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Economic Research:

The Bank Of Japan Breaks New Ground Yet Again--And It May Work This Time

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Never one to underdeliver, the Kuroda-led Bank of Japan (BOJ) surprised yet again on Sept. 21 by making some fundamental changes to its monetary policy framework when it released the results of its "comprehensive assessment" of its policies and their efforts to date. It broke new ground in monetary policymaking in the process. In introducing "Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control," the BOJ is now targeting the nominal level of the 10-year Japanese government bond (JGB) yield, at around zero percent to start with, as well as the anchor rate of the yield curve (the "overnight" rate) (currently minus 10 basis points)--and it's committing to "overshoot" its inflation target of 2% (1).

No other central bank targets both the level and the slope of the yield curve, and no other central bank has explicitly committed to overshoot its inflation target. With its latest moves, the BOJ is adding more complexity to a framework that it had already made quite complicated with its Jan. 29, 2016 decision to introduce a negative interest rate. However, this latest development shows the BOJ is continuing its "take no prisoners" approach when it comes to achieving its inflation target. And with government fiscal policy now cooperating more and the Japanese labor market looking increasingly tight, it stands a good chance of succeeding.

The implications of what the BOJ has announced go way beyond Japan's shores: Recent history shows that, when it comes to unconventional monetary policy, where the BOJ ventures, other major central banks often follow in due course. Nothing dictates that this must be the case this time, but central bank watchers worldwide should take note.

Overview

- The monetary policy equivalent of a Copernican revolution occurred at the Bank of Japan when the governors changed in March 2013. The Shirakawa-led BOJ professed that deflation was caused by falling real potential growth, so was not amenable to monetary policy cure; the Kuroda-led BOJ argued that monetary policy could control inflation and proceeded to show how.
- With its new policy framework, the BOJ is doubling down, not throwing in the towel, on its attempt to achieve its inflation target. Although increasingly complicated, the new framework gives the BOJ considerable operational flexibility.
- By continuing with QE but now targeting long-term yields, the BOJ appears to be attempting the impossible: to control both the quantity of bonds in the public's hands and their price. In practice, price will take precedence over quantity.
- The commitment to overshoot the inflation target is unlikely to be credible to the public, given the difficulty of a central bank precommitting to actions it would prefer to renege on when the time comes to actually implement them.
- History shows that when the BOJ pioneers unconventional monetary policies, as it's doing again, other central banks eventually follow suit.

Putting The BOJ's Latest Move In Context

The shift in policy at the BOJ after Haruhiko Kuroda took over from Masaaki Shirakawa as governor in March 2013 was the monetary policy equivalent of a Copernican revolution.

The Shirakawa-led BOJ professed that the cause of deflation in Japan was steadily declining real potential growth and, therefore, wasn't amenable to a monetary policy cure. Not believing that monetary policy could overcome deflation, the Shirakawa-led BOJ did not implement very aggressive monetary policy. Thus, for instance, at the time Mr. Kuroda took over as governor from Mr. Shirakawa, the BOJ's balance sheet was 53% larger than it was when the global financial system suffered a massive cardiac arrest in September 2008, compared to a 247% increase in the size of the Federal Reserve's balance sheet in the same period.

Mr. Kuroda, on the other hand, embraced the logic of the standard inflation-targeting framework and argued that the BOJ could use monetary policy to end deflation and achieve 2% inflation. The key would be to change the public's inflation expectations. To do that, first the BOJ would have to tell the public that it believed it could control inflation and then back up that new message with policy action. Thus the BOJ launched "Quantitative and Qualitative Monetary Easing" on Apr. 4, 2013--committing to expand the monetary base initially by ¥60 trillion-¥70 trillion per year and later (following the Oct. 31, 2014 decision) by ¥80 trillion. Since then, the BOJ's balance sheet has increased by 173%. The bank's thinking was that QQE would lower real interest rates substantially by simultaneously raising inflation expectations and lowering nominal interest rates. This would stimulate economic activity and raise actual inflation, which in turn would support a rise in the public's inflation expectations toward the BOJ's target. All sound thinking.

Although the Kuroda-inspired policy shift was to be applauded, three factors were always going to make it an uphill battle for the BOJ to achieve its inflation target, particularly in the ambitious time frame of "about two years." First, it started with a huge credibility deficit, which handicapped its ability to change the public's inflation expectations (2). Second, QE is not a very potent monetary policy tool (3). And third, critically, a fiscal tightening was looming in the form of the April 2014 hike in Japan's consumption tax, something that the BOJ's policy shift gave cover for the government to proceed with. In the event, that fiscal tightening pushed the Japanese economy into a mild recession, stymieing the BOJ's attempts to reflate.

The BOJ added a major tweak to its QQE framework in January of this year by announcing "QQE with a Negative Interest Rate," charging 10 basis points (bps) on a (relatively small) portion of the excess reserves that it creates with QQE (4). The thinking was that, in the spirit of the expectations theory of the term structure of interest rates (5), a negative overnight rate would put downward pressure on the entire yield curve, which it did, to the point of inverting it into negative territory out to 10 years.

There were two flies in the ointment, however. The flattening of the yield curve and its being pushed into negative territory put a squeeze on bank lending margins. Monetary policy works largely through the banking system, so this raised concerns, voiced more generally about negative interest rate policy, that the BOJ's attempts to ease monetary policy could turn out to be counterproductive if it ended up impairing banks' willingness to lend. And after initially weakening for a couple of days, the yen strengthened significantly, producing an unwelcome tightening of financial conditions and reducing the competitiveness of Japanese exports.

All of this set the stage for the "comprehensive assessment of the developments in economic activity and prices under 'Quantitative and Qualitative Monetary Easing (QQE)' and 'QQE with a Negative Interest Rate'" that the BOJ announced on July 29.

Doubling Down, Not Throwing In The Towel

It wasn't clear before the BOJ released its comprehensive assessment what exactly it was up to. After all, if the BOJ was just going to assess the effectiveness of its policies--something that a central bank would be expected to do as a matter of course--why would it be necessary to announce that fact with such fanfare, keeping the markets on tenterhooks for close to two months? This led to speculation that the BOJ was going to use the comprehensive assessment to wriggle out of its QQE or abandon what many saw as its ill-fated experiment with negative interest rate policy. Indeed, while negative interest rates have survived, some have interpreted the outcome as signaling the end of QE or at least the beginning of the end.

But although the Kuroda-led BOJ made some substantive changes to the policy framework, taken at face value at least, it's clearly full steam ahead with the bank's reflation efforts. For those who see confident communication and aggressive monetary policy action as being key to Japan returning to the league of mildly inflating nations rather than deflating ones, this should be a source of relief.

Here are the main elements of what the BOJ decided with its new framework of "Quantitative and Qualitative Monetary Easing with Yield Curve Control":

- Henceforth, the BOJ will seek to control both the short-term (overnight) interest rate and the 10-year JGB nominal yield, aiming initially for these to be minus 10 bps and "around zero percent," respectively. (6)
- The BOJ expects to purchase JGBs "more or less in line with the current pace" (about ¥80 trillion per year). It abolished the guideline for the average remaining maturity of JGBs that it buys (previously seven to 12 years).
- It will continue to purchase exchange-traded equity funds (ETFs) and Japan real estate investment trusts (J-REITs) at the preexisting annual rates of ¥6 trillion and ¥900 billion, respectively (and maintain the amount of commercial paper and corporate bonds held at their preexisting levels of ¥2.2 trillion and ¥3.2 trillion, respectively).
- The BOJ introduced two new tools of market operations: outright purchases of JGBs with yields set by it and operations to supply funds at fixed rates with maturities of up to 10 years (previously one year).
- The BOJ will continue with "QQE with Yield Curve Control" until it achieves its 2% inflation target in a stable way. Specifically, it will continue with its policy of expanding the monetary base until the inflation rate of the consumer price index (excluding fresh food) "exceeds … 2 percent and stays above the target in a stable manner."

This doesn't sound like a central bank that's backing down.

Making Sense Of The New Framework

That said, the BOJ's new policy framework raises as many questions as the comprehensive assessment answers.

First of all, why did the BOJ feel the need to "strengthen" its existing framework by adding the two new elements of targeting a point on the long end of the yield curve and committing to overshoot on inflation? There are two main substantive differences between the old and new framework. Yes, the BOJ is keeping the absolute level of yields very low, consistent with wanting to stimulate the economy. But in a nod to Japan's banks and the need to keep financial intermediation intact, the BOJ is now targeting a positively sloped yield curve, helping banks to maintain positive lending margins. Second, the commitment to overshoot the inflation target is an attempt to raise the public's inflation expectations, in line with the finding of the comprehensive assessment that "many indicators of inflation expectations have weakened" since summer 2015.

A second question is: Does the new framework make sense? On the surface, the BOJ appears to be trying to achieve the impossible: set both the quantity of JGBs in the hands of the private sector and their price (yield). When it comes to the overnight interest rate, a central bank like the BOJ can set both the quantity of reserves (deposits of financial institutions at the central bank) and the interest rate (7). Having set the amount of (excess) reserves, the central bank can also set the interest rate on those reserves by paying interest on reserves (8).

But this doesn't work further out the yield curve. A central bank can determine the amount outstanding of bonds of a certain remaining maturity by varying its bond purchases or sales (open-market operations or QE). It can (presumably) set a floor on the price (a ceiling on the yield) for such bonds by standing ready to buy unlimited amounts of those bonds at that price. It can (presumably) set a ceiling on the price (a floor on the yield) for such bonds by standing ready to sell unlimited amounts of those bonds at that price, until of course it runs out of those bonds (9). But it cannot do both: determine how many bonds (of a given maturity) there will be in the hands of the public and independently set their market price. One of those will generally have to give.

Up until now, under QQE and then under "QQE with Negative Interest Rates," the BOJ has controlled the amount of bonds outstanding (absorbing about ¥80 trillion a year since November 2014). It has done so hoping to influence long-term yields, but it has not set a level or attempted to do so. Long-term yields have been determined by the trading and investment decisions of market participants, taking into account the BOJ's actual and expected monetary policy and its actual and expected effects on the economy and inflation.

Quantity And Price: Is The BOJ Trying To Have Its Cake And Eat It Too?

The latest announcement of the BOJ is quite confusing on this point. As suggested by the name of the framework ("Quantitative and Qualitative Easing with Yield Curve Control"), it gives the impression that the BOJ believes that it can simultaneously set the quantity of long-term bonds (in the hands of the public) and their price (yield). That's also indicated by the BOJ's reference to targeting the 10-year JGB yield at around zero percent and continuing to purchase about of ¥80 trillion of JGBs. And in explaining the background to its introducing yield curve control, the BOJ states: "The experience so far with negative interest rate policy shows that a combination of the negative interest rate on current account balances at the Bank and JGB purchases is effective for yield curve control."

Abolishing the target for the average remaining maturity of JGBs purchased does give the BOJ flexibility in terms of how it distributes its JGB purchases across the entire yield curve, which should increase its ability to target 10-year yields. But the flaw in the above assertion is that the experience to date is not strictly relevant to the question of yield curve control because the BOJ has not been attempting to control the yield curve, in the sense of setting a target for the 10-year rate.

All of this raises a third question: How will the framework operate in practice? To form a view on that, a couple of things are worth keeping in mind. First, although the BOJ doesn't make this point very clear, the yield-curve control (targeting of the two points on the yield curve) takes precedence over the JGB purchases and monetary base expansion, if one of them has to give, which is likely. The "guideline for market operations [between meetings] specifies a short-term policy interest rate and a target level of a long-term interest rate," said the BOJ. The amount of JGB purchases isn't a target but rather a tool to achieve the target, and it's an expected amount (akin to "guidance") not a commitment.

In this regard, here's a key footnote in the announcement: "In case of a spike in interest rates, the Bank stands ready to conduct fixed-rate JGB purchase operations--for example, those with regard to 10-year and 20-year JGB yields--in order to prevent the yield curve from deviating substantially from the current levels," the "current levels" being presumably the target level.

Further indication that BOJ is hoping to have its cake and eat it too when it comes to quantity and price is provided by its specification of "possible options for additional easing." "The Bank can cut the short-term policy interest rate and the target level of a long-term interest rate, which are two key benchmark rates for yield curve control. It is also possible for the Bank to expand asset purchases as has been the case since the introduction of QQE. Moreover, if the situation warrants it, an acceleration of expansion of the monetary base may also be an option." But these can't all be independent variables.

Second, the overnight and long-term interest rate targets the BOJ has set are in place only until the next policy board meeting, as is the guidance on the expected JGB purchases (and other asset purchases). At every meeting, the interest rate decisions are up for grabs, and the JGB purchase guidance can be tweaked. Again, this gives the BOJ additional flexibility. But this flexibility may come at the cost of frequent recalibration of yield targets and JGB purchase (monetary base expansion) guidance.

Presumably, the BOJ will operate the new framework as follows. Say that 10-year yields are falling significantly below the target level (currently around zero percent). In order to maintain the target, the BOJ would need to raise the yield, that is, push bond prices down, which it could attempt to do by cutting back on the amount of JGB purchases. Although this is not mentioned in the announcement, presumably the BOJ could conduct "twist operations," selling long-term bonds and buying shorter-term ones in equal amounts. And if such twist operations didn't suffice, if necessary the BOJ could even potentially sell JGBs in order to push down bond prices and hit the yield target.

But what if, presumably as the BOJ hopes, the policy (on top of cumulative efforts to date) works, and there is upward pressure on 10-year JGB yields, as inflation and inflation expectations both rise toward the BOJ's target? In order to maintain the target, the BOJ would then need to put downward pressure on yields. That is, put upward pressure on bond prices, which (again, if twist operations did not do the trick) it could attempt to do by buying more JGBs (particularly long-term ones).

But the BOJ has another option. At the next policy board meeting, it could alleviate the upward pressure on yields by raising the yield level target, thus mitigating the possible need to buy more JGBs. Likewise, if yields are falling below the BOJ's targets, rather than pulling back on JGB purchases to put upward pressure on (now negative) yields, something that might look like it was pulling back on easing amidst a weakening outlook, the BOJ could lower the interest rate targets, while maintaining a positive spread.

With its new framework, the BOJ seems to have bought itself quite a lot of operational flexibility, but at the cost of making what started out as a parsimonious framework increasingly complex and opaque. What effect this increased complexity has on the public's inflation expectations and confidence, and therefore on the effectiveness of the BOJ's monetary policy, is open to debate. By bamboozling the public and conveying a sense of desperation on the BOJ's part, it could impede policy effectiveness; on the other hand, by creating the impression that the BOJ is committed to achieve its objectives and will "do whatever it takes," it could improve it. Time will tell.

An Exit Strategy Could Be In The Making

In introducing this new framework, the BOJ may also be sowing the seeds of an exit strategy from QE. If the BOJ operates this new framework in line with the above analysis and if the policy works, it would not be surprising if over time it deemphasized the "quantity" guidance and put more emphasis on the yield curve control aspect, ultimately turning the framework into "Yield Curve Control" with JGB purchases being a free-floating variable and minus the reference to monetary base expansion. It could then accommodate the upward pressure on yields by gradually raising the long-term yield target and, at some point, make it just a ceiling rather than a ceiling and a floor, before removing the ceiling altogether. At that point, it would still have a very enlarged balance sheet, replete with a considerable amount of risk assets, so it would still be "doing QQE" in a "stock" (as opposed to "flow") sense, just as the Federal Reserve is too. So, the BOJ would still face the issue of when and how to unwind the size of the balance sheet, allowing assets to run off as they mature or selling them if necessary, while paying interest on excess reserves. But in terms of its monetary policy framework, the BOJ would have succeeded, as the Fed has already done, in returning to using the overnight interest rate as its principal operating tool.

Committing To Overshoot

The commitment of the BOJ to overshoot its inflation target appears to be a first for a central bank. Several major central banks, including the BOJ, have used "forward guidance" in an attempt to increase the potency of their monetary easing. "Forward guidance," an ugly term if there ever was one, involves the central bank communicating its intentions about future policy settings. One form is to tie policy settings to future calendar dates. Another is to tie them to observable variables, usually to monetary policy targets such as the inflation rate or the unemployment rate. The idea is to increase the public's confidence that easy monetary conditions will continue for longer, thereby encouraging economic activity and helping the central bank to achieve its target.

The BOJ's commitment to overshoot its inflation target takes this forward guidance one step further, by committing to what is known as a "time-inconsistent" path for policy. "Time-consistency" refers to future actions by the central bank that it signals today needing to be optimal ones for the central bank to take when that future arrives. The kind of forward guidance observed to date can be considered to be time-consistent.

A central bank precommitting to overshoot an inflation target smacks of being time-inconsistent or, as economist Paul Krugman puts it, "committing to be irresponsible." If the public believes this commitment, it may work in stimulating economic activity, for instance, by raising inflation expectations and lowering the real interest rate, which is the whole idea. But when the time comes for a central bank that takes seriously its mandate to overshoot, it will have an incentive to renege on the commitment because overshooting violates its mandate. Here's the rub: If the public has rational expectations and expects the central bank to renege, then the commitment will be seen as hollow and won't work.

It is very difficult, if not impossible, for a central bank to precommit to a course of action in the future that it will prefer not to take when that future arrives. One reason is that, like democratic parliaments, it's very difficult for current monetary policymakers to commit future policymakers to decisions that they'll have to make. The structure of independent monetary policymaking committees within central banks makes it difficult, if not impossible, for the central bank as an institution to commit itself to future actions. After all, the "central bank" doesn't set policy; the members of the monetary policy committee do, and this membership changes over time. This suggests that the public will view the BOJ's commitment to overshoot its inflation target with a healthy dose of skepticism.

A commitment to overshoot can also be viewed as the central bank signaling it's intent to compensate in the future for its coming up short on its inflation target in the past.

Inflation targeting as a monetary policy framework has been criticized for letting bygones be bygones when it comes to the central bank undershooting their inflation target. Some have proposed price-level targeting or nominal GDP-level targeting as an alternative to (or evolution of) inflation targeting because these frameworks imply that undershooting inflation will be compensated for by overshooting in the future.

The BOJ's move can be considered as it dipping its toe in that pond. Adopting a price-level or nominal GDP-level framework could attenuate the time inconsistency problem by making the central bank's "reaction function" explicit. However, all such proposals (including raising the inflation target itself) share the same flaw: If a central bank is having trouble meeting its inflation target, how can merely aiming for even higher inflation in the future solve that?

Whichever way you look at it, the BOJ's commitment to overshoot it's inflation target stands as an important development in monetary policy history.

Where The BOJ Goes, Others Tend To Follow

In the last eight years, major central banks have adopted a plethora of "unconventional monetary policies," notably, zero interest rate policy, credit easing, quantitative easing, forward guidance, and negative interest rate policy. The BOJ pioneered all of these policies, except the last (which the Swiss central bank pioneered in the early 1970s), and in response to the prolonged aftermath of its financial crisis. That was way before the global financial crisis and Great Recession of 2007-2009 led the other central banks to adopt variants of these policies. The BOJ introduced zero interest rate policy in February 1999; quantitative easing along with forward guidance in March 2001; and credit easing in June 2003 (or arguably in October 2002, when the BOJ announced a scheme to purchase equities held by banks).

That the BOJ has now pioneered two new unconventional monetary policies does not necessarily mean that other central banks will do so when and if circumstances dictate their consideration. But, if history is any guide, the chances that one or more central banks does do so must be judged to be quite high. It does not feel like the curtain is going to come down on this historic period of policy experimentation, innovation, and diffusion any time soon.

The unemployment rate in Japan, at 3%, is at its lowest rate since 1995 and the job-offers-to-applicants ratio, a closely watched measure of labor market tightness, is at its highest level since mid-1991. The BOJ estimates that the output gap in Japan is now closed (that is, aggregate demand is in line with potential supply). This augurs well for reflation prospects as long as policymakers sustain a sufficiently "aggressive" monetary and fiscal policy mix. The inflation expectations of the Japanese public have proved to be devishly difficult to raise, but the government and the central bank should be able to succeed if they are prepared to use policy "brute force." As the Volcker experience of the 1980s showed in the U.S., when the public's inflation expectations are out of whack with what the central bank wants, earning the "credibility" to reanchor them is no mean feat.

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- Japanese Reflation Is In Play, But Hurdles Galore Stand In The Way, Jan. 3, 2013

Endnotes

(1) Although the BOJ appears to be the first major central bank to target a long-term interest rate in the modern era, the idea has been around for a while. Notably, Ben Bernanke, then a member of the Board of Governors of the Federal Reserve System, floated the idea in a famous speech in Nov. 2002 ("Deflation: Making Sure 'It' Doesn't Happen Here"): "A more direct method [to lower rates along the yield curve when the overnight interest rate has fallen to zero], which I personally prefer, would be for the Fed to begin announcing explicit ceilings for yields on longer-maturity Treasury debt (say, bonds maturing within the next two years). The Fed could enforce these interest-rate ceilings by committing to make unlimited purchases of securities up to two years from maturity at prices consistent with the targeted yields. If this program were successful, not only would yields on medium-term Treasury securities fall, but (because of links operating through expectations of future interest rates) yields on longer-term public and private debt (such as mortgages) would likely fall as well."

(2) The "credibility deficit" stems from the fact the BOJ was switching its story about its ability to use monetary policy

to end deflation and target 2% inflation. Why would the public suddenly believe the story espoused by the new governor and not continue to believe the story they had heard from the previous governor for several years? In its comprehensive assessment, the BOJ found that inflation expectations in Japan have a bigger "adaptive" or backward-looking component than elsewhere, rather than being "forward-looking." This was bound to be the case and is just a reflection of the credibility deficit that Mr. Kuroda inherited. That the Japanese public's inflation expectations were not forward-looking, and have been slow to become so, is just another way of saying that the Kuroda-led BOJ has had a hard time of it getting the public to reject the Shirakawa line and believe the Kuroda line. The fact that some policy board members have consistently dissented against the majority does not help matters.

(3) The numbers associated with QQE have been enormous: ¥80 trillion is equivalent to about 16% of Japan's nominal 2015 GDP. But QE does not inject new purchasing power into economy; it merely changes the composition of assets held by the private sector. The portfolio rebalancing that ensues eases financial conditions somewhat, but for monetary policy to stimulate activity economic agents need to consume and invest more than they otherwise would, either by borrowing to finance this activity or because asset prices rise have made them more wealthy. Merely doing QE does not change these underlying conditions and constraints in the real economy.

(4) There were about ¥264 trillion of excess reserves in the Japanese banking system in August 2016. The negative interest rate applies to about ¥10 trillion-¥20 trillion of them.

(5) The expectations theory of the term structure holds that, because of the ability of market participants to engage in arbitrage, long-term rates will reflect their (collective) expectations of the entire future path of short-term ("overnight") rates, as well some additional factors known as term, liquidity, and risk premiums.

(6) Strictly speaking, the interest rate imposed by the BOJ on a portion of the current accounts (the "policy-rate balances") held by financial institutions at the bank, as per the negative interest rate framework it announced in January.

(7) A caveat is in order: as long as the central bank is providing at least the amount of minimum required reserves and counterparty default risk in the inter-bank market is not an issue. If the central bank does not supply enough reserves to satisfy minimum reserve requirements for the banking system as a whole, and sets an arbitrary target interest rate (policy rate), banks will bid up the overnight interest rate to the point where the spread between the market rate and the policy rate is such that banks are indifferent between paying that spread and incurring whatever the penalty is that the central bank sets for not meeting minimum reserve requirements. Of course, the central bank sets the minimum reserve requirements so this is a situation bordering on the absurd, and so it is unlikely to be observed in practice.

(8) Imagine there are excess reserves in the system (because the central bank has created them or failed to absorb them) and the central bank pays interest on (excess) reserves of 50 bps. Any bank with excess reserves can earn 50 bps by leaving them on deposit with the central bank, so no bank will lend their excess reserves to another bank at less than 50 bps. Let's say the distribution of excess reserves is such that all banks have some excess reserves. Then no bank will want to borrow excess reserves at more than 50 bps because that would be a negative carry operation. Let's say that the distribution of excess reserves is such that one or more banks has insufficient reserves to meet its minimum reserves requirements. These banks might be prepared to pay more than 50 bps to borrow sufficient

reserves to meet their minimum reserve requirements but competition in the inter-bank market among banks with excess reserves will force the interest rate down (arbitrarily close to) 50 bps.

(9) The problem of the central bank running out of bonds can be solved if it coordinates with the government. The government can "manufacture" unlimited amounts of a bond any given maturity by issuing them to the central bank, which in turn could sell them as part of a price-keeping operation. This kind of operation would have no effect on the net debt of the government as the liability of the bond issued would be matched by the deposit it has with the central bank.