

# Deflation in Japan, Abenomics and lessons for the euro area

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## Introduction

Seven years on from the global financial crisis, which started with the subprime crisis and the collapse of Lehman Brothers in the United States, the euro area economy appears not to have quite recovered: a subdued upturn followed a deep recession, with the sovereign debt crisis then tripping the euro area into a second recession. Over the recent period, growth has languished way below pre-crisis levels, suggesting that the euro area economy has all but stalled. In addition, inflation has been low and in some cases even turned negative.

These twin forces of economic stagnation and low inflation/deflation have long been features of the Japanese economy. After a breakneck macroeconomic expansion in the 1980s, Japan faced a bursting real estate and financial asset bubble, followed by a long period of persistently slow growth, known as the 'lost decade'. Moreover, by the end of the 1990s, Japan had got locked into a deflationary climate. While the country never went into a deflationary spiral, the nightmare scenario the literature had warned about, policies proved inadequate to get economic growth and inflation to take off. Since 2013, Shinzo Abe's government has nevertheless been working to put an end to this situation by implementing a comprehensive and robust programme, dubbed Abenomics.

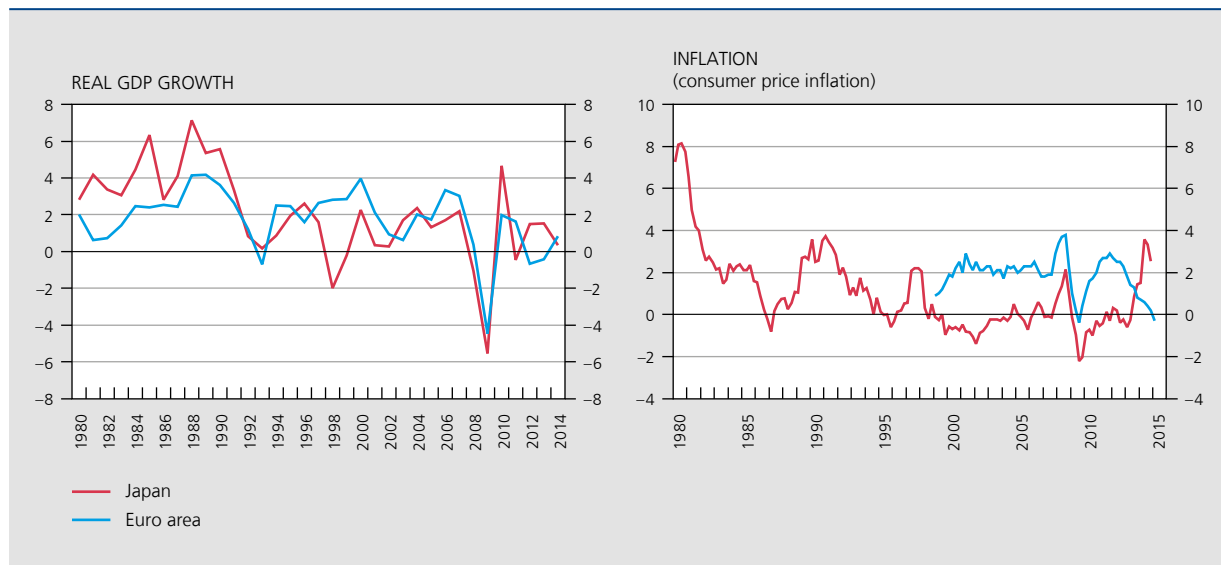
This article proposes to showcase the similarities identified between the situation in Japan over the last two

decades and the one the euro area currently finds itself in. Factoring out the features specific to these economies and the different types of financial crises they faced, the article attempts to identify the lessons that the euro area can draw from the Japanese experience.

The article starts with a review of the Japanese economy between 1990 and 2013, covering three key themes: the bursting of the asset price bubble and the onset of a long balance sheet recession, deflation and the role of monetary policy, and, lastly, the country's transition to a new macroeconomic equilibrium struck at a lower level of inflation, but with economic growth around its potential level. This new equilibrium suggests that the cost of deflation is restrained. A major flaw of this equilibrium, however, is that it does not allow for monetary policy to be fully effective at stabilising the economy in the event of negative shocks. In order to return to equilibrium with positive inflation and higher potential growth, the Japanese government started its Abenomics policies in 2013. These are discussed in the second section. The article ends on a number of lessons that today's euro area can draw from the Japanese experience. A period of low inflation would potentially wreak more havoc in the euro area than it has in Japan, but the range of policy measures adopted since the crisis erupted have reduced this danger. That said, the euro area policy mix needs to be carefully calibrated, with appropriate demand policies and structural reforms put in place.

**CHART 1** ECONOMIC GROWTH AND INFLATION IN JAPAN AND THE EURO AREA

(% change compared with the corresponding period of the previous year)



Sources: OECD, EC, Thomson Reuters Datastream.

## 1. The Japanese economy between 1990 and 2013

### 1.1 Balance sheet recession and financial sector troubles

This section recounts the run-up to the financial crisis of the early 1990s, the balance sheet recession that followed and the way in which the Asian crisis forced the Japanese authorities to finally face up to and address the problems besetting the banking sector.

The second half of the 1980s was a time of unbridled expansion for the Japanese economy. A self-reinforcing cycle of highly favourable macroeconomic conditions, rising asset prices and excessive lending fuelled a build-up of financial imbalances – with the expansionary monetary policy bias and gradual liberalisation of domestic capital markets also chipping in. After all, the 1985 Plaza Accord and the subsequent appreciation of the Japanese yen to help reduce the current account surplus to more acceptable levels had left the Japanese central bank with little choice but to slash policy rates to offset a more expensive currency and bolster domestic demand. Meanwhile, the liberalisation of the country’s capital markets in the 1980s saw Japanese companies increasingly turn to corporate bonds for their funding, at the expense of bank loans. In their search for an alternative use of their resources, banks increased their exposure to the housing market and

brought extra competition into mortgage lending, hitherto virtually the exclusive domain of the *jusen*<sup>(1)</sup>. Faced with fiercer competition between mortgage lenders, the *jusen* expanded to other sectors of the property market by providing loans to project developers and construction companies, collateralised by their property holdings.

From May 1989, the Bank of Japan raised interest rates a number of times to help cool the economy; in 1990, the Finance Ministry advised the financial sector to curb its lending to the property sector. Both policy actions sparked significant corrections in property and equity prices.

Recessions that follow periods of significant leveraging and exceptional increases in asset prices typically hit hard, both financially and in real terms, and their repercussions take longer to clear than ordinary recessions. Reinhart and Rogoff (2014) argue that balance sheet recessions tend to last longer and have a more far-reaching impact. The biggest challenge for policy-makers is to recognise and adequately address a balance sheet recession in real time. Koo (2009, 2013), for instance, notes that Japan’s policy-makers needed some time to make a full diagnosis of the economic ills affecting the country and to come up with the right treatment. The wrong policy approach could nip any recovery in the bud, causing a lengthy period of slow growth and low inflation.

(1) Subsidiaries created by the banks in the 1970s to provide mortgage lending and encourage home ownership.

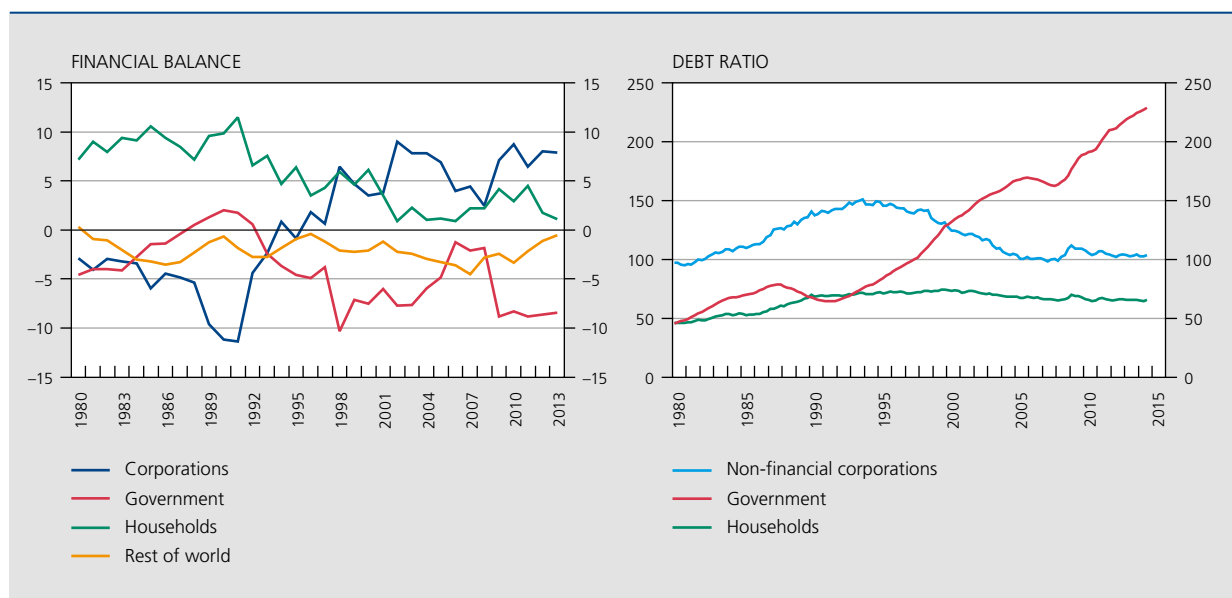
Capturing financial balances in Japan, the chart below shows a surplus in the household sector in the 1980s, which largely served to finance corporate deficits. However, after the crisis in the early 1990s, corporations were also starting to record financial surpluses, turning the country's private sector as a whole into a net saver. Disregarding the external sector, the government then becomes the only sector that can absorb such a savings surplus. In the 1980s, non-financial corporations in particular were leveraged to the hilt, often collateralised by property assets, while household debt ratios were also up, albeit to a lesser extent. Deleveraging became a post-crisis priority for corporate Japan, rather than fresh investment spending. This process took until 2005 to complete: in that year, corporate debt finally stabilised, but corporations have remained net savers and built sizeable cash positions. If the Japanese economy is to recover any further, the corporate sector will have to start dis-saving, and Abenomics (see section 2) should play a crucial role in this respect by boosting expected profitability (Kang, 2014). Rising levels of corporate investment should lessen the pressure on the government as the engine for economic growth.

If the private sector as a whole deleverages, expansionary fiscal policies are required to ensure that recessions do not drag on for a long time or even worsen. Where adequate fiscal stimulus is lacking, recession may well deepen into depression – as happened in the United States in the 1930s. One major constraint, of course, is

the sustainability of public debt, and the euro debt crisis made it painfully clear that the relevant sustainability level is what the financial markets judge to be sustainable. Meanwhile, Japan's economy has been receiving fiscal support from the government for 22 years. Public deficits have become par for the course, with government spending as a percentage of GDP consistently up while revenues have remained virtually unchanged since 1990. Japan's government debt ratio has risen to over 230 % of GDP after two decades of slow growth, persistent deflation and government deficits. Section 2.2 discusses the sustainability of Japanese government debt in greater detail.

In the United States – which in 2008 also faced a balance sheet recession – the Administration immediately switched to highly expansionary fiscal policies to absorb reduced demand from the private sector. These expansionary policies were gradually phased out as the private sector started to chip in again to economic growth. US public debt initially shot up, but soon stabilised as the economic recovery gathered momentum. In the euro area, a joint approach under the European Economic Recovery Plan gave rise to fiscal stimulus measures upon the outbreak of the financial crisis. The sovereign debt crisis in Greece and rapid contagion to other vulnerable euro area Member States – which lost access to capital markets and needed financial assistance – induced rapid budgetary consolidation in these countries.

**CHART 2** JAPAN: FINANCIAL BALANCE AND DEBT RATIO BY SECTOR  
(in % of GDP)



Sources: Bank of Japan, BIS, Thomson Reuters Datastream.

Fiscal stimulus is not the only way to prop up economic growth; external demand may also serve as a driver. However, in crises on a global scale – such as the most recent financial crisis – this route offers only limited relief, unless accompanied by improved competitiveness. The effectiveness of monetary policy is hampered in the event of reduced interest rate elasticity of credit demand: even when (real) interest rates are very low, heavily leveraged private sectors will not take on any new debt but rather continue to deleverage, which is obviously made easier by lower interest rates. A balance sheet recession is typically marked by an absence of loan demand, rather than a shortage in the supply of credit. That said, monetary policies have a key role to play in removing any obstacles to the supply of credit and bank loans by offering banks liquidity that they cannot find elsewhere. In a situation such as this, the central bank acts as the lender of last resort and cushions the blows rained on the banks by the financial crisis. In addition, expansionary monetary policies can help to facilitate the deleveraging process in other sectors through demand-supportive policies.

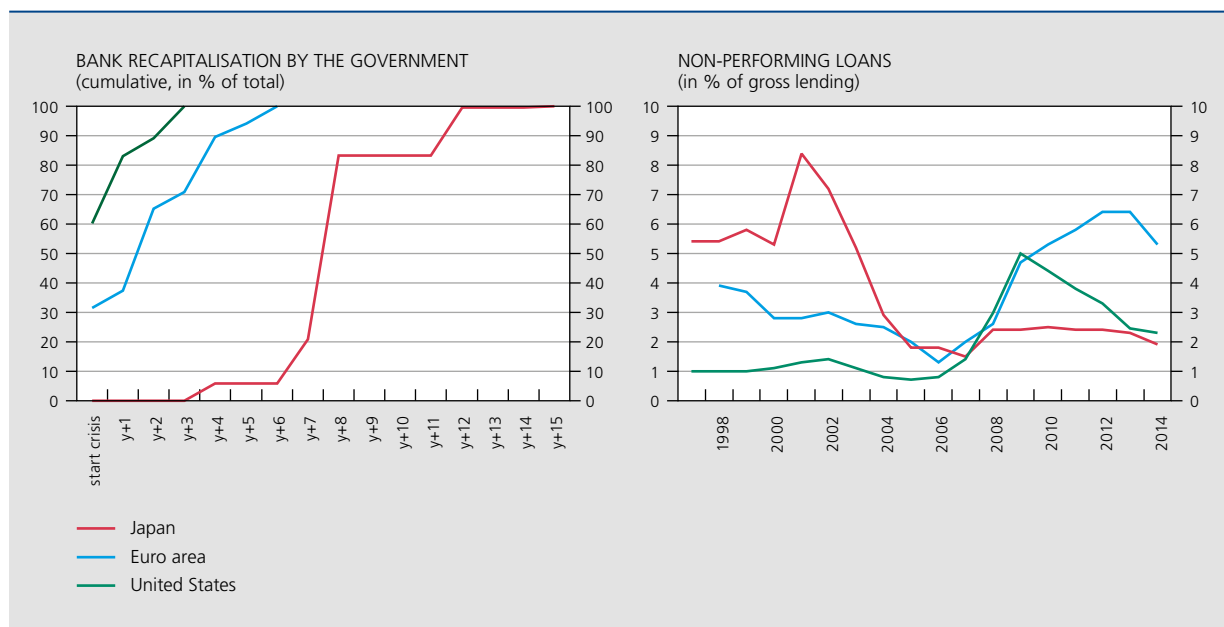
The emergence and bursting of a bubble in the property and equity markets invariably tend to hit the banking sector hard. In the early 1990s, both Japan’s regulator and its banks underestimated the extent of the problems (Hoshi and Kashyap, 2014) and it was not until the 1997 Asian crisis triggered a systemic banking crisis that both banks and the government were compelled to act. Recognition

of the problem of non-performing loans (NPLs), recapitalisation by the government, redrawing and effectively enforcing the rules, including an efficient resolution framework – all ultimately helped to resolve the systemic banking crisis. The damage to the real economy had been done by the ongoing problems vexing the banking sector, causing a lengthy spell of economic stagnation.

The 1991-1996 period was characterised by regulatory forbearance and denial of the problems, for which Nelson and Tanaka (2014) cite three reasons. First, the total extent of non-performing loans was underestimated, as banks themselves reported these loans to the regulators applying a very narrow definition of non-performing loans as well as valuation principles based on historical losses and defaults. Secondly, the key players underestimated the macroeconomic impact of the financial crisis: both the banking sector and the regulators assumed that the economy would quickly turn around and make the problem fade away. Lastly, Nelson and Tanaka feel that the legal framework was not equipped to facilitate prompt recapitalisation or resolution of failing banks.

Against this backdrop, the banks continued to roll over loans to Japanese corporations, and lending to the construction and property sectors climbed right up to 1998. This phenomenon of putting off the recognition of losses by continuing to lend to essentially failing companies – which were by now looking at a highly reasonable interest

**CHART 3** GOVERNMENT RECAPITALISATION AND NON-PERFORMING LOANS



Sources: Eurostat, Bank of Japan, US Treasury, World Bank, Thomson Reuters Datastream, own calculations.

burden, thanks to the Bank of Japan's easy monetary policy – is known as 'evergreening' and 'zombie lending' (Cabellero *et al.*, 2008). The whole process was reinforced by the high degree of cross-shareholdings between banks and relationship-based shareholdings (averaging 40 % in 2003) between companies and banks (IMF, 2003). All of this merely fed into persistently slow economic growth, as it left fewer funding opportunities for more profitable companies or projects.

The Asian crisis of 1997 triggered a systemic banking crisis as a number of key financial institutions went bust and the interbank market dried up. Post-crisis, the government embarked on a recapitalisation of the country's banks and devised policies to address non-performing loans, with an in-depth asset review producing wider recognition of NPLs and compulsory provisioning to absorb any losses. It was not until 2001 that Japan launched a comprehensive strategy (Matsubayashi, 2015), built on two key elements: making it compulsory for banks to sell on NPLs within three years, recognise their losses or demand repayment through the courts – more often than not resulting in the bankruptcy of the borrower/company; and selling any remaining non-performing loans to the Resolution and Collection Corporation (RCC), a subsidiary of the state-owned Deposit Insurance Corporation. RCC's remit was not just to acquire the NPLs but also to restructure the borrowers, many of them being construction and property companies.

Chart 3 shows the banking regulator's late response which had a devastating effect on the real economy. Following an early and limited recapitalisation of the *jusen* in 1995, banks were not recapitalised by the Japanese government until 1998-1999. Such recapitalisation has often proven necessary to rebuild confidence in the banking sector and enable it to fully resume its intermediation role. Non-performing loans peaked in 2001 as the regulators were forced to recognise them. The resolution obligation eventually paid off and non-performing loans stabilised at acceptable levels from 2004.

Unlike the overcautious Japanese, when their time came the Americans moved at speed to recapitalise their banking sector and wind down non-performing loans. The US stress tests under the Supervisory Capital Assessment Program (SCAP) in the spring of 2009 proved decisive and the swift policy response allowed the banking sector to slot back into its intermediation role relatively quickly. Euro area Member States took a more gradual approach to their bank recapitalisations than the United States, but acted more forcefully than Japan. A crucial step was the comprehensive assessment of banks' assets in the run-up to the single supervisory mechanism (SSM). Not until 2013

did the share of non-performing loans in the euro area's total bank loan books start shrinking, though.

## 1.2 Disinflation and deflation

The overheating of the Japanese economy and the surge in asset prices towards the end of the 1980s did not bring sharply higher inflation – a situation that persuaded the Bank of Japan to continue its expansionary monetary policies well after the emergence of the bubble and not to raise its discount rate until May 1989, its first policy rate increase in nearly nine years.

After the bubble burst, Japan went through a period of gradual disinflation in the early 1990s. Halfway through the decade – in 1995 according to the GDP deflator and in 1999 according to the consumer price index – disinflation turned into moderate deflation. With the exception of 2008, when global energy and food prices surged, inflation in Japan did not move back into positive territory until the end of 2013.

### 1.2.1 Determinants of low inflation: negative output gap and falling inflation expectations

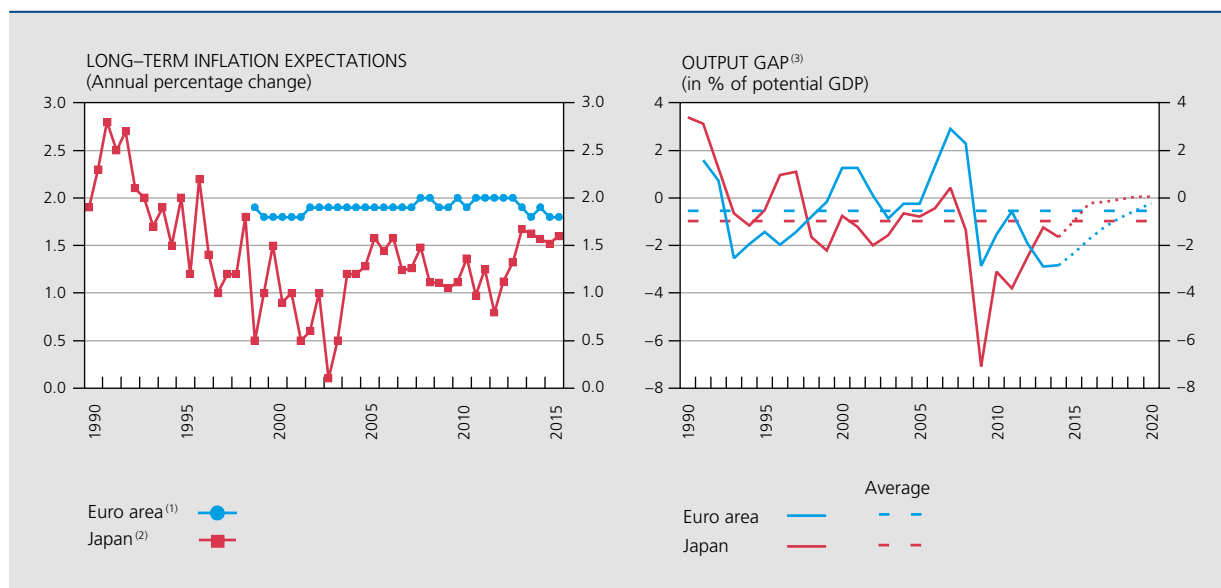
To study the factors underpinning the long period of deflation in Japan, we have drawn on the theoretical analysis framework of a forward-looking new-Keynesian Phillips curve (see Galí, 2008). This specific Phillips curve currently holds sway in monetary theory and would appear – for Japan at least – to offer an empirically sound description of aggregate price dynamics (see Sanchez, 2006 or Muto, 2006). The standard forward-looking new-Keynesian Phillips curve postulates that current inflation ( $\pi_t$ ) depends on inflation expectations ( $E_t\pi_{t+1}$ ), on a proxy of real marginal costs such as the output gap ( $Gap_t$ ) and on a number of other factors such as external price shocks ( $u_t$ ):

$$\pi_t = \beta E_t \pi_{t+1} + \alpha Gap_t + u_t$$

This relationship reflects the idea that current inflation is largely determined by corporations' price-setting behaviour, which depends on their expectations for demand and future costs as well as their marginal costs, in particular wages. Marginal costs, in turn, depend on where an economy is in its business cycle, as reflected in the difference between real and potential production. The higher the inflation expectations, the higher today's inflation. And the higher real output is in relation to potential output, the more marginal costs will tend to increase.

Long-term inflation expectations for Japan – i.e. those with a horizon of between six to ten years – gradually

**CHART 4** CAUSES OF DISINFLATION AND DEFLATION IN JAPAN



Sources: Consensus Economics, Thomson Reuters Datastream, IMF, ECB.  
 (1) Five-year inflation expectations, derived from the ECB's Survey of Professional Forecasters (SPF).  
 (2) Inflation expectations for a six to ten-year horizon, published by Consensus Economics.  
 (3) Projections from 2015.

edged down between the early 1990s and the first half of the 2000s. After hitting absolute lows of nearly 0% in April 2003, they picked up again a little to move back between a range of 0.8% to 1.7%. As this article will explain, the downward trend in inflation expectations in Japan in the 1990s was mainly due to monetary policy. Unlike Japan in this review period, the euro area has been looking at extremely stable inflation expectations since 1999, moving in a very narrow range of between 1.8% and 2%.

Like inflation expectations, the Japanese output gap contracted sharply in the early 1990s, moving into negative territory mid-decade and staying predominantly negative since then. No consensus explanation for these developments has emerged, though two specific factors have been put forward. The first is a straightforward one: that Japan was repeatedly buffeted by demand shocks: the collapse of the asset price bubble in the early 1990s, the financial crisis in Japan and the Asian currency crisis in 1997, the dot.com bubble in the United States in the early 2000s, and the great recession in 2008.

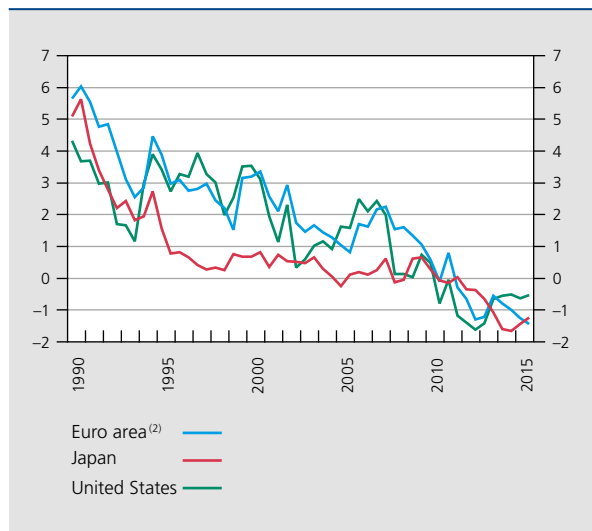
The second factor is the fall in the real equilibrium interest rate, which was accompanied by a contraction in the working age population (Ikeda and Saito, 2012) and the decline in potential output (Watanabe, 2012, in Nishizaki *et al.*, 2014). This lower equilibrium interest rate is said to

have prevented the central bank from pursuing monetary policies that were sufficiently accommodating to help stabilise production around its potential level. Constrained by the zero lower bound on nominal interest rates, the central bank cannot keep lowering policy rates to levels sufficiently below the real equilibrium interest rate to bolster economic activity. Meanwhile, its stimulation capacity is restricted even more by falling inflation expectations and actual inflation (see above), effectively causing real interest rates to rise. Quite possibly, a deflationary phenomenon may become self-reinforcing and set off a deflationary spiral.

Ever since the bubble burst, the Bank of Japan has found it difficult to engineer a sufficiently expansionary course on five-year real interest rates, generally agreed to be the most relevant to consumption and investment decisions. Compared with the monetary stimulus provided by the European Central Bank or the Federal Reserve in the context of the great recession, the Bank of Japan's monetary stimulus programme since the mid-1990s has in fact been relatively moderate despite comparable – and sometimes even lower – nominal interest rates.

Other contributory factors to disinflation and later to deflation in Japan since the early 1990s included the removal of customs barriers, which boosted competition in the Japanese goods and services markets (Kamada

**CHART 5** FIVE-YEAR REAL INTEREST RATES<sup>(1)</sup>  
(in %)



Sources: Consensus Economics, Thomson Reuters Datastream.

(1) Nominal interest rates deflated by average inflation expectations in the period.

(2) Data for Germany before 1999. Average yields for the five most important AAA-rated countries in the euro area at 30 June 2013 (Germany, Finland, France, the Netherlands and Austria) from 1999.

and Hirakata, 2002), cheap imports from emerging Asian economies such as China, and the appreciation of the yen against other major currencies, the US dollar in particular (Ito and Mishkin, 2006).

### 1.2.2 The role of monetary policy

Milton Friedman famously observed that “inflation is always and everywhere a monetary phenomenon”, and the medium- to longer-term price level dynamics typically reflects monetary policy. This would suggest that deflation is primarily caused by inadequate monetary policies. More specifically, the underlying decline in inflation expectations may be theoretically attributed to the reduction of the inflation target by the central bank, or, alternatively, to the lack of credibility of that inflation target (Nishizaki *et al.*, 2014).

In the case of Japan, where an inflation target was adopted only very recently, falling long-term inflation expectations and persistent deflation would appear to be mostly down to the Bank of Japan not being forceful and credible enough in combating deflation. This lack of confidence is believed to reflect the Bank of Japan’s interpretation of price stability, its communication strategy and its implementation of monetary policy. The Bank of Japan was granted independence at the end of the 1990s, which is also believed to have contributed to its relatively conservative attitude.

### No definition of price stability

In the mid- and late 1990s, the Bank of Japan took a critical attitude towards the various price indices that were available and was ambiguous about the way it measured and interpreted price stability. Despite being urged to adopt an inflation target by politicians and academics alike (Ito and Mishkin, 2006), Japan’s central bank would have none of it, even though this has proven to be instrumental in anchoring inflation expectations.

In May 1994, for instance, BoJ Governor Yasushi Mieno argued that it was not advisable to single out any specific price index, while in 2000 Governor Masaru Hayami defined price stability as neither deflationary nor inflationary, arguing that it was inappropriate to put a number on it (Nishizaki *et al.*, 2014). Eventually, in March 2001, the Bank of Japan announced it would assess price stability on the basis of the consumer price index excluding fresh food, and that it would adopt accommodating monetary policies until the growth of this index stabilised at a level above zero (Ito, 2004). No further details were given. By 2006, the Bank of Japan finally explained that it would interpret price stability in the medium and long term as an increase in the consumer price index (CPI) of between 0 and 2%, and target a median of 1%. After adopting a clearer objective of 1% in February 2012, it was not until January 2013 that the Bank of Japan announced an overall inflation target of 2%.

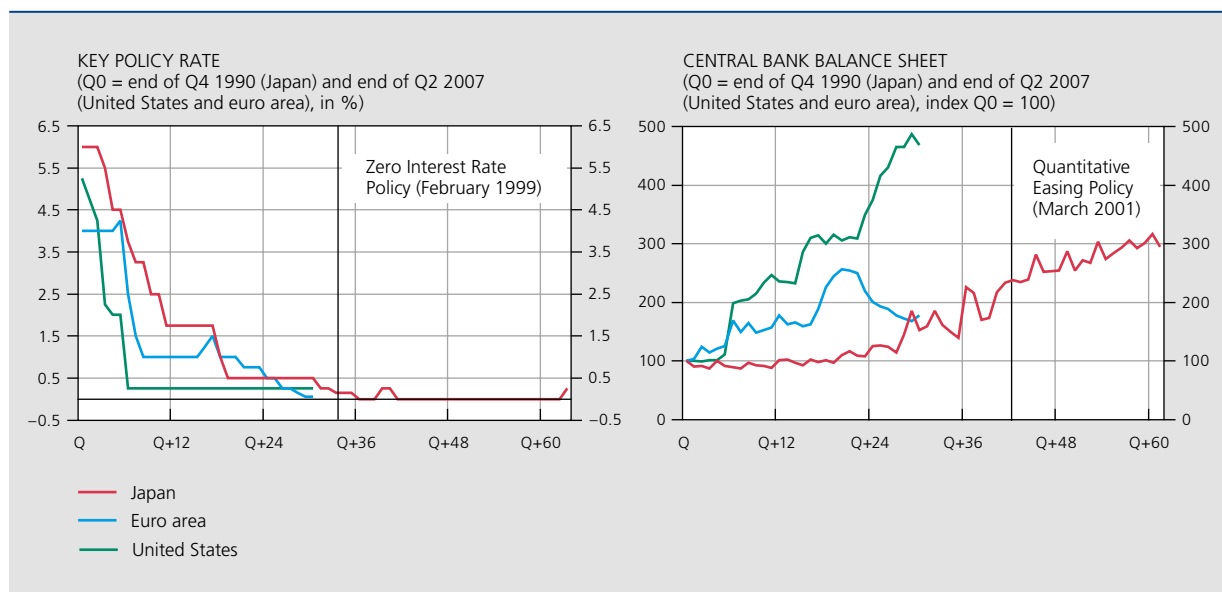
### Ambiguous communication

Although committed to price stability and seeking to dispel the fear of deflation, the Bank of Japan was not always unequivocal about its ability or determination to combat it. In the early 2000s, Governor Masaru Hayami even denied that Japan was in a state of deflation, while at the same time pointing out that deflation could be a good thing as it was the result of technological innovation and progress in the distribution networks. Dismissing the need for an inflation target, he insisted that inflation was not the solution to the economic challenges facing the country (Hayami, 2000). The Bank of Japan long balked at the introduction of unconventional monetary policy measures and did not join the fight against deflation until very late. The game-changer would appear to have been the appointment of Governor Toshihiko Fukui, who succeeded Governor Hayami in 2003 (Ito, 2004).

### Monetary policy measures

In 1991, the Bank of Japan adopted accommodating monetary policies at a time when land prices had started to fall but inflation still exceeded 3%. However, monetary

**CHART 6** POLICY RATES AND CENTRAL BANK BALANCE SHEETS



Source: Thomson Reuters Datastream.

policies after the collapse of the bubble are generally agreed to have been rather restrictive (Ito and Mishkin, 2006).

The central policy rate was lowered from 6% in June 1991 to 0.15% in February 1999, the month in which the Bank of Japan adopted its zero interest rate policy (ZIRP). However, as early as the spring of 2000, Governor Hayami announced that the zero interest rate policy was about to end, and in August 2000 the Bank of Japan effectively raised its target interest rate by 25 basis points after having first reduced it to zero, despite persistently negative inflation and fierce resistance from politicians and academics (Ito and Mishkin, 2006). In March 2001, following a further deterioration in economic activity, the Bank of Japan resumed its zero interest rate policy. It is not clear whether Japan's central bank should have adopted a zero interest rate policy sooner; but the fact is that policy rates were cut much more swiftly in the euro area and the United States during the recent crisis.

Also in March 2001, the Bank of Japan embarked on a policy of quantitative easing (QE), although it had long resisted any type of additional monetary easing (Ito and Mishkin, 2006). It stopped focusing on the overnight rate, but rather opted to target the net current accounts it held for commercial banks and started buying both government and private sector-issued securities. The Bank of Japan may have expanded and extended its quantitative easing policy several times, but the programme always

remained relatively modest. Between March 2001 and March 2006, the month in which it ended QE, the Bank of Japan increased its balance sheet by a mere 25%. This compares with a Federal Reserve balance sheet that more than trebled between mid-2007 and mid-2012 against the backdrop of the great recession. As for the European Central Bank, it expanded its balance sheet by around 150% in the same period.

#### The role of independence

The Bank of Japan did not become independent and fully responsible for monetary policies until April 1998. On that date, it received its mandate to ensure price stability, whereas its previous remit had been to help maximise potential economic growth (Ito, 2004). Gaining independence appears to have set the Bank of Japan on a conservative course, which may have eroded its credibility on avoiding deflation. Late independence seems to have inspired in its officials a bias towards too low rather than too high inflation, and some even argue that independence came at the worst possible time (Ito and Mishkin, 2006).

Critics of Japanese monetary policy typically argue that more aggressive and coherent policies in the early 1990s could have nipped deflation in the bud or avoided it altogether. By contrast, its defenders believe that the Bank of Japan's measures actually precluded any further collapse in economic activity and the emergence of a deflationary spiral.



### 1.2.3 Avoiding a deflationary spiral

While deflation in Japan turned out to be a widespread and unexpected phenomenon, it remained moderate but persisted for a long time. This suggests that the Japanese economy has evolved structurally to a new equilibrium.

#### Widespread and unexpected

Japanese deflation affected a wide range of goods and services (Nishizaki *et al.*, 2014). As evidenced by the GDP deflator falling faster than the consumer price index, it was mainly domestic in nature and hardly reflected external shocks related to commodity price trends. Neither did it result from positive productivity shocks, which would have logically led to higher production growth. In fact, deflation was primarily down to weak aggregate demand, making it potentially malignant (Ito and Mishkin, 2006).

Another aspect of Japan's deflation that may have had macroeconomic repercussions was its unexpectedness. Neither before it emerged nor when it first reared its head in the mid-1990s or at the start of the 2000s did Consensus Economics' inflation expectations ever point to a lengthy period of negative prices.

An unexpected drop in general price levels adds to the repayment burden in real terms of debt with fixed nominal interest rates, and translates into a shift in purchasing power from debtors to creditors. Debtors typically show a greater propensity to spend than creditors, and shifts such as these can depress aggregate demand and feed into the deflationary trend. This phenomenon, with deflation getting in the way of repayment and becoming a self-reinforcing cycle, is labelled debt deflation (Irving Fisher, 1933). In a deflationary context eroding debtors' balance sheets, banks may also become less willing to lend, even more so if they are looking to wind down their own debts and see their asset values fall. The financial accelerator may then kick in and weaker balance sheets of economic agents prompt a deterioration of the financing conditions imposed on the latter group. This would normally happen when asset prices slump, but may be exacerbated by a fall in general price levels.

Although unexpected inflation of goods and services can, in theory, have a certain impact, there is little evidence that the unexpected deflation of goods and services added to Japan's macroeconomic troubles after the bubble burst or contributed to the economic stagnation of the 1990s. But even if it did, the economic repercussions of the higher Japanese debt in real terms do not compare to the Great Depression in the United States in the 1930s. Although a financial accelerator phenomenon seems to

have emerged in Japan, it would seem to be chiefly due to falling asset prices (Fushi *et al.*, 2005).

#### Subdued

Deflation in Japan has generally been below 1%. In view of the repeated shocks that hit the Japanese economy and the modest monetary policy impetus, legitimate questions can be asked about the long-term nature of the price falls and the absence of any deflationary spiral. The explanation breaks down into three elements.

A first key element is the nominal flexibility of the Japanese economy and, more specifically, of wages, typically more rigid than prices. Japan has displayed a downward flexibility of nominal wages that allows real wages to adapt at a time of deflation, with corporations able to sustain their margins without cutting staff numbers. As employment is not affected, purchasing power is better maintained at the macroeconomic level, which in turn supports aggregate demand and curbs the negative output gap.

In general, most countries display a downward rigidity in nominal compensation (Kuroda and Yamamoto, 2014), typically explained by the negative effect of nominal wage cuts on workers' morale, a key element of productivity. In Japan, by contrast, nominal wages have been fairly flexible since 1998, believed to reflect wage cuts in nominal terms for so-called regular employees coupled with the increasing share of non-regular employees in the overall workforce (Kuroda and Yamamoto, 2014). Such flexibility is also facilitated by the fact that regular employees receive a substantial part of their pay in the form of bonuses, which tend to be more flexible than wages (Ito and Mishkin, 2006). Nominal wage flexibility may well have kept Japan's unemployment rate relatively low, i.e. consistently below 5.5%.

A second element is weaker potential growth against a backdrop of a trend decline of population and, more importantly, its ageing, which has reduced the working age population over the past two decades. Of course, a lower working age population implies fewer workers in the economy and lower potential growth. All other things being equal, the negative output gap remained relatively subdued, relieving some of the pressure on prices.

A final element is the clear upturn in government consumption and sustained private consumption, both of which were supportive of aggregate demand in the context of a balance sheet adjustment. Sustained private consumption may seem odd in an environment of negative wealth effects after the bubble burst, but Japanese households apparently opted to save less. Meanwhile,

more government spending offered fundamental support against the significant falls in private sector investment that clearly depressed growth from the early 1990s. This element shows the importance of sound coordination of monetary and fiscal policies at a time of low inflation and monetary policy restricted to extra stimulus.

### Prolonged

Deflation in Japan is a prolonged affair and has been a fact of economic life for over 15 years. In fact, it may well be argued that it has stopped being a temporary cyclical phenomenon and has taken on the guise of a fundamental economic development (Nakaso, 2014).

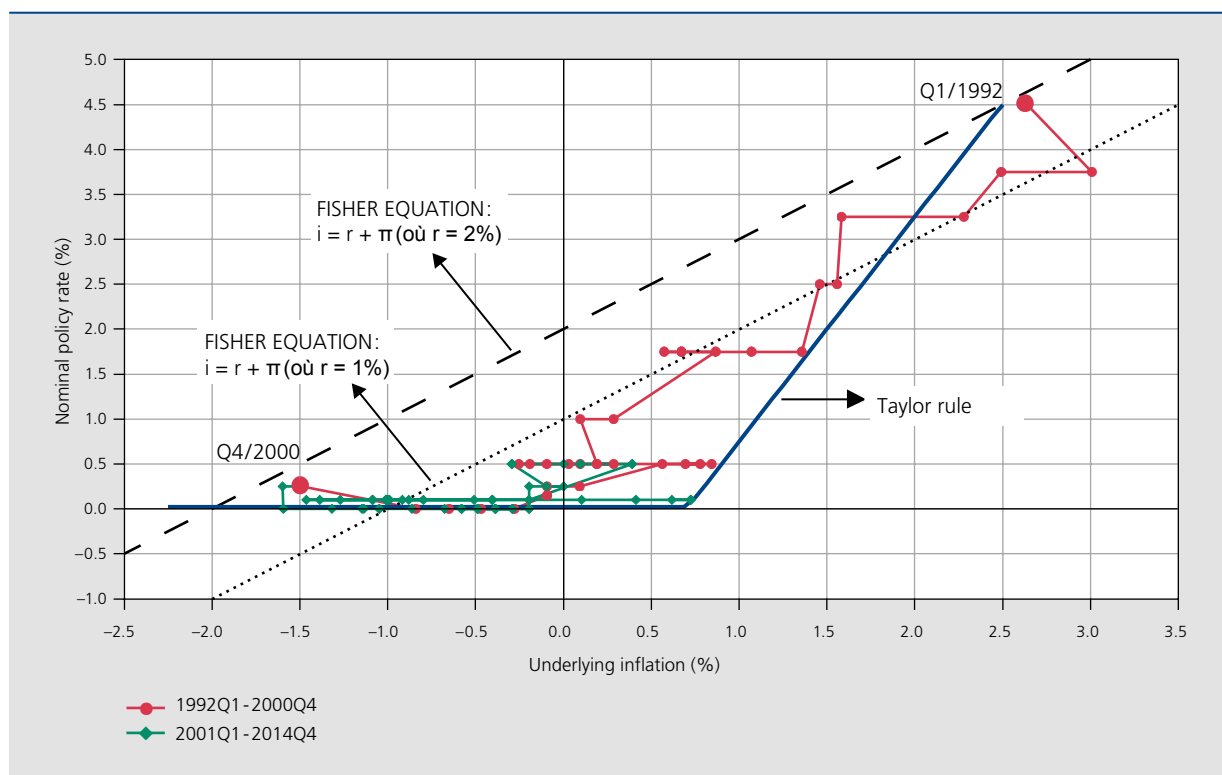
From this perspective, between the early 1990s and early 2000s Japan's economy went from an equilibrium of high nominal interest rates and relatively high inflation, to a new one of nominal interest rates close to zero and a deflationary environment, and has largely stayed around this new equilibrium since. Chart 7 is based on Bullard's analysis (2010), which suggests that the US economy was moving towards a similar deflationary equilibrium in the aftermath of the great recession. Bullard (2010) postulated a model around two possible equilibrium situations

for any economy: one in which inflation moves around the target set by the central bank and one in which inflation is negative, but nominal interest rates equal zero, i.e. a situation that also still ensures positive real interest rates.

The equilibrium points meet where the straight line representing the Fisher equation – which defines nominal interest rates as real interest rates plus the inflation rate – intersects with the curve reflecting the Taylor rule, which describes how monetary authorities adjust nominal rates in response to changes in the inflation rate. Around the inflationary equilibrium, the slope of the Taylor rule-derived curve is greater than the Fisher equation, as an adjustment of nominal rates causes a change in real rates. The Taylor curve becomes a horizontal line when a zero nominal interest rate is recorded: after this, it is no longer possible to respond to lower inflation by cutting policy rates.

At the top right equilibrium point, inflation has reached its target and there is no reason why nominal interest rates or the level of inflation would change in the absence of any shocks. Should inflation edge down relative to its target, the central bank might respond by lowering nominal interest rates more than proportionally. If it exceeds the

**CHART 7** POLICY RATES AND UNDERLYING INFLATION



Sources: Thomson Reuters Datastream, own calculations.

target, nominal rates can be raised more than proportionally, and any temporary imbalances will thus be adjusted through changes in real interest rates. This more or less reflects the Japanese economy in the first quarter of 1992: nominal rates at around 4.5 % with inflation at 2.5 % and potential growth at 2 %.

At the bottom left equilibrium point, nominal interest rates have hit their lowest possible levels – the central bank has lost the ability to stimulate the economy any further – and inflation is way below target and turning negative. Whether it edges up or down at this stage, inflation will remain far removed from its central bank target and nominal policy rates will be kept at zero – in fact, monetary policy has become passive. As the effective real interest rate reaches equilibrium, the economy will still grow around its potential, albeit that this has now fallen in the wake of demographic and productivity trends. Monetary policy has thus proven to be neutral in the long term: with time, the growth of real variables decouples from that of nominal variables such as inflation or nominal interest rates.

The transition from the first to the second equilibrium would seem to take place when the slope of the Taylor rule curve dips below one. In that event, the central bank is no longer able to implement a proportional response to a drop in inflation below its target and the economy is more likely to switch to the second equilibrium. The

Bank of Japan's relatively cautious monetary policy may be interpreted as too subdued a response to low inflation outcomes, with the effective real interest rate not being lowered sufficiently or swiftly enough.

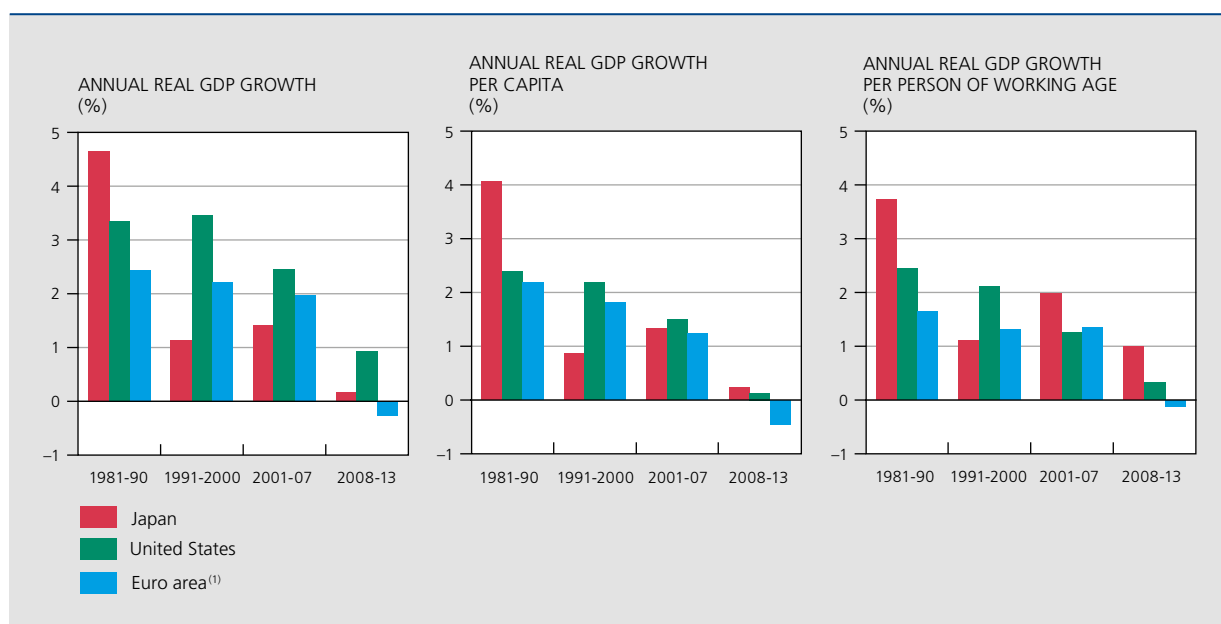
### 1.3 A new equilibrium: decent macroeconomic results but a fragile balance

As it turns out, then, real growth in the Japanese economy has more or less hovered around its potential level, suggesting that the new, slightly deflationary equilibrium reached in the early 2000s does not come at a cost. This begs two questions: why then are the past twenty-odd years after the bubble burst still referred to as the “lost decades” (e.g. Lipton, 2014)? And secondly: is this equilibrium stable and really free of cost?

#### Decent macroeconomic results

The “lost decades” term that has been used to describe the evolution of Japan's economy in the past twenty years can be traced back to the country's output gap remaining deeply negative since the early 1990s while economic growth was lower than in the United States or the euro area. However, a closer look reveals that, at least in part, “lost” is not quite the right adjective to use if we take into account the demographic trends in the archipelago.

CHART 8 REAL GDP GROWTH



Sources: OECD, own calculations.

(1) Six key euro area economies: Belgium, Germany, France, Italy, the Netherlands and Spain.

Two relevant indicators of the economic performance of advanced economies are real growth per capita and, more specifically, real growth per person of working age. Real per capita growth provides some insight into the way the material living standards of a population are developing, while real output per person of working age offers information about the ability of an economy to use its production potential efficiently. The first indicator shows Japan to have performed worse than the United States and the euro area in the 1990s, but this stopped being the case in the 2000s. What is more, Japan's relative performance would seem to have improved since the great recession started in 2008. Japan also did less well on real growth per person of working age in the 1990s – particularly when compared with the United States – but appears to have done significantly better than the other two economies since.

As it turns out, the real story behind Japan's less-than-brilliant performance on real economic growth over the past two decades is demographic trends. Factoring these in, the "lost decade" description so easily used to describe the Japanese archipelago in the 1990s should be taken with a pinch of salt, while it is totally inapt for the 2000s. These findings tie in with our observation above that the economy has struck a new balance, marked by lower inflation but growth in line with its potential.

### A fragile balance

Given the zero lower bound on nominal policy rates, a deflationary environment shackles a central bank and keeps it from stimulating economic activity and supporting inflation. This increases the danger that, when hit by a shock, an economy will slide into secular stagnation, in which economic growth is zero or sluggish as traditional monetary policies do not work (see NBB, 2015, pp. 50-52). Weaker economic growth in nominal terms also implies a greater risk to the sustainability of public debt, discussed later in this article. Against this backdrop, the equilibrium that has marked the Japanese economy since the early 2000s would appear fragile and potentially costly, even if it would seem not to come with any direct costs in real terms.

Theoretically, a range of macroeconomic and structural policy measures can help ward off the threat of secular stagnation. A first one is that the central bank sets an inflation target to pin down expectations and limit the risk of deflation. Central banks that already have an inflation target in place can increase their target if doing so does not erode their credibility. Non-conventional monetary policy instruments that can help contain long-term interest rates in the economy are a second course of action

– e.g. quantitative easing and forward guidance. A third way would be for a country to implement expansionary fiscal policies to support aggregate demand and reduce the negative output gap. Lastly, a country can implement structural reforms to bolster its growth potential. Such reforms may temporarily eat into aggregate demand and/or widen the negative output gap, but should boost growth in the longer term as economic resources are used more efficiently. Abenomics, the set of policies pursued by Japan's Prime Minister Shinzo Abe since 2013, comprises precisely these various elements.

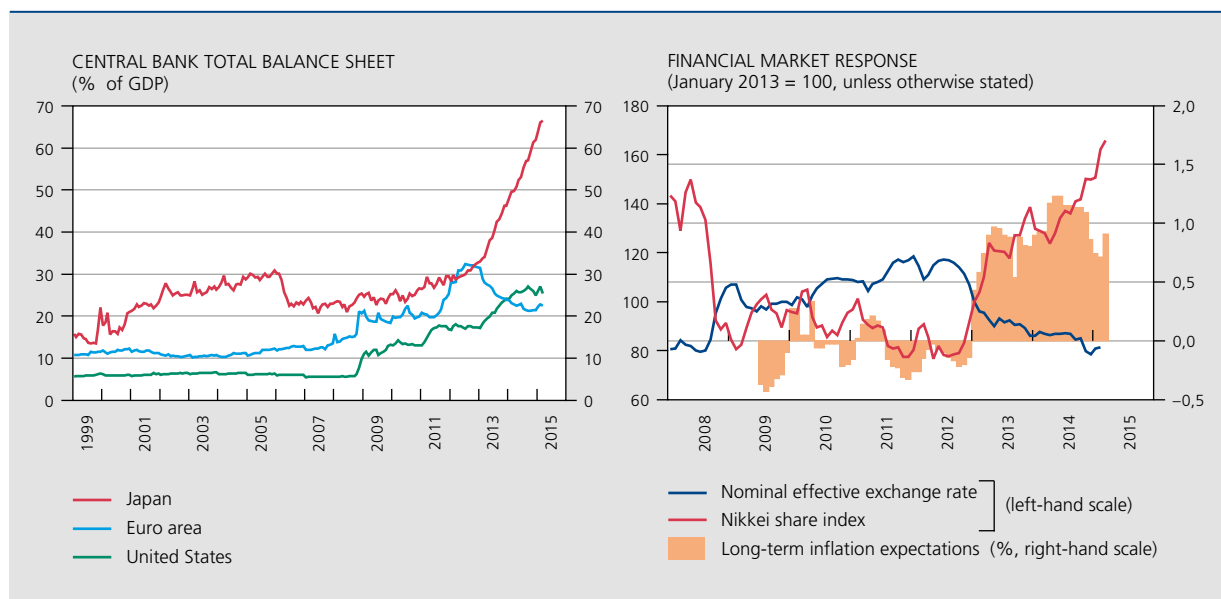
## 2. Abenomics

Abenomics, the economic programme launched in 2013 and named after Japan's Prime Minister Shinzo Abe, aims to end the protracted period of economic stagnation and deflation, while at the same time tackling head on the country's high and growing public debt. It breaks down into three 'arrows', the first of these relating to monetary policy and entailing a complete reversal in the monetary policy regime. In January 2013, the Bank of Japan introduced a 2% quantitative inflation target, and in April 2013 – after the appointment of Governor Haruhiko Kuroda – it launched its qualitative and quantitative easing (QQE) policy, its aim being to hit the inflation target by the end of 2015, meanwhile pushed back to the first half of 2016. The second arrow targets fiscal policy. While it is expansionary and supportive of growth in the short term, it should ultimately hone in on long-term fiscal consolidation, as sustainability of its public debt is one of the key risks facing the Japanese economy. Structural reforms make up the third arrow and are intended to support private sector investment and boost potential growth, dubbed the Japan Revitalisation Strategy by the Tokyo government in June 2013. A strategy update in June 2014 added an additional target of real GDP growth averaging 2% by 2022. This is the most crucial Abenomics arrow, as neither easy monetary policies nor expansionary fiscal policies on their own can get the economy onto a sustainably higher growth trajectory and ensure the sustainability of public debt.

### 2.1 Monetary policy

The 'first arrow' as set out in the Abenomics programme was a major departure from past monetary policies. The quantitative aspect of Bank of Japan's QQE programme aimed to double the monetary base within the space of two years, implying an increase of 50 000 billion yen annually; a figure raised in October 2014 to 80 000 billion yen per annum. These are massive liquidity injections into

**CHART 9** BANK OF JAPAN MONETARY POLICY



Source: Thomson Reuters Datastream.

the economy – over 60 % of GDP at this juncture – when compared with the expansion of central bank balance sheets recorded in other countries during the global financial crisis.

On the asset side – the qualitative aspect – the Bank of Japan primarily purchased government bonds, but also included private sector assets such as commercial paper, corporate bonds, exchange-traded funds (ETFs) and real estate investment trusts (REITs). Meanwhile, the maturities of government bonds so held were extended from a little under three years to about seven years, pushing the entire risk-free yield curve downwards. An open-ended commitment to actually achieve the inflation target is key to the credibility of the QQE programme, implying that the asset purchasing programme will not end until the target is met. Such a commitment should prevent what happened in 2006, when the then QE programme was discontinued while inflation was still negative – a decision exposing Japan to a slide-back into deflation in the event of any additional significant negative demand shocks. This duly happened in 2008 when the financial crisis erupted.

As hoped, the initial effect on inflation expectations was upwards and real interest rates fell, also as government bond purchases by the Bank of Japan pushed down nominal interest rates. However, inflation expectations stabilised at a level below the 2 % target, showing up a credibility deficit for the central bank. Over the course of 2014, inflation expectations fell, as it became clear that a

VAT increase would trip Japan back into a recession and as oil prices continued to move smartly downwards. At the end of October 2014, the Bank of Japan therefore decided additional stimulus was required; the subsequent drop in real interest rates combined with the depreciation of the Japanese yen eased monetary conditions, boosting competitiveness. Meanwhile, Japan's QQE programme caused share prices rise significantly, and some market watchers wonder whether the higher equity prices adequately reflect expected dividends, given that there have been no major upward revisions of growth prospects.

## 2.2 Fiscal policy

Fiscal policy, the second 'arrow', combines stimulus in the short term with consolidation in the medium to longer term, the aim being to achieve a balanced budget and stabilise the debt ratio by 2020. The initial phase in the country's fiscal consolidation was the increase in VAT rates, in two increments. The first of these, from 5 % to 8 %, took place in April 2014, and was immediately followed by an economic recession – a clear sign of the first key challenge in fiscal policies, i.e. reconciling the proposed fiscal consolidation with the achievement of the 2 % real growth target. The Japanese government handled this technical recession by providing additional fiscal stimulus at the end of 2014 and by deferring the second VAT increase (up to 10 %), jeopardising the proposed balanced budget by 2020.

The biggest challenge facing Abenomics and the Japanese economy in general is the sustainability of public debt. Despite the size of this debt, interest charges have remained relatively subdued thanks to massive purchases of government securities by the Bank of Japan and a persistent savings surplus in the private sector. That said, the sheer size of its public debt makes Japan vulnerable to any increases in interest rates. If Abenomics – with its inflation and real growth targets each at 2% – succeeds, an increase in nominal interest rates and interest charges is on the cards. The OECD (2015) simulated a range of scenarios in which the Japanese government does or does not implement additional cost-cutting measures to offset higher interest charges and in which both real growth and inflation are up. Simulations assuming that the Japanese government does not introduce any additional fiscal consolidation measures and that nominal growth averages 2.75% point to a surge in public debt to 400% of GDP by 2040. Interest rates would go up to 7% in that year to reflect high risk premiums. If counteracted by additional fiscal consolidation to the tune of around 7% of GDP – e.g. a VAT increase from 8% to 22% – the debt ratio would stabilise at today's steep levels or fall to 122% of GDP by 2040, depending on average nominal growth.

The key factors that have so far supported the sustainability of Japanese public debt are the home bias of Japanese investors and the private sector's savings surplus, which ties in with the current account surplus and which has led to a significant positive net international investment position.

Around 90% of Japanese government debt is held domestically. The economic literature has been at pains to adequately explain this 'home bias', i.e. that investors are willing to accept lower returns on domestic assets even risk-adjusted. Explanations suggested are aversion to exchange rate risks and prudential capital requirements, domestic government bonds being assigned low to no risk weightings (Hoshi and Ito, 2014). The bulk of Japanese government debt is held by domestic financial institutions (banks, insurers and pension funds), and the recent contraction of their share is virtually completely matched by the asset purchasing programme run by the central bank, which predominantly buys longer-dated issues. Greater – albeit still limited – external ownership since 2007 mainly reflects an interest in short-dated government paper (<1 year) as part of a flight to safety, after other governments also started issuing short-dated instruments at similarly low yields (Horioka *et al.*, 2013).

The savings behaviour of the Japanese in the past two decades has resulted in significant wealth creation, also

percolating through in a robustly positive net international investment position (at 74% of GDP in 2013). Recently, some shifts in savings behaviour have emerged that may undermine this excellent position from the perspective of public debt sustainability. In the past few years, Japan's corporations have been the main contributors to the private sector savings surplus, while the household savings ratio has fallen sharply and recently even dipped into negative territory as a percentage of disposable household income as a result of population ageing and cyclical factors such as the drop in real wages. In fact, to boost economic growth, corporations should scale down their savings surplus in favour of investment or higher wages. From a different perspective, the current account surplus is shrinking due to the trade deficit, which only partly reflects higher energy imports after the Fukushima nuclear disaster. As long as the current account balance is in surplus, marginal buyers of newly issued government debt can be residents – which they are very likely to be given the home bias already noted. This set-up might be jeopardised if the current account balance shrinks further.

### 2.3 Structural policy

The third and most important arrow in the Abenomics programme is the implementation of structural reforms. The demand-stimulating first and second arrows (monetary and fiscal policies) are expected to serve as an impetus to drag the Japanese economy out of the deflationary equilibrium it has been languishing in for over a decade. Whether or not the country will manage to slot into a sustainably higher growth path will depend on the effective implementation of structural reforms and how these benefit the potential growth of the Japanese economy in the medium to longer term. Structural reforms may also bring short-term rewards, as the prospect of higher productivity and higher incomes may spark extra investment and household spending (ECB, 2015).

The structural reforms under the Japan Revitalisation Strategy cover a wide range of areas: health care, agriculture, trade agreements, corporate governance, labour market, social security, pensions, tax reforms, energy and electoral reform. The main challenges facing the Revitalisation Strategy include a decline in the effective labour supply, Japan's further integration in the global economy and increasing productivity.

#### 2.3.1 Curbing the fall in effective labour supply

In Japan, the working age population has been shrinking since the mid-1990s. This trend is expected to continue in

the next few decades, and at an even faster pace than for the population at large, as the population ages faster and the dependency ratio shoots up. Put in numbers, the total population should contract from 127 million people today to less than 100 million in 2050 and the working age population looks set to fall from 78 million to 50.5 million in the same period.

Japan could slow the decline by encouraging more women to enter the workforce. If the activity rates of the male and female working populations, currently at 85 % and 66 %, remained at their 2014 levels, the total working population would fall to 38 million in 2050 compared with 59 million today. The activity rate is already high for men, so raising female workforce participation is the only way to put a brake on the decline. Were the female activity rate to rise by 1 percentage point per year to today's percentage for men, the fall in the total working population would slow to 43 million.

An important reason for Japanese women's low workforce participation is that less than 50 per cent return to work after giving birth, so the government's Revitalisation Strategy envisages an increase in the number of childcare places. What is more, many studies show an increase in the rate of births wherever more childcare facilities are available. Japanese women may also be encouraged to return to work if the government revises current personal income tax rules granting households sizeable tax relief for non-working spouses.

Another way to hold the working population steady is to relax the rules on immigration. Between 2001 and 2011, the number of foreigners as a percentage of the Japanese population merely inched ahead from 1.4 % to 1.6 %, while corporate surveys already reveal labour shortages. However, the Revitalisation Strategy does not identify any quantitative criteria for migration. Raising the employment rate for older employees may also make an important difference, as countless Japanese corporations currently impose a compulsory retirement age of 60, often in keeping with age-based pay scales.

### 2.3.2 Japan's integration into the global economy

Whereas in the 1980s Japan was right at the frontier of global technology and enjoyed a competitive edge, this is no longer the case. Broader measures of competitiveness such as the international competitiveness indicator of the International Institute for Management Development (IMD) put Japan in 27<sup>th</sup> place in 2012 (out of 59 countries), down from 1<sup>st</sup> place between 1989 and 1993. Over the past two decades, Japan has seen its share of world trade – as measured by exports – fall from 10 % to 4 %,

while its terms of trade have also worsened significantly as its export prices have been hit by competition from emerging Asian countries.

The aim of Japan's Revitalisation Strategy is to conduct 70 % of its total trade with countries with which it has Economic Partnership Agreements; its 14 agreements currently account for some 25 % of total Japanese trade. The country is looking to close a new free trade agreement – the Trans-Pacific Partnership – as well as additional agreements with key trading partners such as the United States, China and the European Union. The services sector, for one, offers plenty of scope for international opening-up and for positive productivity effects as a result. Importantly, protection of the agricultural sector is being relaxed significantly for the first time ever.

Further freeing up trade should also attract foreign direct investment. Japanese companies may boast positions across the world, but the country's domestic stock of foreign direct investment is one of the lowest in the developed economies (less than 4 % of GDP, compared with an OECD average of 35 %). Abe's Revitalisation Strategy is looking to double such inward investment by 2020. Foreign companies cite a number of obstacles for foreign direct investment into Japan: low M&A levels, high corporation tax, an unclear regulatory framework, high employment protection and rules hampering the immigration of foreign workers (European Business Council in Japan (EBC), 2014).

### 2.3.3 Increasing productivity

Aside from opening up the Japanese economy to global competition, the Revitalisation Strategy also aims to boost productivity by improving the corporate governance framework and aligning it to standard OECD practices. Reducing cross-shareholdings and encouraging/imposing the inclusion of foreigners in management teams and boards are two such changes.

Contrary to the oft-cited allegation that all Japanese are middle class, inequality has risen sharply in the past 30 years (Aoyagi *et al.*, 2015). The labour market in Japan is increasingly a two-track one, with highly protected employees on regular contracts and 'non-regular' employees on the other track. The latter group's share of the labour market has grown from 20 % in 1980 to 35 % in 2013, and consists mostly of women and older workers. In addition to significant wage differentials – they typically earn between one-third and a half less than regular workers – these non-regulars enjoy less job security, fewer social security benefits and less training, which seriously harms their labour productivity.

### 3. Lessons for the euro area

This final section reviews a number of lessons that may be drawn from the Japanese experience of the past 25 years and that might benefit the euro area. Three key conclusions are immediately obvious: that it is better to prevent financial crises rather than to cure them afterwards; that inflation expectations need to remain firmly anchored, and that the authorities should move promptly and in a coordinated fashion while focusing on both supply and demand. Japan's reality has also illustrated that the cost of deflation reflects the specific features of an economy, and in particular its nominal flexibility.

#### Crisis prevention rather than cure

Nearly seven years after the great recession took hold in the United States and the euro area, it has become painfully clear that recessions sparked by financial crises last for a long time and run deep, another case in point being Japan in the 1990s. Closer investigation shows that these are no isolated instances: Taylor (2015) finds that recessions following financial crises tend to be deeper and more protracted than recessions resulting from other shocks.

It may sound self-evident in today's world that it is important to prevent a financial crisis. However, it would seem that policy-makers had learned little from the events in Japan, which had largely proved how damaging the repercussions of a financial bubble bursting are.

In the past couple of years, both the European and the Belgian institutional frameworks have been expanded, with a clear shift in emphasis to the macroprudential aspects of supervision: regulators are not just there to ensure the health of the individual financial institutions, they also need to guard the systemic aspect of financial stability. New institutions have been put in place to oversee the implementation of macroprudential policies: at European level, the European Systemic Risk Board (ESRB) has been established and the ECB's mandate under the single supervisory mechanism (SSM) has been expanded, and the NBB has been tasked with macroprudential policy at the domestic level. This enhanced focus on the financial system at large should help avert future financial crises and mitigate their costs.

The Japanese experience also shows that any financial crisis, if it cannot be avoided, requires a very rapid restructuring of the financial sector so as to enable it to fully play its financial intermediation role. In Japan, the lack of bold action by the authorities to resolve the problems in the banking industry likely caused the crisis to drag on. Banks in the euro area were recapitalised much more quickly and

the restructuring of its banking sector entered a crucial phase by the end of 2014: the release, in October 2014, of the findings of the comprehensive assessment of the balance sheets of the major euro area banks was crucial to speed up the recapitalisation of the sector.

#### Keeping inflation expectations firmly anchored

The Japanese experience shows that once deflation becomes embedded into an economy's DNA, it is difficult to combat. The Bank of Japan did not get around to setting an explicit inflation target until January 2013 and its communications regularly caused doubts about its will and even its ability to guarantee price stability. For a long time, it also dragged its feet about any further easing of its monetary policy. This is not a good way to keep inflation expectations firmly anchored – a crucial prerequisite if a central bank is to influence real interest rates and readjust its monetary policy course.

The Japanese situation is in sharp contrast with conditions in the euro area. The Eurosystem was given a mandate focused on price stability, which the ECB Governing Council followed up with a precise definition of being an increase in the harmonised index of consumer prices (HICP) of below, but close to, 2% in the medium term, a target that serves as a benchmark to firmly anchor inflation expectations. In the recent crisis, the Eurosystem consistently referred to its mandate and objectives to ensure price stability in the medium term, but although it cut key interest rates faster than the Bank of Japan in its day, it was less quick to respond than the US Federal Reserve.

In the area of unconventional monetary policy measures, the Eurosystem proved more willing to work its balance sheet at the time of the great recession than the Bank of Japan had been in its time of crisis. In the early stages of the crises – i.e. while the banking troubles raged and at the start of the sovereign debt scare – the Eurosystem used its balance sheet to preserve the transmission mechanism of its monetary policy. The euro area's banks were able to tap the central bank for as much liquidity as they needed, provided they had adequate collateral, and the balance sheet mainly moved in keeping with the demand for refinancing from the Eurosystem's counterparties. Since the end of 2014 and more specifically since March 2015, the Eurosystem has been working its balance sheet more proactively to help adjust the monetary policy stance against the backdrop of easing financial tension, the fall in inflation and inflation expectations, and the lower bound that key interest rates have now reached. Every month since March 2015, the Eurosystem has been purchasing €60 billion worth of government bonds, ABSs and covered bonds in the markets and intends continuing



to do so until September 2016, and in any case until the Governing Council sees a sustained adjustment in the path of inflation that is consistent with its target. Clearly, the Eurosystem has demonstrated its commitment to achieve its objective.

The Japanese experience suggests that in the absence of a swift and forceful response in the early stages, extreme measures will be needed at a later date to get inflation expectations back on track, as evidenced by the expansion of the Bank of Japan's balance sheet, which accounted for nearly 70% of GDP in the recent past. And the story of the United States also highlights the importance of swift and decisive action: the country that moved promptly on monetary policy, even before inflation expectations could be said to be adrift, has since been able to discontinue its asset purchases and is generally expected to raise interest rates in the near future. The Eurosystem's current policies would appear to be a mix of prevention and cure: long-term inflation expectations have come down somewhat, but not to the same extent as observed in Japan.

#### Cost of deflation: reflecting the features of the economy

Japan may have gone through a lengthy period of deflation, but it never did get sucked into a deflationary spiral. Its unemployment rate remained low – when compared with the euro area at least – and its per capita GDP performance has been comparable or even better than that in the euro area or the United States since the 2000s. All this would seem to suggest that a period of low inflation or deflation does not necessarily involve high real costs (see Borio *et al.*, 2015), corroborating the idea that monetary variables – money supply, nominal interest rates – are neutral in the long term and that real variables are determined by real factors such as the preferences of economic agents, total factor productivity and population growth.

Even though monetary variables are neutral in the long term, it is generally assumed that these do have a real short-term impact, reflecting the fact that a large number of prices in the economy (of products and services, but also of labour or debt) are set in nominal terms over a fairly lengthy period. Shocks affecting the general price level therefore cause undesirable – i.e. inefficient – changes in the relative prices of individual products and services, of labour and of nominal debt.

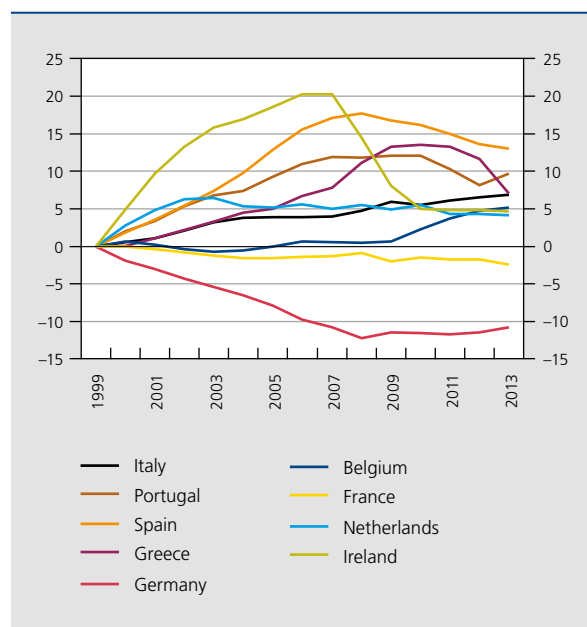
The actual impact of these shocks depends on the flexibility of the nominal variables in the economy: the more flexible prices and nominal wages are, and the greater

the margin of variation of nominal interest rates to absorb shocks, the smaller the effect of any changes in general price levels on real variables (NBB, 2015). This is a crucial aspect of any assessment of the possible repercussions of an unforeseen period of disinflation.

When it comes to nominal wages, the institutional wage-setting framework in Japan appears more flexible than in the euro area (Du Caju *et al.*, 2009). From 1998, wages in Japan have displayed fairly strong downward flexibility in contrast to the relative downward rigidity that euro area wages continue to show in the current low inflation environment (IMF, 2014). This is particularly true for a number of countries that were hit hard by the crisis – Spain comes to mind here, although others such as Ireland have fared better. ECB research has found that corporations in the euro area were generally reluctant to reduce wages during the great recession and opted instead for the redundancies route (Fabiani *et al.*, 2015). As a result, the real cost of disinflation or deflation – particularly in terms of rising unemployment – would be higher in the euro area than it is in Japan.

And there is more to the downward nominal wage rigidity in the euro area: judging by relative price trends, competitiveness in quite a few countries deteriorated rapidly and sometimes also strongly in the run-up to the crisis. With a monetary union in place, these economies now have to cut their relative nominal prices and

**CHART 10 GDP DEFLATOR**  
(cumulative difference from the euro area average since 1999)



Source: Thomson Reuters Datastream.

wages if they are to turn the tide, but find themselves up against the downward nominal rigidities of these variables. If inflation stays low in the other euro area countries as well, the danger is that adjustments will proceed only very slowly. A rapid recovery in competitiveness of countries that recorded excessive increases in relative prices and wages before the crisis would accelerate if the other countries report higher inflation, whereas average inflation in the euro area would stay close to 2%. A positive rate of inflation close to the ECB's target contributes to the smooth functioning of the Economic and Monetary Union, as this helps to correct any imbalances and has its part to play in managing debt. It should be noted that the high external debt levels of various countries in the euro area also mean that a period of low inflation would hit the euro area harder in real terms than it did Japan, which enjoys a net external creditor position. This is particularly true for the most highly indebted countries, which are most in need of a downward adjustment of their relative prices and wages. The fairly close correlation between the net international investment position and underlying inflation developments in the countries of the euro area (see chart 11) captures the adjustments currently taking place. The more countries that need to boost their competitiveness are compelled to adjust their wages and prices downwards, the more the real value of their debt will tend to rise and the bigger the risk that a drop in relative prices will have negative real effects.

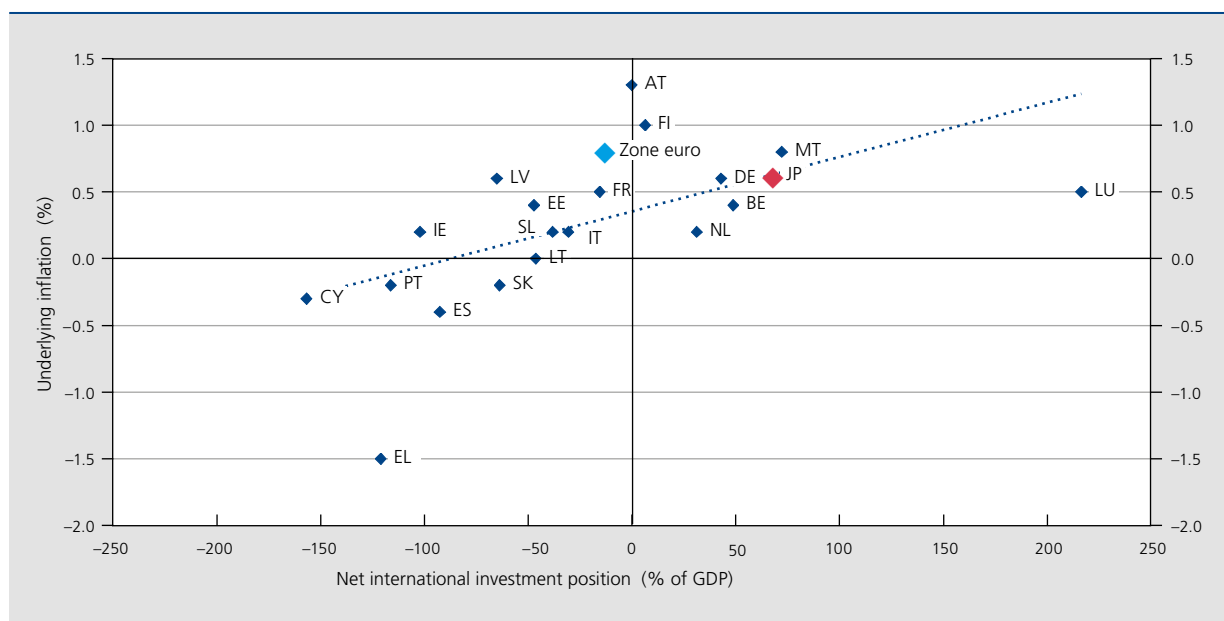
### Prompt and coordinated action by way of supply and demand policies

The Japanese experience demonstrates the desirability of prompt, coordinated and consistent policy responses in the event of a balance sheet recession. What is more, all areas of economic policy – monetary and fiscal policies and structural reforms – need to be activated to bolster both supply and aggregate demand. Given the potentially high real cost of a period of low inflation or deflation, this would appear to hold even more true for the euro area.

### Demand

Any expansionary demand policies require monetary policy to be supported by appropriate fiscal measures. With key interest rates at rock bottom, a comprehensive asset purchase programme in place and other non-conventional measures already taken, the room for manoeuvre for monetary policy in the euro area has significantly narrowed – and fiscal policies have taken on an important role. It is essential – but also complex – to navigate just the right stimulative course and to do so without endangering the sustainability of public debt in the long term. The question then becomes not only whether domestic policy measures are on the right track but also whether applicable institutional arrangements are the right ones to push fiscal policies for the euro area at large in the right direction.

**CHART 11** NET INTERNATIONAL INVESTMENT POSITION (NIIP) AND UNDERLYING INFLATION  
(NIIP in 2013 and average annual underlying inflation since January 2014)



Sources: Eurostat, Japan Ministry of Finance, Thomson Reuters Datastream, ECB.

The need for more coordinated macroeconomic policies in the euro area – between monetary and fiscal policies, but also between the various countries – has become evident over the past few years in the way the financial balances of the individual sectors and countries of the euro area have developed. Just like in Japan from the 1990s, private sector deficits have changed into surpluses since the 2008 crisis while government sector deficits have clearly widened. A key difference with Japan is the sizeable contraction of the negative financial balances of the euro area governments in the wake of the sovereign debt crisis. This process of fiscal consolidation, coupled with the still sizeable surpluses in the private sector, have turned the euro area at large into a net saver, depressing domestic demand and therefore also inflation. The euro area savings surplus can mainly be traced back to countries that used to be running deficits and that were compelled to slash their external funding requirements, while most countries already in the black held on to their surpluses. The effect of these highly asymmetrical adjustments has been to squeeze domestic demand.

Although structural reforms are typically regarded as supply-side economic measures, they may also have a role to play in supporting demand. This is particularly the case if they promote investment, which accounts for today's demand as well as tomorrow's supply. More indirectly,

structural reforms open up the prospect that incomes will rise and so also support demand.

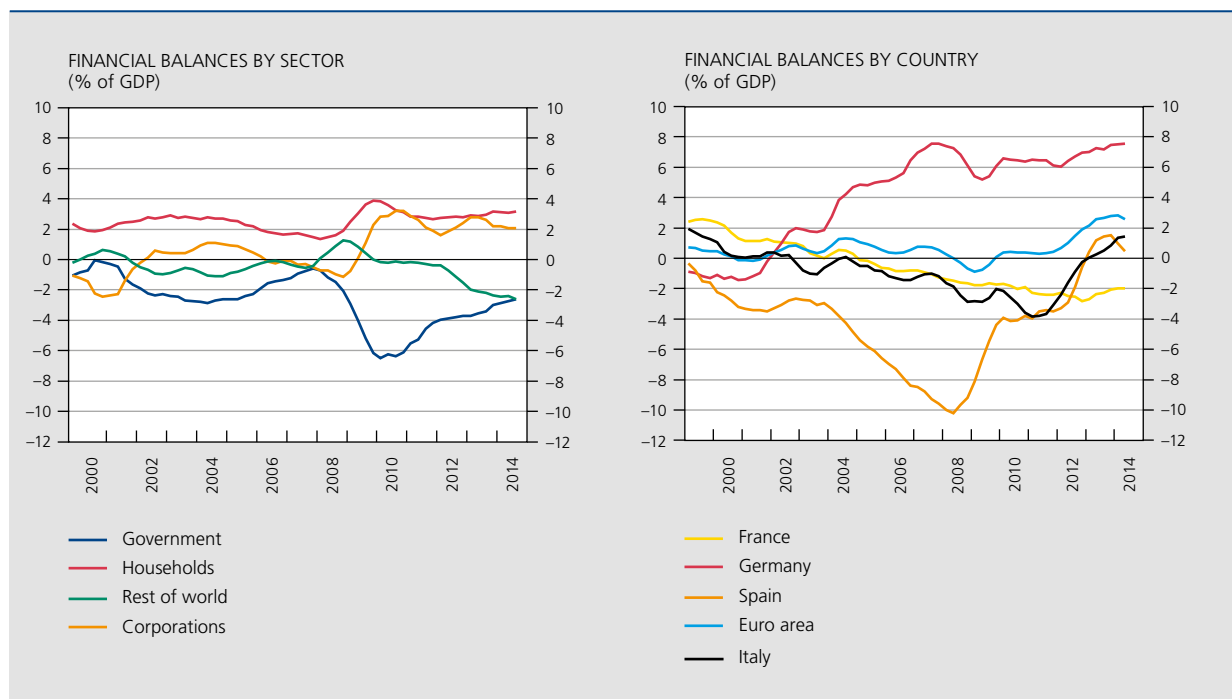
### Supply

Apart from temporarily boosting aggregate demand, structural reforms should also be implemented on the supply side if economies are to pull themselves out of crisis situations and keep up their growth potential in the longer term.

Such reforms typically concern the labour and product markets and tend to introduce measures contributing to a more business-friendly climate. By enhancing flexibility, they should encourage optimum resource allocation and use of production factors, while also addressing structural economic developments such as population ageing.

In the short term, some such reforms may drag down inflation and push up real interest rates, curbing growth in the process. If they are coupled with robust demand policies, the expected increase in future incomes should logically offset the deflationary short-term effects – even amply so – and thus support the recovery. It should be noted that this observation serves to underline the key importance of appropriate demand policies and the selection of structural reforms.

**CHART 12** FINANCIAL BALANCES IN THE EURO AREA



Source: OECD.

Although demographic trends are still behind those in Japan, the euro area population is ageing as well. All the more reason, then, to implement reforms that bolster labour force participation, the employment rate and productivity in order to keep up living standards and keep debts manageable. Moreover, higher productivity and a resultant increase in real equilibrium interest rates would ward off the danger of secular stagnation.

Early signs suggest that the structural reforms implemented in the euro area since the crisis first broke are beginning to pay off. Wages and prices would appear to have become more flexible, encouraging a more efficient allocation of resources, while some countries are reporting favourable effects on productivity (ECB, 2015). And lastly, countries that have implemented reforms generally also record improved export results. Despite distinct progress since 2008 – and particularly in those countries hardest hit by the crisis – there would appear to be ample margin for improvement still, with significant differences between euro area countries.

## Conclusion

In the early 1990s, a major financial and property bubble burst in Japan and its economy suddenly faced the twin challenges of a balance sheet recession and a banking crisis. Its balance sheet recession reflected a significant change in savings behaviour, with corporations preferring to pay down their debt rather than spend or invest, and the government clearly had to intervene to prop up aggregate demand with expansionary policies. At the time, the banking crisis was already in the making, even though its full force did not erupt until 1997, when the Asian crisis hit. This crisis, which caused the demise of key financial institutions, finally forced the country into recognising the problem of non-performing loans, which had been dragging down the real economy. The banking industry ended up being recapitalised by the government.

After these heavy negative shocks, Japan embarked on a period of gradual disinflation in the early 1990s, followed by persistent deflation from halfway through the decade. Two main factors caused the inexorable slide: lower inflation expectations due to the Bank of Japan's lack of credibility and its failure to act resolutely on combating deflation, and the negative output gap, caused by the numerous shocks that buffeted the Japanese economy as well as the drop in real equilibrium interest rates, which eroded the stabilising capability of monetary policy all the more as inflation expectations came down.

Deflation in Japan turned out to be a widespread and unexpected phenomenon, but it remained moderate and persisted for a long time – all of which suggests that between the early 1990s and the early 2000s the Japanese economy evolved to a new equilibrium with nominal interest rates close to zero and negative inflation, but with a real pace of growth in keeping with its potential level much as before. These observations are backed up by the analysis of real growth per capita and per person of working age, and the country's figures have proved quite good since the 2000s when compared with those for the euro area and the United States. Obviously, then, the "lost decade" epithet attributed to Japan in the 1990s needs putting in perspective, and is wholly inapt for the 2000s. Although the Japanese economy appears to be growing at its potential, its newly achieved equilibrium is not yet completely free of potential cost. Because of its deflationary aspect, the central bank has limited room to support economic activity in the event of any shocks, increasing the risk of secular stagnation.

Abenomics, the economic programme introduced in April of 2013, aims to end the protracted period of deflation and to boost the economy by making Japan's public debt sustainable in the longer term. The programme breaks down into three 'arrows': expansionary monetary policy, growth-supporting fiscal policies in the short term but with the aim of also achieving long-term fiscal consolidation, and wide-ranging structural reforms to help the Japanese economy evolve to a higher growth potential.

There are three key lessons to learn from the Japanese experience of the past 25 years. The first is that it is better to prevent financial crises rather than cure them after they materialise. This may sound evident in today's world, but the great recession suggests that policy-makers had learned little from the events in Japan. That said, post-crisis, the euro area's banking sector was restructured quite a bit faster than it had been in Japan. A second important lesson is that inflation expectations should remain firmly anchored: once deflation becomes embedded into an economy's DNA, it is difficult to fight and extreme measures are then needed to get inflation expectations back on track. The third lesson is that a balance sheet recession requires prompt and coordinated action to achieve the maximum effect for any measures taken and to facilitate necessary adjustments. Joint macroeconomic policies should be put in place to bolster both supply and demand. Finally, it should be noted that Japan's experience has shown that the cost of deflation depends on the specific features of an economy and, in particular, its nominal flexibility. To the extent that the latter seems lower in the euro area and since the loss of the exchange

rate instrument requires relative domestic prices to be adjusted to correct any loss of competitiveness, deflation costs threaten to be higher. The need to ward off any risk of deflation in the euro area would thus appear to be even larger.

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