

# Green Bond: An Instrument to Fight Climate Change

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**Abstract:** *This paper looks at the ability of green bonds to mobilise financing for adaptation and mitigation in developed countries. It examines, on the basis of a theoretical approach, the key drivers of the green bond market in recent years and the challenges stopping developed countries from seizing it. The results suggest that, in both developed and developing countries, green bond growth is a fact, supported by growing investor awareness of the environment. Nevertheless, in developing countries, demand remains incipient, and its maximum potential seems to be undervalued. The lack of adequate institutional frameworks for handling green bonds, the issue of minimum size, and high transaction costs associated with issuing green bonds, are key barriers to green bond growth in developing countries. To address these challenges, this paper suggests the successful use of multilateral and national development banks as intermediary institutions for the management of local green bonds. In addition, local governments are required to offer guarantees to local green bond issuers to cover the funding costs associated with green bond issuance.*

**Keywords:** *Green bonds, minimum size, transaction costs, development banks, developing countries.*

## INTRODUCTION

As innovative financial instruments, green bonds provide an incentive to test new private capital markets in order to finance sustainable projects. The term 'green bonds' refers to bonds whose proceeds are used to finance environmentally friendly initiatives such as recycling, conservation of water and energy, bioenergy, and low carbon transport[1]. There is currently no common concept of green bonds, but there has been a growing consensus about what they are supposed to do. For the purposes of this paper, a green bond should be described as a financial instrument with a fixed income to raise capital to fund or refinance eligible green projects..

Green bonds were a term of limited interest for investors during the financial crisis of 2008, as traditional investors considered environmental projects risky and unprofitable[2]. Surprisingly, since then, green bond issuance has risen exponentially due to an increasing awareness of the benefits of green investments and the potential effect of climate change on conventional investors' financial assets. Therefore, the appetite of investors for green bonds has risen rapidly, as they understand that climate change is a new element in investment returns that needs significant attention[3]. Many investors, especially those in the economy's carbon-intensive sectors, are now

very sensitive to climate-related technologies, such as carbon capture and sequestration (CCS)(Fig.1). More significantly, a increasing number of investors have begun to use climate change risk assessments in their investment strategies.

The European Investment Bank (EIB) became the first multilateral development agency to launch, in 2007, a USD 1 billion climate-awareness bond. A year later the World Bank released a second green bond in its countries of activity to fund climate mitigation and adaptation programs. Municipalities, commercial banks, and some of the biggest corporations in the world have also moved in the same direction[4]. For example, green bond issuance increased significantly from USD 1 billion in 2007 to USD 895 billion in 2017, of which USD 674 billion were self-branded green bonds and USD 221 billion of certified green branded bonds, according to the Climate Bond Initiative.

### THE KEY DRIVERS OF THE GREEN BOND MARKET

Although attempting to be thorough, this paper addresses several powers that have been crucial to the growth of the green bond market in developing and emerging countries in recent years. First, with a few exceptions, green bonds are fundamentally similar in nature to conventional bonds. Our deals carry the same risk / return profile as any conventional bond offered on the market for fixed income. Indeed, the price and yield at maturity of green bonds is comparable to conventional bonds [3]. Recent empirical studies have shown that there is a strong link between green bond yield and traditional bond yield to maturity (YTM). Firstly, green bonds are essentially close in form to traditional bonds with few exceptions.

Their bonds bear the same risk / return profile as any conventional bond issued on the market for fixed income. Indeed, at maturity, the price and yield of green bonds is comparable to conventional bonds. A powerful correlation between green bond yield (YTM) and traditional bond yield has been shown in recent empirical studies. The relation between green and conventional bonds issued by Apple and the German Development Bank (KFW). In some extent, the fact that green bonds are ranked with conventional bonds in terms of maturity yield is a key factor that stimulates investor appetite for green Links. In addition, investors realized that investing in projects related to the environment does not necessarily jeopardize investment returns.

The key difference between green bonds and traditional bonds is that, unlike the latter, the proceeds of the former must be dedicated exclusively to projects which are environmentally friendly. Moreover, a more complicated issuance process is also expected for green bonds, since their deal normally needs at least three market participants whose positions will be discussed in the next paragraph. Indeed, investors and policy-makers have become increasingly aware of the possible

threats to companies and the financial system as a whole presented by climate change[5]. This climate-consciousness has contributed to preventive implementation Measures, such as climate risk stress tests to determine financial institutions' vulnerability to the risks of climate change.

These evaluations are mainly intended to ensure that the entire financial system is resilient to the consequences of climate change. That is why some authors urge investors to move from a shareholder model that focuses solely on maximizing revenue to a stakeholder model that seeks to create not only financial interest, but also social and environmental values. The implementation of voluntary codes of conduct for sustainability has been suggested to help create a more sustainable financial system in which the society understands and handles risks well. Through doing so, investors will sensibly reduce their exposure to climate change threats, thus reducing their future capital losses as a result of climate change impacts due to stranded properties.

This unprecedented political support for climate change has given investors positive signals, thus increasing the Green Development of the bond markets, especially in advanced and emerging countries. For example, highlights the financial markets' positive reaction to ratification of the environmental deal in Paris[6]. This increased understanding of the economy and the low interest rate environment that prevails in most developed countries and have the institutional investors recognized green bonds as a diversification of portfolios machine. In terms of yield to maturity, the fact that green bonds are ranked with conventional bonds is to some extent a key element which boosts the investor's appetite for green bonds.

## **T TYPOLOGY AND THE FUNCTIONING OF GREEN BONDS**

It is currently possible to differentiate between four different types of green bonds, all compliant with the Green Bond Principles, depending on the use of the proceeds: regular green use of proceeds bonds, green income bonds, green project bonds, and green securitized bonds. In the case of default on interest payment or return of principal, a regular green use of proceeds bond is a debt obligation with recourse to the lender. Following an internal mechanism that connects the issuer's lending and green investments[4], the proceeds of such a bond should be tracked with a different subaccount or by the issuer. When buying such a bond, it is recommended that the issuer make the expected types of qualifying investments available to investors for the balance of unallocated proceeds.

For example, it may be the fee paid by customers for using the infrastructure created by the proceeds of the green bond. Failures to comply with these requirements can result in the issuer being excluded from the green bond market[7]. The applicant is permitted to issue a certified branded green bond to raise funds on the debt capital market when the second opinion attests to the green quality of the project to be financed. For a specified period of time, green bond

underwriters then provide the issuer with capital at a fixed or variable interest rate. Some major transaction costs may be involved in this tripartite green bond issuance process.

## CONCLUSION

As innovative financial instruments, green bonds provide a historic opportunity to channel private equity into low-carbon investments. Variations were studied in the yield term structure between green and conventional bonds on the U.S. municipal bond market. There is an average spread that is positive and statistically meaningful between traditional and green bonds. Differences in the basic features of both traditional and green bonds may explain this spread. Green bond issuers are generally more creditworthy, and have more robust economic fundamentals. Such results have important consequences for further expansion of the green bond market and of global finance more generally. The issue is of particular concern because a significant part of the funding needs for mitigation, and even more so for adaptation, involves developing countries and small-scale projects, which appear to be more risky to the market.

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