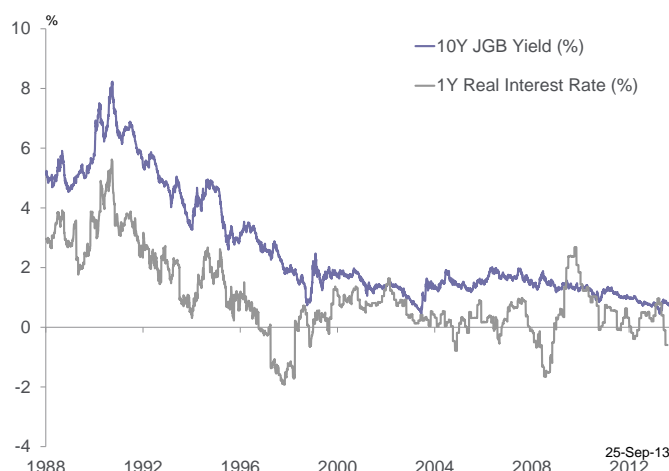
Source: Bloomberg, Citi Research

Figure 34. Selected Countries – Sovereign Yield Curve (%), Latest



Source: Bloomberg, Citi Research

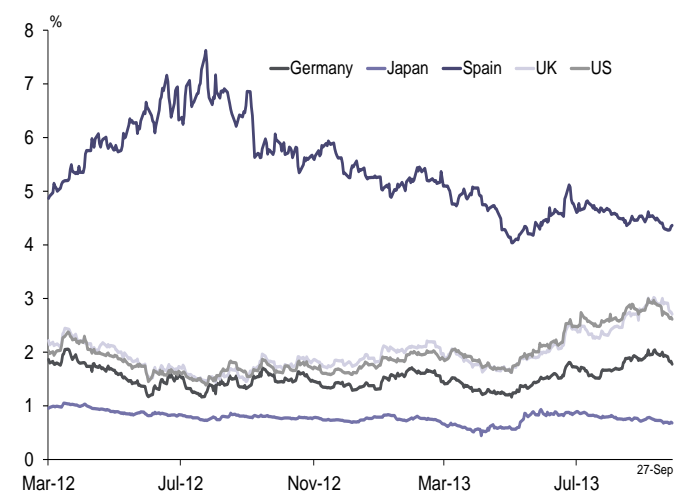
Figure 35. Japan – 10yr JGB Yields and 1yr Real JGB Yields, 1988-2013



Note: Real yields computed as difference between 1yr JGB yields and realized Consumer Price Index (CPI) inflation of the corresponding month.

Source: Bloomberg, Citi Research

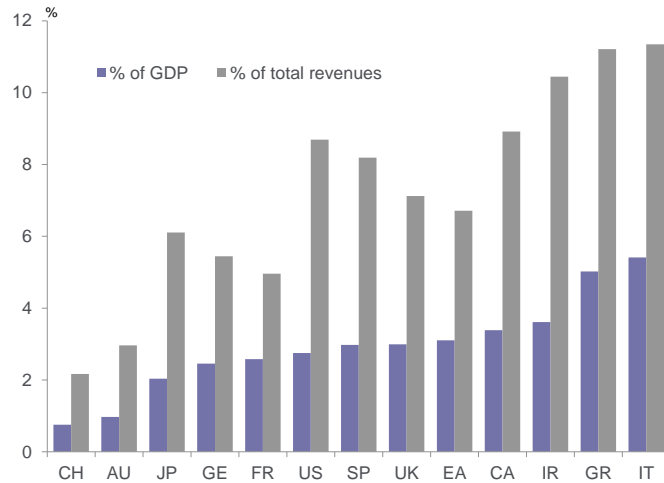
Figure 36. Selected Countries – 10yr Sovereign Yields (%), 2012-2013



Source: Bloomberg, Citi Research

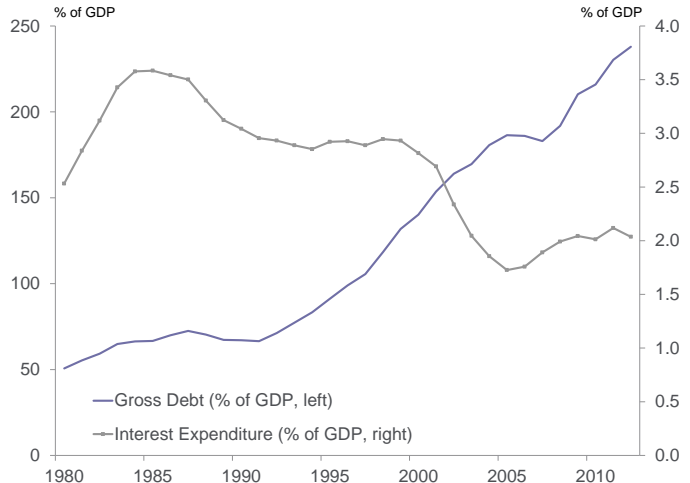
The low (nominal and real) level of yields on Japanese government debt has made life relatively easy for the Japanese Treasury. In fact, Japanese yields have been so low that its interest burden is relatively moderate (again both compared to other countries and its own history) at roughly 2% of GDP, despite the extraordinarily high level of government debt. This also means that Japanese government's interest expenditure relative to GDP is lower than for most other advanced economies (Figure 37).

Figure 37. Selected Countries – General Government Interest Expenditure, 2012



Source: OECD, Eurostat, Citi Research

Figure 38. Japan – General Government Gross Debt and Interest Expenditure (% of GDP), 1980-2012



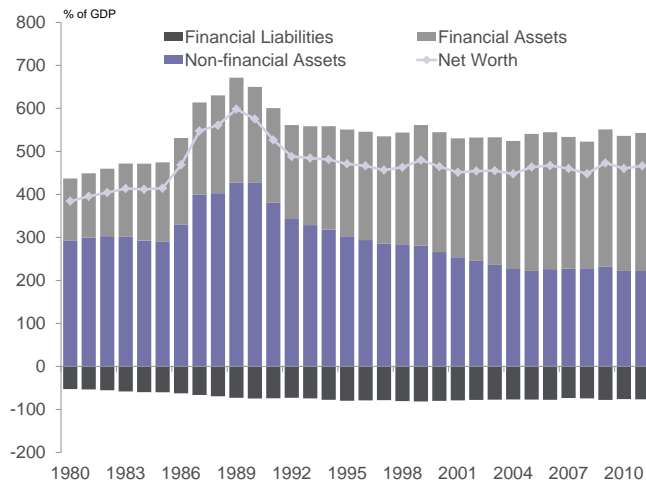
Source: OECD, Citi Research

Why hasn't there been a Japanese sovereign debt crisis yet?

Japan has been in a 'good equilibrium' where low yields have confirmed the assumption of government solvency

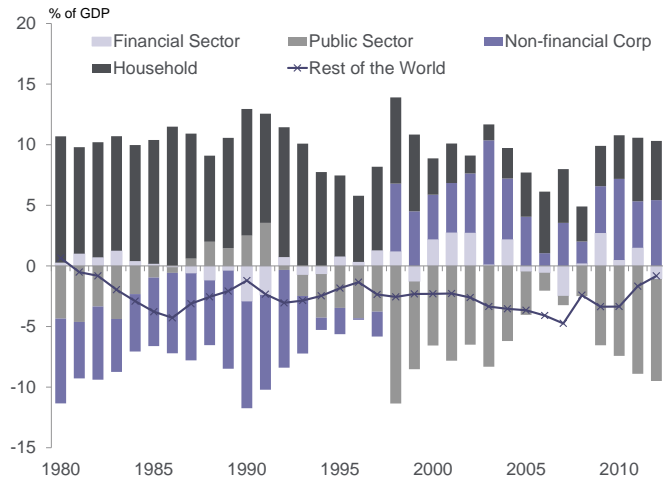
Low yields and the implied moderate interest burden have put Japan into a pretty benign equilibrium. This is certainly fortunate, as a fear-of-default-driven increase in real rates would have a very good chance of becoming self-fulfilling. It also raises the question of why the bond market vigilantes have not yet disciplined the Japanese sovereign. Some of these are indicated below.

Figure 39. Japan – Household Wealth (% of GDP), 1980-2011



Source: Cabinet Office of Japan, Citi Research

Figure 40. Japan – Financial Balance by Sector (% of GDP), 1980-2012



Source: Bank of Japan, Citi Research

In our view there are two main reasons.

High private saving has accompanied large public borrowing.

First, although the sovereign is deeply indebted, Japanese households and corporates in the past have been ferocious savers. The stock of household financial wealth as a share of GDP and of total household wealth as a share of GDP,

therefore continue to be high (Figure 39).³⁴ This is also reflected in a large net foreign investment position (Figure 41).

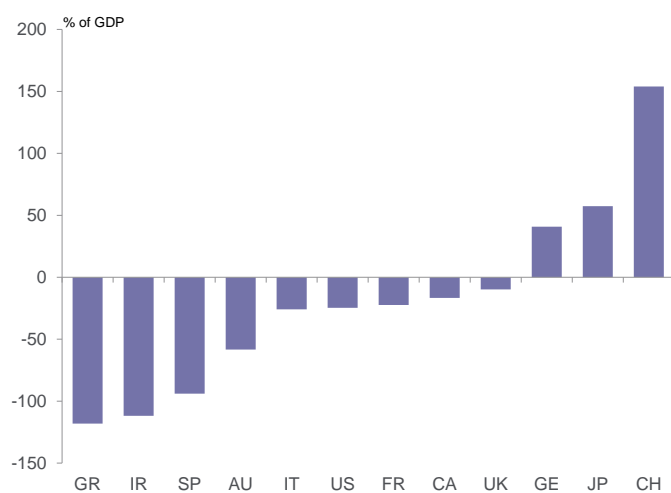
The household saving rate has fallen quite substantially in recent years, but the fall in household savings has been more than compensated by a rise in corporate financial surpluses (to which falling investment has contributed). In fact, the increase in the Japanese government deficit has been associated with a rise in private savings, which has meant that despite the fall in household savings and the large public deficit, the current account continues to show a surplus.

High private wealth has been associated with self-imposed financial impression and a massive home bias of Japanese savers and investors.

Second, high private wealth and high private saving (and a current account surplus) translate into low yields due to what we call self-imposed or voluntary financial repression in Japan. The country has a remarkable home bias in its portfolio allocation. Despite a notionally completely open capital account, more than 95 percent of the stock of JGBs is held domestically.

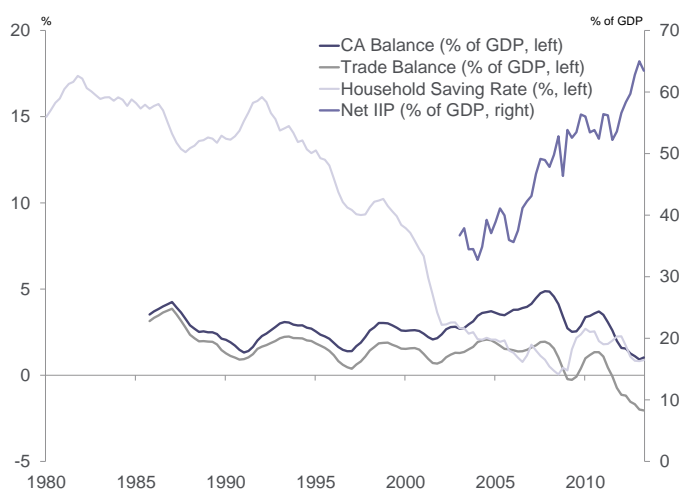
As long as the current account is in surplus, the marginal purchaser of new JGBs issued by the sovereign can always be a domestic buyer. Given the portfolio home bias of large institutions like Japan's Post Office (Japan Post Holdings Co., Ltd.), of other institutional Japanese investors and of Japanese households, the marginal purchasers of JGBs have indeed mainly been domestic. The ranks of domestic purchasers of JGBs have now been joined by an entity with infinitely deep pockets — the Bank of Japan through its Quantitative and Qualitative Easing policy. All these domestic purchasers display a massive home bias in their portfolio allocation, which has the same effect of lowering yields as financial repression. Indeed for the large institutional investors, there may well be subtle or even not-so-subtle forms of imposed or involuntary financial repression applied by the authorities, rather than the 'internalised' or voluntary financial repression that appears to govern the behavior of Japanese retail investors. Japan Post Holdings Co. Ltd., is after all still 100% state-owned.

Figure 41. Selected Countries – Net International Investment Position (% of GDP), 2012



Source: IMF, Citi Research

Figure 42. Japan – Current Account Balance, Net International Investment Position (% of GDP) and Household Saving Rate (%), 1980-2013



Source: Bank of Japan, OECD, Citi Research

³⁴ After the burst of the asset price bubble in 1990, house prices and the level of non-financial assets relative to GDP never recovered.

What if the current account turns negative?

As Japan's current account turns negative, the marginal buyer of Japanese bonds is less likely to be domestic

Japan's current account surplus is already deteriorating – at the peak in 2007 it amounted to 4.9% of GDP. In 2012, it was 1.1%. The trade balance has shown a deficit since Q3 2011 (in Q2 2013, the deficit was 1.0% of GDP).

As Japan continues to age rapidly, its household saving rate will continue to decline. It is possible, but not likely, in our view, that the corporate saving rate will continue to rise to offset this. Until the government engages in serious fiscal austerity or unleashes a supply side miracle, public sector saving is unlikely to rise much. With residential construction and corporate capital formation picking up and public sector infrastructure spending unlikely to be cut any time soon, total domestic capital formation is likely to increase. Looking at the current account balance as the difference between domestic saving and domestic investment, Abenomics may well raise saving by less than investment – and could even reduce saving.³⁵ Looking at the current account balance in its alternative manifestation as the sum of the trade balance, net inward transfers and net foreign factor income, the same story can be told. The sharp depreciation of the yen of course increases the value (in yen and as a share of GDP) of net foreign investment income. However, despite the sharp depreciation of the real exchange rate of the yen, the trade balance could well worsen as rapidly growing domestic demand (driven by the fiscal stimulus and by a sharp improvement in Japan's 'animal spirits' boosts Japan's import demand as well as Japan's domestic demand for exportables, which diverts these goods from the export markets.

At the point where Japan becomes a persistent current account deficit country, the marginal purchaser of newly issued Japanese securities is less likely to be a domestic investor.³⁶ It is quite plausible that yields on Japanese securities, including but not limited to Japanese government bonds, could rise quickly and sharply once the marginal purchaser is a foreigner.

The Current Account and the Real Exchange Rate

We ought not to infer from a sharp depreciation of Japan's real and nominal exchange rate (and the associated worsening of its terms of trade) that the Japanese trade balance surplus or current account surplus is bound to increase, or even likely to increase. The notion that any sharp depreciation of the real exchange rate, regardless of what causes it, is necessarily accompanied by an increase in the trade balance surplus or current account surplus is theoretically suspect. First it focuses only on foreign *demand* for exports and domestic demand for imports, ignoring the supply side of exportable and import-competing goods and services. Second, within this exclusively demand-driven framework it assumes that the Harberger-Laursen-Metzler conditions are satisfied (the sum of the export and import elasticities (of demand) with respect to the real exchange rate is greater than

³⁵ The forecasts of our Japanese colleagues show the Japanese current account surplus to remain positive through 2017.

³⁶ For net external flows of financial instruments, the marginal purchaser of course has to be domestic as soon as the country runs a current account deficit. For the issuance of Japanese securities alone, this does not have to be the case: Japanese purchasers could buy all of Japan's new security issuance even if the country runs a current account deficit by running down their existing gross holdings of foreign financial instruments.

1.³⁷ The discussion then tends to meander inconclusively into J-curve territory and the causes of possible lags in the effect of the real exchange rate on export demand and import demand, again neglecting completely both the supply sides of imports and exports, and any other drivers of import and export demand. As one important non-Keynesian theoretical study of the relationship between the terms of trade and the trade balance puts it: “... *the relation between the trade balance and the terms of trade depends critically on the source of fluctuations.*” (Backus, Kehoe and Kydland (1994)).³⁸

An example of a likely positive association between the current account balance and the terms of trade, relevant to the third arrow of Abenomics, is the following. Assume Japan undergoes a positive productivity shock as a result of liberalization and other structural reforms. Even with the existing capital stock and other resources, potential and actual output rise. Domestic output rises and so does real income (at given terms of trade). If this higher *level* of productivity is viewed as permanent, it will raise permanent income by the same amount. If every Japanese household is a permanent income consumer, aggregate consumption will rise by the same amount as real output and income, so there is no change in the trade balance. What happens to the terms of trade? These are likely to turn against Japan, because at constant terms of trade, the productivity shock increases the demand for domestic output less than it raises the supply of domestic output: domestic consumers spend part of their higher incomes on imports. So the terms of trade deteriorate. This reduces the real income gain relative to the domestic output gain from the productivity shock. But if this decline in real income is viewed as permanent, consumption will fall in line with real income and again there is no effect on the trade balance. So we have an example here of an unchanged trade balance and a lower relative price of exports. What happens to the real value of net foreign factor income depends on the currency composition of gross foreign assets and liabilities, on the degree to which these are index-linked to the domestic or foreign general price levels, and on whether the deterioration in the terms of trade comes through the nominal exchange rate, or through higher import prices and lower export prices at a given nominal exchange rate.

Now assume, plausibly, that the increased productivity of the Japanese economy boosts investment, at least temporarily. With investment up and saving unchanged, the current account balance declines and so, almost surely, will the trade balance. So after the initial productivity shock we are likely to have a period in which worse terms of trade and a depreciated real exchange rate are associated with a lower current account balance and trade balance. The higher volume of investment may

³⁷ A less partial partial equilibrium interpretation of the Harberger-Laursen-Metzler conditions is that, if a depreciation of the real exchange rate is associated with a deterioration of the terms of trade (a decline in the relative price of exports to imports), this will reduce the real income corresponding to a given amount of real domestic output. With a Keynesian consumption function, lower real income lowers domestic saving. If nothing happens to reduce investment by an equal or larger amount, the current account deficit increases. A less Keynesian, permanent income approach to consumption would imply no effect on saving from a permanent deterioration in the terms of trade. In addition, a lower relative price of exports is likely to reduce investment at least in the export sector. There is therefore no obvious theoretical presumption that a depreciation of the real exchange rate will always be associated (or is likely to be associated with) a larger current account surplus, from whatever accounting identity one approaches the current account.

³⁸ David K. Backus; Patrick J. Kehoe; Finn E. Kydland (1994), “Dynamics of the Trade Balance and the Terms of Trade: The J-Curve?”, *The American Economic Review*, Vol. 84, No. 1. (Mar., 1994), pp. 84-103.

influence the terms of trade, depending on how much of it is spent on domestic output and how much on imports.

If consumers had been more Keynesian, the increase in real output and income caused by the positive productivity shock would have raised domestic saving, possibly even by enough to overcome the effect of the higher investment level on the current account balance.

It is rather surprising that the presumption that a real exchange rate depreciation will increase the trade balance or current account balance ever took hold. Asking about the effect of the real exchange rate on the trade balance is rather like asking what happens to purchases and sales of bananas when the price of bananas goes up. Even if the demand curve for bananas is downward-sloping and the supply curve upward-sloping, the answer depends on whether it is the demand curve that has shifted, the supply curve or both (and in that case by how much).

The empirical evidence on the correlation between real exchange rate changes and the trade surplus or current account surplus is all over the place, as one would expect from two endogenous variables that are clearly jointly determined and jointly endogenous and whose covariation is likely to change in magnitude and even in sign depending on what policy shocks and other changes in the exogenous environment are driving them. Monacelli and Perotti (2010) find that, in response to a public spending shock, the trade balance deficit increases (this is also the standard old-Keynesian expected association) but the real exchange rate depreciates.³⁹ So even the data don't speak clearly – they barely whisper.⁴⁰ A useful survey of the empirical literature on the association between exchange rate changes and movements in exports and imports (and of the quite distinct impact of exchange rate volatility on trade volumes) is Auboin and Ruta (2011).⁴¹

The first and third arrows of Abenomics also have benign fiscal effects — yet they fall short of completing the fiscal task

The consequences for medium- and long-term fiscal sustainability in Japan of the first arrow, monetary expansion, and of the second arrow, the temporary fiscal stimulus are, on balance likely to be positive. The effect of the second arrow alone is likely to be negative: despite the hopes of more than a few politicians, a fiscal stimulus through a boost to public spending rarely pays for itself by increasing revenues by more than the public spending boost. But the increase in public debt from the 2% of GDP temporary stimulus is likely to be limited.

On the distinction between general government debt and the consolidated general government non-monetary debt

The balance sheets of the general government and the central bank should be consolidated

The public debt that matters for fiscal sustainability is not the general government debt, because the general government excludes the central bank. It is the net non-monetary debt of the consolidated general government and central bank. Because the government (through the Treasury/Ministry of Finance) is the *de facto* beneficial

³⁹ Monacelli, Tommaso and Roberto Perotti (2010), "Fiscal Policy, the Real Exchange Rate and Traded Goods, *The Economic Journal*, No 544, pp. 437-461, May.

⁴⁰ A useful discussion of the US trade balance and its association with the terms of trade and other variables is San Francisco Fed (2007), Education "Is the U.S. trade deficit a problem? What is the link between the trade deficit and exchange rates",

<http://www.frbsf.org/education/publications/doctor-econ/2007/june/trade-deficit-exchange-rate>

⁴¹ Auboin, Marc and Michele Ruta (2013), "The relationship between exchange rates and international trade: a review of economic literature, WTO, October, http://www.wto.org/english/rese/reser_e/ersd201117_e.pdf

Consolidated general government gross debt for Japan stands at 247% of GDP, compared to 238% for the general government

Non-monetary consolidated general government gross debt is 210% of GDP

Non-monetary consolidated general government net debt is 98% of GDP

The BoJ has announced to purchase in 2013-4 more government bonds than the net issuance of the Japanese government, thereby reducing the consolidated general government debt

owner of the central bank, the consolidation of the accounts of the general government and the central bank is required to get a proper view of the financial position of the state. This holds regardless of the degree of instrument independence or target independence of the central bank.

For Japan this matters. First, consider the effect of consolidation. The combination of Japanese government debt and the liabilities of the BoJ amount to ¥1,338 trillion or 281% of Japanese GDP. However, as of August 2013, the Bank of Japan owned ¥163 trillion (34.3% of GDP) of Japanese government debt. Consolidating between the two yields a total level of debt of ¥1,174 trillion or 247% of GDP. However, monetary liabilities should not be counted as true liabilities. In Aug 2013, the value of the monetary base in Japan was ¥173.7 trillion or 36.5% of GDP. Lopping these off the consolidated general government debt calculated above, puts Japanese consolidated non-monetary gross general government at 210% of GDP. Still scary, but slightly less scary than the more commonly cited figure for general government gross debt – and most of this consolidation effect predates Abenomics/Kurodanomics. The net (reflecting financial assets held by the consolidated general government and the central bank (including Japan's \$1,254 billion worth of foreign exchange reserves at the end of August 2013) non-monetary debt of the Japanese consolidated general government would amount to 98% of GDP – high but not hopeless.

But there is also a dynamic side to these calculations and that's where Abenomics or, more accurately, Quantitative and Qualitative Easing under BoJ Governor Kuroda come in. The BoJ has announced to double its monetary base in two years (increasing it by ¥132 trillion or 28% of GDP) and to purchase ¥100 trillion of JGBs. That means that the yearly expansion of the monetary base since the beginning of the Quantitative and Qualitative Easing program is likely to exceed the general government financial deficit (and the financial deficit of the consolidated general government and central bank, henceforth the *State*) for at least a couple of years since the beginning of 2013 – thus chopping another 3.2% of GDP from Japanese consolidated non-monetary general government gross debt (NMGGGD) over two years *in addition* to monetizing the entire general government deficit for these years.⁴² That is still far from being the solution to Japan's fiscal travails, but useful.

Figure 43. Japan – Projected General Government Debt and Financial Deficit (% of GDP), 2012-2017E

	2012	2013	2014	2015	2016	2017
Fiscal balance	-10.7	-9.8	-8.0	-6.2	-5.8	-5.4
Gross debt	237	244	246	251	255	258
Net debt	135	146	150	158	165	170

Source: Citi Research (forecasts as of September 2013)

⁴² This also means that the non-monetary liabilities of the State will be smaller than the liabilities of the general government by an increasing margin.

Figure 44. Fiscal Implications

	¥ trillion	% of GDP
I. Stocks		
General Government (GG) gross debt	1,132.2	238.0
BoJ liabilities	205.7	43.2
<i>Total GG+BoJ non-consolidated gross debt</i>	<i>1,337.9</i>	<i>281.2</i>
BoJ holdings of JGBs debt	163.4	34.3
<i>Total GG+BoJ consolidated gross debt</i>	<i>1,174.5</i>	<i>246.8</i>
Monetary Base	173.7	36.5
<i>Total GG+BoJ consolidated non-monetary gross debt</i>	<i>1,000.7</i>	<i>210.3</i>
GG financial assets	492.9	103.6
BoJ financial assets*	42.3	8.9
<i>Total GG+BoJ consolidated non-monetary net debt</i>	<i>465.6</i>	<i>97.8</i>
	JPY trn	% of GDP
II. Flows		
2013		
GG fiscal deficit	46.6	9.8
JGB Purchases	50.0	10.5
Debt Monetisation	3.4	0.7
2014		
GG fiscal deficit	38.1	8.0
JGB Purchases	50.0	10.5
Debt Monetisation	11.9	2.5

Source: Citi Research

The mostly anticipated increase in inflation also reduces the debt burden of the Japanese government

In addition, unexpected inflation reduces the real burden of servicing nominally denominated fixed interest debt, with the effect being greater the longer the maturity of the debt. This unexpected inflation tax is separate from, and in addition to, the anticipated inflation tax – the reduction in the real value of the non-interest-bearing component of base money, that is, currency. The rest of the stock of base money – reserves (both required and excess) held by banks with the central bank are interest-bearing. If the interest rates on reserves move with expected inflation, there will be no anticipated inflation tax revenue from reserves.

Still, on the reasonable assumption that, if by the end of 2014 or soon after, a CPI inflation rate of around 2% will be achieved (up from a -0.5% underlying rate in the 3 or 4 years prior to the start of Abenomics), most of this increase in the inflation rate would have been unanticipated when most of the currently outstanding stock of public debt was issued. This unanticipated inflation tax will make a helpful albeit not decisive contribution to restoring fiscal sustainability.

Considering the gross (net) stock of non-monetary debt of the consolidated general government and central bank, which currently stands at 210% of GDP (98% net) and the current actual and cyclically corrected or structural general government primary surplus, the amount of fiscal consolidation still required before Japan regains fiscal sustainability is daunting.⁴³

⁴³ Strictly speaking, the financial deficits and primary deficits of the general government and the central bank should also be consolidated. In practice, this is a second-order affair.

The fundamental identity relating the change in the ratio to GDP of the net non-monetary debt of the consolidated general government and central bank, d , can be written as:

$$\begin{aligned} d - d_{-1} &\equiv \left(\frac{r - g}{1 + g} \right) d_{-1} - s - \sigma \\ &\equiv \left(\frac{(1 + i)}{(1 + \pi)(1 + g)} - 1 \right) d_{-1} - s - \sigma \end{aligned} \quad (1)$$

where s is the (augmented) primary surplus of the consolidated general government and central bank as a share of GDP, σ is seigniorage (base money issuance) as a share of GDP, r is the effective one-period real rate of interest on the public debt, g is the growth rate of real GDP, i is the effective one-period nominal interest rate on the public debt and π is the GDP deflator rate of inflation.⁴⁴

The operation of the unanticipated inflation tax as a levy on fixed interest nominal debt can be seen in its simplest form in the second line of equation (1). Inflation, π , increases, but because this was unanticipated when the debt was issued, the nominal interest rate i does not adjust, and the effective real interest rate on the debt, r , declines. A sharp enough unexpected jump in the rate of inflation could reduce the real value of servicing nominally denominated fixed interest rate debt to zero.

How large is this effect? Assume the average maturity of Japanese government debt is 6 years, and each year one sixth of it will fall due. If we assume that inflation expectations shift soon from -0.5% to 2%, the effect on the real debt burden will be an initial 2.5% x 210% of GDP = 5.3% of GDP. In the following year, 5/6 of government debt will not yet be due, so that there is a further reduction in the real burden of debt of roughly 5/6 x 5.3% of GDP = 4.4% of GDP. Continuing this process ad infinitum gives an overall reduction of the nominal debt burden by a rather handy 15% of GDP. Of course, the BoJ could engineer an even larger increase in the inflation rate, which would also imply a bigger reduction in the remaining burden of debt. However, a continuing government primary deficit of the magnitude of Japan's could not be financed by running the printing presses, as and once the inflation it generates becomes anticipated.

Despite the effects of Abenomics, additional austerity will be needed to shoulder the Japanese fiscal burden.

However, seigniorage revenues can help to finance even flow deficits. Seigniorage as a share of GDP can, in the simplest case where all base money is interest-bearing be written as:

$$\sigma = \frac{\Delta M}{PY} = \frac{\Delta M}{M} \frac{M}{PY} = \frac{\mu}{V}$$

⁴⁴ $\sigma_t = \frac{M_t - (1 + i_t^M)M_{t-1}}{P_t Y_t}$ where M_t is the nominal stock of base money at the

end of period t , i_t^M is the effective average nominal interest rate on base money (zero for currency), P_t is the period t GDP deflator and Y_t is period t real GDP. Note that

$1 + i = (1 + r)(1 + \pi)$, that $\pi_t = (P_t - P_{t-1}) / P_{t-1}$ and that $g_t = (Y_t - Y_{t-1}) / Y_{t-1}$

where $\mu = \frac{\Delta M}{M}$ is the growth rate of the nominal stock of base money and

$V = \frac{PY}{M}$ is the income velocity of circulation of base money, the reciprocal, the

ratio of the stock of base money to nominal GDP. Velocity depends, not surprisingly, positively on expected inflation, nominal interest rates and the expected rate of depreciation of the exchange rate. Clearly, as long as these expectations are fixed, V will move but slowly, in response to the growth of real income, real wealth or as transactions and payments technology changes. So as long as inflation expectations remain constant, the monetary authorities can boost the real value of seigniorage, or of seigniorage as a share of GDP, to arbitrarily high levels, simply by boosting the growth rate of the nominal stock of base money. However, such policies will sooner or later lead to higher inflation and higher expected inflation which will raise velocity and reduce the real value of the seigniorage generated by a given rate of growth of the nominal stock of base money. Empirically, for sufficiently high rates of expected inflation, velocity increases so rapidly and the real value of the stock of nominal base money private agents are willing to hold falls so rapidly, that real seigniorage revenues decline. In hyperinflations, real government revenue from running the printing presses typically goes to zero.

We estimated the present discounted value of future seigniorage in Japan to be JPY197trn (40% of GDP) assuming a constant real growth rate of 1.0% and interest rate of 4.0% (see [Global Economics View - Looking into the Deep Pockets of the ECB*](#))

Unless Japan has a supply-side miracle, fiscal sustainability will eventually be restored via some combination of austerity, inflation and sovereign debt restructuring. Our money is on austerity doing most of the work.

We view it as unlikely that Japan's inflation rate will be allowed to exceed the new two percent target by much for long (which could mildly raise seigniorage revenues), although any short-term overshooting will probably be accepted gracefully and gratefully. Serious supply side reforms may boost real growth materially, but realistically feasible reforms are unlikely to boost growth much beyond 1%, given the demographic headwinds. Seigniorage revenues as a share of GDP will likewise be limited once actual and expected inflation start rising. If, as we expect, the scope for financial repression may also become more limited as Japan becomes a current account deficit country and its vast stock of private wealth is gradually diminishing because of an aging and declining population, balancing the fiscal equation will either have to come from sovereign debt restructuring or from fiscal austerity.

In our view, it is unclear whether it will be the former or the latter, or in fact a combination of the two. Our base case is that eventually austerity will do the heavy lifting. This is based on the view that, first, there is plenty of private wealth, as noted above, and, second, that the willingness to pay taxes (once they are on the statute books, that is tax compliance) will remain very high. After all, the incidence of sovereign debt restructuring is not simply a function of the debt burden, but usually requires a breakdown in social cohesion as well, and there are few signs of that in Japan.

But there are risks. Significant austerity might follow pressure by the market, or, if Japanese policymakers finally decide to apply themselves to the task of restoring fiscal sustainability, may itself focus the attention of the market on the difficulty of achieving that task and thus aggravate market pressures.

Fiscal austerity damages domestic demand. It is therefore essential, if Japan is not to slip back into recession and deflation as it attempts to restore fiscal sustainability, that fiscal measures that are least damaging to aggregate demand be selected.

Income taxes and consumer taxes tend to hit the spending of liquidity-constrained and credit-constrained households and firms hard. Wealth levies are therefore a better alternative. Inheritance taxes, property taxes, land taxes or general wealth taxes are more likely to fall on those who are not constrained in their spending decisions by current disposable income but rather by permanent income or wealth. We expect that Japan's choice will indeed be to impose wealth levies (which inevitably impact either the old or their intended heirs) on a sufficient scale to reduce the debt stock overhang, making it possible to close the remaining general government primary budget deficit with more modest consumption or income tax increases or cuts in public spending. The fourth arrow of Abenomics would thus be fired belatedly and awkwardly, but hit its target, and without re-opening the old wounds of persistent deflation and excess capacity.

Such fiscal decisions have acute distributional consequences. These distributional effects could quite possibly create social fissures, substantially weakening social cohesion, which could lower the sense of obligation towards one another, including as regards sovereign debt repayment. It is thus possible that austerity itself – pressed by markets or pursued proactively – may contribute to changes in social norms that could raise the likelihood of debt restructuring. The effects on the rest of the world from a sovereign debt crisis in Japan could be substantial. These effects could be substantial both when the sovereign ends up defaulting, but also if, for example, Japanese households and firms repatriate their significant net foreign wealth to satisfy their domestic obligations.

We consider it unlikely that the fiscal challenges will be tackled in the near future.

In any case, we have little expectation that the problem of restoring fiscal-financial sustainability will be tackled in the near future. We expect that apart from the scheduled permanent increases in the consumption tax rates (whose budgetary effects are likely to be offset for the next couple of years by additional temporary infrastructure spending stimuli), little will be done at least unless the markets, fearing either aggressive use of the inflation tax or sovereign debt restructuring, compel the government to act.

Conclusions

Japan will achieve its goals of eliminating deflation, achieving two percent inflation and closing the output gap, probably in a period not much longer than two years from now.

Japan has a chance to break with the past as regards structural reforms aimed at boosting the level and growth rate of potential output. Clearly, both its longer-term fiscal challenges and its regional and geo-political problems could be confronted more effectively if Japan could at least double the growth rate of potential output through supply-side enhancing measures taken during the next few years.

The measures taken to eliminate deflation will also help the sustainability of the Japanese fiscal position. Much more will have to be done however, if the country is to avoid sovereign default or an inflationary solution to its public debt problems.

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Notes

Notes

NOW / NEXT

Key Insights regarding the future of the Japanese economy



IMMIGRATION

Japan has a population that is aging fast and has declined since 2011 with a declining working-age population and rising dependency ration. However, it has the lowest share of foreign nationals as a percent of total population at 1.6%. / Immigration reform would be contentious in any advanced economy with a declining and/ or ageing population, but the cost/ benefit analysis favours support for immigration.



REGULATION

Impediments to structural reform are mostly in the realm of the political economy. Political opposition by vested interests is vigorous and could thwart substantial reforms. / The environment for structural reform is as fertile as it has been at any point in recent decades as reform proposals are starting to be introduced.



POLICY

Using just fiscal stimulus to push through a boost in public spending rarely pays for itself by increasing revenue by more than the public spending boost. / By doubling the monetary base and purchasing JGBs, the yearly expansion of the monetary base is likely to exceed the general government financial deficit for at least a couple of years. In addition, Fiscal sustainability will eventually be restored via some combination of austerity, inflation and sovereign debt restructuring.



