Research on the central bank's carbon emission reduction support tool under the dual carbon target

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Abstract. Under the background that central banks have successively issued green financial policies to deal with climate change, on November 8, 2021, the people's Bank of China officially announced the creation and launch of carbon emission reduction support tools to help achieve the "double carbon goal" as soon as possible. Support the development of key areas such as clean energy, energy conservation and environmental protection and carbon emission reduction technologies in a steady, orderly, accurate and direct manner, and leverage more social funds to promote carbon emission reduction. This structural monetary policy tool is different from the traditional monetary policy. It will drive the accurate delivery of basic currency through its special transmission mechanism; Stimulate the overall growth of green credit scale; Promote the adjustment of industrial structure; Help to further improve the relevant information disclosure and review mechanism. At the same time, as a long-term financial instrument, carbon emission reduction support tool still has great room for improvement in the future. It is expected to be continuously improved in supporting credit policies, issuing objects, supporting industries, disclosure mechanism and other aspects.

Keywords: central bank, carbon emission reduction support tool, structural monetary policy, transmission mechanism.

1. Introduction

1.1 Climate issues have become increasingly prominent

"Double carbon goals" is a hot topic this year. Climate change caused by a large amount of carbon emissions under industrialization is a global problem that all mankind need to face together, which is related to the sustainable development of human society. From the perspective of climate change, this kind of emission reduction is not completely borne by the public economy. Therefore, without human intervention and giving play to the role of the "tangible hand" of the government, it will seriously affect the allocation of resources and make it difficult to achieve sustainable development. As countries put carbon governance on the agenda, China has also launched a series of policies in an orderly manner to promote the realization of carbon neutralization goals in all walks of life.

1.2 domestic and foreign central banks help carbon emission reduction

Central banks of all countries are responding positively to the challenge of climate change. European Central Bank: integrate climate change response into the monetary policy framework. The Federal Reserve has established two committees to assess the impact of climate change on financial institutions and the financial system from the perspective of micro and macro prudence.

The people's Bank of China has also launched a series of policies to help green finance and help the implementation of carbon emission reduction support tools. Including providing preferential capital interest rates and green special loans to qualified financial institutions; Guide financial institutions to provide preferential interest rate financing for key emission reduction areas; Accelerate carbon emission information disclosure and green finance evaluation; Conduct climate risk stress tests.

In the medium and long term, climate change will have a huge impact on economic activities and financial development. The mission of the central bank is to maintain the stability of the monetary and financial system and promote the stable and healthy development of the national economy.

Supporting the private sector to deal with climate change is conducive to long-term macroeconomic stability. The participation of the central bank has greatly promoted the capital market to help carbon emission reduction and injected a lot of funds into green and sustainable development.

2. Policy interpretation

2.1 Carbon emission reduction support tool is a structural monetary policy

The carbon emission reduction support tools launched by the central bank this time are similar to the inclusive reserve requirement reduction and small refinancing for supporting agriculture. In essence, they are a kind of structural monetary policy. Structural monetary policy [1] refers to the differentiated monetary policy adopted by the central bank in order to adjust the economic structure and promote coordinated economic development, which is different from the unified monetary policy. Compared with the traditional conventional monetary policy, the structural monetary policy has obvious differences in the operation mode and operation objectives. It has the characteristics of directional adjustment and differential treatment. This policy is often more targeted, accurate and practical. As a structural monetary policy, carbon emission reduction support tools targeted to guide the flow of financial resources to the core industries of low-carbon emission reduction and promote their development and growth, so as to "point to area" and help the whole industry achieve the dual carbon goal.

2.2 The launch of carbon emission reduction support tools is necessary

① "Adding" promotes the goal of double carbon. Carbon emission reduction support tool refers to a set of policy "toolbox" set up by the central bank to support carbon emission reduction. It can pool part of the low-cost funds to support key carbon emission reduction projects. And guide commercial banks to expand their support for carbon emission reduction financing activities, and leverage more financial resources to favor green and low-carbon industries. [2]

② Promote the green transformation of the financial industry. Carbon emission reduction support tool is a structural monetary policy tool directly to the real economy, so the financial industry plays an indispensable role in the process of green transformation. By providing low-cost funds to qualified financial institutions and supporting financial institutions to provide preferential interest rate financing for key projects with significant carbon emission reduction benefits, this policy has effectively improved the enthusiasm of financial institutions and promoted the development of green finance. [3]

2.3 Implementation process of carbon emission reduction support tool

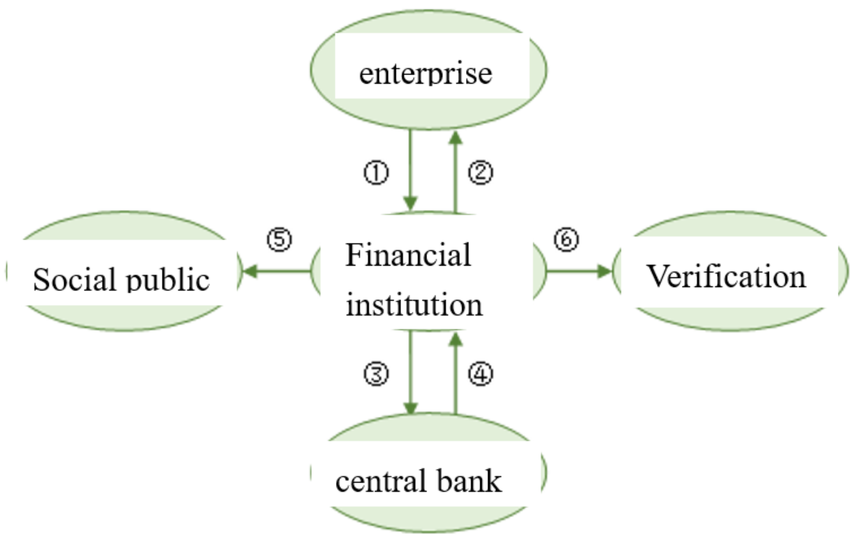

Figure 1 implementation flow chart of carbon emission reduction support tool

Enterprises → financial institutions: industries with significant carbon emission reduction effects that are mainly supported, such as clean energy, energy conservation and environmental protection, carbon emission reduction technology, etc. the enterprises included can apply to financial institutions for loans and obtain preferential interest rate financing of the project.

Financial institutions → Enterprises: financial institutions take their own risks and make independent decisions based on the principle of fairness and justice. Provide carbon emission reduction loans to support three types of enterprises in key areas of carbon emission reduction, and the loan interest rate should be roughly the same as the market quotation interest rate (LPR) of loans of the same period and grade. [4]

Financial institutions → central bank: financial institutions can apply for financial support from the people's Bank of China after applying for and issuing carbon emission reduction loans for enterprises in key areas.

Central bank → financial institutions: after receiving the request for financial support from financial institutions and reviewing the qualified collateral of financial institutions, the central bank adopts the direct mechanism of "loan first and then loan", and provides funds to financial institutions at 60% of the loan principal, the interest rate is 1.75%, the term is one year and can be extended twice.

Financial institutions → the public: after receiving financial support from the central bank, financial institutions need to disclose project information to the public on a quarterly basis, including carbon emission reduction fields supported by carbon emission reduction support tools, project quantity, loan amount, weighted average interest rate and carbon emission reduction data, and accept the supervision of the public.

Financial institutions → audit institutions: after financial institutions disclose the information of carbon emission reduction projects supported by carbon emission reduction tools, the central bank will verify and verify the authenticity of information disclosure of financial institutions in conjunction with relevant departments by entrusting third-party professional institutions for verification and other means.

3. Conduction mechanism

As a structural monetary policy, the transmission mechanism of carbon emission reduction support tool is different from the traditional monetary policy. The transmission mechanism of traditional monetary policy includes interest rate, bank credit, asset price and exchange rate, while the transmission mechanism of carbon emission support tools consists of four parts: signal and expectation transmission, credit and directional support transmission, interest rate and cost transmission and risk and undertaking transmission. [5]

3.1 Signaling and expected transmission mechanism

According to the development requirements of the double carbon goal, the central bank launched carbon emission reduction policy tools and operation information, transmitted the signals of national economic structure adjustment and energy industry development and upgrading to the society through policy communication, interview and answering reporters' questions, and changed market expectations. After receiving the signal from the central bank, the public gradually realized the main direction and focus of the country's future development, began to change their expectations for the development of clean energy, energy conservation and environmental protection, carbon emission reduction technology and other industries, and adjusted their own behavior to make it consistent with the direction of the country's behavior. Financial institutions will also follow the adjustment direction of national policies, increase the information disclosure requirements for dual carbon track enterprises, so as to alleviate the information asymmetry and adjust the asset liability and capital cost expectations of various industries, so as to further adjust their capital structure and the focus trend of future main business, comply with the policy development and increase investment and support in targeted support fields.

It can be seen that the signal and expectation transmission mechanism of carbon emission reduction support tools can slow down the information asymmetry, actively strengthen the information exchange between various subjects, change the expectations and behavior of various subjects in the financial market, and make them pay more attention to the carbon emission reduction industry, so as to gradually achieve the national dual carbon development goal.

3.2 Credit and directional support transmission mechanism

Carbon emission reduction support tools need to be implemented by financial institutions represented by commercial banks to invest credit funds in industries or regions supported by carbon emission reduction tools. With its "loan before loan" approach, financial institutions will provide green credit services with lower capital cost, so as to stimulate their motivation to inject funds into the carbon emission reduction industry, so as to reduce the financing cost of supporting the industry, realize the accurate transmission of credit, and "add up" for investment and construction in key areas such as clean energy. According to the data of China Banking Insurance Regulatory Commission, the overall non-performing asset ratio of China's banks fluctuates at 2%. Due to the cold of the real estate industry in the past year, the non-performing asset ratio will also rise, but the non-performing rate of green credit is less than 0.4% at the lowest and only 0.7% at the highest. Therefore, increasing the credit support of industries such as carbon emission reduction is not only conducive to optimizing the asset structure, increasing the proportion of green credit, and helping to achieve the goal of carbon peak and carbon neutralization as soon as possible; It is also conducive to stabilizing asset quality performance. This also realizes the transmission mechanism between bank credit and targeted support, and further promotes the development of carbon emission reduction.

3.3 Interest rate and cost transmission mechanism

In terms of interest rate level, the policy stipulates that the corresponding loan interest rate of financial institutions should be roughly the same as the LPR of the same term grade. At present, about 68% of the loan interest rate of commercial banks is added on the basis of LPR. In other words, carbon emission reduction support tools greatly reduce the actual financing costs of enterprises in the carbon emission reduction industry, help the company continuously reduce costs and increase operating income, improve profitability, adjust the rationalization of enterprise capital structure, and finally realize economic adjustment, transformation, optimization and upgrading.

In terms of interest rate structure, the interest rate of carbon emission reduction support instruments is 2.1% lower than the one-year interest rate of LPR, and then multiplied by the 60% capital support coefficient of "borrowing before lending", it can be concluded that if financial institutions support qualified one-year carbon emission reduction enterprises, they can obtain interest margin income of 1.26%; If the loan term is considered to be more than one year, it may produce higher interest margin income. This is likely to promote the transmission of short-term capital interest rate to medium and long-term financing interest rate and reduce the risk premium. The depression effect of capital will be produced in the carbon emission reduction industry, which is conducive to encouraging financial institutions to issue medium and long-term loans to enterprises, making both sides profit, financial institutions obtain higher interest margin income, and relevant companies in the field of carbon emission reduction obtain medium and long-term financing amount at a lower cost. [6]

3.4 Credit risk and transmission mechanism

The ingenious design of this carbon reduction tool is that financial institutions need to "make independent decisions and bear their own risks". 60% of the loan principal is supported and subsidized by the central bank, and the remaining 40% is issued by commercial banks. This means that for every 100 yuan issued by financial institutions to enterprises, the central bank will invest 60 yuan of base currency accordingly. After about 7 times of money multiplier, the market money supply will eventually be 420 yuan, From this, we can see the positive effect of the central bank's carbon emission reduction tool policy. On the one hand, it has effectively mobilized the enthusiasm of financial institutions to support key areas of carbon emission reduction and brought a broader credit stabilizing effect; On the other hand, financial institutions pay part of their own funds, which is conducive to due diligence in the process of enterprise audit, so as to achieve effective support.

The policy also stipulates that financial institutions are required to disclose the carbon emission reduction fields, number of projects, loan amount, weighted average interest rate and carbon emission reduction data supported by carbon emission reduction support tools to the society on a quarterly basis, and accept the supervision of the public. Previously, the refinancing and rediscount tasks of financial institutions did not need to be disclosed to the public. The information disclosure provisions of carbon emission reduction support tools can better promote the effective investment of financial institutions, increase the information transparency of activity support, and avoid the chaos of fund issuance to achieve the investment target as much as possible.

In general, as a structural monetary policy, carbon emission reduction support tool makes financial institutions and the public more fully understand the significance of green transformation through the transmission mechanism, which has a significant impact on the development of enterprises, continuously encourage and guide social funds to flow into green and low-carbon fields, reduce financing costs for enterprises, enhance profitability, and help achieve the goals of carbon peak and carbon neutrality. [7]

4. Policy Significance

4.1 Carbon emission reduction support tools will drive the release of basic money and economic growth

As a long-term monetary policy tool, carbon emission reduction support tool will cooperate with medium and short-term monetary policy tools such as special refinancing, providing a new way for the central bank to put base currency into the market. It reflects the subtle changes in the basic money supply mode of the central bank, changing from "flood irrigation" to "precision drip irrigation", and paying more and more attention to the operation ideas of "precision direct" and "suit the remedy to the case".

In an environment where the stimulative effect of traditional loose monetary policies such as RRR and interest rate cuts on the social economy is weakening, the carbon emission reduction support tool and its supporting special refinancing policy, as a direct way of money delivery, can effectively regulate the basic money supply and guide the flow of capital, which is of great significance to drive the accurate delivery of basic money to green and low-carbon industries in need.

According to the data disclosed by the CBRC, by the end of September 2021, the green credit balance of 21 major domestic banking institutions had exceeded 14 trillion yuan, ranking first in the world. Relevant studies show that the contribution rate of capital investment to China's economic growth and its pulling effect on the economy are much higher than other factors [8]. It is conceivable that the large amount of capital investment brought by carbon emission reduction support tools will further stimulate the development of China's green industry and the growth of the overall economy.

4.2 Carbon emission reduction support tools will stimulate the overall growth of green credit scale

At the level of financial institutions, assuming that the remaining 40% of the funds come from their original financing channels, the comprehensive capital cost of carbon emission reduction loans is 1.81% based on the average interest bearing debt service rate of major large commercial banks and joint-stock banks in the first half of 2021 (1.90%) [9], that is, the capital cost under the original financing channels of financial institutions. This interest rate level is 2.95% of the one-year medium term lending facility (MLF); Compared with 2.25% of one-year re loans for agriculture and small loans, it is more competitive. In this scenario, financial institutions will consciously adjust the credit structure and expand the scale of green credit from the supply side due to the consideration of refinancing cost control.

At the enterprise level, the loan interest rate (3.8%) is much lower than that of Pratt & Whitney small and micro enterprises (5.68%) under the provision that the loan interest rate of carbon emission reduction should be roughly the same as that of LPR. The preferential interest rate reduces the financing cost of relevant industries, and the enthusiasm of enterprises to borrow is also increased. Especially for emerging enterprises in the development period in the industry, its attraction is undoubtedly significant, which promotes the expansion of the scale of green credit from the demand side.

4.3 Carbon emission reduction support tools will promote the upgrading of industrial structure

The initial support scope of the carbon emission reduction support tool is "small and precise", focusing on the three fields of clean energy, energy conservation and environmental protection and carbon emission reduction technology. Its importance in low-carbon transformation is self-evident.

Drawing on the experience of western developed countries in controlling carbon emission sources, enterprises should not only optimize the original production process, but also control carbon emissions or neutralize the impact of greenhouse gases from the source by developing new technologies, new energy and new equipment [10]. The field of clean energy covers energy supply, energy storage, energy transmission, energy consumption and other sectors, providing support for the structural adjustment of energy and power; In the field of energy conservation and environmental protection, we focus on improving industrial energy efficiency and provide new energy-saving equipment such as power system for industrial production, which is the "big head of energy consumption"; In the field of carbon emission reduction technology, carbon capture, storage and utilization are used to provide technical support for the digestion of carbon dioxide gas that has been discharged or is difficult to be "subtracted".

It can be seen that the three industries supported by the energy conservation, environmental protection and carbon emission reduction support tools play an important role in low-carbon transformation. Giving them some financial support can bring significant carbon emission reduction effects, widely affect the whole market and promote the transformation and upgrading of the overall industrial structure.

4.4 Carbon emission reduction support tools will help further improve the relevant information disclosure and review mechanism

The implementation of carbon emission reduction support tools has officially put the information disclosure related to carbon emission reduction on the agenda. If financial institutions want to apply for carbon emission reduction support tools and obtain financial support, they must timely and accurately disclose the carbon emission reduction fields, number of projects, loan amount, weighted average interest rate and carbon emission reduction data to be supported by carbon emission reduction tools, and accept the verification of supervision, third-party professional institutions and public supervision. However, at present, most financial institutions have not established a unified green information account for enterprises, which makes it difficult for financial institutions to timely and accurately understand the actual contribution of project carbon emission reduction and other relevant information when financing green funds to enterprises.

The inequality of information requires financial institutions to further establish and improve the information disclosure and review mechanism related to carbon emission reduction. Financial institutions represented by commercial banks can improve their organizational structure, lending procedures, carbon emission reduction project identification and corresponding index system [11]. Combined with China's specific national conditions and referring to the existing mechanisms abroad, continuously accumulate experience in practice, consolidate the data base, explore and develop carbon emission reduction management information system, and improve the construction of database and relevant information disclosure index system.

5. Policy outlook

As the current capital market has fully expected the use of carbon emission reduction project support tools, the capital financial market entities are more likely to be directly promoted by carbon emission reduction project support tools, which are more likely to be concentrated in the large carbon emission reduction support industries supported by key industries, while the direct impact on other capital market entities is more likely to be neutral.

As a policy support tool of economic structure, carbon emission reduction monetary support policy tool can be regarded as a means of loose money to a certain extent, but from the current economic policy situation, it is not a large-scale loose money. Therefore, if we want to gradually expand the actual effect of carbon emission reduction support tools, we also need the strong support of supporting monetary and credit policies.

High risk and low interest rate spread directly lead to the fact that the central bank's carbon emission support tools may be less attractive to some national commercial and financial institutions. Among the central bank's carbon emission reduction support tools, the interest rate of short-term loan funds provided by the central bank is generally 1.75%, and the interest rate spread can directly reach 2.10%. However, from the perspective of commercial financial institution management, in order to avoid greater financial risks and stricter financial supervision [12], most national commercial financial institutions do not have too high demand for the central bank's carbon emission reduction support tools. Because from the perspective of interest margin, the short-term overall deposit capital issuance cost of most national commercial financial institutions is not high. At present, the overall deposit and loan issuance interest margin of most national commercial financial institutions is more than 2% to 3%. In contrast, the overall deposit issuance cost of most local commercial financial institutions is higher, and it is more necessary to reduce the overall capital issuance cost.Therefore, in order to achieve better results, the fund distribution service object of the support tool can consider trying to expand from most national commercial financial institutions to other local commercial financial institutions.

From the perspective of liquidity, as the industries and loan granting scope of carbon emission reduction support tools are still narrow , its role in liquidity may not meet expectations. At present, the participants in the national carbon market are relatively single. All the enterprises included in the list of key emission control belong to the power generation industry, with a high degree of homogeneity, which is difficult to form a stable and sustainable trading volume. Therefore, in the future, with the development of relevant technologies and industries, the carbon emission reduction industries supported by policies will be constantly updated, so as to better help technological breakthroughs and industrial upgrading. In addition, due to the lack of institutional and individual investors in China's current carbon trading market, a large number of transactions are substantive demand transactions and lack of market liquidity. Therefore, in the future, institutional investors should also be introduced to participate in the national carbon market transactions and enrich the varieties of carbon finance.

At present, China is still in the exploratory period in the information disclosure mechanism of carbon emission reduction, and the relevant information disclosure system and supervision mechanism still need to be further improved. In order to effectively prevent market risks, avoid falsification of carbon emission data and improve the market supervision system, we should learn from the mature experience of developed countries, improve the information disclosure index system as soon as possible, establish relevant audit standards, and establish a diversified and long-term supervision mechanism of multi sectoral collaborative supervision.

References

[1] Lo C , Yeung A , Cheng T . The impact of environmental management systems on financial performance in fashion and textiles industries[J]. International Journal of Production Economics, 2012, 135(2):561-567.

[2] Chen Ning, Sun Fei Comparison of ESG system development at home and abroad and suggestions on building ESG system in China [J] Development research, 2019391 (3): 61-66

[3] Ma Xili Research on the development trend of ESG investment in China [J] Research on generalized virtual economy, 2019 (2)

[4] Yan Lidong Suggestions on the application of environmental assessment in China's ESG assessment system [J] Environmental protection, 2019, 47 (7): 45-48

[5] Business environment and strategy research group of financial investment institutions, Yan Yiming, Su Jinghao, etc ESG investment philosophy and application prospect [J] China economic report, 2020117 (1): 70-78

[6] Xu Xiaoling, He Fang, Chen Na, etc ESG information disclosure policy trend and countermeasures and suggestions of Chinese listed energy enterprises [J] World petroleum industry, 2020 (3)

[7] Feng Jialin, Li Huaqian, sun Zhongjuan Comparison of ESG information disclosure standards at home and abroad and Its Enlightenment to China [J] Contemporary managers, 2020 (3): 57-64

[8] Martínez-Ferrero, J., Ruiz-Cano, D., & García-Sánchez, I. M. (2016). The causal link between sustainable disclosure and information asymmetry: The moderating role of the stakeholder protection context. Corporate Social Responsibility and Environmental Management, 23(5), 319-332.

[9] Milgrom, P. R. (1981). Good news and bad news: Representation theorems and applications. The Bell Journal of Economics, 380-391.

[10] Plumlee, M., Brown, D., Hayes, R. M., & Marshall, R. S. (2015). Voluntary environmental disclosure quality and firm value: Further evidence. Journal of Accounting and Public Policy, 34(4), 336-361.

[11] Hope, O. K., & Thomas, W. B. (2008). Managerial empire building and firm disclosure. Journal of Accounting Research, 46(3), 591-626.

[12] Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. The accounting review, 86(1), 59-100.