Climate Report
Research on the economics of climate change

cdc climat research | Caisse des Dépôts GROUP

N°46 ● July 2014

SMART UNCONVENTIONAL MONETARY (SUMO) POLICIES: GIVING IMPETUS TO GREEN INVESTMENT

APPENDIX II – GREEN QUANTITATIVE EASING

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This is an appendix of CDC Climat Research's 46th Climate Report.

You can find the main report here: http://bit.ly/SUMOpolicies.

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Quantitative easing (QE) is the modern version of the "money printing press". This non-conventional monetary policy was broadly deployed by the United States Federal Reserve (Fed) and the Bank of England during the recent economic downturn, as well as by the Bank of Japan in the 1990s. Meanwhile, the European Central Bank (ECB) used a similar non-conventional policy via long-term refinancing operations (LTROs)[3].

The principle of Green QE would be to use the creation of money by the central bank in order to finance low-carbon projects.

The basic premise is as follows: private banks can borrow from central banks at rates close to zero, so why not use this driver to finance projects aimed at helping the transition to a low-carbon economy?

I. CONVENTIONAL MONETARY POLICIES AND QUANTITATIVE EASING

Most of the money created today is created by private banks in the course of their lending transactions (McLeay, Radia, and Ryland 2014). However, central banks can influence the amount of money in circulation – the money supply – via several channels. First, commercial banks are subject to mandatory reserve rates, which determine the portion of the loans that they grant which they must hold on their account with the central bank. Moreover, central banks can lend to banks under certain conditions, although this so-called discount instrument is only used in a marginal way. Lastly, central banks use tenders to sell or buy bonds during their open market transactions. In doing so, they cause variations in key interest rates, which are the rates at which commercial banks can refinance themselves from central banks, as well as the liquidity available on the inter-bank market. The open market policy is the Fed and the ECB's main monetary policy instrument (Blanchard and Cohen 2010).

This mechanism is sufficient to regulate money supply most of the time. However, during crisis periods, the economy may fall into a "liquidity trap" (Krugman 2000). In this case, even with a key interest rate equal to zero, banks do not grant additional loans, and the economy is threatened by deflation. This is the phenomenon that took place in Japan in the 1990s, and in Europe and the United States following the sub-prime crisis in 2008. In this situation, the central bank can no longer influence the key interest rate, since it is already equal to zero. At this point, central banks may resort to non-conventional monetary policies, including quantitative easing. Broadly speaking, central banks buy massive amounts of financial assets as part of these policies, including Treasury bills, which inflates their balance sheets. In theory, the price of the purchased assets increases, while their yield decreases. The effects on the real economy are felt via several channels, the relative importance of which is a subject for debate among economists. Some observers[4] specifically mention the reduction in the risk of the assets purchased by the central bank, the rebalancing of private portfolios towards other assets, and a change in operators' expectations for future inflation.

II. APPLYING QE TO THE ISSUE OF FINANCING THE TRANSITION TOWARDS A LOW-CARBON ECONOMY

The idea is simple (see Figure 1): whereas in the case of conventional QE, the central bank buys various debt securities, in the case of Green QE, the central bank would buy green bonds at the key rate – which is close to zero. The money raised would be used to finance projects that provide an environmental benefit.

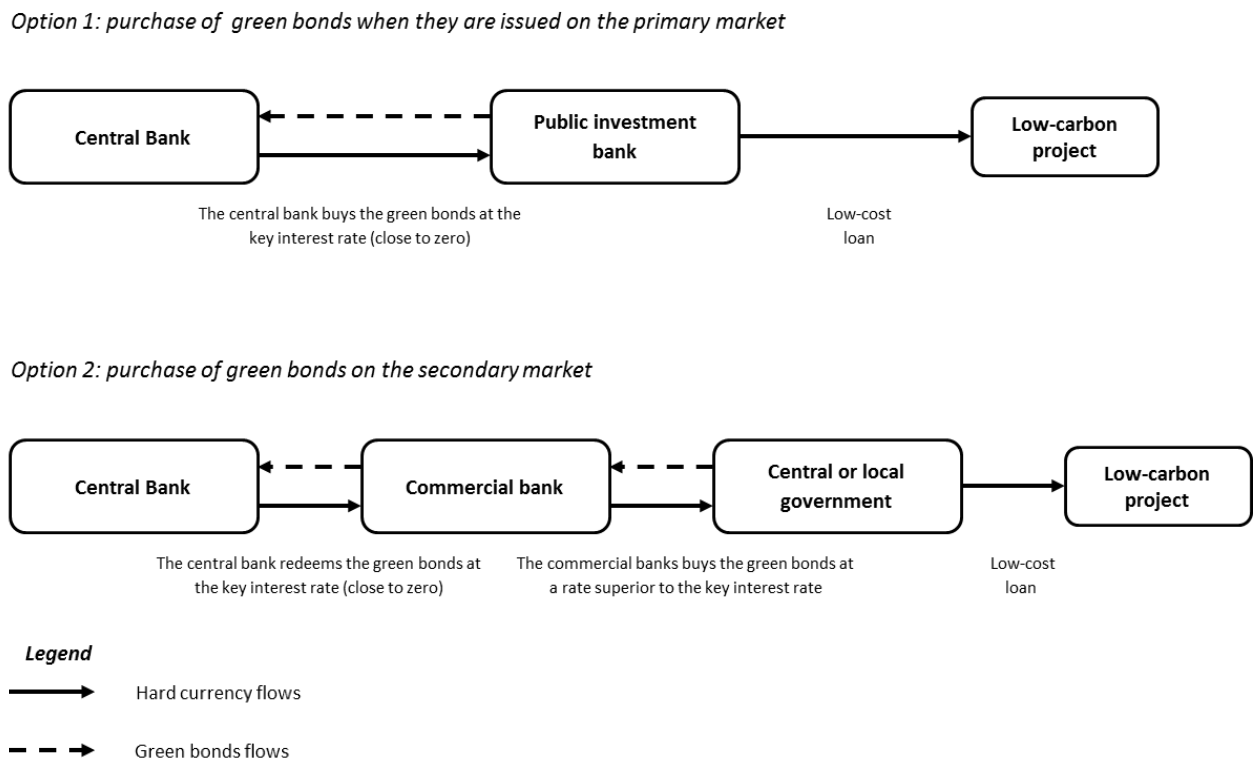
Private green bonds can be purchased unconditionally by the central bank as long as they are eligible as collateral during private banks' refinancing operations with central banks.

[3] ECB Monthly Bulletin, September 2011, Box 5.

[4] See for example (Ugai 2007).

In the case of government bonds, we need to make a distinction between two cases: the case where the central bank buys green bonds at the time when they are issued on the primary market, and the case when it buys them from intermediaries, which may be commercial banks, on the secondary market.

Figure 1: Two options for Green Quantitative Easing



Source: authors

In the Eurozone, for instance, the ECB's remit currently prevents it from lending directly to governments or from buying Treasury bills at the time when they are issued[5]. However, the ECB has had the right to buy Treasury bills from its Member States on the secondary market since 2010, as part of the "Securities Market Programme" (ECB 2009b). Two options may therefore be considered: either the green bonds are issued by domestic investment banks, in which case the ECB has the right to buy them at the time of issue[6], or the ECB buys green bonds issued by States or regional authorities from private banks on the secondary market.

Nevertheless, the EIB lately became an eligible counterparty to the ECB (ECB 2009b). Therefore, we can imagine a mechanism where the EIB would emit green bonds and refinance at a low rate to the ECB. This option may be more easily accepted as the decision to green the monetary policy would not be taken by the ECB but by the EIB.

III. STRENGTHS OF THE GREEN QUANTITATIVE EASING MECHANISM

A. Speed and ease of implementation

This mechanism seems the easiest to implement, as it could be part of a more global economic recovery policy. In fact, the Governor of the Bank of England recently stated that he did not exclude this possibility (Clark and Giles 2014). In view of the risk of deflation in the Eurozone, the members of the ECB Bureau

[5] Treaty on the operation of the European Union, Article 123, Paragraph 1.

[6] Treaty on the operation of the European Union, Article 123, Paragraph 2 and (ECB 2009a).

are increasing their announcements pointing towards a quantitative easing policy[7]. On 5 June 2014, Mario Draghi, the Chairman of the ECB announced that a policy of targeted long-term refinancing operations (TLTROs) was set to be implemented (Draghi 2014). If such a policy is actually implemented, it could be appropriate to include a "green" component in it.

B. Creating money that is directly targeted towards the real economy, and the challenges posed by the transition to a low-carbon economy

For economists who advocate this approach, the monetary creation process that is part of financing the transition to a low-carbon economy would be less exposed to the risk of speculative bubbles than conventional quantitative easing. In the case of green quantitative easing, the liquidity granted by the central bank would automatically be used to invest in low-carbon projects, since green bonds have been issued for this purpose. Thanks to this mechanism, recourse to the financial markets will be limited, and likewise the risk of speculative bubbles (Grandjean 2012) (Murphy and Hines 2010). In addition, the financing granted will be reserved for solvent projects that focus on the transition to a low-carbon economy. However, the risk of a bubble may appear if all the financing is focused on the same kind of project, or if demand is inelastic, and does not quickly adjust to the increase in the supply of financing.

IV. LIMITS OF THIS MECHANISM: UNCERTAIN CONSEQUENCES FOR THE BEHAVIOR OF PRIVATE OPERATORS

If we base ourselves on the empirical research that has assessed the consequences of quantitative easing, the purchase of green bonds by the central bank could have the following consequences:

A yield effect: following the increase in the price of green bonds, the potential wealth of the private holders of these bonds would increase, and they could be encouraged to sell them. At the same time, the high price and low yield of these bonds could discourage potential buyers. The current private buyers for green bonds are primarily investors who specialize in the responsible investment field, and whose portfolio choices are partly governed by ethical motives; however, environmental bonds must nonetheless offer financial conditions that are equivalent to those of conventional bonds. It will be these return conditions that will enable green bonds to attract so-called mainstream investors (Novethic 2013). Accordingly, there is a risk that the private sector may not be attracted by green bonds, which could result in a loss of expertise, and so deprive the transition to a low-carbon economy of potential long-term sources of financing.

A risk effect: the massive purchase of green bonds by the central bank may also be correlated with a decrease in their risk premium[8], which could attract new investors who are keen to diversify their portfolio through purchasing low-risk assets (Markowitz 1952). The impact of Green QE on private demand for green bonds will depend on the relative importance of both these factors.

We can also expect that the central bank's policy for buying green bonds will have an **impact on operators' expectations** for the future of policy of the central bank (Bernanke, Reinhart, and Sack 2004), the expected pricing of green bonds (Krugman 2013), and their long-term interest rate. The central bank must therefore implement a credible policy, and pay attention to the impact that the sudden sale of green bonds could have on the behavior of private operators. It is worth noting that the QE orchestrated by the Fed during the economic downturn has not affected its credibility to date.

[7] See the recent statements made by Mario Draghi, the President of the ECB (Taylor 2014).

[8] See (Gagnon et al. 2010), for example, on the effect of QE on risk.

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