

The Feasibility Study of Issuing Carbon Coins from the Perspective of Currency Attributes

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ABSTRACT

The increasing greenhouse gas emissions have made environmental problems increasingly acute, and a low-carbon economy has become an inevitable requirement for social development. In recent years, some scholars have proposed the concept and role of carbon currencies from the perspective of international currencies, arguing that carbon currencies are a global institutional arrangement to promote green economic development.

This article discusses the possibility of issuing carbon currencies in the future by analyzing the attributes of carbon currencies. Carbon currencies have the characteristics of generic equivalents and are superior to a single basket of commodity currencies and a single credit currency anchor. In conclusion, an effective carbon currency operating mechanism should include an issuance mechanism, a circulation mechanism, an ecological compensation mechanism and a regulation mechanism. It also requires a reasonably designed framework, including a scientific basis for currency issuance, a complete circulation domain, a sound and effective multi-level market and supporting institutions to assist its operation.

This essay mainly adopts the research methods of literature research method and comprehensive theoretical analysis. Through reading and studying a large amount of relevant literature at home and abroad, we aim to grasp the research results, the current situation and the shortcomings of research in the relevant fields at home and abroad, and strive to make a certain degree of innovation on the basis of the excellent research results of previous generations. This article specifically combines the traditional theory of monetary functions, the theory of monetary evolution, the theory of supplementary money and other methods and perspectives in its research to analyze issues such as the attributes and functions of carbon money in a comprehensive manner. In summary, carbon currencies have the basic conditions to become international currencies, but further research is needed on how and where they can further become international currencies. I believe that the establishment of an international monetary system with the carbon standard as its core should be distinguished from the original gold standard, and that imitating the gold standard system or becoming a super-sovereign currency lacks a certain realistic basis.

Keywords: *Climate Change, Carbon Finance, Carbon Currency, Monetary Properties*

1. INTRODUCTION

Carbon finance refers to the resources available to buyers of greenhouse gas emission reductions (World Bank 2006), a concept that emerged from changes in international climate policy. According to the World Bank, since 2004, the global carbon market has grown from less than US\$1 billion to US\$176 billion in 2011, an increase of more than 100 times, and the trading volume has risen rapidly from 10 million tonnes to new highs. With the rapid development of the carbon trading market, the connotation and extension of carbon finance have gradually deepened and expanded. Many new

carbon financial tools and institutional arrangements have emerged on the market, such as carbon funds, carbon currency, carbon insurance, carbon futures and carbon transaction [2]. Carbon currencies are not only seen as a tool for energy saving and emission reduction but are also widely seen as a powerful tool for changing the regional and global economic landscape. In a speech in 2006, David Milley's Secretary of State for Environment, Food and Rural Affairs, David Bender, introduced the idea of "carbon points", "in a country where people have both pounds and carbon points on their bank cards and where carbon points (such as pounds) can be used to buy electricity, gas and fuel.

They can be traded between those who are in surplus and those who are in short supply. The debate around carbon currencies has now evolved from a regional proposal to a global one, with ideas emerging to replace the existing paper currency system. Whether carbon currencies can replace existing paper currencies, and whether and how they can become the currency of both the domestic and global economic systems requires further research and discussion. At the practical level, the new global technological and industrial revolution characterized by green, smart and sustainable will change the existing human production methods, lifestyles and the way of economic and social development, and the development of a low carbon economy is an irreversible trend, therefore, it will be necessary to explore and study a low carbon monetary system to suit future development. This paper will summarise the historical experience of complementary currencies and study the unique monetary attributes of carbon currencies, in order to provide a reference for the improvement of carbon market construction, design and establishment of a carbon currency system, which is of great significance for the achievement of energy-saving and emission reduction targets in the 13th Five-Year Plan, as well as for low-carbon development and sustainable development[4].

2. DEFINITION AND PROPERTIES OF A CARBON CURRENCY

A carbon currency is now commonly defined by academics as a monetized carbon credit. This definition provides a clearer picture of the origin of carbon currencies, but fails to capture the full picture of carbon currencies. In this paper, we extend this definition to include a carbon currency, which is a standardized unit of credit with a commodity value that can be exchanged, stored and borrowed by the private sector for the purpose of energy-saving and emission reduction, issued by a government-appointed department or a third-party issuer. A standardized unit of credit with a commodity value. In essence, a carbon currency has several properties[6].

Firstly, a carbon currency is a credit currency. A carbon currency is a monetized form of carbon credit, i.e. a carbon credit unit, a standardized quantitative unit of carbon credit. Carbon credits can be pledged to finance the rights holders of carbon credits, so carbon currencies can also be pledged, and because they are more standardized than other forms of carbon credits, they are more widely accepted and circulated.

Secondly, carbon money is a commodity currency. Carbon money is a product of the monetization of carbon credits, and is also a commodity created by workers, which condenses human labour without distinction and has value and use-value. Depending on the carbon trading mechanism in the market, the spot

subject of carbon trading can be expressed as carbon allowance trading, project emission reductions and carbon sinks. The main ways in which carbon currencies can be used as commodities are through the compliance mechanism and the offset mechanism. Under the compliance mechanism, carbon currencies are expressed in terms of carbon allowances, which can be traded as unused carbon allowances saved in the current production period of each compliant company, i.e. the savings in carbon allowances, which are generated as a result of the transition to a low-carbon economy in post-industrial societies. and declining energy consumption per unit of output, i.e. energy efficiency. This labour is condensed in the carbon currency, i.e. the carbon currency is created by labour. Under the carbon offset mechanism, the labour of replacing fossil energy with clean energy through new energy substitution projects that reduce carbon emissions, or the labour of increasing carbon uptake by ecosystems through activities such as afforestation, which increases carbon sequestration and allows some of the carbon dioxides that had to be emitted to be absorbed, reducing the impact on the climate, also creates other manifestations of carbon currency, namely project emission reductions and carbon sinks for carbon sequestration. Carbon currencies under both mechanisms condense undifferentiated human labour, and are therefore also a commodity, created by labour, the labour of energy efficiency and clean energy creation and use by enterprises, and indirectly the labour product of carbon emission savings created.

Thirdly, carbon money itself has a money-like value, and like ordinary money, it can be exchanged for other products and services, and can also be used for storage and lending. Carbon currencies represent a special kind of commodity, a widely recognized standard for carbon emission rights, which is a departure from the many carbon trading commodities, and is homogenous, standardizable and measurable.

In 1968 the American economist Dales proposed the theory of emissions trading, whereby emissions rights could be sold and bought in the market as a commodity. The United Nations Framework Convention on Climate Change and the Kyoto Protocol established a global policy of reducing greenhouse gas emissions and carbon emission rights became a rare right. Carbon emission rights are traded in the market as a scarce commodity. Firstly, carbon currencies are monetized carbon emission rights, which as commodities are objective labour products, created by human energy-saving and emission reduction labour, with use and exchange value. Secondly, as a commodity, carbon currency has both a quantitative standard and a value standard, and the intrinsic value of this valuable commodity will inevitably become the value basis of carbon currency. Carbon currencies have both commodity and financial attributes, and have a "special value proposition", as

carbon trading closely links financial capital with entities based on low carbon technologies. In the economy, carbon emission reductions from corporate savings and project emission reductions are designed as carbon financial products and derivatives to be traded in the carbon market, and carbon emission rights exhibit the characteristics of a financial asset whose price is dependent on the financial market (Qiao, 2011).

Fourthly, carbon currencies have a credit basis. Credit is an important feature of modern money, and the official currencies that have emerged throughout the history of money are collections of credit. The credit base of official currencies is national credit, the credit base of regional currencies is a collection of economic regional credit or community credit, and the credit base of carbon currencies is carbon credit. Carbon credits are both international credits and government credits, as well as social credits. Carbon trading is based on the United Nations Framework Convention on Climate Change and the Kyoto Protocol, and carbon credits are internationally and widely recognized as international credits. Under international rules, carbon credits become an important basis for the monetization of carbon credits, and the economic value of the credits is based on the provisions of international conventions.

Last but not least, carbon currency has the property of general equivalence. At present, academics generally regard carbon credits as a financial asset, considering them to have financial attributes, similar to general equivalents, and a kind of purchasing power certificate (Wang, 2012). Examining whether carbon credits can act as general equivalents requires examining whether they have both commodity attributes and natural qualities that distinguish them from ordinary commodities (Xiao Kuixi et al., 2010).

3. ANALYSIS OF THE SUPERIORITY OF CARBON CURRENCIES

Carbon money is a special product of the development of the modern credit economy to the period of ecological development constraints. As a special kind of money, it has certain superiority in terms of value base, capital properties and characteristics. Carbon money is a duality between commodity money and credit money, retaining the advantages of both types of money while avoiding the shortcomings of each. There are two main types of money that have emerged throughout human history, commodity money and credit money. The final stage in the development of commodity money is the period of physical precious metal money, in which the value of money is related to the precious metal content of the coin and the value of the precious metal material itself, the scarcity of which is determined by the natural reserves of precious metals and the capacity to extract and purify them. The advantage of minted precious metal coins is that the

currency itself has a real value and is relatively stable in value, with the value of the coin being related to the value of the precious metal, with little serious depreciation of the purchasing power of the currency and less susceptible to hyperinflation. However, with the development of the commodity economy, barter demanded a larger quantity of easily portable and tradable currency to keep pace with economic development. Gold and silver coins were constrained by reserves and minting capacity, and the supply of minted coins grew slowly and was not easily portable, and could no longer meet the requirements of economic development. The first forms of credit money circulation, using precious metals as security for credit, arose around the world. In some ways, credit money was created to address the shortcomings of metallic money. Credit money was issued and circulated on the basis of a credit guarantee, initially issued and circulated with an equivalent amount of precious metal money as security, until it was completely decoupled from precious metal money. The advantage of credit money is that it is issued and circulated entirely on credit. The credit creation mechanism allows the supply of credit money to be flexibly regulated and, as a means of payment and a medium of exchange, it is perfectly suited to the requirements of economic development. However, the disadvantage of credit money is that it is decoupled from precious metals and is seen more as a monetary symbol, which is stored and circulated in the form of banknotes or even electronic symbols. In fact, the modern international monetary system is essentially a fully credit-based monetary system. Following the collapse of the Bretton Woods system and the decoupling of the US dollar from gold, precious metals are no longer the only monetary anchor for credit currencies. Governments find suitable monetary anchors for their official currencies in order to ensure the stability of their currency values, which are usually commodities in the global economy, but also by reference to the value of other countries currencies. But basically, the instability of credit currencies is always present. Adjustments in monetary and exchange rate policies, debt credits, and changes in commodity prices can trigger large fluctuations in the value of credit currencies, and currency devaluations become the norm. The value of the Russian ruble is closely linked to international oil prices, and a very important factor in the ruble's devaluation in 2014 was the plunge in oil prices triggered by the increase in crude oil supply by OPEC and the US. Carbon currencies are both commodity and a credit currency. As a commodity currency, they are homogeneous with carbon emission rights, and their value is completely governed by the value of carbon emission rights, which can neither depreciate nor appreciate at will. Carbon currencies as credit currencies are based on international credit and government credit, and the amount of money issued is both constrained by the carbon budget and more so by

the carbon credit creation mechanism, which encourages the use of low carbon technologies and emission reduction projects to create and issue carbon currencies. As such, the commodity nature of carbon currencies provides a real value basis, which is more stable than a mere credit symbol; the credit nature of carbon currencies provides a credit creation basis, which is conducive to the growth of carbon currencies based on credit creation mechanisms.

4. CONCLUSION

By examining the properties and functions of carbon currencies, this essay makes the following main points. Firstly, carbon currency is a standardized unit with both commodity and credit attributes that can be issued for the purpose of greenhouse gas emission reduction, and can be used for exchange, storage and lending, and is the result of the monetization of carbon emission rights and is a form of monetization of carbon assets. It is the result of the monetization of carbon emission rights, and is a form of monetization of carbon assets. Secondly, carbon currencies can perform the functions of a measure of value, a means of storage, a means of payment and a world currency. As a measure of value and a means of payment, carbon currencies can measure and pay not only the traditional value of commodities but also their ecological added value. In the context of a changing global environment, carbon currencies have a clear monetary advantage over traditional currencies in terms of their monetary properties and functions. According to the World Bank, carbon emissions trading could become the number one commodity after oil, and such a rapidly growing and potentially large market will have an impact on the current international monetary system and the world economic order. Under the current unilateral US dollar monetary system, the economic order is volatile and crisis-prone, and the one-dollar oil transmission mechanism further reinforces the unilateral dollar standard and makes it more difficult to balance the fluctuations within this system. The rise of carbon trading will have an impact on the current paper currency standard, with the US dollar as the only key currency, and it is worth examining whether the formation of a carbon trading mechanism and a global carbon trading system will lead to a new currency flow and a new monetary standard system.

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