Climate Bonds INITIATIVE

iisd International Institute for Sustainable Development / Institut international du développement durable

Spring 2015

Growing a green bonds market in China

Key recommendations for policymakers in the context of China's changing financial landscape

Sean Kidney, Beate Sonerud, Climate Bonds Initiative
Padraig Oliver, Climate Policy Initiative

www.climatebonds.net

Supported by:

Foreign & Commonwealth Office

'Growing a green bonds market in China: Key recommendations for policymakers in the context of China's changing financial landscape'

Written by:

Sean Kidney, CEO and co-founder, Climate Bonds Initiative
Beate Sonerud, Policy Analyst, Climate Bonds Initiative
Padraig Oliver, Analyst, Climate Policy Initiative

Thanks to Ting Su and David Uzsoki for contributions to this text.

This report is part of a broader project of the International Institute for Sustainable Development (IISD) working in partnership with the Financial Research Institute, Development Research Centre of the State Council (DRC-FRI): Greening China's Financial System Initiative. At IISD, this project was led by Simon Zadek, and Mark Halle.

Special gratitude goes to the United Kingdom Foreign & Commonwealth Office, who funded this project. We also wish to also acknowledge HSBC, who provided further financial support.

We want to acknowledge Chongyang Institute of Financial Study, Renmin University of China in the publication of this report.

Any errors or omissions remain the responsibility of the authors.

March 2015

Climate Bonds Initiative

The Climate Bonds Initiative, an international, investor-focused not-for-profit organisation, works to mobilize debt capital markets for climate change solutions. It works with institutional investors, with commercial actors and with governments to promote investment in projects and assets necessary for a rapid transition to a low-carbon and climate resilient economy. The Climate Bonds Initiative also runs an International Standards and Certification Scheme for climate bonds; investor groups representing $34 trillion of assets sit on its board and some 50 organizations are involved in its development and governance structure. **www.climatebonds.net**

International Institute for Sustainable Development

The International Institute for Sustainable Development (IISD) contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change and energy, and management of natural and social capital, as well as the enabling role of communication technologies in these areas. We report on international negotiations and disseminate knowledge gained through collaborative projects, resulting in more rigorous research, capacity building in developing countries, better networks spanning the North and the South, and better global connections among researchers, practitioners, citizens and policy-makers.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the International Development Research Centre (IDRC), from the Danish Ministry of Foreign Affairs and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector. **www.iisd.org**

Executive summary

China is committed to reforming its bond markets. This has implications both for financial and economic policy concerns, as well as environmental concerns, as it increases the opportunity to utilise the bond market to finance the transition to a low-carbon/green economy in China.

The aim of this paper is to provide a range of specific, action-oriented recommendations for China's policymakers on how to grow a green bonds market in China. It builds on the recommendations of a previous report that outlined international practices in the green bonds market and how they might be implemented in China (see Kidney & Oliver 2014).

This paper instead, is anchored in the Chinese context, evaluating the current state of play of China's bond markets and how this is changing with financial reforms in the short-medium term that may provide an opportunity for green bonds to emerge. In addition, Chinese-specific green definitions, standards and verification processes that can be leveraged in the design of a robust green bonds market are reviewed.

Key recommendations for developing definitions, standards and verification of green bonds

- ✓ **China's particular environmental challenges and financial system means China-specific definitions for green bonds are recommended. There is an opportunity to build on definitions and standards for green and low-carbon investment already established in China.**

The report identifies the China Banking Regulatory Commission's Notice on Filing and Reporting in Green Credit Statistics Forms (2013) ("Green Credit Reporting Instruction")as the main relevant document of definitions for green investment that already exist in the Chinese markets that provide a foundation for the development of green bond standards. While the document provides a useful foundation for what type of assets could qualify for green bond issuance, the document does not provide any criteria for specific emissions performance (or performance in terms of other environmental impact) that is required in each asset class for it to be considered green. Having hurdle rates for emissions is particularly important for certain types of assets; for example, energy efficient buildings where small cuts in emissions can have a detrimental climate mitigation effect over time as the minimal efficiency gain is locked-in for decades as buildings are only upgraded every few decades.

The focus on the CBRC's *Green Credit Reporting Instruction* for definitions rather than the local emission trading systems or National Energy Savings Scheme, which the report also considered, is justified by the broader scope of this document, and by its asset and project focus. The relevant standards under the emission trading schemes are only focused on calculation of carbon emission reductions, which falls short of what is required for green bonds standards: These require standards around emission performance, as well as categorisation of green investments more broadly.

Action point: Set up a new entity, "Green Bond Market Development Committee", to review existing and forthcoming green standards and regulations. The Committee would work with the CBRC's *Green Credit Reporting Instruction* as a foundation to develop green standards suitable for the bond markets in China.

The participation of the CBRC's Department of Statistics in the Development Committee will have a dual benefit:

- They have relevant expertise on standards development, as they developed their green credit statistical report which provide the foundation for green bond standards in China
- Their mandate has recently been altered to also cover macroprudential regulation, allowing the Committee to tie a close link between the development of a green bond market and China's other financial policy priorities.

The Market Development Committee could be placed under the Expert Council of the Secretariat for the Green Finance Working Group of the PBoC, as part of the work of this group is on green bonds. This Green Finance Secretariat is in the process of being set up within the China Financial Society.

✓ **A green bond verification system can use the structure of 3rd party, independent, government-approved verification entities used both under the local emissions trading schemes and the National Energy Savings scheme.** In addition to providing a useful model for a green bonds verification system, the emission trading schemes and energy savings scheme also provide lessons for a green bond verification scheme in terms of ensuring efficiency and robustness, as several weaknesses with the implementation of the verification schemes have been noted.

Action point: **Set up an independent, government-approved verification supervisory entity for green bonds.** This entity would supervise the individual 3rd party verifiers who verify bond issuances against the green bonds standards developed by the Market Development Committee.

Action point: **Expand oversight of credit rating agencies and auditors to cover green definitions**. The 3rd party verifiers could also include established entities in China such as credit rating agencies and auditors, as their role would be to check compliance against a Green Bond Standard, not making ad-hoc decisions about what is green.

Key recommendations for Policy and Regulatory considerations for green bonds

Guidance documents issued by the State Council, CBRC and Ministry of Finance will have a large impact on domestic bond market in the short to medium term. They identify reforms for expanding municipal bonds, corporate bonds and project bonds in China. They also signal efforts to improve information disclosure, market trading systems as well as widening foreign investment quotas.

The following recommendations point to actions that policymakers may take to enable the growth of a green bonds market to take advantage of forthcoming bond market reforms:

✓ **Establish a central fund to provide partial credit guarantees for green municipal revenue bonds and green public-private partnership project bonds**:

Major reforms in local government financing can be tailored to green performance standards. A central government subordinated debt position or partial guarantee pool could incentivize municipals to promote the bond structure and achieve green development goals. Credit enhancement of green municipal bonds, municipal revenue bonds and PPP project bonds can also come in the form of monoline insurance.

✓ **Provide corporate tax credits for interest earned on green enterprise bonds (from SOEs), corporate bonds and medium-term notes.**

Interest earned by domestic institutional investors on non-government bonds is subject to a 25% corporate tax and a 5% capital gains tax. Government bonds, including municipal bonds, are already tax-exempt. For international investors, a 10% withholding tax is imposed on coupons for non-government bonds.

- ✓ **Establish specific rules for green bonds in the new improvements to issuer disclosure systems:**

To reduce reliance on external credit ratings and improve the ability of investors to identify risks, the State Council has announced guidelines to improve disclosure for bond issuers. Bond convenants for corporate bond issuers in particular should ensure that risks associated with resource use (energy, water etc.) and environmental compliance (pollution control, waste management etc.) are fully disclosed. Once green bonds standards are established, as discussed above, a place holder within bond convenants will exist for issuers to prove their adherence to the standards for their green bond issuance.

- ✓ **Promote discovery and trading of green bonds through the overhaul of bond market information systems**

In their drive to promote transparency and accuracy of information in exchanges and other forums for securities trading, regulators should consider easily identifiable tagging for green bonds across all platforms that have standardized characteristics.

- ✓ **Reforms aimed at linking the interbank and exchange markets should aim to include categorisation of green bonds.**

This will be important to ensure that multiple bonds are not issued based on the one green investment If there is no common categorisation of green bonds, it is a possibility that issuers claim that a green bond they issue in the interbank market will have proceeds going to a specific green project, and also issue a green bond in the exchange market claiming proceeds going to the same green project. If this occurred, it would reduce the additional investment in the real economy from green bond issuance.

- ✓ **Establish green investment quotas through the expansion of the R-QFII and QFII programmes.**

Through its new guidelines, the government has signaled its intention to raise quotas and remove restrictions on foreign investment into China as well as investment by domestic institutions outside China. Similar to quotas on municipal bonds, special consideration could be afforded to investments in green bonds to top-up or channel investor quotas.

Contents

1. Introduction: Why green bonds for China

The role of China's bond markets is increasing

China is committed to reforming its bond markets: As China's financial markets mature, bonds will become an increasingly important financing instrument. This has implications both for financial and economic policy concerns, as well as environmental concerns, as it increases the opportunity to utilise the bond market to finance the transition to a low-carbon/green economy in China.

China's low carbon/green economy transition needs huge amounts of funding

The Development Research Center of the State Council of the People's Republic of China (DRC) has recently estimated that "green development" in China will require an annual investment of RMB2 trillion. This compares to green investment flows of RMB1.1 trillion in 2012 (DRC 2014). A significant share of this investment will be required for green urbanisation. China's financial markets can and should play a key role in the transition to a green, low-carbon and climate resilient urban economy.

This is to a certain extent recognised**,** and China is committed to greening its financial system: For example, Green Credit Guidelines are in place that require banks to ensure environmental assessments in their lending processes and a Green Credit Statistics System integrates environmental ratings into national credit ratings for companies, although challenges remain to implement these Green Credit initiatives successfully in practice.

Having a transparent and common definition around what is green, and therefore what can be funded by green bonds, is one of the challenges. This is expected to differ in China compared to what has been seen so far in Europe and the US: in these regions, climate change mitigation and adaptation have been the primary investment categories green bonds have financed, however, China's environmental challenges go beyond climate change to include for example other types of pollution and significant water scarcity issues.

Changes in financial markets are required also to meet non-environmental policy objectives

In addition to increasing environmental investments, large investments are needed to: maintain satisfactory economic growth; improve the efficiency of public investments by crowding in more private investment; introduce greater transparency into financial markets; provide more financing options for non-state entities and to improve economic stability; and to tap into the country's huge pools of domestic savings.

What financial regulatory changes are suitable to meet these policy objectives is influenced by other trends in China such as urbanization, the need to reduce the financial sector's reliance on bank lending, and the high levels of potential unstable short-term debt, shifting to more long-term finance.

Green bonds has the potential to contribute to closing the green investment gap, as well as meeting the non-environmental policy objectives

Green bonds, where the proceeds of the bond are earmarked for green investments and labelled as such, connect all these trends in China and can play a significant role in tapping into the bond market for green infrastructure and other green projects. An example of an investment area in China where green bonds are highly suitable is green urbanisation projects – such as green buildings, public transport, water and energy. As these have high capital costs and stable revenue streams, they have a financial profile that fits well with bond investors' investment preferences. Green bonds have successfully been issued in Europe and the US for all of these types of infrastructure projects.

The innovative earmarking process facilitates a connection of investor demand for green investments, citizens' concerns for the environment and several of China's policy priorities, as set out in the figure below.

Figure 1: The threefold rationale for a green bond market in China

An addition benefit is that green bonds are complementary to other green finance initiatives, such as preferential loan rates for green loans. Green bonds also stand out in comparison with other green finance concepts for its simplicity: it is a concept that is quick and easy to both understand and implement in practice.

To date, green bonds have been issued by corporate entities, national or local governments and development banks, and bought by institutional investors or retail investors. The majority of green bond issuance to date has been in Europe and the US, although there has also been some issuance in Latin America, Asia, Australia and Africa (the City of Johannesburg). Green bonds have provided funding for green projects at scale by easily identifying and marketing green investments. The Climate Bonds Initiative (2014) identifies some US$503 billion of bonds outstanding relating to climate change solutions in 2014; China accounts for the largest share of this with US$164bn outstanding, mainly for rail investments. However, the majority of this bond issuance is not yet labelled as green: Only some US$50 billion of this have been marketed (labelled) as green bonds, with half of issuance to date from development banks, implying the potential for growth in this market is large (Climate Bonds Initiative 2014).

These trends from the international green bonds market illustrates the potential for green bonds for China, although it's worth noting that the Chinese green bond market will differ from the market seen to date, as

[1] A constraint to tapping into retail investor demand for green bonds is that regulators are moving into imposing limits into the type of investments retailers can buy - http://www.bloomberg.com/news/articles/2014-12-12/china-considers-limiting-individuals-bond-buying-to-stem-risk

the financial system in China has a very different structure than in Europe and the US, with a less developed bond market, and as mentioned, green investment needs that go beyond low-carbon and climate resilience (see chapter 2).

The current stance on Green Bonds in China

Since the publication of our initial paper on the potential of a green bond market in China in February 2014, China's leaders have explicitly recognized the opportunity with green bonds. For example, in July 2014, the Chief Economist of the People's Bank of China reiterated the importance of green bonds for China and added "to distinguish green bonds from other bonds […] they should have lower financing costs and greater support from the government, such as tax exemptions". Such policy support would enable an additional benefit for issuers of green bonds in China: lower cost of capital would add to the benefit of marketing and investor diversification seen for green bond issuers in the Europe and the US. The support for green bonds amongst China's policymakers is strong because, with judicious government support, green bonds can help address some of the financial system issues: boosting bank lending, providing longer term capital and becoming more efficient with public capital, as set out in figure [1].

Importantly, developments for green bonds can dovetail with the deep reforms and increased transparency required for rapid bond market growth rather than rely on existing structures. A key development announced in 2014 is the regulatory shift in China allowing municipalities to issue bonds through a pilot scheme. This is an important facilitator for increasing the potential for green bonds to finance green urbanisation in China.

China's experiences with developing and implementing the Green Credit Guidelines can provide useful lessons for growing a green bonds market in China: they provide lessons on how to develop standards around green, as well as showing the need for verification, monitoring and enforcement, as the lack of these have hampered the implementation of green credit in practice. The innovative earmarking process of proceeds that define green bonds therefore require policing to ensure that it has robust environmental benefits.

Understanding the broader financial and economic aims and the financial regulatory changes underway in China is important to ensure the development of a green bond market is aligned with these aims and regulations. It is crucial to understand that China's bond market differs from that of developed countries' bond markets, where most green bond actors have been located to date. **This paper aims to close this knowledge gap, and explore green bonds from a China-centred perspective.**

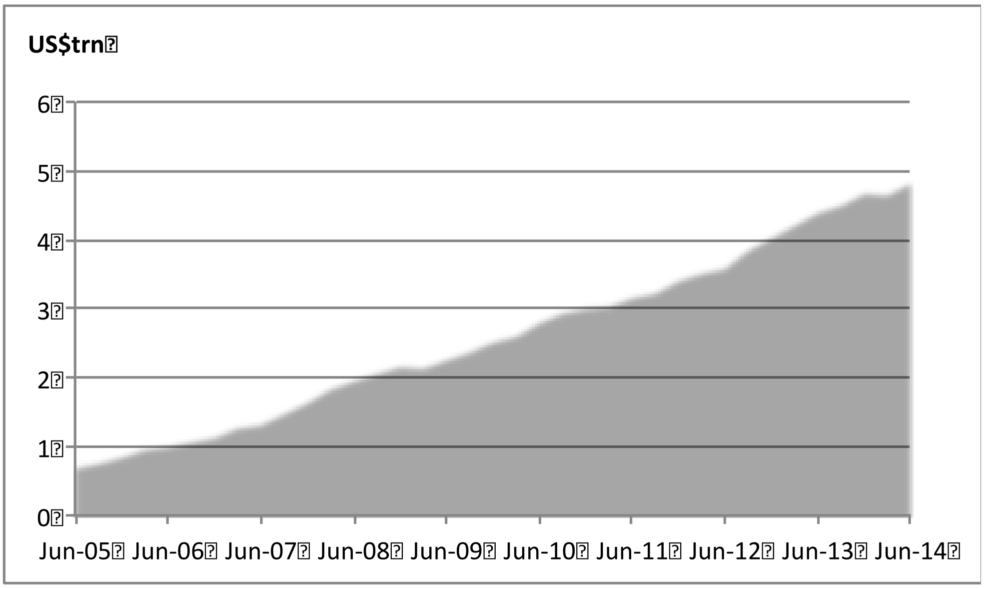
The paper is structured as follows: Section 1 has outlined the case for green bonds in China. Chapter 2 covers the state of play of China's bond markets and how this is changing with financial reforms in the short-medium term. Chapter 3 covers the state of play of green definitions, standards and verification processes. Building on the findings from chapter 2 and 3, chapter 4 outlines recommendations specifically for growing a robust green bond market in China.

2. State of play and how it's changing: China's bond market

China's bond market is growing rapidly, increasing the opportunities for green bonds

In terms of absolute size, China's domestic bond market is now ranked 3rd globally, after the US and Japan, with cRMB25trn (cUSD4trn) outstanding per September 2013 (Goldman Sachs 2014). The growth has been rapid, with the size of the market growing from cUS$0.7trn June 2005 to cUS$4.9trn per June 2014, an increase of more than 500% (ADB 2014).

Figure 2: Size of the bond markets in China bond markets in China



Source: ADB (2014)

However, as a share of the economy, China's bond market is still much smaller than in developed economies. In 2012, it stood at 47% of GDP, while in the U.S., Europe and Japan, bond markets stood at respectively 222% of GDP, 190% and 259%. Globally, bond markets represent 138% of GDP (McKinsey 2013).

China's bond market can be split into the interbank market (93% of market trade) and the exchange market (c7% of the market). In addition, there is an over the counter (OTC) market for retail bonds, however, this accounts for a very small share. Different issuers issue in the different markets (see table 1).

However, the interbank market and the exchange market are increasingly integrated (Liu 2014): The State Council has proposed to strengthen the connection between the different bond markets and develop a mechanism that allows bonds to be listed on different markets. This is supported by a recent policy draft proposal from China Securities Regulatory Commission (CSRC)[2]. At the moment, investors have to go through complex procedures[3] to trade across the interbank market and exchange market, as the registration and settlement authorities differ between the market (see table 1). The State Council also proposes to improve the information sharing among registration, settlement and trusteeship departments, develop a unified information system to achieve more efficiency and to prevent systematic risks in the same time.

In addition to the domestic market, there is an offshore market in Hong Kong, called the “Dim-Sum market”, where domestic and international issuers may issue RMB-denominated bonds for the international market. This market has also grown quickly, from RMB69 billion in 2010 to RMB405 billion by the end of January 2013 (HSBC 2013), and is covered by international laws and regulations, and not controlled by Chinese regulators. The onshore market is the focus of this report due to the much larger size of the market and therefore potential opportunity for green bonds. Therefore, the next sections focus on the onshore market only.

The main categories of actors in China’s domestic bond markets are, as in any bond market; issuers, investors, regulators and intermediaries. An overview is provided in table 1 below.

[2] CSRC: *Administrative Measures of Corporate Bonds Issuance and Trade (draft for comment) 2014*

[3] The complex procedure currently required involves transferring trusteeship between two different settlement authorities, the CCDC and CSDCC in order to trade across interbank market and exchange market. This slows down market efficiency significantly. The State Council’s proposal encourages allowing investors to transfer the trusteeship autonomously so as to facilitate trade across different markets.

Table 1: Overview of China's bond market – actors and structure

Issuer	Type of bond	Characteristics	Issuance share	Market	Regulator	Approval method	Issuance method	Disclosure requirements	Registration & settlement	Investor base
Policy banks		Used to finance infrastructure development. Common tenors 1-10 years.	29%	Interbank (exception: CDB permission to issue at exchange market in 2013)	PBoC	N/A	Tender (through PBoC's issuance system)	N/A	CCDC	Commercial banks (82%), funds (8%), insurance (7%), others (3%)
MoF	Treasury bonds	Used for fiscal funding. Common tenors 1-10 years.	28%	Interbank and exchange	MoF	N/A	Tender (through PBoC's issuance system)	N/A	CCDC, CSDCC	Commercial banks (70%), special member (20%), insurance (4%), others (6%)
Central bank		Strictly regulated. Pilot for issuance by 10 municipalities.	3%	Interbank	PBoC	N/A	Tender (through PBoC's issuance system)	N/A	CCDC	N/A
Local gov.	Municipal bonds(pilots)	Mid-to-long term debt, 5, 7 or 10 years	2%	Interbank market, exchange market	State Council, MoF	Approval from State Council required	Tender or book building.	N/A	CCDC, CSDCC	N/A
Unlisted companies, mostly SOEs	Enterprise bonds	Medium-to-long term debt	8%	Interbank market, exchange market	NDRC	Verification and approval system	Determined by the enterprise by market conditions, and approval by NDRC. Issued once subject to approved size.	Prospectus, issuance notes, financial report, audit report etc.	CCDC, CSDCC	Exchange (28%), commercial banks (25%), funds (24%), insurance (15%), others (8%)
Incorporated non-financial corporations	Medium-term notes	Shorter-term debt (3-5 years)	9.70%	Interbank	NAFMII (PBoC)	Registration system	Tender (if comply with PBoC regulations[1]) or book building. Can be issued in instalments, subject to registration once only	Prospectus, issuance notes, financial report, audit report etc. Purpose of funds must be disclosed in issuance document.	CCDC, SHCH	Commercial banks (49%), funds (36%), insurance (6%), others (9%)
Incorporated non-financial corporations	Commercial paper	Shorter-term debt (up to 1 year)	4.90%	Interbank	NAFMII (PBoC)	Registration system	Tender or book building. Can be issued in instalments, subject to registration only once.	Prospectus, issuance notes, financial report, audit report etc. Purpose of funds must be disclosed in issuance document.	CCDC, SHCH	N/A
Listed companies	Corporate bonds	Long-term debt	2.40%	Exchange	CSRC	Verification and approval system	Market inquiry by issuers and underwriters. Issued in instalments, subject to approval only once.	Prospectus, issuance notes, financial report, audit report etc.	CSDCC	N/A
SMEs	Private placement bonds	Tenor depends on exchange: Shenzhen exchange 1 year or longer, Shanghai exchange up to 3 years	N/A	Exchange	CSRC	Filing on exchange	Private negotiation between issuers and investors	Prospectus, repayment on the principal and debt, bond transfer by management or main shareholders	CSDCC	N/A

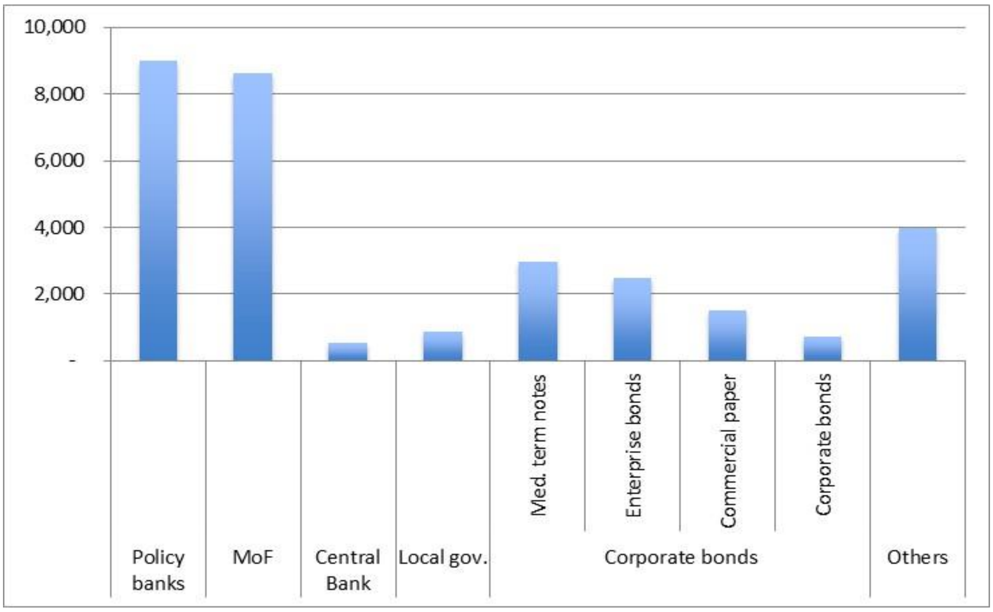
[1] Notice of the People's Bank of China (Financial Market Department) on the Relevant Matters Concerning the Issue of Bonds by Tender through the Issue System of the People's Bank of China (BSC[2010] No. 11).1

Source: Adopted from ADB 2012, Jingu 2012, Bradsher 2014, Liu 2014

Issuers: A changing landscape from policy banks to greater participation by municipalities and corporates

Figure 3: Bond issuance outstanding in China by issuer type

Source: Goldman Sachs (2014) citing MoF (2014), data from September 2013



As evident from the figure above, the largest share of issuance in China is by the government entities. Bond issuance by **policy banks** such as China Development Bank, the Export-Import Bank of China and the Agricultural Development Bank, and bonds from the **Ministry of Finance** account for the majority of issuance (combined 57%). **Direct local government issuance** is very small in comparison, accounting for c3% of total bond issuance. However, this is because municipal bond issuance is strictly regulated in China, and their debt issuance is largely indirect. Since 2009, the Ministry of Finance has issued bonds on behalf of local governments. Asset managers, infrastructure and investment companies owned by local governments also indirectly issue local government debt. In 2012, it is estimated that RMB636.79 billion in bonds were issued by, or implicitly linked to, local governments. **Central bank** issuance only accounts for c2% of issuance, and this issuance is for liquidity purposes rather than investment, and is therefore less relevant in the green bond context.

Issuance by **corporate entities** in total accounts for c25% of the market, and in terms of absolute size, the corporate bond market in China is expected to overtake the US corporate bond market in the next few years. However, in terms of bond finance for investment, it is worth noting that the majority of this issuance from corporate entities is shorter-term debt from incorporated non-financial companies (medium-term notes and commercial paper in the figure). The second largest category of corporate bond issuance is by state-owned enterprises. While this is listed as corporate bonds, the implicit state backing of these companies is important to note. Long-term issuance by listed, non-state owned, companies, noted as corporate bonds in the figure, accounts for only 2.4% of total bond market issuance. Lastly, there are also privately placed corporate bonds from SMEs.

Certain non-Chinese issuers are also allowed to raise funds in the domestic bond markets through so-called **Panda bonds**; however, this issuance is subject to strict regulations (Reuters 2014a). This issuance includes development banks, the Asian Development Bank, the IFC, and Japan Bank for International Cooperation, and in 2014, the first corporate Panda bond was issued by the German carmaker Daimler (Reuters 2014a).

In sum, the majority of bond issuance in China is from policy banks and central government. The majority of corporate bonds are short-term, and issuance by entities with strong implicit government guarantees. However, in the future, the share of central government bonds is expected to decline, due to the opening up of municipal bond issuance, as central government has been lending on these municipalities behalf.

Reforming Municipal debt markets

There are two key goals of the reform of the local debt markets in China. One is the re-financing of existing local government debts. The other is introducing more structured finance features in municipal debt such as revenue bonds, referred to as project-income bonds, and asset securitisations.

In May 2014, the Chinese government, through the Ministry of Finance, announced that municipalities would be allowed to issue local bonds directly. At this initial stage, ten pilot local governments are allowed to issue municipal bonds: Shanghai, Zhejiang, Guangdong, Shenzhen, Jiangsu, Shandong, Beijing, Jiangxi, Ningxia and Qingdao. The local governments themselves will organise the bond issuance, coupon payment and principal repayment. The structure size and tenor of the bonds is however regulated: The pilots' issuance size is limited by approval from the State Council; the bonds will be fixed-interest risk-bearing bonds. Tenor can be 5 years, 7 years and 10 years, in a ratio of 4:3:3. The interest rate base on new issued government bond interest rate and market rate, issuance methods can be book building or tender. Some investor diversification is also required, with the share of a single investor being limited to 30% of the bond.

In addition to allowing municipal bond pilots, the State Council has also issued Guidelines to Strengthen Local Government Debt Management. The ballooning local government debt in China and lack of transparency around debt levels is increasingly a concern for policy makers. This Guidelines issued have two components:

1. Municipalities need to distinguish debt that belongs to the government and that belongs to the private sector. Municipalities can no longer issue bonds through commercial enterprises. Municipalities can issue new municipal bonds to refinance their existing debt.
2. A public-private partnership model is proposed where special purpose vehicles (SPVs), set up by private sector companies undertaking public sector work such as infrastructure construction, can issue corporate bonds, project-income bonds, or asset-backed securities to finance the given infrastructure project. The public sector role for these bonds will be through franchise rights, set adequate pricing of infrastructure operations as well as providing fiscal subsidies. The difference between this model and the current model of local debt issuance is transparency and explicit, rather than implicit, backing from local government. The debt liability under this public-private partnership model belongs with the private sector.

Greater diversification in the corporate bond market, both in terms of issuers & structures

For corporate bonds (from listed companies; non-SOEs) reforms are proposed from the State Council, China Securities Regulatory Commission (CSRC) and the China Banking Regulatory Commission (CBRC), to expand and diversify the corporate bond market. From the State Council, this includes proposals to improve the public offering mechanism for corporate bonds; encourage companies to issue different bond types for different investor groups and improve the bond market access of small companies. The latter includes development of new bond types for middle, small and micro enterprises. A 2014 draft document from the CSRC[4] highlights that private placement corporate bond will be the focus here in the next step. This document also proposes to expand issuer entities of corporate bonds to all corporate legal entities instead of only listed

[4] Administrative Measures of Corporate Bonds Issuance and Trade (draft for comment) 2014.

domestic limited companies. CSRC is considering guiding companies listed on the New Three Board.[5] Published proposals from the CSRC also improve the bond market access for real estate enterprises, leasing companies and iron and steel companies.[6]

Documents from the CSRC, CBRC and Shanghai Stock Exchange[7] also allow a new type of bond to be issued by banks; the corporate bond with a written down term. This aim of this structure is to enable banks to more easily fulfil their capital requirement of Tier 2 capital under Basel III. When a bank can no longer continue business without writing down debt, this kind of bond will be written down to make sure depositors and other senior debtors can continue to get paid. Holders of the bonds with written down terms therefore take a higher risk of not being paid back of both interest and principal, as they will only get paid after depositors and other senior debtors.

Overall, the increasingly diverse Chinese corporate bond market, as envisaged by the reforms targeting bonds from industry, real estate sectors and SMEs, as well as reforms on information disclosure rules, offers increased opportunities for innovation in green corporate bonds.

The issuer landscape in China can be mapped against green bond issuers seen in global markets to date:

Table 2: Potential bond issuers in China and international precedents[8]

China bond issuer type	Example of relevant green bond issuance in international markets
Policy banks - China Development Bank, Agricultural Development Bank of China, China Export-Import Bank	KfW, Germany's national development bank, has issued two green bonds for EUR1.5bn (RMB11.3bn) and US$1.5bn (RMB9.3bn) respectively in 2014. Proceeds finance KfW's renewable energy investment program.
Ministry of Finance	N/A
Local government – 28 provinces and 4 municipalities	In June 2014, the City of Johannesburg, South Africa, issued R1.5bn (RMB800m) of green bonds to finance solar power, waste-to-energy projects and hybrid buses. This was the first green municipal bond issuance in emerging markets. State of California, US, issued US$300m (RMB1.9bn) of green bonds in September 2014. Proceeds went to water and public transport projects.
Corporate bonds – State-owned utilities and infrastructure companies as well as private corporate leaders	In November 2013, EDF issued EUR1.4bn (RMB10.6bn) of green bonds to finance renewable energy projects. In March 2014, Toyota issued US$1.75bn (RMB10.9bn) of green asset backed securities to fund hybrid and electric vehicle projects; the issuance was backed by non-green auto loans.
Panda bonds – key issuers so far includes the Asian Development Bank, the IFC, and Japan Bank for International Cooperation	In August 2014, IFC issued green bonds in Peru in local currency PEN42m (RMB87.1m) to help kickstart a local market Proceeds go to renewable energy and energy efficiency.

[5] New Three Board, officially called "National small-mid sized enterprises equity transfer system", is an equity exchange for SMEs. It was established in 2012, initially designed for high-tech companies but later expanded to a broader range of SMEs.

[6] Real estate enterprises and leasing companies are allowed to issue medium-term notes on the interbank market. There are restrictions on the real estate bonds: Issuers have to have a rating above AA, and use of proceeds of the real estate bonds must go to supporting normal commercial housing project construction, supplement working capital or repay bank loans used for normal commercial housing construction projects or indemnificatory housing. Additionally, the regulations encourage qualified iron and steel enterprises to issue merger and acquisition bonds in order to develop competitive enterprises in the industry.

[7] CSRC and CBRC issued a document on October 2013 "Guidance on commercial banks issuing corporate bonds as capital supplement". In 2014 January, Shanghai Stock Exchange issued a corresponding document that gives more detail rules on written down corporate bond issuance.

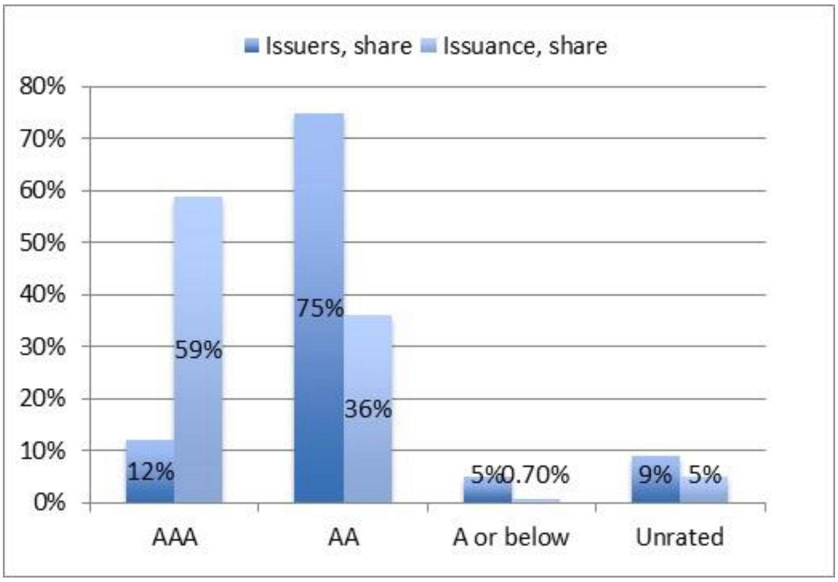
[8] Exchange rates US$ and EUR to RMB per 30th December 2014

Credit Quality: High investment-grade ratings dominate but more transparency is needed

China's sovereign credit rating is investment-grade: AA- by S&P, A+ by Fitch and Aa3 by Moody's (Trading Economics 2014). The policy banks have ratings equal to China's sovereign ratings, as they are directly supported by the central government (Goldman Sachs 2014). As for corporate bonds, the extent of implicit government backing varies. Traditionally, the implicit backing has been high – there have been no bond defaults in China's bond market to date - implying that credit risk, market risk and policy risk have not greatly influenced bond pricing in the past. The lack of experience with these risks restrict their understanding by market players. However, China is moving to a more market-driven bond market, with signs of decreasing government backing for corporate bonds, although it will likely be a slow process: While the first corporate bond default on interest payments in China was seen in March 2014 (The Economist 2014a), the company was later in the year bailed out by a state-owned bank (Wildau 2014). No company has yet defaulted on payment of principal. The central government has also explicitly stated they will not provide blanket guarantees for future municipal bond issuances.

The ratings breakdown of non-government issuers and issuance in China from local rating agencies is provided in the figure below. The ratings breakdown is markedly different if looking at ratings of issuers or the ratings by bond issuance amount. While only 12% of issuers are AAA-rated from China's rating agencies, 59% of bonds issued are rated AAA[9]. This implies that the highest rated entities issue a disproportionately large share of bonds. It's worth noting that green "use of proceeds" bonds would have the same rating as the issuer, while green asset-backed securities would achieve a rating based on the performance of the underlying green assets.

Figure 4: Ratings breakdown of non-government issuers and issuance in China



Source: Liu (2014)

[9] The rating of some bonds above the international rating of the sovereign can be explained by the ratings of China's domestic bond market being undertaken by local rating agencies

Credit ratings agencies:

There are 10 main credit rating agencies for the Chinese bond markets, however, the three main agencies control 80% of the market: China Chengxin International Credit Rating, China Lianhe Credit Rating and Dagong International Credit Rating. It is worth noting that the main international rating agencies control large shares of these major Chinese rating agencies: Moody's owns 49% of Chengxin, Fitch owns 49% of Lianhe, and S&P have a co-operations agreement with Shanghai Brilliance (Liu 2014), another large Chinese rating agency.

The credit rating agencies for China's bond market are supervised by the People's Bank of China (PBoC); it's PBoC's role to draft relevant rules and regulations, development strategies and policies (ADB 2012). In 2006, the PBoC set definitions around the requirements for different credit ratings to unify ratings by the different agencies in the interbank bond market. Supervision of the credit ratings in the bond markets is done by the CSRC (for the exchange bond market) and the National Development and Reform Commission (NDRC) (for the enterprise bond market) (ADB 2012).

Regulations propose strengthening credit ratings, information disclosure and improved investor protection

The State Council has proposed to strengthen the credit rating system on the bond market. This will include improving issuers' information disclosure system; this, as well as credit rating agency disclosure improvements. is also proposed by CSRC's 2014 draft document on *Administrative Measures of Corporate Bonds Issuance and Trade*. The improvement in information disclosure from issuers is to reduce reliance on external credit ratings and improve the ability of investors to identify risks. CSRC's 2014 draft document specifically proposes to strengthen regulations on underwriting and use of proceeds to this end. **Improved information disclosure is an aim that is well aligned with the green bonds agenda, as green bonds can provide increased disclosure and transparency around use of proceeds of bonds**.

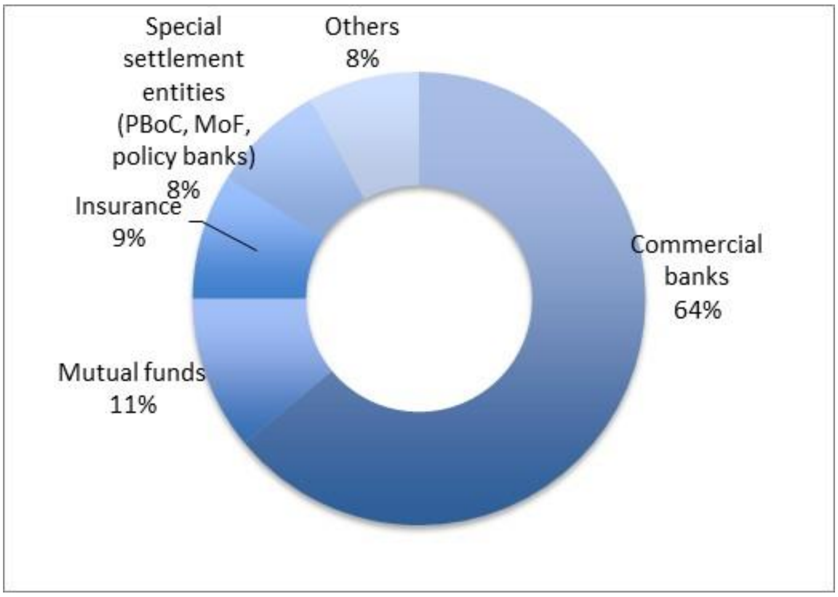
The State Council has also proposed to further improve investor protection by exploring bond credit insurance and support bondholder meetings to protect debtors' rights. The lack of defaults in China's bond market historically means that there are few established rules in this area; for example, many bonds are issued without covenants (Liu 2014). The regulatory developments underway here provide an opportunity for regulations to take into account green bonds from the outset, for example by encouraging disclosure of use of proceeds in covenants.

Investors: China's investor base is dominated by commercial banks, but it is broadening

The investor base is different for the different domestic bond markets in China, but due to regulations, the vast majority of investment in this market comes from domestic investors – international investors can, however, invest in the offshore Dim-Sum market and in the domestic market through certain programs. **For the dominant interbank market, domestic institutional investors account for the majority of investment; this market is not open to retail investors. In the exchange market, individuals and small institutional investors account for the majority of capital.**

Figure 5: Investors in China's domestic bond markets

Source: Liu 2014. "Others" category refers to credit unions, retail investors, corporates, securities exchanges and financial institutions other than banks.



Overall, as set out in the figure above, banks are the dominant investors in the Chinese bond markets. Mutual funds are the second biggest investor group, followed by insurance companies. However, insurance companies' share of bond holdings have fallen in the last few years due to investment alternatives with higher returns (Liu 2014). **The dominance of banks as investors in China's bond markets provides interesting potential synergies for green bonds with the Green Credit Guidelines already established by the China Banking Regulatory Commission.** The banks will already be familiar with the Green Credit Guidelines; the definitions of green provided by the *Green Credit Reporting Instruction* and the challenges of monitoring and verification of green lending, as set out in detail in chapter 2. This knowledge can be leveraged by investor teams within the bank and enable them to better evaluate green bond investment opportunities and risks, and place a value on the green bonds that follow standards and robust verification schemes.

However, it is worth noting that the investor mix differs significantly for the different types of bond issuances, as set out in table 1. While commercial banks dominate the market overall, the largest share of their bond holdings are of the lowest risk government and policy bank bonds; for enterprise bonds, exchanges are the majority bond holder with commercial banks only accounting for 25% (Liu 2014). **Understanding this diversity in the market is useful to identify market education needs for different types of green bond issuance.** The appetite for lower risk bonds by the largest investor segment of commercial banks implies that government efforts to reduce the risks of green bonds, particularly policy and market risks, through risk-sharing instruments, at the project or investor level, can be important to see strong demand for non-governmental green bonds.

The ability of foreign investors to participate in the domestic bond market is limited by the Qualified Foreign Institutional Investors (QFII) quota program, established in 2002; and the Renminbi QFII program (R-QFII), established in 2011. R-QFII, allows foreign investors who hold Renminbi offshore to use these funds to invest directly in the domestic Chinese market, including the bond market, and was initiated as an extension of QFII in 2011. Until 2013, foreign investors mostly had access to the equity markets, not bond markets, as the vast majority of bonds are listed on the interbank market, and QFII only had access to the exchange market until 2013 (Rabinovich 2013). Now, PBOC approves quotas for the interbank market for foreign investors as well. Policy changes from the CSRC (see table 3) have also increasingly allowed R-QFII and QFII investors to determine their own asset-allocation plans based on market conditions, although an investment plan specifying the split remains a requirement at the time of application. Previously, the first RMB20bn of the R-QFII quota required at least an 80% allocation to fixed income products, and the second RMB50bn was used solely for equity exchange traded funds. An additional change is in the type of institutional investors that can qualify under the programs: Previously, only securities' firms and asset management companies qualified for the R-QFII program, but recent policy changes now also allow Hong Kong subsidiaries of banks and insurance companies to qualify.

The quotas under both programs have increased in recent years "to attract more long-term foreign investment institutions to China's market and promote the development of the capital market" (Xi & Lim, 2013). Per November 2014, RMB298bn had been invested under the R-QFII program, although total approved cumulative investment quotas were larger at RMB510bn. A significant share of the investment and capacity was added in 2014: RMB140bn of actual investment, and RMB240bn in quotas. Under the QFII program, RMB240bn has been invested; of a total approved quota of RMB410 bn. RMB100 bn of this was added in 2014 (SAFE 2014). What share of the approved quota is used varies by country: The full quota is used for Hong Kong, but not for other countries.

In terms of the foreign investor base, 93 institutional investors have been approved under R-QFII by November 2014, and 260 institutional investors have been approved under QFII. The geographical spread of approved foreign investors also expanded with France, South Korea and Germany being approved under the R-QFII program in 2014[10] (SAFE 2014).

Through its new guidelines, the government has signalled its intention to raise QFII and R-QFII quotas and remove restrictions on foreign investment into China, as well as investment by domestic institutions outside China. It is expected that the quota approval and qualified investor will be further expanded in the future (Liu, 2014).

Overall, the trend is that the investor base in China's bond markets is growing and diversifying (CCDC 2012). The bond market is increasingly opening up to foreign investors, although this process is strongly regulated with investment quotas. This can increase the investment demand for green bonds in China, as many of the large institutional investors increasingly have sustainability commitments; for example, the UN Principles of Responsible Investment now have signatories with a total of US$45 trillion of assets under management.

[10] In March 2014, institutional investors in France were granted with RMB80 billion. In July, South Korea and Germany were also granted with RMB 80 billion each.

Regulation: The bond market has a wide range of regulators; improved cooperation is proposed

Financial institutions and market supervision is regulated by different governmental bodies with clearly specified mandates. Understanding the roles of the most important players regarding the regulation of the Chinese bond market (see overview table 1) is crucial to understand who to engage with to grow a green bond market in China, and their potential roles in establishing the green bond market.

Regulator	Role	Relevance for green bonds
China Banking Regulatory Commission (CBRC*)*	CBRC does not regulate the issuance of any specific types of bond issuer. As the name implies, it mainly regulates banks. There are only two laws related to financial markets issued by CBRC: the securitization of Credit Assets by Financial Institutions; and the issuance of bonds by financial companies belonging to holding groups.	- The former in particular is relevant for green asset-backed securitisation issuance in China. - The CBRC is also responsible for the Green Credit Guidelines, implemented in 2012, which are relevant for green bonds, particularly in terms of green standards (see chapter 4).
People's Bank of China (PBoC)	PBoC regulate market entry, bonds issuance and liquidity. The PBoC is in charge of open bond market operations and set a "bilateral trading"[11] system. In the interbank bond market, PBoC also regulate the issuance, clearing and settlement of certain bonds (policy bank bonds and PBoC bonds). Moreover, PBoC supervises the credit rating agencies for China's bond market. PBoC also indirectly regulates medium-term and commercial paper issuance through National Association of Financial Market Institutional Investors (NAFMII).	PBoC has a working group on green bonds as part of their broader work on green finance.
Ministry of Finance (MoF)	MoF examines the qualification of bond underwriters, the securitization of credit assets, and bonds' custodial arrangements across markets. Besides, MoF and State Taxation Administrations set rules about the tax exemption on interest revenue from government bonds. MoF sets government bond issuance levels, which are only constrained by the debt ceiling, set by the National People's Congress annually (Liu 2014). Up until 2014, MoF also issued bonds on behalf of local governments; however, this is changing, with the pilots for municipalities to issue bonds directly.	- Green-asset backed securitisation - Preferential tax policies for green bonds
National Developmen t and Reform Commission (NDRC)	The NDRC supervises the issuance of enterprise bonds. . NDRC has recently moved to tighten the requirements for corporate bond issuance (unlisted companies, mostly SOEs) (Reuters 2014b).	- NDRC has the mandate to promote agendas for sustainable development and ecological improvement in bond markets - Disclosure relevant for evaluation green credentials of green bonds

[11] Bilateral trading refers to requirement that every transaction should be performed between two parties.

Regulator	Role	Relevance for green bonds
National Association of Financial Market Institutional Investors (NAFMII)	NAFMII regulates the issuance of medium term notes and commercial paper. NAFMII operates under the authority and delegated power from the PBoC. NAFMII is an organisation with interbank market actors as members, which the NAFMII supervises for implementation of laws and regulations. It does not develop regulations (ICMA n.d.).	- Commercial paper may be less relevant for green bonds, due to the short-term nature of issuance (less than 1 year).
China Securities Regulatory Commission (CSRC)	CSRC regulates the exchange bond market, where mainly listed companies issue bonds (corporate bonds in table 1). CSRC also regulates the issuance of stocks and any other securities issued by listed companies. Besides, CSRC also regulates the exchange, securities registration and settlement organizations, as well as rating agencies and legal services offered by law firms specialized in securities issuance. The CSRC regulates the foreign investor quotas alongside the State Administration of Foreign Exchange (SAFE). The CSRC sets the overall quotas for the QFII and R-QFII programs, and regulates which investor entities will be licensed to access these quotas. For the licensed entities, SAFE determines the individual investment quotas under the programs (CSRC 2012, Wildau 2012).	- CSRC is responsible for the green IPO developments. - CSRC can drive green bond integration with reforms on foreign investor quotas and rules and procedures around corporate bond issuance.

Coordination between different authorities is possible across their respective responsibilities: The State Council has proposed to strengthen supervision and connection among different departments and authorities. This includes supervision on bond market entrance, as well as the regulatory trends identified around improved information disclosure, credit rating systems and investor protection. Coordination will also be relevant for investigating false information, inside trade and price manipulation. See Appendix 1 for an overview of the specific regulatory issues and relevant legislations in the Chinese debt markets for each of the regulators set out in this section.

Regulatory changes relevant to green bonds proposed by the different regulators are presented in table 3 below.

Table 3: China's bond market reform in the short-medium term in published documents

	Regulator	Type of bond	Issuer/ target group	Main Changes	Potential interaction with a Green Bonds policy framework
1	CSRC & CBRC: Guideline on Commercial Banks' Issuance of Corporate Bonds to Supplement Capital Requirement. January 2014	Corporate bond	Commercial banks	Commercial banks are allowed to issue corporate bond with written down term on exchange market. Corporate bond with written down term is a debt tool for banks to fulfil their capital requirement of Tier 2 capital under Basel III. When a trigger event occurs (defined as when bank business cannot be continued without writing down loans), this kind of bond will be written down to make sure depositors and other senior debtors get paid first. The holder of the written down term bond therefore effectively takes a first loss position, taking on the risk of not being paid back interest or principal.	Provide a new bond type of green bonds, which is issued by commercial banks. The banking sector accounts for the largest part of China's financial markets, although policy banks dominate bond market issuance at present. These bonds play an equivalent role to conditional convertibles ("CoCos") in Europe.
2	State Council The State Council: Suggestions on further deepening capital market development. May 2014.	Corporate bond	Enterprise	- Corporate bond types should be more diversified. - Issue a new bond type for middle, small and micro enterprises.	- Provide more possible products to develop for green corporate bonds - Enables more green bond issuance from smaller companies
		Municipal bond	Municipalities	Build up issuance framework for local governments to issue municipal bonds.	Increasing the potential for green bonds from municipalities. Municipalities are particularly relevant in China's increasingly urban economy, e.g. for green infrastructure investments.
		All types	Bond market	Integrate different bond markets, develop the mechanism that allows bonds to be listed on different markets, transfer the trusteeship autonomously[12]	- Provide more liquid, open, diverse market environment to green bond market; increasing the investor base - A larger market can make green bonds more attractive, as issuers have a larger incentive to

[12] Bonds or investors that are allowed to trade across markets (exchange market and inter-bank market) need to transfer their trusteeship from China Security Depository & Clearing Corporation (CSDCC) to China Depository & Clearing Corporation (CDCC), or the other way around. The transfer of trusteeship requires a series of processes, so autonomously transfer simplifies the process and makes the cross-market trade more convenient.

	Regulator	Type of bond	Issuer/ target group	Main Changes	Potential interaction with a Green Bonds policy framework
					differentiate themselves from other issuers - A larger, more liquid market will improve pricing, also for green bonds - Having one market makes it easier to develop a common set of standards for green bonds
3	MOF: Guideline on Municipal Bonds Pilot Issued and Repaid by Municipalities 2014	Municipal bond	Local government	Set 10 pilot municipalities to issue municipal bonds. Finance bureau in these 10 pilot municipalities should select qualified rating agencies to evaluate bond rating.	- Explicitly link municipal bonds to green urbanisation needs and investments and policies of 12th FYP. - Reward municipalities with environmental projects with high standard of performance through credit incentives - Green bonds can offer greater transparency in municipal expenditures through investor reporting rules
4	CSRC & NAFMII	Corporate bond	Specific industries	- Conditional support on real estate enterprises and leasing companies to issue Medium Term Notes (MTN) (3-5 years maturity) on interbank market. - Support iron and steel enterprises to issue M&A bonds.	- Real estate enterprises with green buildings, for example defined by achieving the highest standards of China's building codes, can issue green MTNs; although a limitation is that the tenor is relatively short term, 3-5 years, while many green investments are longer term; support for real estate enterprises could be conditional on their MTNs being green - Green corporate bonds could be issued to finance certain M&A bonds for the iron & steel sector, provided that they follow best practice energy efficiency performance standards.
5	The State Council: Suggestion on Strengthening Municipal Debt Management. Oct 2014	Municipal Bonds	Municipalities	- Municipalities are no longer allowed to issue bond through corporate enterprises, but they can use public-private partnership (PPP) to finance public infrastructure projects. - Municipalities can issue ordinary municipal bonds for non-profit public projects; and issue special purpose bonds for profitable public projects.	- Provide central government incentive pool or guarantees for re-financing bonds linked to green performance criteria. - Give opportunities to green municipal bonds as a method of re-financing existing municipal debt. - Project entities can issue green project bonds to finance infrastructure projects under the PPP model

	Regulator	Type of bond	Issuer/ target group	Main Changes	Potential interaction with a Green Bonds policy framework
				- Clarify the ownership of the current debt (debt belongs to government or private sector, i.e. which share of the local government vehicle debt is guaranteed by local governments) and re-finance what is classified as government debt with municipal bonds.	
6	MOF: Administrative Measurement of Clean and Disposal of Outstanding Local Governmental Debt (draft for comment). Oct 2014	Municipal Bonds	Municipalities	- Provincial fiscal departments needed to submit reports identifying outstanding local borrowings to the ministry by January 5, 2015. - The transitional window is open until December, 31, 2015, meaning local municipalities can still finance the ongoing projects through the previous channel. After December 31 2015, governmental debt can only go through municipal bonds. - Decreasing the number of special purpose vehicles by closing, merge and acquisition or transfer.	Explicitly link municipal bonds to green urbanisation needs and investments and policies of 12th FYP.
7	PBOC Financial Market Division: Notice on Allowing Non-financial Qualified Investors' Entrance into Inter-bank Bond Market. Nov 2014	All types in interbank market	Non-financial institutions and rural financial institutions	Qualified non-financial institutions, rural financial institutions and four types of non-legal entity investors[13] are also allowed to trade on inter-bank bond market.	Expand issuance entities and investors for green bonds. The development of wealth management products specialising in green fixed income investments or with a mandate for both green fixed income and equities could be fostered.
8	SSE and SZE: Notice of Private Placement merger and acquisition (M&A) Bonds	Corporate M&A bonds	Unlisted enterprises	Private placement corporate bond issuance from unlisted enterprises to fund their M&A activities is allowed under a pilot scheme	As above for iron and steel but perhaps not as relevant if there is no public support attached to it i.e. no leverage for the government to attach it to green performance criteria. -Regulations on M&A is less relevant for green bonds, as M&A relates to entity level investments, while green

[13] Non-legal entity investors means that they are on product level rather than on entity level, they include trustee products, asset/wealth management products from funds (including their subsidiaries), insurance or security companies.

	Regulator	Type of bond	Issuer/ target group	Main Changes	Potential interaction with a Green Bonds policy framework
	Issuance Pilot. Nov 2014				bonds relate to project or asset investment. Green bonds could however be issued for a pure play M&A. - Merged companies could however then issue earmarked corporate green bonds - A better functioning private placement market can help SMEs to expand their green bond finance
Expectations on future policies related to bond market reform:					
1	CSRC	Corporate bond	Companies	- *Administrative Measures of Corporate Bonds Issuance and Trade (draft for comment).* Mainly focuses on expanding issuer base, introduce more issuance methods, increase trading exchanges, simplifying verification on public placement, establishing private placement mechanism and strengthening regulation[2]. - The next step for CSRC is to revise the Security Law, which will unify the entrance standard, information disclosure and rating requirement for corporate bonds.	Strengthen the supervision of green bonds, helps investors to monitor the use of proceeds.
			R-QFII investor	It is predicted that CSRC and SAFE will further expand investor quota and involve more foreign investors into R-QFII mechanism	Provide explicit extra quotas for foreign investors to invest in green bonds above the normal quota limit.

3. State of play: Green bond market structure components: Definitions, standards, verification processes

A well-functioning green bond market includes well-defined roles, procedures and standards for actors in the market.[14] This includes knowing what investment categories qualify as green, and verification processes of the green claims. Therefore, providing robust recommendations for growing a green bond market in China not only requires an in-depth understanding of the Chinese bond markets, as set out in chapter 2, but also an understanding of the current landscape for green definitions, standards and verification systems established in China. In that respect, it is worth stressing that the agendas for green and low-carbon finance in China are currently disaggregated and not well aligned **(**Amin, Ng and Holmes 2014).

Definitions and standards for green

There are two main aspects to consider when developing green bonds standards in China: what investment areas are required to address China's environmental challenges, and what the bond markets require from a standard.

As briefly mentioned, **China's investment areas covered by green bonds must go beyond climate change mitigation and adaptation;** although climate change has been the main investment focus of green bonds seen to date in Europe and the US, China are facing other issues such as air pollution and water scarcity as well that require large scale investments. However, this broader scope for green bond investments in China does not imply that climate change is not also an important priority in China, and it is crucial that Chinese green bond standards have hurdle rates that ensure that emissions cuts are sufficient to avoid the shallow investments that can have a negative impact over time due to locking in weak performance. Overall, ensuring consistency with the definitions and key policy areas set out under China's 12th 5-year plan, and upcoming 13th 5-year plan, is essential.

For the bond market, the following additional components have been identified as requirements for a green standard:

- Standards that measure ongoing performance, not just a snapshot at one point in time, as bond investors hold an investment over time
- Standards that facilitate aggregation to achieve investment opportunities at scale
- Standards that are practical across markets and jurisdictions to ensure a broad universe of eligible green investments

While no green bond standards complying with these requirements exist in China, the country already has relevant experience to develop clear definitions around green in other areas that can be leveraged in developing standards for green bonds: examples are performance standards and regulations for resource

[14] For more detail, see Kidney and Oliver (2014): Growing a green bonds market in China, the precursor to this paper.

efficient and green infrastructure, goods and services for several sectors, which in some areas surpass the equivalent standards in developed markets.

The main relevant definitions of what is green that already exist in the Chinese markets that can provide a foundation for green bonds are identified as CBRC's Green Credit Statistical Report.[15]

Specific definitions for Green Credit were issued in 2013 with the Notice for Green Credit Statistical Report from the CBRC, in response to the lacking of clear, operable definitions around what is green at the level of granularity required by the banks under the initial 2012 Green Credit Guidelines. The initial Guidelines only provided high-level suggestion around what investment areas could be considered green: "Banking institutions shall promote green credit from a strategic height, increase the support to green, low-carbon and recycling economy" (...) "including environmental and social issues related to energy consumption, pollution, land, health, safety, resettlement of people, ecological protection, climate change, etc" (CBRC 2012).

The *Green Credit Reporting Instruction* document (CBRC 2013) elaborates on this and recognizes green agriculture, industrial energy-saving, solar, hydro and wind power projects and green retrofitting of buildings, amongst others, as asset categories that could be considered green. While the document provides a useful foundation for what type of assets could qualify for green bond issuance, the document does not provide any criteria for specific emissions performance (or performance in terms of other environmental impact) that is required in each asset class for it to be considered green. Having hurdle rates for emissions is particularly important for certain types of assets; for example, energy efficient buildings where small cuts in emissions can have a detrimental climate mitigation effect over time as the minimal efficiency gain is locked-in for decades as buildings are only upgraded every few decades.

In addition to defining asset categories for Green Credit, the document includes emission calculation methodologies for various types of green credit, which enables impact assessment. These are considered robust, as they were developed in collaboration between CBRC and the Standards Administration of China, the key standard setting body in China for products and processes.

In December 2014, the CBRC also launched a mix of qualitative and quantitative key performance indicators (KPIs) as a guidance tool for self-assessment by banks, which has to be submitted to the regulator annually in May (BankTrack 2015).

In terms of coverage, the Green Credit Guidelines covers all the top 21 banks in China, who control c80% of lending. This broad coverage of banks implies that there is overlap with the banks already adhering to the Green Credit Guidelines and potential green bond issuers. Per end 2013, these banks had RMB5.6trn classified as green credit investment, equivalent to c9% of their portfolios (Amin, Ng and Holmes 2014). However, the extent these calculations have used the definitions in CBRC's Statistical Report is not clear.

If taking a more narrow focus on just greenhouse gas emissions, there are other relevant initiatives in China that has established standards, particularly the local emission trading schemes and a greenhouse gas accounting framework from the NDRC. The local emission trading scheme pilots set up in 7 cities and regions of China[16] have emission calculation methodologies that apply standard emissions factors to the companies' activities. In 2013, NDRC released accounting methods for greenhouse gas emissions for ten sectors: steel,

---

[15] CBRC (2013) Notice for Green Credit Statistical Report

[16] The intention to establish a range of local pilot emission trading schemes in was set out by the State Council in 2011. The first 5 pilots were implemented in 2013, followed by the other 2 in 2014.

chemical, glass, cement and ceramics manufacturing, aluminium and magnesium smelting, power generation, power grids, and civil aviation (EY 2014). The coverage of these emission methodologies is broad, as in 2014 the NDRC mandated 20,000 companies in total to report on GHG emissions using their GHG accounting standards (World Resources Institute n.d.).

For green bond standards these initiatives are less relevant, due to the narrow focus on emissions, which does not fit with the more comprehensive environmental challenges of China. However, there might be opportunity to leverage the calculation methodologies for impact assessments of green bonds, and the initiatives could provide an avenue to identify and reach out to potential green bond issuers.

Verification and enforcement

Robust implementation of any definitions and standard in the market will require a verification and enforcement system. In developing a verification system for green bonds, China can learn from previous efforts in other areas where they have developed green assurance and verification systems. The verification systems under the Green Credit Guidelines, pilot local emissions trading scheme and the National Energy Savings scheme are considered. Although no verification system has been identified for the preferential financial regulations and policies that are already in place in China for small to medium enterprises and rural development, they are considered important for green bonds to ensure robust impacts.

1. Green Credit Guidelines

There is no explicit verification system in place for Green Credit. Banks report their statistics on green credit to the local CBRC, who then input it to CBRC centrally, but there is a lack of verification. However, this does not mean that the Green Credit Guidelines cannot provide lessons for verification and enforcement processes: The experience with the Green Credit Guidelines seem to have made it clear to policymakers that verification rules and entities are important, as lack of verification has limited the implementation of the Green Credit Guidelines in practice. Improved verification systems and compliance measures are currently under development.

The Ministry of Environmental Protection has been involved in estimating banks' compliance with Green Credit; for example, in 2012, the Ministry's Policy Research Centre published a report on China's banks' performance on Green Credit (Nan 2013) – however, this seems to be an ad hoc evaluation rather than a systematic verification process.

Improvement to verification against the Guidelines has been proposed (e.g. DRC 2014). For example, it has been proposed that banks have to disclose amount of green credit in annual reports.

There is limited scope for enforcement and punitive measures from the CBRC, as adherence to the Green Credit Guidelines is voluntary. However, lack of compliance may in the future allow CBRC and the PBOC to punish banks by restricting their credit and banking licenses (Amin, Ng and Holmes 2014).

2. Local Emission Trading Schemes

The verification process varies slightly by pilot, but the main characteristics apply across all the pilots (PMR 2014). For all pilots, third-party verification is required, not optional (PMR 2014). The "competent authority", which nationally is the NDRC (Department of Climate Change) and the local DRC for the emissions trading scheme pilots, appoint independent third-party verifiers for the relevant region (PMR 2014). The verification is in several of the pilots paid for by the DRC (PMR 2014).

This system of multiple verifier entities is similar to what have been adopted for verification in the green bonds market to date in Europe and the US. Here, the verification model that has been used to date is a range of independent, third party, private organisations – although unlike under China's emissions trading scheme, the verifier entities are not "designated" by any overarching regulator, as verification is voluntary, and the issuer's decision.

The reporting content required varies by pilot, but the minimum proposed for a national emission trading schemes is total emissions, activity data and emission factors and sources (PMR 2014). A web-based reporting system is used for all the pilots (PMR 2014)[17]. Some of the emissions data could be useful for climate change mitigation focused green bond impact assessments; however, green bond reporting will generally be more comprehensive than what has been developed for the local emission trading schemes.

Enforcement under the local emission trading schemes is reliant on the NDRC granting the local government powers to enforce compliance (IETA 2013). The penalties for non-compliance vary between the pilots, but they are typically monetary fines for failing to submit verified reports (PMR 2014). In Tianjin and Chongqing, an additional penalty is that the company will be disqualified for environmental preferential policies, such as subsidies and funds, for 3 years (PRM 2014). Similar sanctions could be applied to green bonds that do not comply with environmental commitments.

A national emissions trading scheme is expected under the 13th 5-year plan (2016-2020). In total, the regions with pilot emissions trading scheme cover c25% of China's GDP – although not all emitters in each of these regions are covered by the scheme, as only the largest emitters are targeted (EDF and IETA 2013). The total number of companies covered is 2247 (Zhong 2014). As with the *Green Credit Reporting Instruction*, this implies that there is significant overlap with the companies covered by the emissions trading scheme and potential green bond issuers[18]. This overlap implies that the verification systems can possibly be leveraged for green bonds, as the capabilities developed in companies to comply with the verification processes under the emissions trading schemes provide a foundation to build on for green bonds; although green bonds would require a broader scope than emissions.

3. National Energy Savings Scheme

The energy savings scheme started in 2011 and now covers 17,000 enterprises. It is regulated by the NDRC[19] (2011), and verification is mandatory (IEPD n.d.). The target setting, monitoring, verification and enforcement process is as follows: first, Energy Saving Authorities in the local DRC set the energy saving target. Enterprises collect and report the statistics of energy consumption. Verification of the data is done at the local level, either directly by the Energy Saving Authorities or by the Authorities commissioning third-party verifiers that are approved by the MOF and the NDRC. In 2011, 26 third-party verifiers were approved. The Energy Savings Authorities then evaluate the verified performance compared to the target they had set for the enterprise, before the evaluation result is reported to NDRC. Centrally set targets are not relevant for green bond issuance, however, the system of 3rd party independent verifiers can be copied for green bond verification.

17 Information on the reporting format for the pilots is not available for Tianjin and Hubei.

18 As green bonds are based on green performance defined at the project level, not entity level, high emission companies could issue green bonds, provided the *projects* bond proceeds are allocated to can be defined as green

19 *Notice on the Implementation Plan of the Top-10,000 Energy-Consuming Enterprises Program* under the 12th FYP.

There are then sanctions on those who fail to meet their target, imposed by the local DRC. If companies do not meet their annual target for energy savings, mandatory audits will be undertaken to determine the required retrofits to meet the target, which then must be implemented within a set timeframe (IEPD n.d.).

Weaknesses with this verification and enforcement system has however been identified. A report from the World Bank (2014) revealed the need to improve the current energy saving verification system by a range of measures:

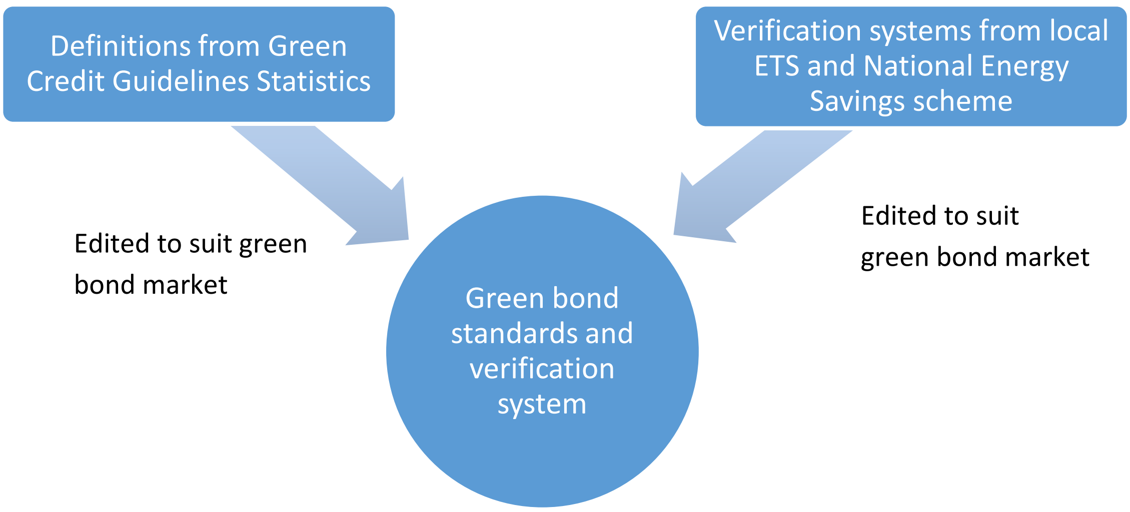
- Establishing standardized operational guidelines for project-level energy saving monitoring and verification.
- Establishing Standardized methodology for enterprise-level energy saving monitoring and verification.
- Improving the rigor in energy saving monitoring and verification
- Improving the transparency and credibility of the accreditation process for third-party verifiers
- Improving the capacity building of third-party verifiers.

While the standardised methodologies for monitoring and verification will be different for green bonds that what is required under the energy savings scheme, this review tell us that the existing verification and monitoring systems in China have room for improvement, and are not currently robust enough to be co-opted for the green bonds market.

In sum, the Green Credit Guidelines and Statistics System have well-developed definitions and standards around green for the financial sector, however, the verification and enforcement system is currently here less developed. For the local emissions trading schemes and National Energy Savings scheme, the verification systems are more developed, and provide structures that can be adopted for the green bonds market; although the implementation of the existing verification models must be improved as severe limitations with the systems in practice have been identified.

Green bonds could therefore have a consolidating effect on the agendas for green and low-carbon finance in China, which are currently disaggregated and not well aligned.

Figure 6: Green bond standards and verification system can build on, and consolidate, fragmented existing definitions and verification



4. Green bond recommendations

Recommendations for developing definitions, standards and the verification of green

In the China context, outlining the specific green criteria and verification system that may apply for green bonds originating in China and ensuring a functioning market ecosystem, may be pursued through the following steps:

✓ **China's particular environmental challenges and financial system means China-specific definitions for green bonds are recommended.**

While climate change mitigation and adaptation have been the primary investment categories green bonds have been used for in Europe and the US, China's environmental challenges go beyond climate change to include, for example, other types of pollution and significant water scarcity issues. Moreover, China's financial system has a very different structure than in Europe and the US; more dominated by banks and with a less developed bond market. Together, these imply a green bonds market in China will differ from the market seen to date.

Additionally, China has experience in developing performance standards and regulations for resource efficient and green infrastructure, goods and services cross the economy sectors including transportation; buildings, electricity etc. In some areas these standards surpass their equivalents in developed markets.

✓ **Set up a new entity, "Green Bond Market Development Committee", to review existing and forthcoming green standards and regulations**:

The Committee will consist of representatives from:

- Regulators, particularly the bond market regulators (PBoC, MoF, NDRC, CSRC and CBRC)
- Industry coordination bodies.
- The Standards Administration of China, which develops industry standards for environmental performance of products and processes, can provide expertise gained in their involvement in developing the *Green Credit Reporting Instruction* with the CBRC.
- Government agencies. The Ministry of Environmental Protection is one relevant entity, given the role they play currently in monitoring emissions performance of enterprises.
- Development banks: Considering their large share of the bond market issuance, development banks are important stakeholders.
- Commercial banks.
- Industry coordination bodies.

The participation of the CBRC's Department of Statistics in the Development Committee will have a dual benefit:

- They have relevant expertise on standards development, as they developed their green credit statistical report which provide the foundation for green bond standards in China
- Their mandate has recently been altered to also cover macro-prudential regulation, allowing the Committee to tie a close link between the development of a green bond market and China's other financial policy priorities.

The Market Development Committee could be placed under the Expert Council of the Secretariat for the Green Finance Working Group of the PBoC, as part of the work of this group is on green bonds. This Green Finance Secretariat is in the process of being set up[20] within the China Society for Finance and Banking[21] .

Activities:

1. *Expansion of the CBRC (2013) Notice for Green Credit Statistical Report:* the review would particularly consider how the current guidelines would need to change to be tailored for China's bond markets, and how to ensure consistency across different types of bonds and bond markets. The work should also ensure that bonds fit with China's green development policies under the 12th and 13th 5-year plans.

   While its focus in developing definitions for green bonds would be the CBRC's *Green Credit Reporting Instruction*, it is recommended that the Committee collaborate with the international and global process already in place to develop green bond definitions. Currently, the only effort to develop standards around what is green is organised by the Climate Bonds Initiative through their Standards and Certification Scheme.

   The focus on the CBRC's *Green Credit Reporting Instruction* for definitions rather than the ETS is justified by the broader scope of this document, and by its asset and project focus. The relevant standards under the ETS are only focused on calculation of carbon emissions, which falls short of what is required for green bonds standards: These require standards around emission performance, as well as categorisation of green investments more broadly. Moreover, the use of the *Green Credit Reporting Instruction* would avoid duplication, simplifying the process of green standardisation for regulators, issuers, investors and other market actors. Given the high presence of banks also in the bond market, this is a particularly useful starting point. The Committee would collaborate closely with CBRC to ensure that commentary from the review would feed back to CBRC. The Green Bond Market Development Committee would provide an informal complementary working group to the high level groups on green finance and bonds already established in the DRC and PBOC.

2. *Encourage demonstration issuance from public and commercial entities:* development banks are particularly well-placed to be the pioneering issuers of green bonds in China. Multinational development banks' issuance kick-started the global green bond market, and national development banks have been amongst the first issuers of green bonds in other countries as well: KfW in Germany is one example. Commercial banks that have been pioneering in green finance in China, such as SDP and Industrial Bank, could also provide demonstration issuance.

[20] Email communication with Ma Jun, chief economist PBoC

[21] China Society for Finance and Banking is an academic group aiming to promote finance development in China. It carries out financial studies and spread finance knowledges to the public. It is supervised by People's Bank of China.

3. *Provide input to green bond market commentary:* ongoing, online market commentary and analysis will help grow the market by increasing information for potential issuers, investors, policymakers, underwriters and other market actors. This can take the form of blogging and social media outreach. It would be the role of the Market Development Committee to contribute to this communication channel.

4. *Education activities:* complementary to the market commentary, more formal communication of green bond standards to the market, once they are developed, as support is required for CBRC to communicate the standards to financial market actors to ensure broad uptake. This can include workshops and webinars.

5. *Make ongoing proposals for market development*: the committee will play a think tank role in developing the green bonds agenda in China, as an informal complementary to the ongoing green finance processes under the PBOC and the DRC.

✓ **Set up a multi-entity third-party verification system for green bonds supervised by a government approved entity**

After discussions with regulators in China, it is recommended to have one government-approved entity supervising a range of verifiers of green claims. NDRC could approve the supervisory entity, for example. A model of multiple verification models *and* entities has been used in the green bonds market in Europe and the US, although there is no supervisory entity of the verifiers and the verification process is not standardised. A supervisory entity in China would be an independent, market-focused, non-government entity set up explicitly for this purpose. This structure is modelled on the proposed China's Social Credit System Association.

The bond market regulators can play a role in the development of this supervised verification system; however, their main role in the process is to mandate verification and the use of the supervisory verification platform to ensure its wide use in the market. Compulsory verification contrasts with the practice in Europe and the US *to date*, but is nevertheless considered appropriate in China because of experiences with lack of compliance with the voluntary Green Credit Guidelines to date and the early stage of bond market development. As mentioned, mandatory verification is already used under the National Energy Savings Scheme.

Activities:

1. *Review of the harmonization of a green bonds market with emerging emissions trading systems for verification, monitoring and reporting*: the methodologies, monitoring, reporting and verification systems established under pilot emissions trading systems and the national energy savings scheme can inform the development of equivalent processes for green bond market players. As corporate green bond issuers may also act as key participants in emissions trading platforms, the verification agents and reporting platforms may be cost-effectively co-opted to perform the same duties for the green bonds market, although this would require expansion of capabilities, as verification of green claims for the bond market is more complex than emissions verification,

2. *Set costs of verification low so that is it self-funding even without policy support; covered by benefits from consumer-focused labelling:* transaction costs of verification should be low enough that the cost to issuers should be recoverable by the additional marketing benefits achieved by marketing a bond as green. The labeling of bonds as green would be consumer-focused, providing a fair trade-like label

for the bonds signaling their green credentials. This is beneficial in China's move to a market-led economy, as currently standards are typically complex and not signaled with easily understood labels.

The costs to issuers could also be further compensated by preferential policy support for green bonds, for example preferential tax exemptions, as proposed above, which would be made conditional on verification. However, relying on preferential policies for green verified bonds for issuers to recover costs would limit the initial growth of the market – keeping the costs lower should therefore be a priority.

3. *Verification process should learn from international best practice on green bonds:* regulators should look to the global green bond markets for the key components to include in their verification process:

   - Review of the green assets linked to the green bond proceeds, rather than reviewing the green credentials of the bond issuer at the entity level. This enables an earmarking process for proceeds from bonds, which is innovative, and not a typical feature of bond issuance – investors then know what projects their funds are going to. The requirements for municipalities now issuing bonds in China to disclose on use of proceeds is a similar idea of increased transparency. The earmarking is they key defining feature that has facilitated the rapid growth in green bond issuance: it enables a much larger market than if the green credentials are established at the entity level, as this will exclude the potential issuers that are not pure play.

   - Review if commitments have been made to regular (at least annual) confirmation of the use of green bond proceeds and performance of green bond proceeds and assets. As a bond is held, ensuring that the green credentials are guaranteed over time is important.

   The internationally recognized Green Bond Principles and the Climate Bond Standard have enshrined the need for green bonds to meet open and transparent green criteria.

✓ **Expand oversight of credit rating agencies and auditors to cover green definitions**

Credit rating agencies, whose role is improving with the proposed reforms, could take on green verifier roles to check compliance with green bond standards. Technical auditors could also take on this role, as what is needed is verifying and auditing against set standards of what is green; not making ad hoc decisions about what is green, which is currently the role of verifiers in the European and US bond markets.

Recommendations for Policy & Regulatory considerations

Following the detailed outline of the financial regulatory changes in China and how they are relevant to growing a green bond market set out in the section above, a list of key levers that policymakers may use to enable the growth of a green bonds market in tandem with these bond market reforms are identified:

Green Municipal Bonds

✓ **Extra or proportionate quotas for green municipal bonds:**

Major reforms in local government financing can be tailored to green performance standards: As the NDRC seeks to establish quotas for municipal bond issuance and restrict debt issuance by local government investment vehicles, it would promote transparency and the development of local economies if one of two allowances were made for green municipal bonds:

- Allowing a top-up on the quota for green municipal bonds clearly linked to sustainable development plans or infrastructure; or
- Mandate a proportion of quotas for green bonds, ensuring local government debt is raised with green development at the forefront of capital expenditure.

The implementation of the idea of "ecological civilization" in China has proved that it is essential that there is strong verification and enforcement systems in place to ensure that the projects financed by green municipal bonds have robust green credentials.

✓ **Establish a central fund to provide partial credit guarantees for green municipal revenue bonds and green public-private partnership project bonds**:

The recent approval of a bond issuance for urban renovation in Xinjiang is a first foray into project revenue bonds in the Chinese market. The NAFMII under the PBOC has presented a paper on the development of revenue bonds for municipals to allow them to raise debt without further increasing on-balance sheet debt levels. Such a programme may be fast-tracked for green infrastructure and services by municipalities. A central government subordinated debt position or partial guarantee pool could incentivize municipals to promote the bond structure and achieve green development goals.

Subordinated debt or partial guarantees could also be applied to project bonds issued by public-private partnership (PPP) entities: this is becoming increasingly relevant, as China's municipalities are increasingly moving to a PPP model to finance infrastructure development, boosted by recent regulatory changes for local debt management.

✓ **The Green Climate Fund could also provide partial guarantees for green bonds alongside the central government.** The GCF has announced that it will focus on leveraging private finance rather than direct provision of funds, with partial credit guarantees being one of the mechanisms to implement this model. China's bond market can offer a good opportunity for the GCF to start deploying this instrument, as China's debt market as relatively well-developed compared to other emerging markets and developing countries. Support from the GCF would be conditional on robust verification and monitoring of the green credentials of green bonds, and joint commitments from China's central government. This proposed model is expected to be of less interest for the multilateral development banks, possibly with the exception of the Asian Development Bank.

- ✓ **Credit enhancement of green municipal bonds, municipal revenue bonds and PPP project bonds can also come in the form of monoline insurance.** An alternative to partial guarantees is setting up a government-supported entity of monoline insurance for green bond issuance from municipalities and PPP entities. This option offers a more market-based approach than the option of guarantees proposed above.

Green Corporate Bonds

- ✓ **Provide corporate tax credits for interest earned on green enterprise bonds (from SOEs), corporate bonds and medium-term notes.** Interest earned by domestic institutional investors on non-government bonds is subject to a 25% corporate tax and a 5% capital gains tax. Government bonds, including municipal bonds, are already tax-exempt. For international investors, a 10% withholding tax is imposed on coupons for non-government bonds.
- ✓ **Establish a central guarantee pool for green bonds from SOEs (enterprise bonds).** This market segment account for a significant share of China's bond market; a larger share than corporate bonds. Providing explicit partial credit guarantees from central government to green enterprise bonds can encourage their issuance; although SOEs currently have implicit government backing, making the guarantees explicit can be attractive to investors, as it improves certainty of their risks over time. This is particularly valuable in the current times of financial regulatory changes in China and recent regulatory changes away from implicit central government support in other debt areas, such as local government debt.
- ✓ **Credit enhancement of green enterprise bonds can also come in the form of monoline insurance.** An alternative to partial guarantees is setting up a government-supported entity of monoline insurance for green bond issuance from SOEs; as proposed above for green muni bonds.

Information disclosure for green bonds

- ✓ **Establish specific rules for green bonds in the new improvements to issuer disclosure systems:**

  To reduce reliance on external credit ratings and improve the ability of investors to identify risks, the State Council has announced guidelines to improve disclosure for bond issuers. Corporate bond issuers in particular should ensure that risks associated with resource use (energy, water etc.) and environmental compliance (pollution control, waste management etc.) are fully disclosed, so that once the green bonds standards are established, as discussed above, the information disclosure is readily available for issuers to prove their adherence to the standards for their green bond issuance. In addition, disclosure guidelines for green bonds should specify the green or low carbon assets and activities the funds raised for the bond will be allocated to. In line with international best practice, the principal of the bond should be lower than or equal to the value of the low carbon or green assets.

- ✓ **Promote discovery and trading of green bonds through overhaul of bond market information systems**

  In their drive to promote transparency and accuracy of information in exchanges and other forums for securities trading, regulators should consider easily identifiable tagging for green bonds across all platforms that have standardized characteristics.

Regulators' role for green bonds

- ✓ **Include a green bond market development agenda in inter-ministerial coordination mechanisms:** In concert with the duties and responsibilities of relevant departments and regulators in relation to the bond market, a common agenda on green bond market development may be articulated, pursued and monitored through the agreed inter-ministerial coordination mechanism.

- ✓ **Reforms aimed at linking the interbank and exchange markets should aim to include categorisation of green bonds.** This will be important to ensure that multiple bonds are not issued based on the one green investment If there is no common categorisation of green bonds, it is a possibility that issuers claim that a green bond they issue in the interbank market will have proceeds going to a specific green project, and also issue a green bond in the exchange market claiming proceeds going to the same green project. If this occurred, it would reduce the additional investment in the real economy from green bond issuance.

Green bond investors

- ✓ **Establish green investment quotas through the expansion of the R-QFII and QFII programmes.**

  Through its new guidelines, the government has signaled its intention to raise quotas and remove restrictions on foreign investment into China as well as investment by domestic institutions outside China. Similar to quotas on municipal bonds, special consideration could be afforded to investments in green bonds to top-up or channel investor quotas.

5. Conclusion

The growth of China's bond market provides increasing opportunities for green bonds. Green bonds can enable companies, government and development banks to close the investment gap for China's environmental investments, as well as addressing non-environmental concerns such as transparency in the financial system. Considering how the financial system changes that are already occurring can enable the growth of a green bond market makes it easier and cheaper than making retroactive policy and regulatory changes.

The municipal bond pilot issuance that was approved in 2014 is a key area of reform that creates potential for green bonds, as local governments can issue these to finance low-carbon and climate resilient infrastructure. The increased support for growing the corporate bond market for non-state-owned enterprises is another relevant policy change that creates potential for green bond issuance. Improvements in disclosure is another area that is relevant for growing a green bond market in China, as transparency to know that proceeds from bonds are going to green projects is the key defining factor of a green bond.

To ensure that these opportunities for the growth of a green bond market in China creates robust and significant environmental improvements in the real economy, having standards around what is green as well as verification, reporting and enforcement systems is necessary. It is recommended that China-specific versions are developed; existing green definitions and verification processes in China can be used as a starting point and then altered to be specific for the bond market. For green definitions, it is recommended to expand on the *Green Credit Reporting Instruction* from the CBRC, whereas China's emissions trading system can provide useful lessons for developing a verification system.

References

ADB (2012): People's Republic of China Bond Market Guide. Available from: https://wpqr4.adb.org/LotusQuickr/asean3abmf/Main.nsf/h_Index/4CC53EFBD63D7BA3482579D4001B5CED/$file/abmf%20vol%201%20sec1%20prc.pdf

ADB (2014): Asian Bonds Online – People's Republic of China – Size of LCY bond market. Accessed 02.10.14. Available from: http://asianbondsonline.adb.org/china/data/bondmarket.php?code=LCY_Bond_Market_USD

Amin, Ng and Holmes (2014): China's Low Carbon Finance and Investment Pathway. E3G, July 2014. Available from: http://www.e3g.org/docs/English_Report_WEB.pdf

BankTrack (2015): China sustainable finance newsletter, issue 23, January 2015.

Bloomberg (2014): China Mulls Using Muni Bonds for Local Projects From 2016. 27 October 2014. Available from: http://www.bloomberg.com/news/2014-10-22/china-mulls-using-muni-bonds-for-local-projects-from-2016.html

Bradsher, K. (2014): China Authorizes Local Governments to Issue Bonds. New York Times, September 2014. Available from: http://www.nytimes.com/2014/09/02/business/international/china-authorizes-local-governments-to-issue-bonds.html?_r=0

China Business News Net (2014): Iron & steel enterprises and real estate construction companies gained conditional support on bond issuance. 29 October 2014. Available from: http://www.yicai.com/news/2014/10/4034349.html

CBRC (2012): Notice of the CBRC on Issuing the Green Credit Guidelines. Available from: http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A

CBRC (2013)China Banking Regulatory Commission's Notice on Filing and Reporting in Green Credit Statisticsal FormsReport. Available from http://www.cbrc.gov.cn/chinese/files/2014/501344F75C984C158551B648F971B241.pdf

China Central Depository Clearing Company (2012): Annual bond market report

China Security News: SAFE is considering of expanding quota for R-QFII. 26 September 2014. Available from: http://zixun.wlstock.com/zhulidongxiang/2014-11-0-59-09260804494213.html

CSRC: Administrative Measures of Corporate Bonds Issuance and Trade (draft for comment) December 2014. Available from: http://www.gov.cn/wenzheng/2014-12/07/content_2787818.htm

CSRC&CBRC: Guideline on Commercial Banks' Issuance of Corporate Bonds to Supplement Capital Requirement. January 2014. Available from: http://www.csrc.gov.cn/pub/newsite/flb/flfg/bmgf/fx/gszj/201401/t20140122_242975.html

CSRC (2012): Measures for Pilot Domestic Securities Investment Made by RMB Qualified Foreign Institutional Investors of Fund Management Companies and Securities Companies. Available from: http://www.csrc.gov.cn/pub/csrc_en/OpeningUp/RelatedPolices/R-QFII/201211/t20121129_217391.html

DRC (2014): Draft: Problems in the development of China's green finance and policy recommendations. November 2014.

The Economist (2014a): Chinese bonds – Not so sunny. March 2014. Available from: http://www.economist.com/news/finance-and-economics/21598686-chinas-first-domestic-bond-default-marks-maturing-market-not-so-sunny

EDF; IETA (2013): China: The world's carbon markets: A case study to emissions trading. June 2013. Available from: http://www.ieta.org/assets/Reports/EmissionsTradingAroundTheWorld/edf_ieta_china_case_study_september_2013.pdf

EY (2014): Understanding China's Emissions Trading Schemes and Emissions Reporting. Available from: http://www.ey.com/Publication/vwLUAssets/EY-Understanding_Chinas_Emissions_Trading_Schemes_and_Emissions_Reporting/$FILE/EY-Understanding-Chinas-ETS-and-Emissions-Reporting.pdf

Goldman Sachs (2014): FAQ China's bond market. Available from: http://www.goldmansachs.com/gsam/glm/insights/market-insights/china-bond-market/china-bond-market.pdf

HSBC (2013): The rise of the Redback II: An updated guide to the internationalization of the renminbi. Hong Kong: HSBC.

IEPD (n.d.): Top-1000 Energy-Consuming Enterprises Program. Industrial Efficiency Policy Database. Available from: http://iepd.iipnetwork.org/policy/top-10000-energy-consuming-enterprises-program

IETA (2013): A user guide to emissions trading in China. Available from: https://ieta.memberclicks.net/assets/Reports/ieta_emissionstrading_china_usersguide_sept2013_draft_a4_sf.pdf

ICMA (n.d.): NAFMII newsletters. Available from: http://www.icmagroup.org/About-ICMA/International-Affiliatins/NAFMII-Newsletter/

Jingu, T. (2012): China's growing corporate bond issuance. Nomura Research Institute. Available from: http://www.nri.com/global/opinion/lakyara/2012/pdf/lkr2012154.pdf

Kidney, S.; Oliver, P. (2014): Growing a green bonds market in China: reducing costs and increasing capacity for green investment while promoting greater transparency and stability in financial markets. Available from: http://www.iisd.org/pdf/2014/growing_green_bonds_en.pdf

Liu, B. (2013): QFII/R-QFII expansion – Positioning on/offshore China. 26 March 2013. Available from: https://research.standardchartered.com/configuration/ROW%20Documents/QFII_R-QFII_epansion_%E2%80%93_Positioning_on_offshore_China_26_03_13_05_49.pdf

Liu, B. (2013): China onshore and offshore rates – Outlook for 2013. Available from: https://research.standardchartered.com/configuration/ROW%20Documents/QFII_R-QFII_expansion_%E2%80%93_Positioning_on_offshore_China_26_03_13_05_49.pdf

Liu, B. (2014) China onshore bond compendium 2014. Standard Chartered Global Research, April 2014

McKinsey (2013): China's rising stature in global finance. Available from http://www.mckinsey.com/insights/winning_in_emerging_markets/chinas_rising_stature_in_global_finance

Ministry of Finance: Guideline on Municipal Bonds Pilot Issued and Repaid by Municipalities 2014 Available from: http://gks.mof.gov.cn/redianzhuanti/guozaiguanli/difangzhengfuzhaiquan/201405/t20140521_1082114.html

Ministry of Finance: Guidance on Credit Rating of Pilot Municipal Bond. Available from: http://gks.mof.gov.cn/redianzhuanti/guozaiguanli/gzglzcfg/201406/t20140611_1097736.html

Nan, X. (2013): Chinese banks under "almost negligible" pressure to protect the environment. China Dialogue, March 2013. Available from: https://www.chinadialogue.net/article/show/single/en/5812-Chinese-banks-under-almost-negligible-pressure-to-protect-the-environment

NDRC (2011): Notice on the Implementation Plan of the Top-10,000 Energy-Consuming Enterprises Program. Available from: http://www.sdpc.gov.cn/zcfb/zcfbtz/201112/W020111229589358952455.pdf

People's Bank of China: Guideline on Non-financial Enterprises Debt Financing Tool Management. April 2008. Available from: http://www.gov.cn/gongbao/content/2008/content_1149254.htm

PMR (2014): A survey of the MRV systems for China's pilots. Technical Note 8, July 2014. Available from: https://www.thepmr.org/system/files/documents/Technical%20Note%208_proper%20covers.pdf

Rabinovich, B. (2013): China reforms: And the beat goes on. Financial Times, March 2013. Available from: http://blogs.ft.com/beyond-brics/2013/03/20/china-reforms-and-the-beat-goes-on/

Reuters (2014a): Daimler issues landmark corporate "panda" bond in China. March 2014. Available from: http://www.reuters.com/article/2014/03/14/daimler-china-bonds-idUSL6N0MB0UX20140314

Reuters (2014b): China warns of corporate bond market risks, may raise threshold. August 2014. Available from:http://www.reuters.com/article/2014/08/06/us-china-bonds-idUSKBN0G60Q420140806 Reuters (2014c): CSRC will create innovative bond types such as M&A bonds and municipal corporate bonds. August 2014. Available from: http://cn.reuters.com/article/cnBizNews/idCNL4S0Q73CR20140801

Shanghai Clearing House: Notice on Allowing Non-financial Qualified Investors' Entrance into Inter-bank Bond Market. November 2014. Available from: http://www.shclearing.com/xxpl/sqfb/201411/t20141103_52528.html

Shanghai Securities Exchange: Notice about Commercial Banks' Corporate Bond Issuance, Trade and Transfer. 9 January 2014. Available from: http://www.sse.com.cn/lawandrules/sserules/trading/bond/c/c_20140109_3762582.shtml

Shanghai Securities Exchange &Shenzhen Securities Exchange: Notice on Pilot M&A Private Placement Corporate Bonds. November 2014. Available from: http://stock.cnstock.com/stock/smk_gszbs/201411/3232236.htm

Shanghai Securities News: Shift on Pricing Mechanism of Credit Bonds: More Quoting from Buyer Institutions. May 2014. Available from: http://zixun.wlstock.com/gushiyaowen/2014-11-0-12-05210737274705.html

Trading Economics (2014): China credit rating. Accessed 02.10.2014. Available from: http://www.tradingeconomics.com/china/rating

The State Administration of Foreign Exchange (SAFE): R-QSII quote approval disclosure. 31 October 2014. Available from: http://www.safe.gov.cn/resources/wcmpages//wps/wcm/connect/safe_web_store/safe_web/glxx/hgjwjgtzzmd/node_glxx_jwjg_store/10830c8049dc6f179d02bfed8ff4845d/

The State Council: Suggestions on Further Deepening Capital Market Development. 8 May 2014. Available from: http://www.gov.cn/zhengce/content/2014-05/09/content_8798.htm

The State Council: Suggestion on Strengthening Municipal Debt Management. October 2014. Available from: http://www.gov.cn/zhengce/content/2014-10/02/content_9111.htm

Wildau, G. (2012): China to raise R-QFII quota by 200 billion yuan: CSRC

Reuters, November 2012. Available from: http://www.reuters.com/article/2012/11/11/us-china-investment-R-QFII-idUSBRE8AA02920121111

Wildau, G (2014): China landmark bond default heads towards bailout. Financial times, October 2014. Available from: http://www.ft.com/cms/s/0/10adc7be-4ebe-11e4-b205-00144feab7de.html#axzz3M4n96jav

World Bank (2014): Establishing M&V system for Energy Efficieny in China. Project Information Document for Concept Stage. Available from: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/EAP/2013/06/19/090224b081c85776/1_0/Rendered/PDF/Project0Inform0y0in0China000P132748.pdf

World Resources Institute (n.d.): China Moves Toward Mandatory Corporate Greenhouse Gas Reporting. Available from: http://www.wri.org/our-work/top-outcome/china-moves-toward-mandatory-corporate-greenhouse-gas-reporting

Zhong, Q. (2014) China carbon market report 2014. IETA-IEA-EPRI Workshop, Paris, 8th October 2014 Available from: http://www.iea.org/media/workshops/2014/21ZHONGQINGChinaCarbonMarketReport2014.pdf

Appendix: Roles of regulators in the Chinese Debt Markets

The table provides links to the specific article in the legislation

Regulator	Regulatory issue	Source link (when available)
NDRC	Notice of the scale and relevant problems about the first company bonds	
	Notice of improving the bond market and simplifying the procedures for issuing company bonds	
PBOC	Announcement about financial institution join the interbank bond market	
	Rules on the Issuance of Subordinated Bonds by Commercial Banks	http://www.cbrc.gov.cn/EngdocView.do?docID=906
	Measures for Administration of Short-term Financing Bonds of Securities Companies	http://www.leggicinesi.it/view_doc.asp?docID=250
	Interim Measures for the Issuance of RMB Bonds by International Development Institutions	http://www.lawinfochina.com/display.aspx?lib=law&id=8481&CGid=
	Administrative Measures for the Securitization of Credit Assets	http://www.pbc.gov.cn/publish/english/964/1957/19573/19573_.html
	Measures for the Administration of the Issuance of Financial Bonds in the National Inter-bank Bond Market	http://www.pbc.gov.cn/publish/english/964/1957/19570/19570_.html
	Relevant Issues concerning Issuance of the Mixed Capital Securities by Commercial Banks	http://english.mofcom.gov.cn/article/policyrelease/announcement/200712/20071205278247.shtml
	Administrative Measures for Debt Financing Instruments of Non-Financial Enterprises in the Inter-bank Bond Market	http://www.whitecase.com/files/Publication/b00f4b94-5061-45be-a894-ce5381a9a216/Presentation/PublicationAttachment/18499be3-b1f8-4274-a4ba-d94fd86d49a4/China_Finance_Bulletin_June_2011.pdf
	Measures for the Administration of Bond Transactions in the National Inter-Bank Bond Market	http://www.chinamoney.com.cn/fe/Info/2837990
	Provisions for the Administration of Forward Transactions of Bonds in the National Inter-bank Bond Market	http://www.fdi.gov.cn/1800000121_39_949_0_7.html
	Rules for Checking the Circulation of Bond Transaction in the Nationwide Inter-Bank Bond Market	http://www.enread.com/job/law/38943.html
	The Registration, Custody, Trading and Settlement of Asset-backed Securities in the Inter-bank Bond Market	http://www.pbc.gov.cn/publish/english/964/1957/19571/19571_.html
	Notice of the People's Bank of China on Strengthening the Management of the Credit Rating Practices in Inter-bank Bond Market	http://www.lawinfochina.com/display.aspx?lib=law&id=6781&CGid=

Regulator	Regulatory issue	Source link (when available)
MOF	Measures on the pilot selling saving bonds on a commission basis	
	Measures on management of national bond custody	
	Measures on national bonds custody across the markets	
	Notice of the Ministry of Finance and the China Securities Regulatory Commission on Issues Concerning Accounting Firms Engaging in the Relevant Securities and Futures Businesses	http://www.lawinfochina.com/display.aspx?id=5969&lib=law&SearchKeyword=Measures%20for%20the%20Administration%20of%20the%20Provision%20of%20Securities%20Legal%20Services%20by%20Law%20Firms&SearchCKeyword=
CSRC	Measures for the Administration of the Issuance of Securities by Listed Companies	http://www.fdi.gov.cn/1800000121_39_4505_0_7.html
	Interim Measures for the Administration of Bonds of Securities Companies	http://www.fdi.gov.cn/1800000121_39_1793_0_7.html
	Pilot rules on the issuance of corporate bonds	http://asianbondsonline.adb.org/china/documents/Pilot_Rules_on_the_Issuance_of_Corporate_Bonds.txt
	Measures for the Administration of Securities Exchanges	http://www.lawinfochina.com/display.aspx?id=2864&lib=law&SearchKeyword=Measures%20for%20the%20Administration%20of%20Securities%20Exchanges&SearchCKeyword=
	Measures for the Administration of Securities Registration and Clearing	http://www.lawinfochina.com/display.aspx?id=13944&lib=law&SearchKeyword=Measures%20for%20the%20Administration%20of%20Securities%20Registration%20and%20Clearing&SearchCKeyword=
	Interim Measures for the Administration of the Credit Rating Business Regarding the Securities Market	http://www.lawinfochina.com/display.aspx?id=6371&lib=law&SearchKeyword=Interim%20Measures%20for%20the%20Administration%20of%20the%20Credit%20Rating%20Business%20Regarding%20the%20Securities%20Market&SearchCKeyword=
	Measures for the Administration of the Provision of Securities Legal Services by Law Firms	http://www.lawinfochina.com/display.aspx?id=5969&lib=law&SearchKeyword=Measures%20for%20the%20Administration%20of%20the%20Provision%20of%20Securities%20Legal%20Services%20by%20Law%20Firms&SearchCKeyword=
	Announcement No.41 [2008] of the China Securities Regulatory Commission--Trial Provisions on the Issuance of Exchangeable Corporate Bonds by Shareholders of Listed Companies	http://www.lawinfochina.com/display.aspx?id=7143&lib=law&SearchKeyword=&SearchCKeyword=%b9%ab%cb%be%d5%ae
CBRC	Measures for Supervising and Administrating the Pilot Securitization of Credit Assets by Financial Institutions	http://www.lawinfochina.com/display.aspx?id=4721&lib=law&SearchKeyword=&SearchCKeyword=%bd%f0%c8%da%bb%fa%b9%b9%d0%c5%b4%fb%d7%ca%b2%fa%d6%a4%c8%af%bb%af%ca%d4%b5%e3%bc%e0%b6%bd%b9%dc%c0%ed%b0%ec%b7%a8