GREEN FINANCE

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Preface

This bibliographical survey focuses on 'Green Finance'. This bibliography lists the studies relating to the broader economic policy framework that could directly or indirectly impact the financial sector and influence its activities in a greener direction (or vice-versa). Given that the financial sector is a key player in a modern market economy, policies that drive towards sustainability will certainly influence financial sector behaviour and capital allocation. "Green finance" can be understood as financing of investments that provide environmental benefits in the broader context of environmentally sustainable development. These environmental benefits include, for example, reductions in air, water and land pollution, reductions in greenhouse gas (GHG) emissions, improved energy efficiency while utilizing existing natural resources, as well as mitigation of and adaptation to climate change and their co-benefits. Green finance involves efforts to internalize environmental externalities and adjust risk perceptions in order to boost environmental friendly investments and reduce environmentally harmful ones. Green finance covers a wide range of financial institutions and asset classes, and includes both public and private finance. Green finance involves the effective management of environmental risks across the financial system..

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GREEN FINANCE

Leslie Hillsamer (2016), ‘Reinventing the Money Trail: Green Finance & Chinese Environmental Banking Regulation’, *The Massachusetts Undergraduate Journal of Economics*, 4(Chapter2).

Concept: This paper reviews instances of international green financial reform. In recent years, China has explored the interconnectivity of finance and sustainable development. Finance is an underutilized instrument for sustainable endeavours. Growth does not have to come at the cost of environmental degradation. Additionally, the Environmental Credit Risk Management (ECRM) reveals that banks with environmental standards gain profit advantages by improving credit default predictions and avoiding the cost of environment clean up. If banks incorporate environmental regulations in their credit and funding algorithms, they can encourage corporate social and environmental responsibility. In order to make this argument, the paper considers theoretical frameworks and the emergence of green finance globally. Green finance is analysed with respect to environmental concerns in the context of sustainable development. The paper then evaluates green banking initiatives, particularly green credit initiatives in China.

Ganbat, K., Popova,I .,Potravnny,I. (2016) ‘Impact Investment of Project Financing: Opportunity for Banks to participate in supporting Green Economy’ *Baltic Journal of Real Estate Economics and Construction Management*, 4, 69–83.

Concept: The article analyses impact investment of project financing. Companies’ own funds, own funds of the consortium members, the company's own resources and budget funding, own funds of the company on the basis of a production sharing agreement, borrowed funds; the funds raised by the bond issue are all considered as the project financing sources in the natural resource field. The purpose of this article is to consider various opportunities to support environmentally oriented projects in the framework of project financing, including through attracting funds of banks for the development of “green” economy. The role of banks and the banking sector in supporting environmentally and socially oriented projects is analysed. The experience of banks in Asia, Europe and the United States in terms of “green” economy projects is shown. Moreover, environmental and social risks, and impact of a project, the project compliance with the norms and standards of responsible finance are all considered in this article.

Goel Priyanka(2016)’ Green Finance: A step towards sustainable financial system’ *Abhinav International Monthly Refereed Journal of Research in Management & Technology*, 5(3).

Concept: In today’s era of technological advancement the global economy is threatened from three major challenges: climate change, energy constraints and financial crisis. This is because economic development brings along with itself costs to the nations in form of environmental degradation. A green financial system is the remedy for achieving harmony between the economy and the environment. It promotes green investments in renewable energy development projects which help in achieving sustainable economic growth for the nations. The present study primarily aims at exploring existing literature on the Green banking initiatives taken by the top leading public and private sector banks in India. Secondly, to know about the different green products and services available in the Indian financial markets, their challenges and lastly, the future scope of green finance in India

Ms. Chopra, Tripti and CA Kakrecha, Punit (2015) ‘Green Finance: The practices of Banks and Perspective of Customers’ *International Journal of Research*, 3.(5) 27-38.

Concept: Green financing is a term which is trending these days. Significant evidence was traced in2007 when business week reportedly said that a fifteen-fold rise was there in sustainable mutual fund investment. There is a shift from capital formation to energy efficiency in investments. In 1980s and 1990s the focus of investments was mostly on economically viable projects. But this is the era when the focus has been shifted to environmentally viable projects. There are many companies which are following green finance concept so as to sustain in long run. A report on "Measures for ensuring sustained growth of Indian manufacturing sector "or Prime Minister's group headed by V Krishnamurthy recommended for promotion of clean technologies to achieve the aim of sustainable growth. The major objective of this paper is to study several aspects of green financing with respect to Indian scenario and it would also verify the practicability of green financing in Indian Banking sector. Green financing is now becoming a trending concept in the industry. Besides all the facts, the public is also demanding a company to be environmentally sensitive. Due to this reason, many business houses have already started green financing. But this is indeed a crucial time for the companies to cope up with standards and norms of Green financing. Environmental improvements and economic growth should go hand in hand specially in countries like India so as to sustain and develop in long run.

Ruiza,J D G ., Arboledab,C A., , and Boteroc ,S (2016) 'A Proposal for Green Financing as a Mechanism to Increase Private Participation in Sustainable Water Infrastructure Systems: The Colombian Case' *International Conference on Sustainable Design, Engineering and Construction, Procedia Engineering* 145 ,180 – 187.

Concept: This paper examines how green financial mechanisms can lead to increased coverage of potable water through the funding of new water infrastructure systems in Colombia. Achieving this goal requires both private investment and clean financial mechanisms that promote a low-emissions infrastructure. To address this need, this paper proposes a new financing model that involves green financing, capital markets, and the private and public sectors. In addition, it introduces new policies that the Colombian government should plan to implement to foster private participation and the development of infrastructure-related financial assets. As a result, this paper should contribute to increasing the role of the capital markets and private involvement in the development of a sustainable rural drinking water infrastructure.

Wang,Y and Zhia,Q,(2016) 'The Role of Green Finance in Environmental Protection: Two Aspects of Market Mechanism and Policies', *CUE2016-Applied Energy Symposium and Forum 2016: Low carbon cities & urban energy systems, Energy Procedia* 104, 311-316

Concept: Green finance is a new financial pattern to integrate environmental protection with economic profits, emphasizing "green" and "finance", two of which are controversial issues. This paper probes into the status quo of green finance in the field of renewable energy and finds out some inadequacies. We devote attention to development of market mechanism and formulation of policies. By revealing the internal contradictions between green finance and environmental protection, we propose solutions intrinsically for better achievement of ecological balance.

Jayasubramanian,P and Shanthi,M (2014),'Green Finance' *Indian Journal for Applied Research* 4(8)

Content: Green finance is a phenomenon that combines the world of finance and business with environmentally friendly behaviour. It is an arena for many participants, including individual and business consumers, producers, investors, and financial lenders. Green finance can be expressed differently depending on the participant, and it may be led by financial incentives, a desire to preserve the planet, or a combination of both. In addition to demonstrating proactive, environmentally friendly behaviour, such as promoting mass transit or the recycling of used goods, green finance is about avoiding the promotion of any business or activity that could be damaging to the environment now or for future generations.

Chowdhury, T., Datta, R., Mohajan,H (2013), 'Green finance is essential for economic development and sustainability' *International Journal of Research in Commerce, Economics & Management*, 3 (10)

Content: Green finance is part of a broader occurrence; from the incorporation of various non-financial or ethical concerns onto the financial universe. Generally green finance is considered as the financial support for green growth which reduces greenhouse gas emissions and air pollutant emissions significantly. Green finance in agriculture, green buildings and other green projects should increase for the economic development of the country. In this paper an attempt has been made to describe green financing in a boarder sense.

Rasul,U S M and Abedin, S S (2015) 'Sustainable Banking: Analysing Pattern of Green Banking in Bangladesh', *European Journal of Business and Management*, 7(33)

Concept: The term Green Banking is a new concept in Bangladesh, though the idea is not new. It has shifted the profit maximization goal of banks to 'planet, people and profit goal'. In Bangladesh, the banks are categorized as FCBs-Foreign Commercial Banks, PCBs- Private Commercial Banks, SCBs-State owned Commercial Banks, SDBs- the Specialized Development Banks. Bangladesh Bank – has issued the Green Banking Guideline in 2011 which is a mandatory policy guideline for all the scheduled Banks operating in the country. This study focuses on how the phase-wise action plan is applicable for all banks operating in Bangladesh are coping up to meet the target within the stipulated deadline. It is found that the SCBs and SDBs are showing constantly poor performance in adopting the idea. It is also mentionable that recently the focus is more on direct green financing to indirect green financing. Some banks are welcoming the idea of 'going green' whereas others are still in the dilemma in taking the challenge.

Bihari S C and Pandey B (2015), 'Green banking in I*ndia'Journal of Economics and International Finance*, 7(1) 1-17.

Concept: Environmentalism is a social movement that shows the concerns for environmental conservation and improvement of the state of the environment. This has now become a constant concern in every industry and it is no wonder that the banking industry also caught the 'green' fever. To circumvent the global warming trap, the impulse of 'going green' is running faster than expected amongst all the big giant industries, from Mutual Funds to Banks; every industry is moving fanatically ahead with its own green initiatives.

Tara K and Singh S(2014) ‘Green Banking: An Approach Towards Environmental Management’, *Prabandhan: Indian Journal of Management*, 7(11),.

Concept: The world has witnessed much focus on economic progress but has also neglected environmental issues. This negligence today has led to huge losses in terms of climate change, biodiversity, environmental degradation, rising greenhouse gases, loss of forests and water resources, and so forth. This degrading situation of the environment has led to a call by the society for taking responsibility to safeguard the planet. The corporates, thus have shifted their focus from the single bottom line, that is, profit to the wider approach of "triple bottom line" in lieu of achieving economic, social, and environmental performance simultaneously for attaining sustainable development. Today, every sector of the world economy is talking about their approach towards protection of the environment, and the financial sector moving towards their 'going green' approach in no exception. Various financial services which have adopted green approach in their businesses are banks, stock brokerages, insurance companies, and consumer finance companies. This paper aimed at finding out the various initiatives taken by the Indian banking industry to protect the natural environment and bring about sustainable development in the society.

Lymperopoulos, C., Chaniotakis, I E., Soureli,M (2012), ‘A model of Green Bank Marketing’, *Journal of Financial Services Marketing*, 17(2) 177–186

Concept: In the light of current market conditions, the financial services industry has been reshaped, requiring new marketing knowledge to provide guidelines for successful practice. To that end, corporate social responsibility, green marketing and a green brand image (GBI) have attracted considerable interest in the banking sector, although no framework has yet been established relating these constructs to one another. In this article, the authors present exploratory research as a basis for developing a model of green bank marketing. The model was tested to confirm the dimensions of green bank marketing and investigate its impact on a GBI, thus providing statistical evidence of the relationship between the two variables.

Sharma N et al. 'A study on customer's awareness on Green Banking initiatives in selected public and private sector banks with special reference to Mumbai', *IOSR Journal of Economics and Finance*, 28-35.

Concept: The concept of green banking helps to create cleaner and greener future as Green Banking has direct impact on the environment. This paper has been made to study level of consumer satisfaction and awareness regarding "Green banking services "initiative taken by various Public and Private sector banks in India, Mumbai. The study aims to identify the opinion and awareness of bank employees and customers as regards to green banking concept in public and private sector banks. It is necessary to identify various initiatives taken by bank on the concept of green banking in order influence customer and make them user friendly. Researcher will study the impact of gender on green initiatives taken by public and private sector banks. Whether they face any technical procedural problems as well as administrative problems. The authors have used SPSS technique as a statistical method.

Perez, O (2007)'The New Universe of Green Finance: From Self-Regulation to Multi-Polar Governance', *Bar Ilan University Pub Law Working Paper* 7(3).

Concept: Green finance represents a wide-ranging challenge to the traditional constructs of financial law. New green instruments threaten to transform conventional investment practices (ethical investment), lending standards associated with project finance (environmental/social impact assessment), and accounting conventions (green/social reporting). To a large extent this process was inspired by civic forces: environmentally-socially conscious citizens, environmental groups and private financial institutions.

International organisations such as the World Bank and UNEP added further impetus to this process. From a legal perspective, the phenomenon of green finance reflected a highly patchy social process, constituted by segregated contractual instruments and uncoordinated organisational routines. The paper will argue, in this context, that the contemporary governance structure, with its multiple layers, and private and public components, constitutes a regulatory ensemble whose synergistic capacities compensate for some of its evident shortcomings.

UNEP (2015)'Establishing China's Green Financial System' *Report of The Green Finance Task Force.*

Concept: A 'green finance system' refers to a series of policies, institutional arrangements and related infrastructure building that, through loans, private equity, issuance of bonds and stocks, insurance and other financial services, steer private funds toward green industry. Developed countries have already accumulated several decades of experience in developing green finance-related institutional arrangements and financial products. The green investments that have followed these developments have played a positive role in helping these countries achieve economic restructuring and sustainable growth. To meet the environmental challenges, it faces, China should build a green finance system to guide public funds toward green projects that support the goal of maximizing social welfare. Despite the considerable headway made in the promotion of green credit by the government, efforts for building a green finance system remain fragmented and conceptual. This report proposes a systematic general philosophy and policy framework for the establishment of China's green finance system and the promotion of green investment, with emphasis placed on practicality. On the basis of economic theories, experiences from other countries, and analysis of China's unique situation, we have proposed 14 specific policy recommendations on building China's green finance system.

Merk O., Saussier,S ., Staropoli ,C .,Slack,E and Kim , J H,(2010)'Financing Green Urban Infrastructure', *OECD Regional Development Working Papers*.

Concept: This paper presents an overview of practices and challenges related to financing green sustainable cities. Cities are essential actors in stimulating green infrastructure; and urban finance is one of the promising ways in which this can be achieved. Cities are key investors in infrastructure with green potential, such as buildings, transport, water and waste. Their main revenue sources, such as property taxes, transport fees and other charges, are based on these same sectors; cities thus have great potential to - green their financial instruments. At the same time, increased public constraints call for a mobilisation of new sources of finance and partnerships with the private sector. This working paper analyses several of these sources: public-private partnerships, tax-increment financing, development charges, value-capture taxes, loans, bonds and carbon finance. The challenge in mobilising these instruments is to design them in a green way, while building capacity to engage in real co-operative and flexible arrangements with the private sector.

Croce, R D., Kaminke, C and Stewart ,F(2011) 'The Role of Pension Funds in Financing Green Growth Initiatives', *OECD Working Papers on Finance, Insurance and Private Pensions*, 10.

Concept: Green projects - particularly sustainable energy sources and clean technology - include multiple technologies, at different stages of maturity, and require different types of financing vehicle. Most pension funds are more interested in lower risk investments which provide a steady, inflation adjusted income stream - with green bonds consequently gaining interest as an asset class, particularly - though not only - with the SRI universe of institutional investors. This paper examines some of the initiatives that are currently under way around the world to assist and encourage pension funds to help finance green growth projects. It is drafted with a view to inform current OECD work on engaging the private sector in financing green growth. Different financing mechanisms are outlined, and suggestions made as to what role governments in general, and pension fund regulatory and supervisory authorities in particular, can play in supporting pension funds investment in this sector. The paper concludes with the following policy recommendations: provide supportive environmental policy backdrop; create right investment vehicles and foster liquid markets; support investment in green infrastructure; remove investment barriers; provide education and guidance to investors; improve pension fund governance.

Guertler, P (2012), Energy Policy, 49, 91–97.

Concept: Energy efficiency and social programmes have failed to stem the dramatic increase in the number of fuel poor households in recent years. As the 2016 deadline for eradicating fuel poverty nears, energy efficiency and fuel poverty programmes are undergoing significant changes. The ambitions for Britain's Green Deal, the overhaul of supplier obligations alongside the winding down of Warm Front, and the introduction of an incentive for renewable heat combine to form a sea change in how energy efficiency and fuel poverty objectives are financed and delivered. Green Deal Finance (GDF) eliminates the up-front capital cost of energy efficiency measures to the household by linking repayments to energy savings and spreading them over many years. This paper asks whether and how GDF could be beneficial to fuel poor households. Using scenarios modelled on the English House Condition Survey, it explores the extent to which fuel poverty could be reduced, allowing for repayments incurred by GDF. It examines how much further fuel poverty could be alleviated were the capital cost subsidised or repayments supported, and concludes that a flexible design for GDF is necessary if it is to contribute to alleviating fuel poverty.

Rose, S K., Clark, J., Poe,J L and Schulze, W D (2002)'The private provision of public goods: tests of a provision point mechanism for funding green power programs' *Resource and Energy Economics* 24(1-2) 131–155.

Concept: This paper utilizes laboratory and field experiments to test the use of a provision point mechanism to finance renewable energy programs. The mechanism solicits discrete contributions towards a provision threshold using a money-back guarantee for insufficient contributions and extended benefits for contributions in excess of the threshold. In the single shot, large group laboratory environment, contribution levels are found to be partially demand revealing as well as motivated by other-regarding behaviour. In the field, relatively high participation is found. Furthermore, field participation is shown to be responsive to the provision point mechanism as well as program goals.

UNEP (2016)'Green Finance for Developing Countries: Needs, Concerns and Innovations. Inquiry: Design of a Sustainable Financial System'.

Concept: Green Finance for Developing Countries summarizes this work to date, and spells out developing countries' concerns, needs and innovations as momentum grows to catalyse green finance through financial system development. It maps out broad support for advancing green finance as a key aspect of sustainable development. Importantly, it highlights the leadership taken in diverse developing country contexts in advancing financial policies, regulations and fiscal measures that encourage financial market actors to take greater account of national priorities and sustainable development. Lessons from this leadership can be drawn upon from other developing and developed countries**.**

'Hong Kong as a Regional Green Finance Hub'*Financial Services Development Council,*23(2016).

Concept: Hong Kong is uniquely placed to be the regional leader in green finance. Following what was widely regarded as a successful international climate conference in December 2015 in France, there is undeniable momentum in the sector. There is a significant opportunity for Hong Kong to position itself as a leading hub for the provision of green finance and investment as billions of US dollars are required annually to fund the low-carbon assets that will be required to meet global commitments. With a new race to the top among global financial capitals, Hong Kong also needs to manage the risk to its leadership position in the financial services industry. If it does not seize this opportunity, other financial centres will.

Noh, H J (2010) 'Financial Strategy to Accelerate Innovation for Green *Growth' Korea Capital Market Institute.*

Concept: Green Industries Based on Green Technology are Promising Growth Sectors, and the Government will be Fully Implementing Green Financial Policies. – Government supports for Green Finance through enactment of "Basic Act on Low Carbon Green Growth". • Article 28 (Promotion of Green Finance): The government will establish and implement the following measures in order to promote low-carbon green growth. – Establish and secure funding to foster and support green growth and green industries – Develop new financial products to support low-carbon green growth – Boost private investment to build green infrastructure – Strengthen corporate disclosure of green management and expand financing for green management businesses – Set up carbon market (for trading carbon credits or GHG emission reduction/absorption) and promote active trading – Active green financing is necessary to develop the financial industry.

'Green Finance Reform and Green Transformation'(2015) *China Council for International Cooperation on Environment and Development, Annual Conference of CCICED*.

Concept: The ultimate purpose of green finance reform is to green the entire financial system and mobilize private capital towards green investments and away from resource-intensive and pollution-intensive investments. China's strategic framework for green finance reform contains four parts: China's national development strategy and goals, its "supply" of green finance (institutions and instruments), the "demand" for green finance (investment needs and effective demand), and enabling system conditions. The four elements constitute a holistic, inter-related system and changes in one part will lead to changes in the other parts. The government's vision for development and environment sets the overall framework, but the enabling (or "driving") conditions are the keys for converting investment needs into actual demand for finance. The starting point is to establish the right enabling conditions, particularly: 1) the establishment and enforcement of standards relating to environmental protection; 2) setting the proper pricing for resources; and 3) sending the right policy signals

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