

Taxation Reform for Promoting Low Carbon Green Growth in China¹

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The document, Recommendations on China's 12th National Economic and Social Development Master Plan (the 12th Five Year Plan: 12th FYP) has been issued on 27 October 2010⁴. It proposes the overall goal and ten strategic tasks during the 12th FYP. Following that the 11th National People's Congress approved the 12th FYP in March 2011⁵. Generally speaking, the development trend in the 12th FYP is more emphasized on the inclusive growth which is a development modality focused on the equality of opportunity in terms of access to markets, resources, and unbiased regulatory environment for businesses and individuals. This development modality attaches great importance to green growth and sustainable development in terms of energy efficiency and emission reduction, environmental protection and resource conservation. Furthermore, green growth and low carbon economy are two terms that are getting more and more attention from public. Both the government and academy circles have frequently emphasized the application of these two strategies in solving environmental issues and sustaining economic growth in the context of global economic crisis since 2008.

Taxation reform is one of the five avenues proposed in the 12th FYP. Introducing environmental protection taxes is listed as one of the priorities under taxation reform. Environmental concern is one of the factors which shape the taxation reform. Though the revenue collected from the environmental taxation will not be a great share of the total tax

revenue in China, it will induce the change of the behavior of producers and consumers. This paper overviews the current endeavors in this trend in China, identifies opportunities, barriers and challenges of taxation reform for environmental concerns, discusses the potential roles in promoting low carbon green growth, and provides general recommendation for the design and implementation framework for environmental taxation reform. This paper pays less attention on defining and discussing low carbon green economy itself due to the limited size of the article.

INTRODUCTION

Climate change, ecosystem degradation, desertification, deforestation, the impacts of pollution on human health, the growing resource scarcity, as well as concerns about food, energy and water security are current challenges facing China. As these environmental and social issues, arising along with the rapid economic development and urbanization, are of more and more concern, and after the formation of market economy, the Chinese government has decided to rely more on economic policy to promote the low carbon green growth.

Environmental taxation policy is used as an economic instrument for pollution control/prevention, resource conservation, and environmental protection. Environmental Taxation Reform (ETR) is critical to support sustainable macroeconomic, social, and environmental development, and thus vital to the low carbon green growth in China.

In a broad sense, ETR includes the establishment of the environmental tax, the reformation of fiscal and preferential policies related with environment and natural resources, as well as the elimination of inappropriate subsidy and charge policies which are adverse to the

environment. In a narrow sense, ETR means to collect or reduce taxes from entities or individuals which are engaged in exploiting and utilizing, or protecting environmental resources, according to the extents of the exploitation, pollution or protection of environment.

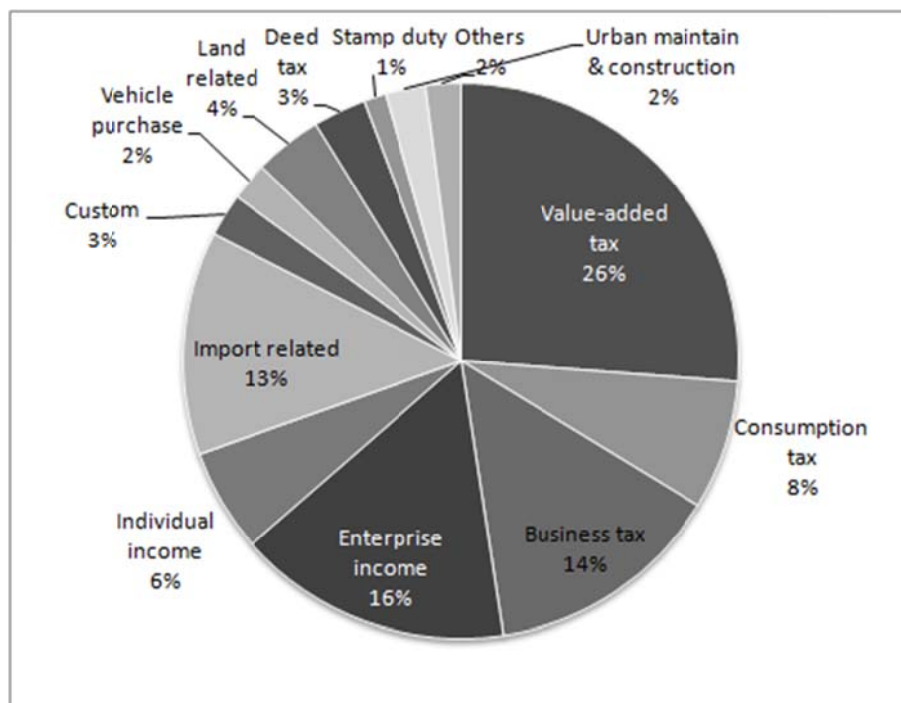
In addition to the ongoing ETR, fiscal policy changes for environment protection are worth discussing here in order to support ETR. Environmental Fiscal Reform (EFR) for promoting low carbon green growth in China is summarized into two components: one is the fiscal policies for motivating energy efficiency and emission reduction, consisting of the improvement for special fiscal fund allocation, fiscal subsidy and transfer, green purchase of government, and national bond and so on; another component is the taxation reform for controlling GHG emission, such as adjusting environmentally related taxation and introducing environmental tax.

CURRENT PRACTICES OF ETR&EFR IN CHINA

After 1994 fiscal and taxation reform, there are 22 types of taxes in the taxation system in China⁶, with value-added tax, enterprise income tax, and business tax as the main ones. In 2010, the total tax revenue in China is approximately CNY 7321 billion. Figure 1 shows the breakdown of China tax revenue in 2010. The environmentally related taxes, such as fuel tax under consumption tax and resource tax, account for about 4.6 per cent⁷ of the total tax revenue in China, which is relatively low compared with that of 5.8 per cent (not including environmental fees) in OECD countries in 2009⁸. Although there are environmental benefits brought by the implementation of environmentally related taxes, they were not originally designed for environmental protection, more environmental factors should be considered

during ETR and further taxation design phase.

Figure 1: Breakdown of China Tax Revenue in 2010



Source: China Ministry of Finance (www.mof.gov.cn)

Introducing environmental tax has been endorsed in several important national official documents. In June 2007, the State Council issued *Comprehensive Working Approach for Energy Efficiency and Emission Reduction in 11th FYP*, which firstly proposed to levy environmental tax in China. In the 2009 and 2010 *State Council's approval on the Suggestion of National Development and Reformation Committee(NDRC) on the Economic System Reform*, the ETR proposal was suggested to be carried out. And as recently reported, the proposal of levy environmental tax has been approved by Ministry of Finance, NDRC, and Ministry of Environmental Protection, and was submitted to the State Council for approval in 2010. It proposes to levy tax on industrial SO₂ emission and wastewater discharge.

Pollution levy, another economic instrument to internalize environmental cost into

polluter's cost, has been being practiced since 1970s. The policy has made a great contribution to make polluters responsible for the emissions and discharges, raise revenue for comprehensive pollution abatement, and build capacity for environmental administration. The revenue raised was particularly important at the early times in 1980s and 1990s when China experienced lack of investment for environmental protection.

According to the decision of the State Council, major changes to pollution levy have come into effect from 1 July 2003. The levy extended to cover small private enterprises which were previously exempted, and transfer payment of levies and charges to the main local budget rather than local environmental authorities.

In addition to introduce environmental tax, there are also initiatives undertaken for environmental fiscal reform. One of them is to set up the account code for environmental protection under general budgetary system which was in place in 2007. It is now the task to find how to get more funding through the account and how to optimize the account by arranging more rational subaccounts.

Starting from 1 January 2009, fuel tax has been imposed on vehicle fuel consumption as a substitute for road toll. It aims at fuel saving by controlling the gas and diesel usage and consequently reducing the GHG emission. It is considered that the overall tax burden for taxpayer is not largely increased as the road related fees, such as road toll, highway transportation management fee, and surcharge on road transport of passengers and cargos, have been replaced by fuel tax. There is also no impact on the gas/diesel price as the tax base is the unit fuel consumption rather than the oil price. This is helpful for the environmental tax

reform which could refer the measures of fuel tax reform for environmental protection and energy-saving without raising the tax burden.

Another is to introduce ecological compensation policy, which is one of the popular topics in environmental policy arena in China. This policy covers more than payment for ecological services. Right now, most modalities of ecological compensation in China are to transfer payments of public budget from beneficiary cities/provinces to the sacrificed cities/provinces in terms of losing economic opportunities, protecting nature and doing more work to improve environmental quality.

THE ROLES OF ETR IN PROMOTING LOW CARBON GREEN GROWTH

As one of the priority economic reforms during the 12th FYP which aims at sustainable development and environmental protection, ETR will play significant roles in promoting low carbon green growth in China. By investigation and practices in foreign countries, it shows that environmental tax not only can alter the polluter's behaviors but also help to protect the environment and improve taxation management under the triple bottom line: environment, economy and society. Detailed roles of ETR are discussed below:

1 Internalizing environmental cost

Environmental protection and resource conservation is one of the basic national policies and the main purpose of ETR as well. The implementation of ETR will definitely benefit the environment and resources. There will be an earmarked fund collected from the environmental taxation only for environmental protection, such as pollution control, investment in low carbon related technologies and R&D, and the compensation for losses due

to the environmental pollution. The price of the related products will be increased due to the imposition of environmental tax, which will decrease the market demand and correspondingly reduce the production, and thus control the total amount of pollution.

2 Changing behavior

ETR will alter the producers and consumers behaviors toward a more sustainable and low carbon production and consumption pattern. Special polluting product taxes will be imposed on consumers when purchasing products (such as phosphoric detergent, mercury and chrome battery, and disposable chopsticks) with potential pollution during usage or disposal, and then get tax payback while returning the product or its container. This could limit the consumption and usage of special products and encourage the return of the used product or its container. Another example is that in many OECD countries, significant taxes are imposed on vehicle fuels, which increase the cost of driving and therefore induce drivers for behavior changing by either driving a more fuel efficient vehicle or a vehicle that uses a lower emission power source, or even driving less. ETR could also provide motivation to enterprises for technology innovation and pollutant emission reduction, thus promote low carbon green growth and improve social welfare. In the example above, the increased demand for more fuel efficient and lower emission powered vehicles induced by vehicle fuel taxes provides strong incentives for automakers to innovate.

3 Promoting economic structural change

This not only plays positive roles in environmental protection and inducing public behavior, ETR also acts as one of the factors to improve economic and managerial development in

China through the following aspects:

a) Sector structural adjustment

By bringing environmental protection and social benefits, ETR will indirectly help on the adjustment of sector structure in China. Higher environmentally related tax rate or newly established environmental tax will increase the production cost for energy-intensive enterprises and force many of them switch to a low carbon emission ways for business growth. Such as a chemical enterprise with outdated equipment and technologies will make efforts to change product structure and improve the technology to avoid higher tax burden.

b) Raising fund for environmental protection

Environmental protection needs large amounts of governmental investment, and ETR can raise funds for government. Although the environmental tax revenue belongs to public financial funds, it could be used as a special purpose fund for pollution control. At the same time the increased tax revenue could also be one of the financing channels for the environmental protection projects. This will support the implementation of the government's environmental planning and improve its capacity of macroeconomic control.

c) Strengthen environmental fiscal management and taxation system in China

ETR could benefit the environmental fiscal management in terms of revenue and expenditure arrangement. After implementing environmental taxation, the revenue will be allocated under the fiscal budgetary management, and the expenditure on environmental protection will be managed under the expenditure category of fiscal budget. Thus by implementing ETR, the revenue and expenditure will be regulated to ensure the fund for environmental protection.

ETR will also play an important role on greening the taxation system in China, since more environmental issues will be integrated into China taxation system, such as including water resources under resource taxation and considering coal and polluting product tax under consumption taxation and so on.

d) Improve competitiveness in international trade

The relationship of international trade and environmental protection is becoming closer under the global economy. By establishing environmental taxation policy, domestic environment could be protected during the consumption and deposition of import products with potential pollution. While in compliance with the *General Agreement of Tariffs and Trade* (GATT1994) and other relevant agreements of international business, levy environmentally related tax on the import products with potential environmental pollution will protect domestic environment and market and provide China with equal rights and opportunities in international trade.

OPPORTUNITIES AND BARRIERS OF ETR

The current trend of reform and transition in China and major developments in the environmental and fiscal policy fields provide important opportunities for ETR, which are considered in the following aspects:

1. Rapid economic growth in the last 30 years has brought China to become the second largest economy in the world, which indicates more public revenue will be available for ETR, and the fiscal revenue has increased from CNY 116 billion in 1980 to CNY 7,321 billion in 2010. At the same time, rapid environmental growth has exerted great pressure on environmental quality and ecological systems. In order to sustain low carbon

green growth, ETR shall be undertaken to harmonize among economic growth, social development, and environmental protection;

2. The newly established laws and regulations (for example Water Act, EIA law, the Promotion of Cleaner Production law and so on) are a strong legal and political basis for supporting achievement of environmental objectives. The higher environmental goal calls for innovation of new policies for environmental management. ETR are promising tools for altering cost structure that push polluters to take measures on pollution control;
3. Public environmental awareness has been raised as people's living standard improves. This in turn calls for more progressive approach toward curbing environmental pollution and ecological degradation;
4. International pressure has induced China to take preemptive measures in ETR. In terms of climate change, carbon tariff that USA and EU countries have planned to introduce may make China establish an environmental tax/carbon tax.

Nevertheless, inputting ETR into effect, there are always barriers of institutional and political, technical, economic and social issues, which could hinder the process of ETR details in:

1. Institutional/political barrier. The introduction of ETR may change the current institutional/political mechanism. Some of the authorities may lose power while some may benefit from the ETR. The first group tends to object to ETR. And there may be coordination problems, or even institutional conflicts due to the unclear responsibility-sharing between the authorities and different levels of government;

2. Technical barrier. ETR have more technical issues compared with the traditional taxation. Taxation and financial professionals may not be good at estimating the amount of pollutant emission or discharge. They may rely on environmental professionals to get the necessary data;
3. Economic/social barriers. This includes the concerns on affordability, loss of competitive advantages, and regional transferring of polluting industrial plants. If environmental taxes are widely levied on goods, there may be income regression for consumers. And environmental tax will increase the operating cost of enterprises, after which the products could lose international competitiveness.

SUGGESTION ON ETR FOR PROMOTING LOW CARBON GREEN GROWTH

Low carbon green economy is the direction and trend of China's development. The suggestion on ETR for promoting low carbon green growth is made based on the above discussion and consideration as well as our previous studies on environmental taxation. As it is at the beginning stage, comprehensive measures including environmental taxation reform shall be undertaken to make low carbon green growth attractive to the society.

(1) Eliminate taxation policies that hinder low carbon green growth

China has been transforming from a planned economy to market economy for more than 20 years. Many previous subsidy policies have been adjusted or eliminated. Although the effects of subsidies are obvious, some of them still have negative effect on environment, economy and society, and could indirectly encourage enterprises to utilize resources and destroy the environment. Therefore, government shall eliminate those subsidy policies and preferential

tax policies while taking into consideration the impact on low carbon green growth and set up new subsidy policies and preferential tax policies. Detailed measures are suggested below:

- a) The preferential tax rate of value-added tax on coal gas, pesticide and farm plastic films (13% while regular rate is 17 per cent⁹) could indirectly encourage the production and sales of the products, which could cause serious air, soil and groundwater pollution. This preferential tax rate should be raised to the regular rate.
- b) In compliance with the State Council's provision of the export restriction on the energy- and resource-intensive products, export tax refund on these products should be reduced or eliminated gradually.
- c) According to the newly established Vehicle and Vessel Tax Law, which will be effective on 1 January 2012, cars are subject to the payment based on vehicle engine distribution. Lower tax rate is levied on smaller engine. In order to reflect the impact of vehicles on environment more accurately and better limit the vehicle usage, it is suggested to levy vehicle tax based on the amount of CO₂ emission or fuel consumption rather than the engine capacity.

(2) Combined environmental tax and charge policy for low carbon green growth

Although some of the functions of current environmental charge system in China will be overlapped with environmental taxes, the standard of environmental charge is much lower than average marginal disposal cost. Thus coexistence of environmental taxation and environmental charge is necessary to help increase the extent of stimulation function. A feasible framework for the combination of environmental taxation and charge shall be

considered during the design phase.

The environmental charge system needs to be strengthened by carrying out 3 approaches. One is to raise environmental charge rate to increase incentives for pollution reduction; secondly is to improve the utilization of the revenue from pollution levy; the last one is to increase efficiency of environmental investment.

(3) Integrated and independent environmental tax for promoting low carbon green growth

The integrated environmental tax, which is also called the environmentally related tax, such as consumption tax and resources tax, needs to be reformed for low carbon green growth as there are few environmental factors considered under these taxes. The change of tax system structure is not required for the reform of integrated environmental taxation. Only some of the tax items need to be adjusted with the approval from the State Council. So it is relatively easy to reform the current tax system by applying integrated environmental tax scheme.

The independent environmental tax scheme could be designed to include direct pollution tax, polluting product tax, ecological tax, and carbon tax. It is relatively difficult to implement since it requires the approval from the Chinese Communist Party Central Committee (CCPCC) to take effect. The objective of independent environmental tax scheme is to simulate pollution control and emission reduction, and thus support low carbon green economy. The design framework of both independent and integrated environmental tax is summarized in Table 1.

(4) Gradual approach is suggested in ETR

ETR shall be implemented gradually through a step by step approach. Environmental

taxation could be introduced at a relatively low level compared with the targeted final level, and to increase it gradually. The process may take a period of 3 to 5 years. However, the direction of reform shall be clear and the adjustment shall be carried out firmly.

Table 1: Design framework for integrated and independent environmental tax

Tax category	Taxpayer		Tax Base	Tax Rate	Collection	Remarks
Independent Environmental Tax						
Direct Pollution Tax	SO ₂ Tax	Any polluter discharge SO ₂ into atmosphere, especially the coal and petroleum users	Real amount of SO ₂ emission for large emission source; sulfur content of fuels for small scale	Initial designed flat rate: CNY1.2/kg	by environmental supervision department	Public institution and individual could be exempted
	NO _x Tax	End users of coal-fired boilers and owners of motor vehicles	Real amount of NO _x emission	CNY1200/ton(according to charging standard of NO _x)	by Environmental supervision department	
Polluting Product Tax	Fuel environmental tax	Anyone uses coal and oil as fuels	the real amount of purchased oil	Oil: CNY 0.2/L; gasoline: CNY 0.15/L	Petrochemical companies or gas station	Gas station should be installed with tax control instrument if it is responsible for tax collection
	Special polluting product tax	Consumers of special polluting products,including chemical fertilizer, pesticide, phosphoric detergent, mercury and chrome battery, and disposable chopsticks	the amount of consumption and value of pollution products	p-detergent:15%-20% price; m&c battery:CNY0.1-0.5/item; disposable chopsticks:100% price	in consumption chain	
Ecological Tax		Miners of mineral resource; developer and user of natural protected area	Mineral resource,type of the minerals and real extraction;natural protected area:scenic tour flow	Coal:CNY20/ton,crude oil:CNY30/ton,iron ore:CNY20/ton,copper:CNY100/ton,nonmetallic minerals:CNY5/ton,natural protected area:CNY2/person		
Carbon Tax		Any polluter discharge CO ₂ into atmosphere	Estimated emission in terms of C content of fossil fuel that generate CO ₂ such as coal, petroleum and natural gas.	CNY 100/t C		individual could be exempted
Integrated Environmental Tax						
Consumption Tax	Adjustment	Increase tax rate of gasoline and diesel oil; preferential tax for clean vehicle and cars with tail gas purifier installed				
	Coal consumption tax	Consumers of coal and coke	sulfur content of coal or coke	-	-	clean and moulded coal is exempted
Resource Tax	Adjustment	Adjust tax rates of natural resources such as coal, petroleum, natural gas and raw ore of ferrous metal; integrate the resource scarcity and ecological compensation into tax rate				
	Water resource tax	Anyone uses water resources	the amount of water consumed or the real amount of water supply	20-30% of water tariff; different tax rate based on the scarcity of water resource and water pollution condition	The original water supply companies for water tariff collection	
Value-added Tax	Adjustment	Preferential tax rate (13%) for environmental typed product and equipment; further preferential taxation for recycled resource and products				
Business Tax	Adjustment	Incomes from environmental technology transfer, environmental related services, and green building business are exempted				

NOTES

1. This paper is developed based on a note prepared for the Informal Meeting on Integrating Ecological Prices, East Asian Low Carbon Green Economy Roadmap, held in Bangkok, on 6 November 2010 by Economic and Social Commission for Asia and the Pacific (ESCAP). The paper benefits greatly from the discussion at the meeting. The author wishes to thank Mr. Rae Kwon Chung, director of EASCAP and his team as well as participants in the meeting for their useful remarks at the meeting.
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3. State Taxation Administration, China.
4. The document is entitled “*Recommendation on the 12th National Economic and Social Development Master Plan*” by the Chinese Communist Party Central Committee. http://news.xinhuanet.com/politics/2010-10/27/c_12708501.htm. accessed in July 2011.
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