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**Financing climate protection with newly
created SDRs**

Explaining the WFC Proposal “Breaking the Funding
Deadlock”

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Executive Summary

Overcoming the climate challenge will not be cheap. The majority of countries currently confronted with huge deficits in their public budgets (mostly resulting from the financial crisis) are reluctant to spend money on long-term climate related issues. A genuinely effective climate policy to reduce climate change as far as still possible would require at least \$ 100 billion a year, and it is not realistic to expect that this will come out of national budgets.

This similarly applies for alternative suggestions, such as financing from emissions-trading profits or taxes on aeroplane fuel and financial transactions. All suggestions will be confronted with such heavy lobbying that the outcome will always be – too little, too late.

This funding problem must be solved at an international level. The only existing international organization that can create these necessary additional funds at once is the IMF. The G20 Summit in April 2009 authorized the IMF to reanimate its own currency, Special Drawing Rights (SDRs), and to issue new SDRs, worth \$250 billion, to tackle the financial crisis. – If the IMF can combat the financial crisis with newly created money, why can it not respond to the challenges of climate change in the same way? This is the point of departure of the WFC proposal.

The New Money Proposal from the World Future Council

In contrast to other proposals dealing with SDRs (e.g. Soros, Action aid, TWN, IMF) the plan of the WFC explicitly proposes to create new and additional SDRs. Therefore the amount of money that could be used in the WFC plan is much larger, and could provide the resources to finance climate change mitigation projects immediately.

The centrepiece of the WFC proposal is the establishment of a financing tool that uses the ability of the IMF to create new international reserve money in the shape of SDRs. The intention is to support financing facilities such as the new Green Climate Fund established at the COP 16 in Cancun. The IMF member states can decide on the issuance of new SDRs. These are usually distributed to them proportionate to their quota shares. Pursuant to the agreement on the formation of the new Green Climate Fund, member states should agree in advance to commit all or most of the new SDRs to this Fund. A small portion (e.g. 10% – 20%) could be claimed by the member states for the financing of specific climate protection projects.

Because SDRs are not usually a medium of payment, the Green Climate Fund would change the newly obtained SDRs into the required national currencies at the respective central banks. At that moment the creation of new money in the currency of the IMF (SDRs) becomes a creation of new money in the equivalent national currencies.

The basic principle is that the new money should be paid only against performance. The Fund should ensure that new economic value and new green jobs (new wages and new revenues) are created in the developing countries by using the additional funds only to pay directly for renewable energy infrastructure projects.

Creating new Money and the possibility of inflation

The proposal to finance new RE projects by “printing” new money will inevitably be confronted with fears of inflation, in particular in light of the creation of at least \$ 100 billion a year that is being proposed. This fear is, however, unfounded considering the global GDP is about \$ 60,000 billion and the average utilization of the industrial capacities is approximately only 81 percent.

The experience also shows that a moderate increase in demand would overwhelmingly be met with an expansion of production. An increase in price is only to be expected when the production costs are on a constant increase and an increase in prices becomes possible because of lack of competition. It can also be shown that the creation of new SDRs will not produce an excess of cash because the new SDRs and the resulting newly created national money is new Central Bank money which will be used – in the refinancing process of our two-tiered banking system – to replace other Central Bank money. Excess cash therefore will not be created. After the final adjustment process the amount of money has grown along the lines of increased production.

Conclusion

The advantages of the proposal to finance climate protection investments with SDRs from the IMF can be summarized as follows: Resources totalling at least \$ 100 billion would be immediately available. No country would be required to overstretch its national budget; national budgets would even receive a small portion of the new money for their own expenditure when applied to a climate protection project.

The financing of climate change mitigation can be carried out on a continuous basis. Because the new money is in line with the increase in production and replaces other money in the refinancing process of banks, no excess money remains in the monetary system.

Given the current under-utilization of global production capacity, no significant inflationary impulse is to be anticipated from the new demand. Over the long-term, it can be expected that the industrial economy – in deference to its own profit interests – will respond to the increased demand for CO₂-free investment goods with an expansion of their corresponding capacity and that excessive demand will not result.

The financial system, endogenous money and financing climate protection with newly created SDRs

1. Problem: How can the needs of the new Green Climate Fund and the Millennium Development Goals be financed?

At the last UNFCCC climate summit in Cancun, the agreement that had been made in Copenhagen to make available US \$100 billion per annum for a Green Climate Fund was confirmed. But it is yet to be clarified from which sources the required funds will be sourced. It also remains unclear why the entire sum for the urgently required climate investments is only to be pledged in 2020 and not now. The Green Climate Fund is threatened with a similar fate to the MDGs whose full financing – according to an early World Bank estimate of between \$ 40–70 billion per annum (Devarajan, 2002, p.257) – was agreed in 2000 for the year 2015 but on which we are currently lagging very much behind.¹

The main reason given for holding back on the financing of climate mitigation and MDGs is strained domestic budgets. This looks unlikely to change in the next years. It is therefore necessary to create an international source of finance, independent of domestic budgets, that can provide the required funding. The only existing organisation that could do this is the IMF, because it has its own reserve currency – so-called SDRs.² Introduced in 1969 to fulfil the liquidity needs of the old Bretton Woods System before 1973, SDRs then fell into obscurity. This changed in April 2009 when the G20 summit ordered the IMF to reanimate its reserve currency and create \$250 billion Dollars worth of new SDRs to cushion the negative impact of the financial crisis with this emergency liquidity. If the IMF is in the position to battle the financial crisis with the creation of new money, why should it not also be in the position to utilise the same approach in the fight against climate chaos and financially equip the new Green Climate Fund with the continuous creation of new SDRs?

There has recently been a renewed debate on how to strengthen the role of SDRs in the international monetary system (see Eichengreen, 2009; Williamson, 2009; Ocampo, 2010; Subacchi/Driffill, 2011; IMF, 2011a; Stiglitz et al., 2011). The annual creation of new reserve money in the form of additional SDRs, to finance necessary climate change mitigation and MDGs, would be a significant step in the direction of reform of the international monetary system.³

At first glance, the idea of saving the world from climate change with newly created (SDR) money seems almost too simple. Most textbook economists and journalists would insist that this must be

¹ Achieving the MDGs is not only affected by the same financing problems as climate change mitigation, but there are many content overlaps. As a global challenge, MDGs could benefit just as much from SDRs as climate protection. Ernst Aryeteey has pointed to the possibility of “development-focused” SDRs (Aryeteey, 2004)

² The IMF describes its SDRs not as a currency, but as a right to exchange these into other currencies. SDRs can thus be seen as a reserve currency.

³ Fred Bergsten, Director of the Peterson Institute for international Economics, recently suggested that an annual share of new SDRs of around \$200 billion over the next five years to allow SDRs to play a bigger role again (IMF, 2011b).

inflationary. But is inflation the necessary consequence of new money? In fact, there are strong arguments in the real behaviour demonstrated between the central banks and the banking system and also in modern economic theory that lead to the conclusion that this must not be the case (Kroll, 2008). Moreover, there is a large output gap in most developed countries, and thus a new demand, financed by new money, will have its outcome in higher levels of production and not in higher prices. Accordingly, this paper argues that it is possible to finance new climate protection investments with newly created SDRs without a rise in inflation.

2. Financing climate protection with newly created SDRs

Ever since IMF members in August and September 2009 agreed upon the creation of additional SDRs with a total value of 283 billion US dollars (IMF fact sheet), the idea has presented itself that this new resource could be used to finance climate protection measures. Different proposals along these lines were subsequently presented at the 2009 UN Climate Conference in Copenhagen (inter alia, from George Soros (Soros, 2009) and Action Aid (Action Aid, 2010). This present paper draws on the World Future Council's proposal "Breaking the Funding Deadlock" (WFC, 2009).

The "New Money Proposal" of the World Future Council (WFC)

The core idea of the WFC Proposal lies in the financing of climate protection investments in developing nations by means of an institutionally constructed mechanism allowing for the recurring creation of new SDRs.

The original proposal assigned a "Supervisory Body" with the role of administering the use of the new money. This body would comprise of representatives of international organisations such as UNEP, UNDP, UNFCCC and IRENA, etc., as well as national development agencies.

But, since it was decided at the COP 16 in Cancun to set up a Green Climate Fund, which by 2012 is scheduled to receive \$30 billion and from 2020 onwards over \$100 billion p.a., it is suggested that this fund assume the responsibilities of the supervisory body. The WFC proposes that the Green Climate Fund be the institution that decides on the allocation of the newly created funds.

The Green Climate Fund would select projects that are best suited at mitigating climate change and request the necessary finance to be created by the IMF.

The IMF (or its responsible Governors as the case may be) then agrees upon the issuance of new SDRs to the 187 member states (proportionate to their quota shares). Pursuant to the agreement on the formation of the Green Climate Fund, the member states will have committed themselves in advance to forward all or the majority of the new SDRs to the Green Climate Fund. A small portion (e.g. 10% - 20%) may be claimed by the member states and used for the financing of climate protection projects agreed with the Green Climate Fund.

According to the Copenhagen Accord the annual budget of the Green Climate Fund is currently set at \$ 100 billion. If demand justifies, this could be increased. Project monies would only be provided after projects have been approved, i.e. money is only being paid against performance.⁴

As SDRs – the currency of the IMF – are not a usable currency, they will need to be converted by the Green Climate Fund at the respective central banks whose currency will form the basis of payment for the to-be-undertaken climate protection projects.⁵

These Central Banks include the new SDRs on their balance sheets as new currency reserves and provide the corresponding Central Bank money in national currency to the Green Climate Fund. New national money corresponding to the exchanged SDRs is thus created. The balance sheet of the Central Bank is extended.

At this point, the process resembles the refinancing process of a normal commercial bank securing new liquid assets from its central bank. The difference, however, is that commercial banks pay interest on the borrowed funds (the federal funds rate of the central bank) and the funds must be repaid at the conclusion of the lending period.

In contrast, the new national currency allocated to the Green Climate Fund projects in exchange for the new SDRs is interest-free new money which carries no obligation of repayment.

The new national currency that the Green Climate Fund receives as service in return for the new SDRs is therefore interest-free and indefinite as it is a foreign exchange (in the form of SDRs) in new national currency. The Central Bank receives as service in return the new SDRs and can utilise these as fully convertible currency reserves.

The Fund will ascertain how – within its given budget – the greatest possible volume of climate damaging emissions can be avoided. With that aim, the question of whether a project will realize positive financial returns –allowing for repayment of principal and interest – becomes secondary.⁶

⁴ One way to achieve this would be to stipulate that projects are only paid for when electricity is actually produced, i.e. the necessary infrastructure is available and functioning. This would of course require interim bank or private equity financing, secured by a guarantee from the Green Climate Fund.

⁵ To make it obvious that the new SDRs are not „unconditional aid“ it could be decided that the IMF only creates new SDRs when the Green Climate Fund requires financing for a concrete climate protection investment. Only then does the Green Climate Fund exchange the new SDRs at the relevant Central Bank into the currency required.

⁶ In the proposals of Soros and the IMF (IMF Staff Paper of 25 March 2010) allusion is made to the potential of emissions trade. The proposals implicitly assume that the funded climate protection projects will result in a surplus of CO2 certificates becoming available for sale such that enough returns can subsequently be generated to cover costs. This can, however, investments of \$100 billion, such a Green Fund as proposed by the IMF would need to realize returns of a corresponding volume from the trade of emission certificates: it would, furthermore, imply that the pertinent industries are prepared to contribute \$100 million yearly. In this respect one must assume that the impacted industries would perpetually exert pressure on policy makers to sink the costs for emissions. Likewise it can be expected that the effected industrial branches would pass on their additional costs in the form of higher prices, thus in fact generating inflationary pressure. Finally, it should also be expected that national governments will have a considerable interest in retaining the proceeds of emission trade for themselves in order to relieve their own budgetary deficits.

The “returns” will be our climate experiencing less dramatic changes so that the consequences of unavoidable change may be overcome at less cost. A monetary evaluation of avoided future costs, which would allow these being balanced against accrued interest and repaid principal, faces profound methodological difficulties that are unlikely to be satisfactorily overcome in the near future.

Yet precise proof of an economic realization of profits does not need to be demonstrated because climate protection is a public good and decisions in respect of public goods are political. Accordingly, it is the legislators – and thus the voters – who decide whether preventing global climate change justifies its cost.⁷

Nonetheless, it remains the case that as a result of newly created SDRs, new money and an additional real demand for goods and services will be created. This process is believed to be inflationary by many observers.

This matter needs to be addressed at two levels: firstly, the real economic level which reveals that additional demand leads to more production rather than increased prices; and, second, at the monetary level by portraying the movement of new money through the banking system.

3. The endogeneity of money in the real financial system

In order to demonstrate how money’s endogenous nature is pertinent for evaluating what, if any, inflationary dangers might exist from the creation of new SDRs, the concept of endogeneity – including its relation to exogeneity – should be briefly outlined.

The traditional view in prevailing monetary theory posits that the money supply is created from the interaction of the money multiplier on the monetary base, whose level is, in turn, set by the central bank.⁸ Thus, the monetary base and the money supply are determined by the central bank. If the monetary base were to be increased (as would be the case with the creation of new SDRs), commercial banks could increase their loan volume, and the money supply would consequently witness a multiple increase according to the level of money multiplier (determined by the reserve ratio and the cash ratio). In this traditional view, the commercial banking system can only extend new loans when it obtains new central bank money. When, however, banks do receive such new money – so the theory – they will use it in its entirety to extend new loans. Accordingly, the impulse for the extension of credit stems from the central bank’s supplemental creation of money. Hence, the chain of causality begins with new central bank money and ends with the creation of new debt money.

⁷ In economic science the model in which the state sets a standard that it must achieve is also known as the Standard-Price approach from Baumol und Oates (Baumol, Oates, 1988, p. 158 ff).

⁸ Boermans and Moore recently showed that, in most international textbooks, this view is still supported, see Boermans, Martijn A.; Moore, Basil J.; Locked-in and Sticky Textbooks: Mainstream Teaching and the Money Supply Process, MPRA Paper, No. 14845, 25. April, 2009

The interest rate on the market for money (i.e. the cost of money) is not determined by the central bank, but rather results – for the given amount of money – from the dynamics of supply and demand. As such, the role of the central bank is seen as a quantity setter and price taker. Since from this perspective the supply of money is “externally” injected into the economy by the central bank, one speaks of an exogenous theory of money (Arestis, 2003, Moore, 1988).

If one adheres to the models which form the basis of the exogenous perspective, the creation and distribution of new SDRs would necessarily result in a manifold increase (commensurate with the value of the money multiplier) in the money supply. Such an increase would entail inflationary potential as soon as the new money was utilized for the purchase of goods and services or was deployed for speculative purposes which drive up the price of property and assets.

The true relations of the real economy, however, are not those assumed under the exogenous model. In the real world the central banks fix the lending rate offered to banks and thus control the interest rate on the money market. In order to achieve the desired market rate, the central banks must consequently satisfy the banking system’s demand for liquidity and provide commercial banks with new money at the lending rate they have set. If they were to behave otherwise, the result would be permanent interest rate fluctuations on the money market and correspondingly negative consequences for the economy.

With the decision to control the market interest rate, the central banks have surrendered their ability to directly control the money supply.⁹ This outcome results from their role as lender of last resort, according to which they must always be prepared to provide commercial banks with liquidity consistent with a given interest rate. In contrast to the exogenous perspective, the central banks in fact fix the price (setting the short-term interest rate on the money market) and stay attuned in respect of amount (providing the amount of central bank money that is demanded by the banking system). Since the money supply in this instance is a function of the “internal” financial needs of the various economic institutions, one speaks of an endogenous theory of money (Moore, 1988).

It is interesting that the majority of economists accept the relationships characterized by the endogenous theory when they discuss real monetary practice and policy; while their theoretical studies and textbooks often act on the assumption of an exogenous money supply (Goodhart, 2002, pp. 252–254).

As formulated by the former senior vice-president of the New York Federal Reserve Bank as early as 1969:

“... in the real world banks extend credit, creating deposits in the process, and look for the reserves later.” (Holmes, 1969, p. 73)

⁹ Now, it is only through indirect means that the central bank can impact developments in respect of the supply of money, namely by sharply raising the interest rate with the hope that the demand for money (along with business investments) will also decline.

The current president of the Bank of England, Mervyn A. King, has also unequivocally stated:

“In the United Kingdom, money is endogenous – the [central] Bank supplies base money on demand at its prevailing interest rate and broad money is created by the banking system.” (King, 1994, p. 264).

In the post-Keynesian view of economic theory, the endogenous perspective is a generally accepted part of academic theory (Moore, 1988; Arestis, 1996; Dalziel, 1996; Howells, 2005; Arestis/Sawyer, 2006, pp. 847–860; Minsky, 2008, p. 271). In new-Keynesian thought as well, the notion has recently been recognized as one of the basic fundamentals in the so-called “new monetary consensus” (Meyer, 2001, pp. 1–15).

The endogeneity of the money supply does not only have an array of effects on one’s theoretical perspective of the economy; rather, it also impacts the processes accompanying policy measures having a financial component. The following section shall, in light of the endogeneity of money, clarify the processes which can be expected to result from the creation of new money through the issuance of new SDRs.

4. New SDRs in an endogenous money world

The allocation of new SDRs by the IMF to the Green Climate Fund would mean the creation of new, internationally convertible central bank money. As soon as the Green Climate Fund exchanges the SDRs for national currency, the central bank’s balance sheet (in the form of outstanding currency) increases, as does the central bank’s monetary base.

Via the expenditure of the money on climate investments, the new money then makes its way into the banking sector. Thereby the commercial banks have obtained central bank money without having needed to directly seek central bank refinancing. According to traditional exogenous money supply theory, the resulting consequence would be the banks using this new money as the basis for additional extensions of credit, thereby producing a multiple increase in the money supply.

In the real world, however, the endogeneity of the money supply will have already ensured that the banking system has accomplished all of the – seemingly lucrative – extensions of credit which have presented themselves since there never existed a shortage of the central bank money needed for such loans. As the newly issued SDRs will not automatically result in commercial banks extending new loans but will rather mean that the banks are now in possession of surplus central bank money, it can be surmised that this additional money will be used to pay off refinancing previously secured from the central bank. With this inflow the balance sheet of the central bank will be reduced – ideally – by the same amount as the increase which resulted from the earlier SDR exchange. Thereby, the new central bank money stemming from the creation of new SDRs is subsequently destroyed. In terms of the central bank’s accounting, the effect of the entire process

is an exchange of assets; the refinancing component – i.e. the central bank's loan to the banking system – has been reduced in favour of the new SDRs.¹⁰

The limiting factor for the extension of credit is the quantity of potential loans which may be distributed for capital investments or promising speculative ventures rather than the amount of central bank money which is already at hand. Hence an enlargement of central bank money as a result of new SDRs would not bring about the allocation of new credit and, correspondingly, a multiplied creation of money. Where possibilities exist to realize additional profits through the extension of credit, banks first issue such loans and only thereafter secure necessary refinancing at the central bank or on the money market.

In the USA, we have a current example of how an increase in the monetary base is not automatically translated into an enlarged money supply by the banking system. Although the Fed has more than doubled the monetary base since Fall 2008, the monetary values of M1 and M2 have increased only slightly. While this might to a certain extent be attributable to the chaotic conditions in the financial markets, it is nonetheless significant evidence for the absence of a process whereby more central bank money inevitably results in a geometrically larger increase in the money supply.

Summary of the monetary processes

According to traditional textbook theory, the creation and distribution of additional SDRs would lead to an even larger and potentially inflationary augmentation of the money supply. Yet this is shown not to be the case when considering the actual processes of money creation and bank refinancing.

With help of SDR financing the Green Climate Fund slips into the existing money creation process. The newly created money replaces other Central Bank money. New money is only created in line with what is required for production, thus no excess money is created.

Each central bank, moreover, would retain the ability if required to take concrete measures, such as an increase in the minimum reserve requirements, to reduce the circulation of central bank currency.

¹⁰ If the financing of projects through the Green Climate Fund by means of newly created SDRs are carried out over a longer period of time and if the SDRs are also entirely converted into national currency, an excessive preponderance of SDRs will accumulate in the balance sheets of the national central banks. To avoid this problem, whereby the commercial banks would not need to turn to central banks for refinancing in the first instance, the central banks could undertake to raise the minimum reserve requirements.

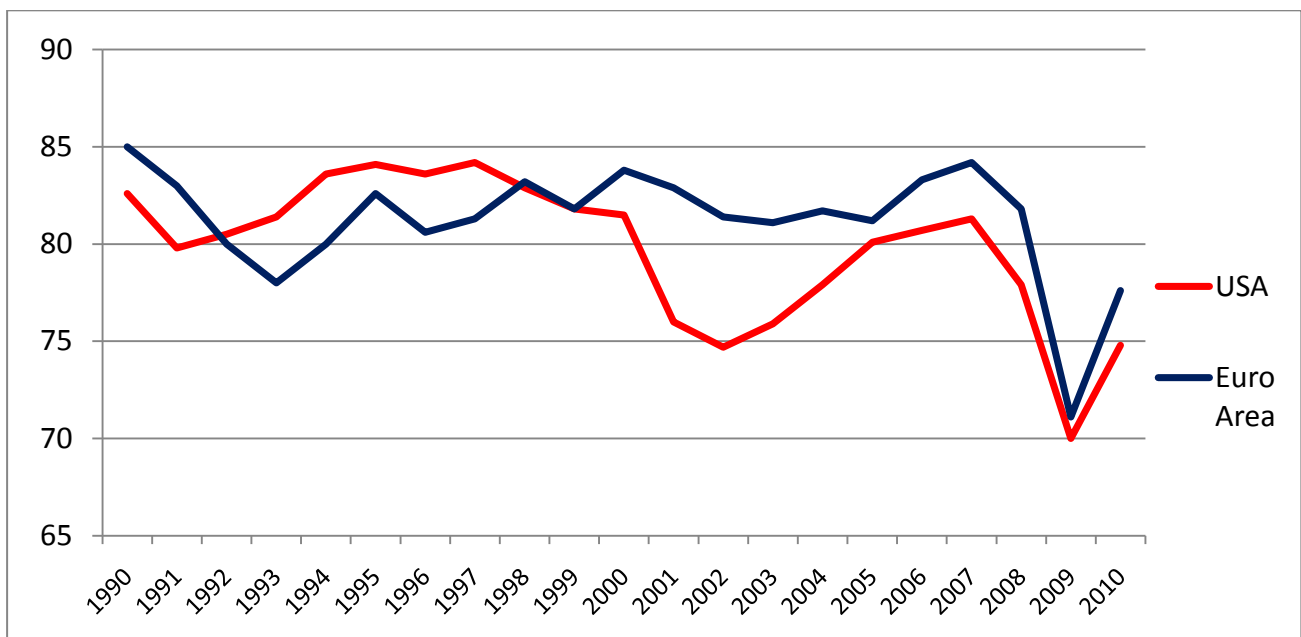
5. The impact on worldwide demand from climate protection investments

The expenditure of the new money will lead to a global increase in demand: first, in respect of industrial goods in the renewable energy sector, a demand which will presumably fall mainly upon the industrialised nations; and, second, in respect of services for the construction and operation of the new installations in the developing nations.

This new global demand faces an “Output Gap” in the industrialised countries. The industrial capacities in North America as well as Europe are in the long-term average only operating at ca. 81 percent capacity.¹¹

This leads us to the assumption that firms adjust their capacities even before they reach full utilization.¹² Similarly the amount of new money to be created is still tiny in relation to total worldwide GDP.

Figure 1. Capacity Utilization in the Euro Area and the USA (in percent)



(Source: Fed, Statistical Release G.17, ECB, Monthly Bulletins)

Industry usually has free capacity to react to sudden demand increases.

Even if the primary impetus of the new demand is concentrated on a few branches in the industrial nations, it can be expected that primarily an expansion of production will be observed rather than

¹¹ For USA figures see: Federal Reserve Statistical Release, G. 17, Industrial Production and Capacity Utilization. For Europe: ECB, Monthly Bulletin, Capacity Utilization in manufacturing, May 2010, p. S 5

¹² The economic rationality of such behaviour can be demonstrated not only with Keynesian principles but also with the theories of Hayek. Here one may refer to the discussion of Hayek’s views by Carl Christian von Weizsäcker (von Weizsäcker, 2005).

an increase in prices. Should production shortages nevertheless be experienced in some sub-sectors with corresponding price increases following, this will not be sufficient to find an echo in the overall inflation rate. At the same time, such price increases will signal to the industry in question the need to increase its production capacity.¹³ By contrast, the equally foreseeable secondary demand effect, resulting from the expenditure of additionally earned wages and profits, will be distributed across the entire production potential of the impacted national economies; thus, here as well excessive demand is only to be expected in few, if any, areas.

By studying observed price-setting dynamics, we can understand the pricing consequences likely to result from the significant output adjustments which will be induced (i.e. demanded) by the implementation of the contemplated climate protection investments. Generally speaking, a “mark up” process is used. Suppliers estimate the costs of production for a given period of time based on an average utilization of capacity, and they then add to this figure the desired profit in order to arrive at the price demanded (e.g. Hall/Hitch, 1952; Baßler, 1999, p. 202; Kromphardt, 2006).

Holding prices constant during a period of changing demand can be seen as rational since firms operate under the premise of uncertainty, i.e. without knowledge as to what revenue will be generated in the face of repeatedly altered prices. The “mark up” price therefore responds very slowly to changes in demand (Bhaduri, 1988, p. 88 ff.). The price determination process works differently, however, as regards homogenous goods that are sold on special markets. Here an increase in demand does generally lead to higher prices. Yet in such an instance one should take heed of the predictive models according to which higher prices lead to an expansion of production capacity or to the utilization of alternative products. Both of which responses would, in turn, have a dampening effect on prices.

New demand and inflationary risks

In a market economy new demand carries a latent potential for effectuating an increase in prices. But this effect is not an inevitable and automatic process. Rather – especially in an economy operating below industrial capacity – it can be expected that the vast majority of new demand will result in output adjustments rather than price adjustments.

¹³ Even neo-liberal economists would be hard-pressed to criticize such an argument. Hayek, in particular, repeatedly explored and developed this connection (e.g. Hayek, 1969).

Summary

The advantages of the proposal to finance climate protection investments with SDRs from the IMF can be summarized as follows: Resources totalling at least \$ 100 billion would be immediately available. No country would need to burden its national budget; national budgets could even receive a small portion of the new money for their own climate protection projects.

With the creation of new money the Green Climate Fund is integrated into the already occurring refinancing processes between the Central Banks and the banking system. The difference lies simply in that the banks receive as new deposits central bank money which they previously obtained directly from the Central Bank.

In the end effect the rise in new money is equal to the rise in new production and so there is no excess money in the monetary system. The key difference would be that investments in climate protection can be undertaken with the new money. Given the current under-utilization of global production capacity, no significant inflationary impulse is to be anticipated from the new demand. Over the longer term, it can be expected that the industrial economy will respond to the increased demand for CO₂ free investment goods with an expansion of their corresponding capacity and that excessive demand will not result. The effect on the international monetary system of creating additional SDRs and spending the equivalent national currencies into existence will not make the global economy less inflationary but neither will it make it more inflationary.

References

- Action Aid (2010); Using Special Drawing Rights for Climate Finance, Discussion Paper, February
- Arestis, Philip (1996); Post–Keynesian economics: towards coherence, in: Cambridge Journal of Economics, Vol. 20, No.1
- Arestis, Philip; Sawyer, Malcolm (2006); The nature and role of monetary policy when money is endogenous, Cambridge Journal of Economics, Oxford University Press, vol. 30(6), pages 847–860, November.
- Aryeetey, Ernest (2004); A Development–focused Allocation of the Special Drawing Rights, WIDER, World Institute for Development Economics Research, Discussion Paper No. 2003/3, January 2004
- Baßeler, Ulrich; Heinrich, Jürgen; Koch, Walter A.S. (1999); Grundlagen und Probleme der Volkswirtschaft, Köln
- Baumol, William J.; Oates, Wallace E.(1988); The Theory of environmental policy, Cambridge University Press
- Bhaduri, Amit (1988); Makroökonomie, Marburg
- Boermans, Martijn A.; Moore, Basil J. (2009); Locked–in and Sticky Textbooks: Mainstream Teaching and the Money Supply Process, MPRA Paper, No. 14845, 25. April, 2009
- Dalziel, Paul (1996); The Keynesian multiplier, liquidity preference, and endogenous money, in: Journal of Post Keynesian Economics, Vol. 18, No. 3
- Devarajan, S.; Miller, M.J. Swanson, E.V. (2002); Goals for Development: History, Prospects and Goals. World Bank Policy Research Working Paper (2819), Washington DC, World Bank
- ECB, Monthly Bulletin, Capacity Utilization in manufacturing
- Eichengreen, Barry (2009); Out of the box Thoughts about the International Financial Architecture, IMF Working Paper, WP/09/116
- Federal Reserve Statistical Release, G. 17, Industrial Production and Capacity Utilization
- Goodhart, Charles (2002), The Endogeneity of Money, in: Schefold, Bertram (Hrsg.), Exogenität und Endogenität, Marburg, Also: Goodhart, Charles (2002); The Endogeneity of Money; in: Arestis, P; Desai, M; Dow, S; (Editor); Money, Macroeconomics and Keynes, Routledge, London
- Hall, R.L.; Hitch, C.J. (1952); Price theory and business behaviour, in: Wilson, T.; Andrews, P.W.S. (Hrsg.); Oxford Studies in the price mechanism, Oxford
- Hayek, Friedrich August von (1969); Wettbewerb als Entdeckungsverfahren, in: Hayek; Freiburger Studien, Tübingen
- Holmes, Alan (1969); ‘Operational Constraints on the Stabilization of Money Supply Growth’, in Controlling Monetary Aggregates, (Boston MA: Federal Reserve Bank of Boston) pp. 65– 77.

- Howells, Peter (2005); The Endogeneity of money: Empirical Evidence, Discussion Papers 0513, University of the West of England, Department of Economics.
- IMF (2009); "Questions and answers", Special Drawing right (SDR) Allocation, Update: October 2009
- IMF (2010); IMF Staff Position Note, Financing the Response to Climate Change, March 25, 2010, SPN 10/06
- IMF (2011a); Enhancing International Monetary Stability – A Role for the SDRs? January 7
- IMF (2011b); Global Monetary Reform Needed to Tackle Imbalance, IMF Survey Magazine, February 11
- King, Mervyn (1994); The transmission mechanism of monetary policy, Bank of England, Quarterly Bulletin, August
- Kroll, Matthias (2008); Monetäre Stabilität und die Finanzierung von Staatsdefiziten durch Zentralbankkredite bei endogener Geldmenge, Berlin
- Kromphardt, Jürgen (2006); Grundlagen der Makroökonomie, München
- Meyer, L. H. (2001); "Does Money Matter?" Federal Reserve Bank of St. Louis Review 83 (5): 1–15.
- Minsky, Hyman P. (2008); Stabilizing an Unstable Economy, McGraw Hill, (first edition, 1986, Yale University Press)
- Moore, Basil J. (1988); Horizontalists and Verticalists, Cambridge University Press
- Ocampo, J. A. (2010); Special Drawing Rights and the Reform of the International Monetary System, Intergovernmental Group of Twenty-Four (www.g24.org/jao0909.pdf)
- Soros, George (2009); Special Drawing Rights proposal, Copenhagen, December 2009 (updated January 6, 2010)
- Stiglitz, Joseph E., et al. (2011); A Modest Proposal for the G-20, Project-Syndicate, 01. 04. 2011, <http://www.project-syndicate.org/commentary/ocampo8/English>
- Subacchi, Paola; Driffill, John; eds., (2010); Beyond the Dollar: Rethinking the International Monetary System, London: Chatham House.
- Weizsäcker; Carl, Christian (2005); Hayek und Keynes: Eine Synthese, in: ORDO, Freiburger Diskussionspapiere zur Ordnungsökonomik, 05/4
- Williamson, John (2009); Why SDRs Could Rival the Dollar, Peterson Institute for International Economics, Policy Brief 09 – 20, September
- World Future Council (2009); „Breaking the Funding Deadlock“, Hamburg

The World Future Council

The World Future Council brings the interests of future generations to the centre of policy making. Its up to 50 eminent members from around the globe have already successfully promoted change. The Council addresses challenges to our common future and provides decision makers with effective policy solutions. In-depth research underpins advocacy work for international agreements, regional policy frameworks and national lawmaking and thus produces practical and tangible results. In close collaboration with civil society actors, parliamentarians, governments, business and international organizations we identify future just policies around the globe. The results of this research then feed into our advocacy work, supporting decision makers in implementing those policies.

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