



Combatting climate change

Matthias Kroll looks at financing the 1.5°C limit by matching new 'green helicopter QE' with private capital

The international community of 195 countries has agreed on an ambitious agenda to curb climate change. In the Paris agreement they have decided to cut greenhouse gas emissions to a level that will limit the rise in average global temperatures to 1.5°C. To reach zero emissions at least by 2050 (and for a likely chance to stay below a rise of 1.5°C), we need to scale up and accelerate the move towards 100% renewable energy (RE). This requires annual expenditures on a very large scale. The International Energy Agency (IEA) has established that US\$1 trillion pa of renewable energy investments would be needed to stay within the 2°C limit.

Currently, there are no exact figures available that assess the costs of achieving the new 1.5°C limit. However, referring to the IEA sum it seems a realistic first estimation to place the required annual financial needs for climate investments between \$1.5 to 2 trillion.

Due to this seemingly enormous figure, many observers assume that the realisation of such large scale expenditures would require an abandonment of other consumer- and investment spending. However, this sacrifice is only necessary if we presume that economic resources are fully utilised and that a dollar spent on renewable energy would require a reduction in investments on other reasonable obligations like education and health care.

Unfortunately, the latter is – more or less – the presupposition of the majority of (microeconomic guided) mainstream economists. However, in the existing capitalist world (and in the documented data of the Fed and the ECB), real capital resources (as well as the workforce) are continuously under-utilised. Furthermore, the money supply is not an external constraint but endogenously determined through the financial needs of the economy. The financial constraints for climate investments are therefore not a result of a lack of savings or (private) credit, but instead a lack of profitable climate investment opportunities.

According to the UNEP data, in current circumstances only RE investments of \$285 billion are profitable and could be financed through the involvement of private capital. The question we now face is: how are we going to finance the gap between the current \$285 billion and the needed \$1,500 billion to \$2,000 billion?

Where does the money come from?

It is still unclear how conventional financing sources can provide the minimum \$100 billion per year necessary for the UN Green Climate Fund (GCF) in order to attract further investment from the private sector. Previous experience with financing commitments, from a CO₂ tax or semi-public funds such as revenues from emissions trading, indicate that the sums actually disbursed will regularly fall short of the ones promised. For example, the current amount of grants provided to the UN Green Climate Fund stand at \$10.4 billion in total, not per year.

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'Helicopter QE' for the climate

An alternative way of financing and providing sums larger than \$100 billion to the Green Climate Fund or multilateral development banks (MDBs) could be the involvement of central banks. These can never become insolvent in their own currency due to their monopoly of issuing the legal tender—even if they purchase non-performing assets. The economic potential of central banks was witnessed during the bank bailout, leaving no apparent reason why they should not contribute to saving the climate with a fraction of the funds previously used. In order to do this, central banks would continue doing what most of them are currently doing to combat the effects of the financial crisis: buying bonds to create new liquidity.

To combat climate change, central banks would need to buy 'Green Climate Bonds' issued by the Green Climate Fund or designated multilateral development banks. By doing so, they would finance concrete RE investment projects rather than invest in government or corporate bonds. The monetary policies of the central banks would benefit from this new liquidity to finance real production instead of simply purchasing existing financial assets. So, instead of talking about 'QE for the banks' we should focus on 'green helicopter QE for the climate'.

Interestingly, the governor of the Bank of England just recently argued that the risk to the stability of the financial system from climate change is a responsibility of central banks.

But how realistic is a new form of 'green helicopter QE' for the climate?

When the new limit of 1.5°C was agreed in Paris, the consequences of the financial crisis reached a new level. Today an increasing number of economist, think tanks and policy-makers realize that the traditional monetary tools of central banks (lowering interest rates and flooding the banks with liquidity), formerly crucial for combating an economic recession, have lost their power.

Even conservative think tanks have started to recognize that central banks need a new effective tool to influence economic growth and the inflation rate, in order to react to the next global recession (which is probably just around the corner. Against their inherent neoliberal ideology they have started to advocate for a direct quantitative easing (QE) in the form of so called 'helicopter money'.

'Helicopter money' is widely discussed

There is a good chance that central banks decide to implement these new tools of direct QE in the near future, handing out a three-digit sum of newly created money to citizens and governments. Such direct 'helicopter QE' basically means that central banks provide their governments with money to hand out directly to citizens or to finance additional and urgently needed public investment. One area where investments are strongly needed is the setup of a 100% renewable energy system in order to achieve the 1.5°C limit.

What does this mean for the global climate finance situation?

The introduction of 'helicopter QE' by central banks would provide a huge opportunity for implementing large scale financial tools for climate protection investments. No national budget or taxpayer would be burdened through the investments since they would be financed with newly created money. It would also be possible to provide the Green Climate Fund or multilateral development banks with money in the form of loans which virtually became the form of grants.

How did central bank loans become grants?

If Green Climate Bonds issued from the GCF or MDBs and purchased by the central banks had a virtually infinite maturity, there would be no need to pay them back. Therefore, the money which the GCF or the MDBs receive from the central bank in return for the issued bonds can be regarded as a grant. Central banks can buy such 'perpetual' bonds due to their unique role in the financial system as creators of money. Other than normal banks, their primary job is

not to earn money from savers and lend it to borrowers, but to provide the economy with sufficient money (legal tender).

As long as the balance sheet of a central bank is growing every year, they can buy 'perpetual' green climate bonds, take the bonds in their balance sheet and keep them there. While combatting the financial crisis over the last few years, the balance sheets of central banks have grown irregularly. However, in a study about new climate finance possibilities, the World Future Council identified a global scope for all central banks of roughly \$700 billion a year, which could be used by central banks in order to buy 'infinity' bonds.

So, a figure of \$100 billion a year for the GCF seems reasonable. Another advantage of such a Green Climate Bond system is its ability to start operating, even if at first only a few (strong) central banks are on board. Of course, the scope of money would then grow smaller in relation to the number of central banks which take part.

If central banks want to withdraw a part of the new liquidity created by the purchases of perpetual Green Climate Bonds, they could raise the reserve requirements and/or raise the interest rates to lower the demand for credit. Thus, central banks remain independent by executing their monetary policy.

But how could Green Climate Bonds become a new monetary tool for central banks to inject money directly in the economy, if they are used for RE investments in developing countries? Due to the fact that the majority of industrial capacities are in the developed countries, it could be strongly assumed that a large part of the new money for the RE investments would be invested in these countries.

This could be illustrated in a short example: the GCF or the MDBs have to choose a project to support. If the RE project in a developing country needs eg. solar panels from China, wind turbines from Spain and Denmark and other

related grid equipment from Japan and the US, the GCF or the MDBs have to issue Green Climate Bonds to the central banks of these countries. Then the GCF or the MDBs would pay for the RE equipment and the new goods were produced in the developed countries. The needs of the central banks are now satisfied, because the new money is spent in their respective economies.

Simultaneously, a new RE power plant would be installed in the developing country, which would be impossible to finance without the support from the GCF or the MDBs. The new RE facility would produce green electricity and support the local economy. The benefit for the developing country is that it gains RE equipment from industrialized countries without the need to pay for it in a foreign currency.

The involvement of private capital

The example further assumes that the RE investment project would need, based on projected electricity prices, a 30% start-up funding to be economically feasible. That means that a total RE investment of \$1 billion would need funding of \$300 million from the GCF or the MDBs. Because the project is then profitable, the balance of \$700 million could be obtained from private investors. Thus, a matching of 'green helicopter QE' with private capital to finance sufficient RE investments in order to reach the 1.5°C limit is possible.

The aim of the Green Climate Bonds is to finance otherwise unfeasible RE investments. This means it should make climate-friendly investments profitable in order to make them attractive for private investors. Other forms of private capital involvement are possible.

In addition, Green Climate Funds could be used as debt guarantee for private climate finance investments or as safeguard against currency or other political risk. The amount of Green Climate Bonds purchases from central banks

should be related to (1) the needs of the achievement of the 1.5°C benchmark and (2) the need of central banks for an innovative monetary tool to inject new money directly in the economy.

Is there a lack of real capital to establish the RE transition?

Yet, if the finance challenge of the RE transition could be resolved, it had to be clarified whether the real capital side could deliver the necessary investment without a significant inflationary impact. This could be assumed if the industrial capacities are underutilized.

The central banks of the United States (Fed), as well as the European Central Bank (ECB) have established data on the degree of utilisation of industrial production capacities. They find long-term average degrees of capacity utilisation of around 80% (Fed) and 81% (ECB). It should be noted that the degree of capacity utilisation even under boom conditions has never risen above 85%. Therefore, it could be assumed that firms adjust their capacities even before they reach full utilisation to prepare for increasing demand in the future.

There may be a mismatch between the free reserves of real capital, the qualifications of the currently unemployed, and the structure of the new demand for climate investments. However, a market economy with competing businesses is designed to absorb and balance such changes.

Therefore, it is to be expected that additional and often new demand structure will emerge, creating a corresponding change in the supply structure. Initial mismatches will thus quickly dissipate and the RE transition could become a success. ■

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