

# ECONOTE

**Societe Generale**

Department of Economic Studies

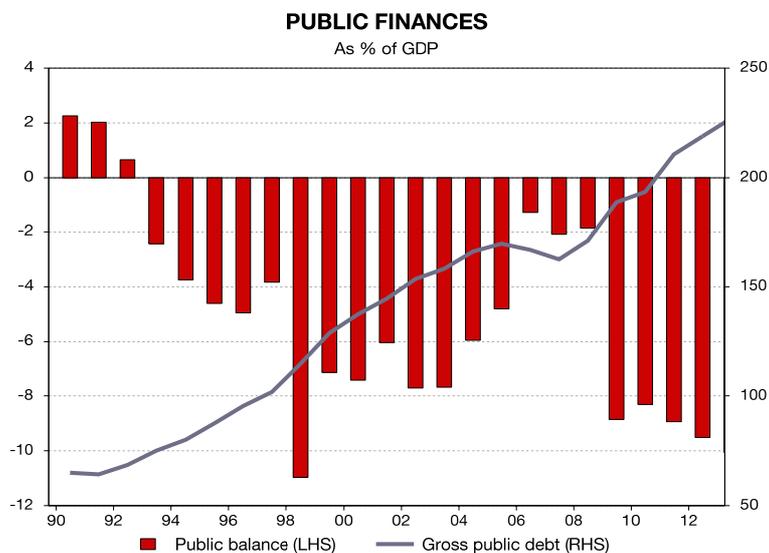
## RISING PUBLIC DEBT IN JAPAN: HOW FAR IS TOO FAR?

— With gross public debt of more than 100% of GDP since the end of the 1990s (and 220% of GDP in 2012), Japan is the most indebted developed country in the world, ahead of the eurozone peripheral countries coping with a sovereign debt crisis.

— However, Japanese public debt reached this record level without any tension on the financial markets. Interest rates on Japanese debt are among the lowest in the world. This is largely due to abundant domestic savings and the fact that public debt is held almost exclusively by the Japanese themselves, especially the financial sector.

— That said, this situation cannot last indefinitely. There is the medium/long-term issue of the “sustainability” of public debt, given its continued increase, structurally weak growth and the downward trend in national savings as a result of the ageing population. In addition, Japanese investors’ appetite for national public debt could decline, driving up long-term interest rates.

— Placing the public debt ratio on a sustainable path will require both bold fiscal consolidation measures and an increase in the country’s growth potential through structural reforms. This is the challenge of the Prime Minister, Shinzo Abe’s “Abenomics” policy.



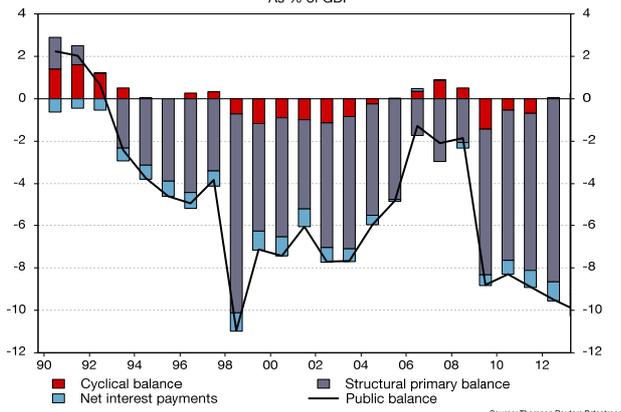
**Audrey GASTEUIL-ROUGIER**  
+33 1 57 29 52 26  
audrey.gasteuil@socgen.com

## DESPITE COLOSSAL AND GROWING PUBLIC DEBT...

### SUBSTANTIAL PUBLIC DEFICITS SINCE 1993

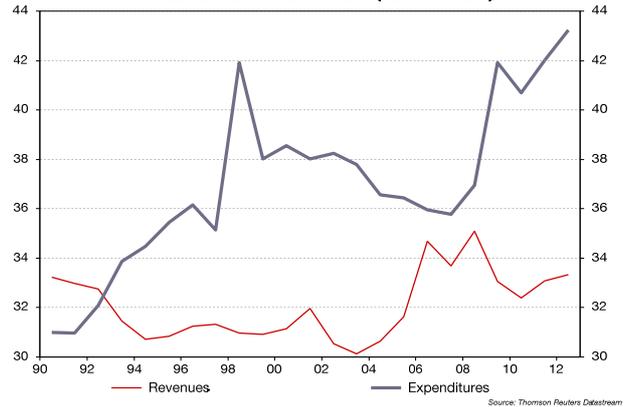
Over the last two decades, Japan has witnessed a marked deterioration in its budget balances. This is due to both the erosion of tax revenues amid a sluggish economy and a wave of stimulus plans aimed at buoying the economy in the wake of the different shocks.

Gr1. GENERAL GOVERNMENT BALANCE  
As % of GDP



Twelve massive stimulus plans were initiated between 1991 and 2001 (the lost decade) to deal with the crisis resulting from the bursting of the financial and property bubble in 1989-1990. Since the crash, Japan has alternated between cycles of weak growth and recession, while deflation has discouraged corporate investment and household consumption. After the outbreak of the global financial crisis in 2007, new stimulus plans were successively rolled out. These were followed by reconstruction plans in the wake of the Fukushima earthquake and ensuing nuclear disaster in March 2011. Consequently, the public deficit (i.e. the general government deficit) jumped from 3% of GDP in 1993 to 10% of GDP in 2012 (source OECD). This deterioration in the public finances can be attributed mainly to the increase in the structural deficit (against the backdrop of a decline in potential growth), the impact of the economic environment on the public deficit and the interest burden being modest (graph 1). That said, there was an improvement in the public deficit from 2005 to 2007 on the back of a rebound in growth prior to the global financial crisis.

Gr2. REVENUES AND EXPENDITURES  
OF GENERAL GOVERNMENT (as % of GDP)



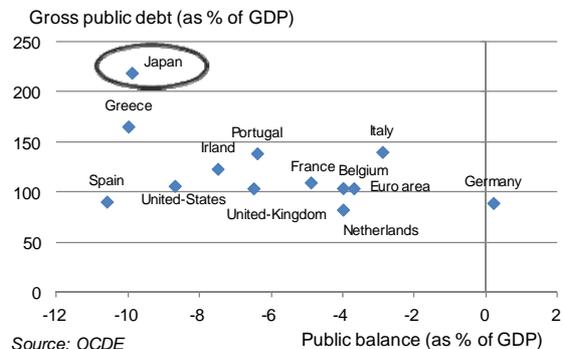
As demonstrated in the graph 2, the deterioration in the public finances since the early 1990s reflects both a contraction in revenues and the continuing rise in expenditure. Although there has been a substantial deceleration in the growth rate of public spending since 2000, social security expenditure has continued to increase at a steady rate due to the ageing population. Accordingly, in 2010, social security became the chief public spending item. Meanwhile, revenues have shrunk since 1992 due to sluggish growth, but also because of moves to ease the tax burden on individuals and companies since the 1980s.

As a result, Japan's public revenues are relatively low compared with other developed countries: in 2012, the revenue/GDP ratio stood at 33% vs. an average of 37% for OECD countries. This gives the country substantial budgetary leeway if it were to encounter financing problems.

### PUBLIC DEBT ON AN UNSUSTAINABLE PATH

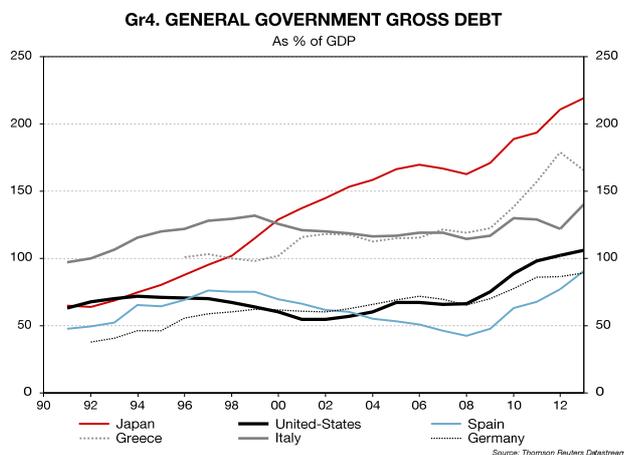
The cumulative deficits of the general government have led to a rapid rise in public debt. Since 1994, gross public debt has increased at an annual rate of 6%, far exceeding the very low GDP growth rate in value terms (average of +0.4% per year until 2007). Moreover, the deflation that has taken root in the country for more than a decade increases the real weight of this debt.

Gr3. PUBLIC FINANCES IN 2012



The gross public debt/GDP ratio reached 220% at end-2012 according to the OECD, i.e. the highest ratio among developed countries (graphs 3 and 4). However,

net public debt is much lower (136% of GDP at end-2012), given the substantial stock of financial assets held by public authorities (pension funds in particular). That said, Japan's net debt ratio is also the highest within OECD countries, with only Italy (113% of GDP) and Greece (103% of GDP) having net public debt exceeding 100% of GDP.



The recent political instability, with a succession of different governments (seven prime ministers between 2007 and 2013) and persistent conflicts with the opposition within Parliament, has weakened the country's ability to implement the necessary fiscal consolidation measures.

### ... THE JAPANESE GOVERNMENT CONTINUES TO OBTAIN FINANCING AT EXTREMELY LOW RATES

That said, unlike peripheral European countries, Japan has not been subject to speculative attacks on its debt and has not experienced financing problems. Moreover, although its sovereign rating has no longer enjoyed AAA status since February 2001 and has undergone several downgrades since then, it remains in the category of good quality securities (Table 1).

Table 1. SOVEREIGN RATINGS

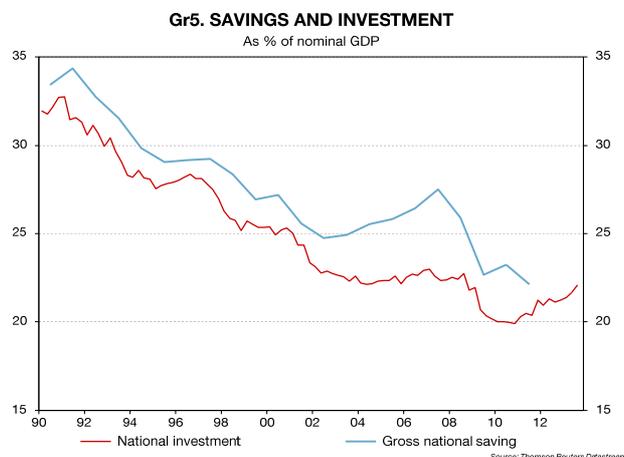
	Rating	Outlook	Date of last rating downgrade
S&P	AA-	Negative	27-Jan-2011
Moody's	AA3	Stable	24-Aug-2011
Fitch	A+	Negative	21-May-2012

However, a further downgrading by the rating agencies cannot be ruled out in the event of the absence of credible additional budgetary measures, weaker than expected economic growth, a substantial increase in public debt that could start to erode the country's external position, or residents' significant withdrawal from the financing of the debt.

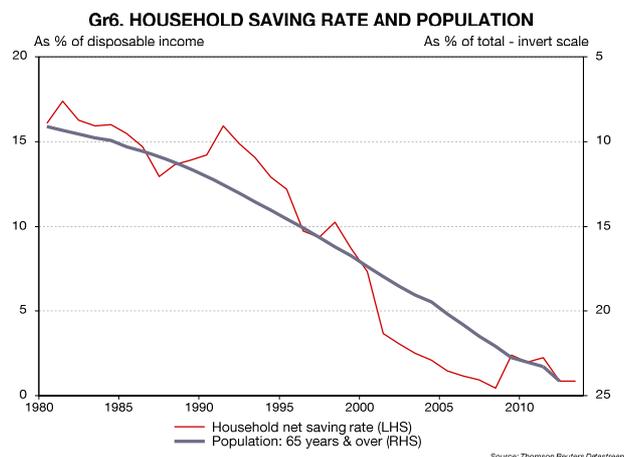
### SURPLUS NATIONAL SAVINGS OVER INVESTMENT

The surplus national savings (relative to investment) contributes significantly to the effective financing of Japanese public debt (graph 5). The savings surplus

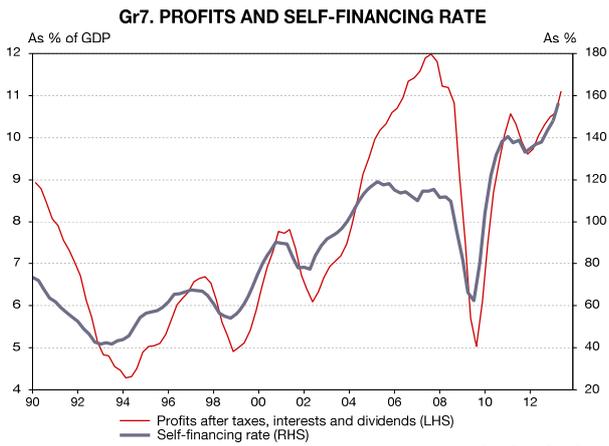
results from both a substantial flow of national savings originating from the private sector (households and companies) and a low level of fixed investment (residential and non-residential). Admittedly, the national savings rate has declined over the last 15 years, but the investment rate has also dropped.



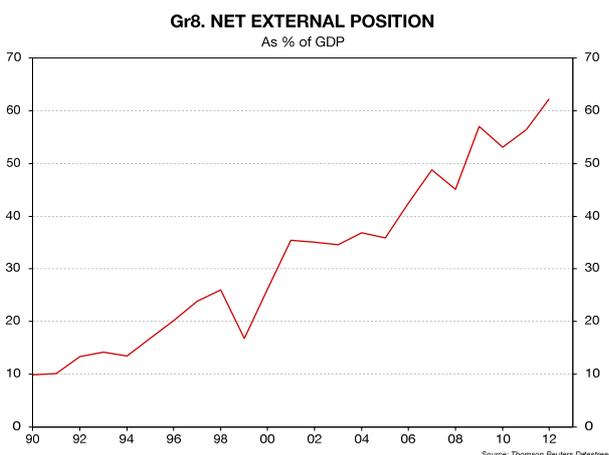
For a long time, Japan boasted the highest savings rate of all industrialised countries. In the early 1980s, the savings rate for Japanese households amounted to nearly 20% of disposable income. It has declined continuously during the last 20 years due principally to the ageing population, with pensioners having a savings rate that is lower than assets (graph 6). The household net savings rate, which reached a low of 1% in 2012 (vs. 7.3% in 2000), is expected to continue to fall slightly.



Conversely, in light of the weak internal growth outlook, Japanese companies' retained earnings have exceeded their investments since the end of the 1990s. As a result, they have been able to generate substantial and durable financing capacity (self-financing rate of approximately 160% currently) (graph 7). Companies have used this savings surplus to reduce their debt but also, and more importantly, to accumulate financial assets.

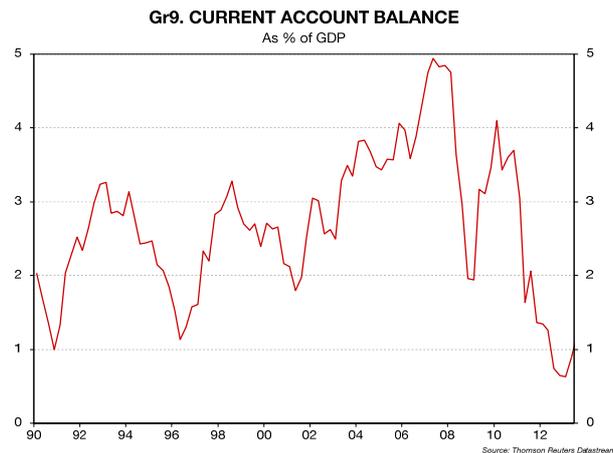


Since national savings have always exceeded investment, the country is a net exporter of capital<sup>1</sup>. As a result, Japan enjoys an exceptionally high net external position (approximately 300 trillion yen at end-2012, or 62% of GDP) that is constantly increasing (graph 8), via the accumulation of current account surpluses.

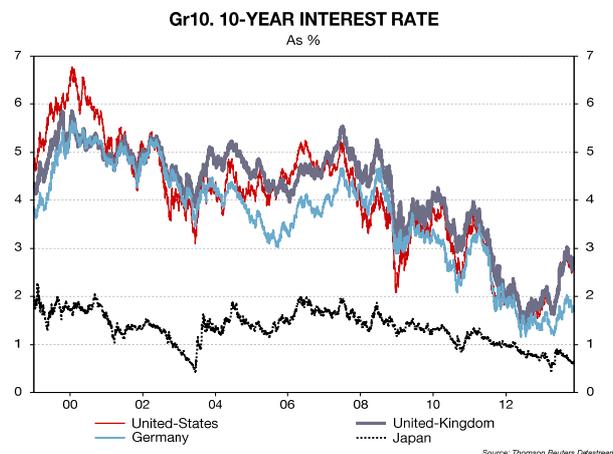


However, it is worth noting that the current account surplus substantially decreased recently – from around 4% of GDP during the second half of the 2000s to 1% of GDP in 2012 – (graph 9) due to the emergence of a trade deficit (the first since 1980). This can primarily be explained by the negative impact on exports of the natural disasters experienced by Japan and Thailand, the erosion of market share related to the strong yen and the increase in energy imports (closure of nuclear power plants and rise in oil prices).

<sup>1</sup>Current account balance = national savings – national investment.



The surplus of national savings compared with investment has two consequences: it makes it possible to finance public debt through national savings, without having to call on the savings of non-residents, and it helps keep long-term interest rates very low. Despite the accumulation of public deficits and the rapid rise in public debt, the nominal rates of 10-year government bonds have actually remained below 2% since 2000 (and even below 1% for the most recent period) (graph 10). The national savings glut, which had to find a major investment vehicle, has been massively channelled into government bonds, whose interest rates remain attractive in real terms (on account of deflation).



**JAPANESE INVESTORS’ STRONG APPETITE FOR DOMESTIC ASSETS**

The persistently-low nominal interest rates of JGBs (Japanese Government Bonds) are largely attributable to Japanese investors’ strong preference for domestic assets (“home bias”). Japanese households, with their strong risk aversion, are particularly fond of public securities which they mostly hold indirectly through banks (deposits represent more than half of households’ financial assets), pension funds and life insurance companies.

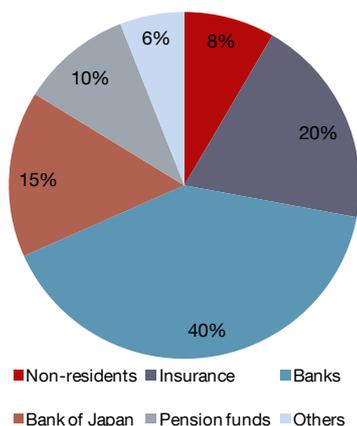
Over the last ten years, another non-financial sector has indirectly supported the government bond market: non-financial companies. They boast substantial

financing capacity and have also accumulated significant bank deposits. With an overabundance of liquidity and given the durably depressed demand for loans, Japanese banks have therefore been major purchasers of JGBs in recent years.

Finally, the Bank of Japan (BoJ) regularly purchases JGBs as part of its unconventional monetary policy (“Quantitative Easing”). Under its new strategy announced in April 2013, it even plans to double the JGB outstandings that it holds between now and end-2014, with an extension of the average maturity of its portfolio from 3 to 7 years. The policy’s main aim is to encourage Japanese investors to switch to more risky asset classes (including foreign assets), but for the moment there is still very little evidence of this occurring.

At end-June 2013, 92% of Japanese public debt was held by residents, i.e. a rate that is far higher than that observed in the other leading economies<sup>2</sup>. The main holders consist of a stable base of institutional investors: banks (40% of outstandings, including the postal bank), insurance companies (20%) and pension funds (approximately 10% including 7% for the public pension fund). Japanese households hold directly 2.5% of the outstanding public debt and the Bank of Japan (BoJ) 15% (graph 11). At end-June 2013, government bonds represented 40% of the total financial assets of insurance companies and pension funds and approximately 20% of those of Japanese banks.

**Gr11. JGBs HOLDINGS BY SECTOR AT JUNE 2013 (as % of total)**



Note: JGBs including FILP (Fiscal Investment and Loan Program) bonds and T-bills.

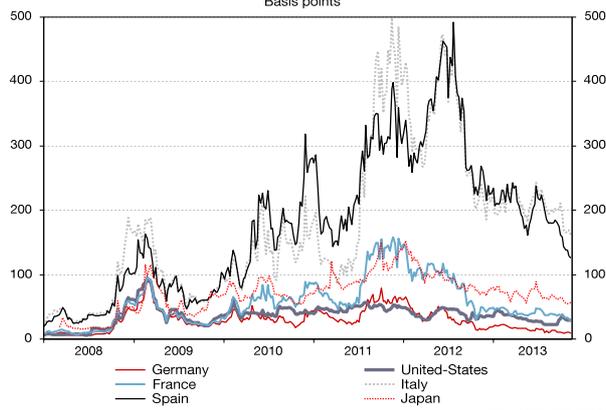
Source: BoJ

**LITTLE VULNERABILITY TO SPECULATIVE SHOCKS**

The predominant role played in the financing of the debt by public institutions, banks and insurance companies and domestic pension funds – whose

investments are typically long-term – constitutes a guarantee of stability for the JGB market. And with only 8% of outstanding debt held by foreigners, Japanese government bond yields are, primarily, determined by internal factors. Accordingly, CDS on the Japanese sovereign debt, the majority of which is held by non-residents, is relatively low compared with other countries (graph 12). Consequently, speculative attacks can only have a very limited impact. In October 2013, Japan’s 5-year CDS spreads stood at 60 bps, i.e. higher than those of countries such as Germany, France or the United States, but much lower than those of Italy and Spain.

**Gr12. CDS SOVEREIGN SPREADS (5-year)**  
Basis points



All in all, the fact that Japanese public debt is held almost exclusively by residents ensures both the stability of its financing and its low cost. Japan’s net interest payments/GDP ratio therefore remains below that of the other developed countries despite a much higher debt ratio: in 2012, it stood at 0.9% vs. an OECD average of 1.8%. This prevented the public debt ratio from ballooning even faster than it has, given durably high primary deficits (i.e. excluding interests).

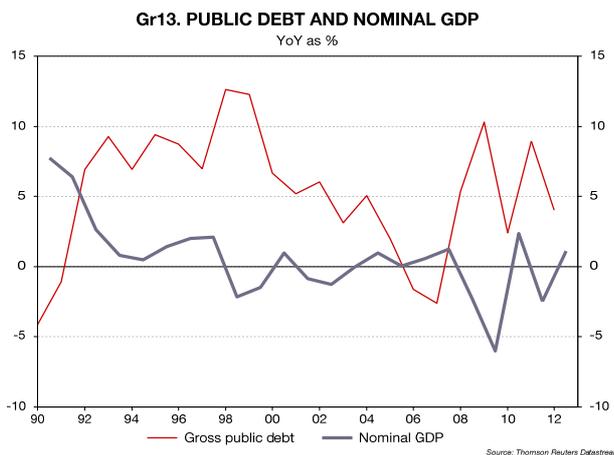
**STABILISING DEBT AS THE POPULATION AGES QUICKLY IS A FORMIDABLE CHALLENGE**

The current situation could continue for some time, but the trajectory of the public debt does not appear viable in the medium/long-term.

The trend in the public debt ratio is dependent on four variables:

- initial level of the public debt/GDP ratio,
- growth in nominal GDP,
- average interest rate on the debt issued,
- public balance excluding interest payments (or primary public balance).

<sup>2</sup> See Econote No.16 “Developed countries: who holds public debt?”, Audrey Gasteuil-Rougier”, April 2013.



**DECLINE IN GROWTH TREND**

The stabilisation and then the reduction of the debt/GDP ratio require strong and sustained growth (graph 13). However, Japan’s growth potential – currently estimated by the OECD at 0.8% per year in volume – is in a downtrend, primarily due to the ageing population (the most advanced in the world) (see inset 1 page 7). The working-age population started to shrink in Japan in the mid-1990s, leading to a decline in the proportion of the active population in the total population. This decline lowers the long-term growth rate of Japan’s potential GDP, as it means less labour used in the production process. Only a rise in the activity rate of women – currently relatively low (60% in 2012) – and in immigration (but which continues to generate considerable resistance) could slightly alleviate the marked contraction in Japan’s working-age population. Moreover, it seems unlikely that the contraction in labour resources can be offset by a sufficient increase in apparent labour productivity (per capita growth in capital, increase in total-factor productivity).

In the short-term, Japanese growth is expected to be around +1.5% in 2013 and 2014, underpinned by the three “arrows” of the economic policy initiated by Prime Minister Shinzo Abe (“Abenomics”), i.e. monetary expansion, fiscal stimulus and structural reforms.

1. Monetary expansion. In April 2012, the Bank of Japan announced a target of doubling the monetary base by end-2014 primarily through massive purchases of government bonds, in order to achieve the 2% inflation target (excluding the effect of the consumption tax hike). This constitutes the most important monetary expansion ever announced in any major developed country.
2. Fiscal stimulus. It amounts to nearly 2% of GDP for 2013-2014, with approximately 40% consisting of public works.
3. Structural reforms. The aim of these reforms is to increase per capita GDP by 40% in ten

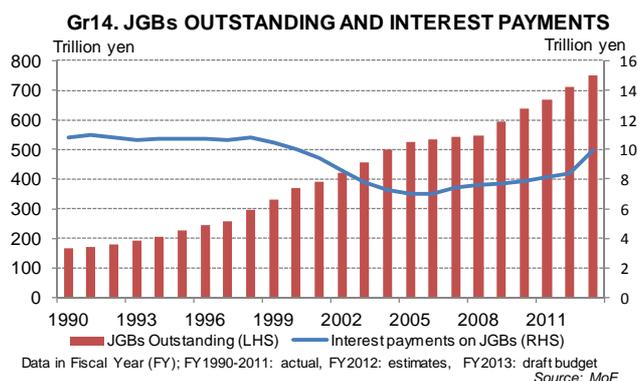
years. This would correspond to annual growth of more than 3% (vs. less than 1% on average since the early 1990s). This third aspect (see inset 2 page 8) comprises three parts: industrial revitalisation, creation of new strategic markets and international expansion. However, details regarding concrete measures have yet to be specified.

The structural reforms proposed by Prime Minister Shinzo Abe, and the long-term fiscal consolidation programme are the conditions for the success of the government’s strategy. If effectively implemented, these reforms should result in an increase in the growth potential which would limit the rise in the debt ratio. Moreover, the organisation of the Olympic Games in 2020 will help support growth, through the increase in public investment, corporate investment and household consumption. That said, the return to sustained growth would require the start of a virtuous circle where higher profits would lead to increases in scheduled wages, followed by a rise in household and corporate spending, driving up consumer prices.

**RISK, ULTIMATELY, OF AN INCREASE IN THE AVERAGE COST OF GOVERNMENT DEBT**

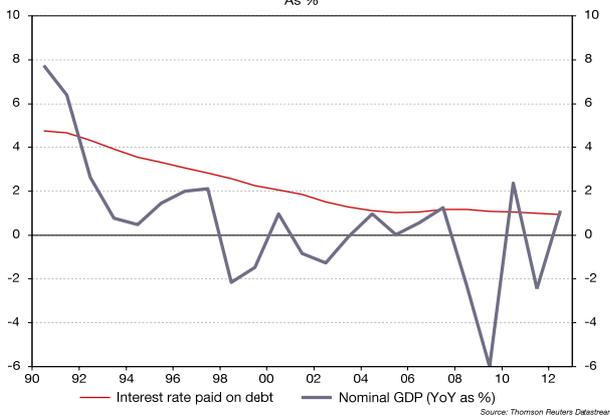
Despite a huge and growing public debt, long-term yields on Japanese government bonds have remained stable and low. Unlike the prevailing situation in the peripheral countries of the eurozone, the cost of Japan's public debt has not become more expensive as a risk premium, linked to the monetization risk or a government default, has not materialised. This, however, could change, particularly if the Japanese population decides to pull back on financing the public debt.

Since 2006, despite quasi-stable interest rates, interest payments on JGBs have increased – rising from 7 trillion yen in 2006 to 8.4 trillion in 2012 –, due to higher outstandings. They are scheduled to increase to about 10 trillion yen in fiscal year (FY) 2013 (graph 14), according to the budget, which stands at 10% of government spending.



What is important, however, with regard to the debt, is the difference between the interest rate paid on debt and the growth rate of nominal GDP. Since 1990, the apparent average cost of Japanese public debt has been barely higher than the growth rate of nominal GDP (graph 15). In 2012, the two variables were about the same (around 1%). In the future, if the apparent interest rate on debt were to become significantly higher than nominal GDP growth for a sustained period, the debt ratio (public debt/GDP) would increase - even if the country generated a primary balance (which is far from being the case as Japan recorded a primary deficit of 9% of GDP in 2012). This would produce the "snowball" effect: the indebtedness rate climbs regardless of the deficit<sup>3</sup>.

Gr15. NOMINAL GDP AND DEBT COST  
As %



Could the reversal of the deflationary spiral and the generation of inflation of about 2% (i.e. the central

bank's new target) be the means by which the country could escape from exploding public debt dynamics, by eroding the debt burden? This will only work if the additional nominal GDP growth significantly and sustainably exceeds the correlated rise in the cost of debt. Several conditions would be required for such a situation to occur:

- a degree of short-sightedness or inertia on inflation expectations, which would engender a drop in real interest rates;
- a substantial Japanese GDP growth acceleration, which would not push the Bank of Japan to rapidly raise its interest rates so as to ward off excessive inflationary pressure (which would require growth to come mostly from structural reforms increasing its potential).

The success or failure of Abenomics will boil down to its ability to boost nominal GDP more than it increases the interest rates on bonds. Success will hinge on the relative success of the third "arrow" (structural reforms). If it fails, the risk would be that Japanese policy would simultaneously stimulate inflation expectations and long-term interest rates without increasing real growth in a meaningful way.

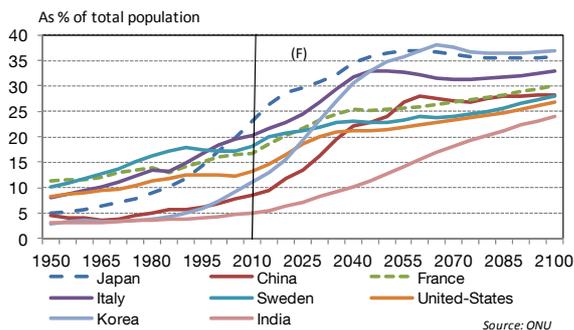
<sup>3</sup> The change in the debt ratio of a country whose primary public is balanced is proportionate to the initial level of this ratio and the gap between the apparent interest rate on debt and the growth rate of nominal GDP.

**INSET 1 - THE AGEING JAPANESE POPULATION**

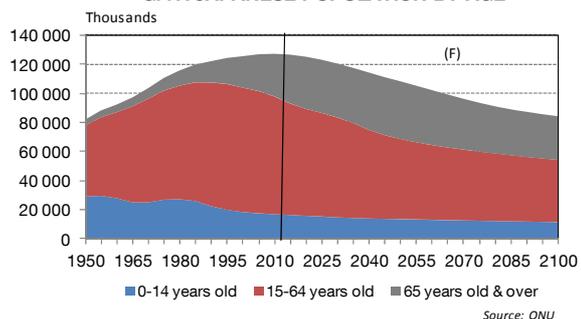
— Japan is the world leader in terms of the ageing of its population. In 2012, Japanese 65 and older reached a record of 30.8 million, nearly 24% of the total population, which is significantly higher than other countries (graph 16). This trend can be explained by a scissors effect: a low birth rate (1.4 children per woman), which - since the 1970s - has woefully insufficient for one generation to replace the next (2.1), and the longest life expectancy in the world (87 for women and 80 for men). The working-age population has therefore shrunk since the 1990s, especially since immigration remains negligible.

— According to the UN's latest projections (2012), the working-age population (15-64) will dwindle from 81.2 million in 2010 to 55.2 million in 2050, while the number of people over the age of 65 will increase from 29.2 to 39.5 million (graph 17). The percentage of Japanese over 65 will rise to 37% of the overall population in 2050. In 2025, only two people will be of working age to every one pensioner; in 2050, this ratio will be one-to-one.

Gr16. POPULATION AGED OVER 65 YEARS BY COUNTRY  
As % of total population



Gr17. JAPANESE POPULATION BY AGE  
Thousands



**INSET 2 - STRUCTURAL REFORMS**

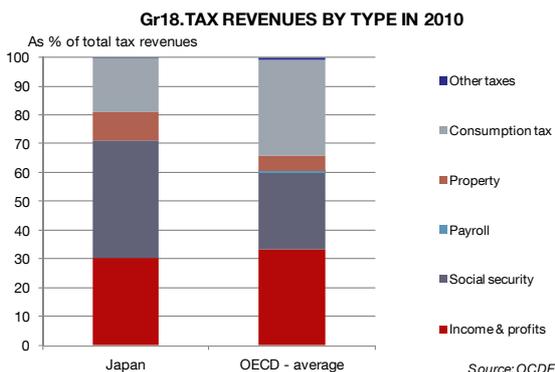
The main targets of the structural reforms put forth by Prime Minister Shinzo Abe are:

- increasing the flexibility of the labour market and encourage women to work;
- deregulating agricultural and service sectors with the goal being to double agriculture revenue in 10 years;
- deregulating the sale of prescription drugs on the Internet;
- liberalising the electricity sector;
- deregulating pension funds to authorise them to invest more in equities and foreign investments;
- encouraging corporate investment by lowering the corporate tax rate;
- promoting innovation;
- encouraging trade, tourism and foreign direct investment; participate, in particular, in "trans-pacific" partnership talks (regional trade agreement covering Australia, Brunei, Canada, Chile, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States and Vietnam).

**THE FORTHCOMING CONSUMPTION TAX HIKE WILL NOT BE ENOUGH TO GENERATE A PRIMARY SURPLUS IN 2020**

In 2012, Japan's primary public deficit reached 9% of GDP. Making matters worse is the fact that the ageing population will significantly increase spending on retirement and health/dependency care at a time when the ranks of young people, who will have to bear these costs, will be dwindling. Social expenditure increased from 11% of GDP in 1990 to 23% in 2012; healthcare and pensions accounted for 9 percentage points of this increase. According to the latest projections from the health ministry, social security spending (in value terms) will continue to rise and in 2025 will reach 24% of GDP (pensions accounting for roughly half).

With a view to reducing the debt ratio from 2020, the government announced a fiscal consolidation plan, which would halve the primary public deficit between 2010 (6.6% of GDP) and 2015 and generate a primary surplus by end-2020. The plan's most important measure is the gradual consumption tax increase (from 5% now to 8% in April 2014 then 10% in October 2015), which would generate revenues that would still be relatively modest compared with other developed countries (graph 18). This law was passed by Parliament in the summer of 2012 and the initial tax hike was approved in October 2013 by Prime Minister Shinzo Abe, who took power in December.



According to official projections, doubling the consumption tax will bolster revenues by 2.5 GDP points<sup>4</sup>. The tax hike will allow the government to pay for rising social spending. However, it appears to fall short of stabilising the public debt ratio (which could reach nearly 230% of GDP in 2013). In fact, according to the Cabinet Office's own estimations, published in August 2013, the goal of reaching a primary surplus in 2020 will not be reached, despite 3% nominal GDP growth every year (official statistics project the primary deficit to reach 3.3% of GDP in 2015 and 2% in 2020).

According to the IMF<sup>5</sup>, an additional adjustment of 5.5 GDP points would be required to reach the goal of a primary surplus and reducing the debt ratio to 2020. To get there, the IMF called for a total fiscal adjustment of 11 GDP points over the next decade (i.e. 4 times larger than the decided government's adjustment) by tripling the consumption tax (from 5% to 15%) and taking additional steps, including cutting public spending. In addition to stabilising the debt ratio, these additional measures would allow Japan to retain the market's confidence in the country's fiscal situation and therefore prevent long-term interest rates from increasing, which would send the cost of debt rocketing.

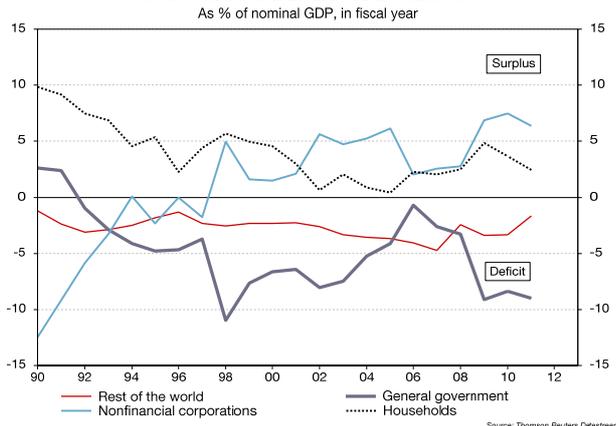
**DROP IN THE DOMESTIC MARKET'S ABILITY TO ABSORB INCREASING AMOUNTS OF GOVERNMENT DEBT**

The private sector's appetite (households plus companies) for public debt is expected to steadily decline in both the medium and long term due to the ageing population's disinclination to save and the private sector's lower appetite for government bonds.

<sup>4</sup> Government figures based on 2% real growth and nominal GDP growth of 3% per year on average over 2011-2020.

<sup>5</sup> Article IV, IMF, July 2013.

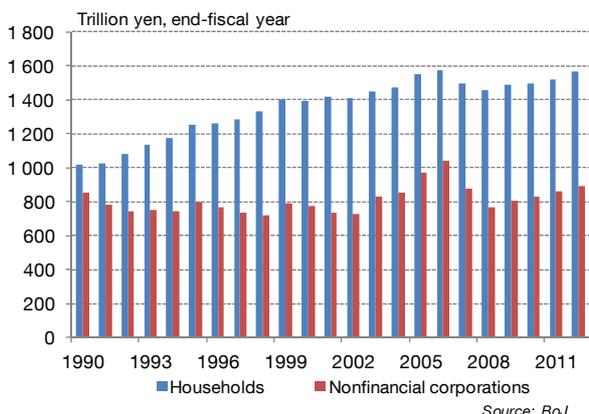
Gr19. FINANCIAL BALANCE BY SECTOR



**HOUSEHOLD DISSAVING**

According to the life-cycle theory, the aging of the population will imply a further decline in the household savings rate, insofar as the rapidly ageing population is accompanied by an increase in the propensity to consumer. Households nearing retirement tend to dip into their savings to supplement their pension or pay for healthcare expenses. In the next 5-10 years, gross public debt, which was around 1,100 trillion at end-2012 (220% of GDP), is expected to outstrip the financial assets held by Japanese households, which reached nearly 1,500 trillion (315% of GDP) (graph 20). Up until now, households had been financing more than half of JGB issuance, either directly or indirectly through banks and other intermediaries. As a result, there is a real risk that demand for JGBs from pension funds, particularly from the Japanese Government Pension Investment Fund (GPIF) - one of the biggest public funds in the world - will be driven even lower due to the increase in pension payments to new retirees.

Gr20. FINANCIAL ASSETS



**RISK OF DECLINING CORPORATE NET LENDING SURPLUS**

The net lending surplus of the nonfinancial corporate sector, which reached 6% of GDP at end-FY2011 (graph 19), should also decline over the long term (on a

2020 horizon) for a multitude of reasons that are both structural and temporary in nature:

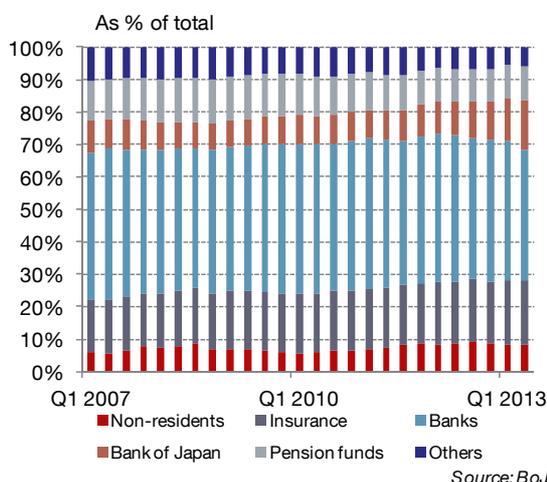
- the implementation of investment plans by industrial companies to rebuild the country;
- higher production costs for companies, owing to the rise in the country's energy dependency in the wake of the Fukushima accident (temporary shutdown of all nuclear plants);
- lastly, and most importantly, the abnormally high level of companies' net lending surplus is mostly attributable to Japan's deflationary situation. If the new economic policy can extricate the country from this situation in a sustainable manner, then this financing capacity should automatically be absorbed as a result of accelerating wages and a pick-up in the investment rate.

Therefore, the private sector's financing capacity (households and companies) is expected to decline over time, which will weigh on the country's current account balance – thus fuelling the risk that the surplus could, ultimately, be wiped out.

**RISK OF DECLINING GOVERNMENT BONDS' HOLDINGS BY JAPAN'S PRIVATE SECTOR**

Moreover, the domestic private sector could eventually cut its government bonds' holdings. This has already been taken place since end-2008: households' direct holdings in JGBs have dipped from 4.5% of total JGB outstandings at end-2008 to 2.5% in Q2 2013 and non-financial companies from 20% to 13%. The private sector's share of indirect JGB holdings (via financial intermediaries) has also fallen (graph 21). More specifically, pension funds and banks have recently pulled back on their purchases of public debt. The BoJ, it stands to note, has more than offset lower purchases of JGBs by the banks.

Gr21. JGBs HOLDINGS BY SECTOR



The factors susceptible of reducing "home bias" and pushing the Japanese to diversify their asset allocation towards more risky assets could include:

- the return of greater risk appetite amid a brighter and less deflationary economic backdrop;
- heightened fears on the sustainability of Japanese public debt as it increases, compelling domestic financial institutions to reduce their exposure;
- the search for higher yield by pension funds in countries with more favourable demographics.

### SEEKING FOREIGN PORTFOLIO INVESTMENT?

Unless the government embarks on deep budget cuts, it will likely be forced to look abroad for finance as the domestic market's capacity to absorb increasing quantities of government bonds declines. However, this would not happen at the current level of interest rates. If foreign investors begin to invest more heavily in Japanese government bonds, interest rates will have to increase (incorporating a risk premium) to offset the depreciation risk on debt (*via* a drop in the exchange rate of the yen) or government default risk. Other factors<sup>6</sup> could also influence the level and volatility of interest rates.

Given the colossal debt pile, rising interest rates could quickly plunge Japan into an explosive debt spiral<sup>7</sup>. The unsustainable increase in public debt could very well lead to a solvency crisis sooner or later. This risk is of course not immediate but is lurking on the medium/long-term horizon. However, it could affect investor expectations even before reaching the critical point where domestic savings become insufficient to finance public debt. This is the challenge of the new economic strategy set in motion by the Japanese authorities.

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<sup>6</sup> Higher market volatility and the spillovers of an economic shock and/or global financial shock would have a major impact on JGB yields. See: "Assessing the risks to the Japanese government bond (JGB) market", IMF WP, December 2011.

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<sup>7</sup> Even a moderate increase in JGB yields would make the fiscal situation extremely vulnerable: if yields were to increase 100bp in the next 5 years, the net public debt ratio would stay high, according to the IMF, even if the government manages to adjust its structural public balance by 10 GDP points. "Assessing the risks to the Japanese government bond (JGB) market", IMF WP, December 2011.

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## CONTACTS

**Olivier GARNIER**

Group Chief Economist  
+33 1 42 14 88 16  
olivier.garnier@socgen.com

**Olivier de BOYSSON**

Emerging Markets Chief Economist  
+33 1 42 14 41 46  
olivier.de-boysson@socgen.com

**Marie-Hélène DUPRAT**

Senior Advisor to the Chief Economist  
+33 1 42 14 16 04  
marie-helene.duprat@socgen.com

**Ariel EMIRIAN**

Macroeconomic & Country Risk Analysis /  
CEI Country  
+33 1 42 13 08 49  
ariel.emirian@socgen.com

**Benoît HEITZ**

Macroeconomic & Country Risk Analysis /  
Euro zone and Europe  
+33 1 58 98 74 26  
benoit.heitz@socgen.com

**Clémentine GALLÈS**

Macro-sectorial Analysis / United States  
+33 1 57 29 57 75  
clementine.galles@socgen.com

**Françoise BLAREZ**

Macro-sectorial Analysis  
+33 1 58 98 82 18  
francoise.blarez@socgen.com

**Constance BOUBLIL**

Central & South-eastern Europe  
+33 1 42 13 08 29  
constance.boublil@socgen.com

**Marc-Antoine COLLARD**

Gulf States, Latin America, Commodities  
+33 1 57 29 62 28  
marc-antoine.collard@socgen.com

**Marc FRISO**

Euro zone, Northern Europe & Sub-Saharan  
Africa  
+33 1 42 14 74 49  
marc.friso@socgen.com

**Régis GALLAND**

Middle East, North Africa & Central Asia  
+33 1 58 98 72 37  
regis.galland@socgen.com

**Audrey GASTEUIL-ROUGIER**

OECD ex. Euro zone & Macro-Financial  
Studies  
+33 1 57 29 52 26  
audrey.gasteuil@socgen.com

**Emmanuel PERRY**

Macro-sectorial analysis  
+33 1 42 14 09 95  
emmanuel.perry@socgen.com

**Sofia RAGHAI**

Macro-sectorial analysis  
+33 1 42 14 30 54  
sofia.raghai@socgen.com

**Sopanha SA**

Asia  
+33 1 58 98 76 31  
sopanha.sa@socgen.com

**Isabelle AIT EL HOCINE**

Assistant  
+33 1 42 14 55 56  
isabelle.ait-el-hocine@socgen.com

**Valérie TOSCAS**

Assistant  
+33 1 42 13 18 88  
valerie.toscas@socgen.com

**Sigrid MILLEREUX-BEZIAUD**

Information specialist  
+33 1 42 14 46 45  
sigrid.millereux-beziaud@socgen.com

**Tiphaine CAPPE de BAILLON**

Statistic studies & Publishing  
+33 1 42 14 00 25  
tiphaine.cappe-de-baillon@socgen.com

**Société Générale | Economic studies | 75886 PARIS CEDEX 18**  
<http://www.societegenerale.com/en/Our-businesses/economic-studies>  
Tel: +33 1 42 14 55 56 — Tel: +33 1 42 13 18 88 – Fax: +33 1 42 14 83 29

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