

Analysis and Suggestions on the Issuance of Green Bond-Taking Apple as an Example

Taisheng Yang*

UCD Lochlann Quinn School of Business, University College Dublin, Dublin, D04 V1W8, Ireland

Abstract. This article examines the issuance of green bonds by Apple Inc. to finance sustainable development projects. It delves into the reasons for the issuance, the terms and conditions, and Apple's repayment capacity. The study highlights the threefold impact of the issuance, encompassing environmental, corporate, and investor benefits. A case study of Apple serves as a practical example, offering insights and recommendations for other companies seeking to adopt similar strategies. The analysis reveals that Apple's commitment to green bonds demonstrates its dedication to environmental responsibility, enhances its corporate image, and attracts socially-conscious investors. The case serves as an inspiring model for other companies, encouraging them to embrace sustainable finance practices for a greener and more responsible future.

*Corresponding author's email: yang.taisheng@ucdconnect.ie

1 Introduction

With climate change at the forefront of pressing global issues, corporations are under mounting pressure to take proactive measures in environmental conservation and social responsibility. Green bonds, a financial instrument specifically designed to support eco-friendly projects, have garnered widespread attention as a means to mobilize capital for green initiatives while adhering to environmental, social, and governance (ESG) principles.

This research seeks to uncover the factors that motivated Apple Inc. to issue green bonds and examine the conditions surrounding the issuance, including the specific allocation of funds for sustainable projects. Moreover, the study aims to assess the impact of green bond issuance on Apple's environmental commitments, corporate image, and investor perception. The research will also investigate how this strategic move aligns with Apple's broader sustainability goals.

Understanding the implications of green bond issuance by industry leaders like Apple Inc. is crucial to shedding light on the potential of sustainable finance in addressing climate change risks and fostering corporate responsibility. The findings from this study will offer valuable insights and serve as a guiding reference for other companies contemplating green bond issuance to amplify their environmental commitments, bolster their brand reputation, and attract sustainable-focused investors. Moreover, this research contributes to the growing body of knowledge on sustainable finance and its impact on shaping a more resilient and environmentally conscious business landscape.

2 Company Profile

2.1 Introduction to Apple Inc. and Its Main Business

Apple Inc. is a titan of technology on a global scale. It has 498 retail locations under its control in 22 different nations. It has developed into a multinational corporation that is only rivaled by industry goliaths like Samsung, Wal-Mart, and McDonalds [1]. Apple Inc. is primarily engaged in the design, development, and sale of consumer electronics, software, and online services. Its main products include the iPhone smartphone, iPad tablet, Mac

computers, Apple Watch smartwatch, and AirPods headphones, among others. Additionally, Apple provides services such as iCloud (cloud storage), digital media services (Apple Music, Apple TV+, and Apple Arcade), and mobile payment services (Apple Pay). Apple enables every device to connect with each other through its own ecosystem. This ecosystem allows seamless integration and communication between Apple devices, providing users with a cohesive and convenient user experience. Entering the Apple ecosystem is like entering a world where everything functions as it should. For instance, the iPhone not only functions by itself, but also with every other Apple product you possess [2].

2.2 Equity Structure

The current capital structure of Apple Inc. is, in fact, a combination of equity and debt, represented by several financial instruments. The common stock and retained earnings make up the equity element and represent the ownership stakes and accumulated profits that the company's stockholders have chosen to keep. The company's borrowings and obligations to repay debt over time are represented by bonds, commercial paper, and other long-term liabilities, which make up the debt section of the balance sheet. Apple's entire capital structure is made up of these stock and debt components, which together enable the business to finance its operations, investments, and other financial pursuits.

2.3 Financial situation before and after the COVID-19 epidemic

Table 1. Revenue of Apple Inc. from 2019 to 2022[3].

Years	Total Revenue (\$)
2022	\$ 394,328,000
2021	\$ 365,817,000
2020	\$ 274,515,000

From table 1, it can be seen that Apple Inc.'s total revenue reached \$394,328,000 in 2022, representing an increase of 8.53% from \$365,817,000 in 2021. Compared to \$260,174,000 in 2019, the growth rate is even more significant at 51.55%. Despite the challenges posed by the pandemic, the upward trend in total revenue is evident. This is largely attributed to the increased demand for Apple products such as Mac and iPad, as people shifted to

remote work and learning during the Covid-19 pandemic, leading to higher usage of Apple's services at home.

3 Analysis on the Green Bond Issued by Apple Inc.

3.1 Issuance Motivation

Since a considerable amount of carbon dioxide is released into the atmosphere during manufacturing operations, leading to issues like global warming, the industrial revolution has had a huge impact on the climate and environment. Another danger to humanity is pollution since it degrades the ecology [4]. Climate change is currently the most critical challenge for businesses and human development. If not handled properly, the future development of humanity would be unimaginable. Climate change poses the most significant risk to businesses, surpassing economic, environmental, geopolitical, and other risks. The Paris Agreement and the United Nations Sustainable Development Goals (SDGs) play pivotal roles in addressing the pressing challenges of environmental degradation and fostering sustainable development worldwide. For companies like Apple, the Paris Agreement and SDGs serve as catalysts for implementing environmental and social responsibility initiatives. These frameworks inspire businesses to prioritize sustainability, resource efficiency, and carbon reduction in their strategies. Embracing the principles of these agreements not only strengthens their corporate citizenship but also ensures that they play an active role in achieving environmental sustainability and social welfare.

By issuing green bonds, Apple can leverage the capital market to fund projects that adhere to strict environmental and sustainability criteria. The proceeds from green bonds can be directed towards renewable energy projects, energy-efficient infrastructure, waste reduction, and other initiatives that have positive environmental impacts. Therefore, this financing approach enables Apple to expedite its transition to renewable energy sources, curtail greenhouse gas emissions, and embrace sustainable practices in its supply chain and operations. The purpose of issuing green bonds is not solely financial but also strategic. It allows Apple to align its funding activities with its commitment to environmental protection and social responsibility, ensuring its actions are congruent with global sustainability targets. The company's

ambitious aim of becoming carbon neutral throughout Apple's total carbon footprint, including the complete product life cycle, by 2030 is supported by the 2019 Green Bond [5]. Investors increasingly prioritize ESG factors, and by tapping into the growing market of socially responsible investments, Apple can attract capital from those who share similar values and beliefs in contributing to a sustainable future.

3.2 Issuance Conditions

Green bond issuance is more complex compared to traditional bonds (brown bonds) because it requires issuers to disclose more information. Apple needs to establish a green bond framework and provide detailed information on the use of proceeds. The funds raised from green bonds must be exclusively dedicated to financing eligible green projects and initiatives. These projects should focus on environmental sustainability, renewable energy, energy efficiency, climate change mitigation, or other environmentally beneficial activities. Apple will adhere to the Green Bond Principles developed by a group of financial institutions, including JPMorgan Chase & Co. and BlackRock Inc. Consultancy Apple's green bond structure has been examined by Sustainalytics to ensure that it complies with these requirements. Accountancy An annual audit of the green bond proceeds will be performed by Ernst & Young [6].

Additionally, Apple needs to publicly disclose relevant data and performance indicators to ensure transparency regarding the progress and impact of the funded projects. Apple must monitor project contractors to ensure that the projects are implemented according to the defined environmental criteria and achieve the desired results. This level of oversight is crucial to provide investors, stakeholders, and the general public with a clear account of how the funds are being utilized for environmentally beneficial initiatives. By maintaining rigorous monitoring and transparent reporting, Apple can demonstrate its commitment to environmental responsibility, gain stakeholders' trust, and uphold its reputation as a responsible and sustainable corporate entity.

3.3 Repayment Ability

Apple has earned excellent credit and a strong repayment

capacity, leading to very favorable ratings. Apple Inc.'s long-term credit rating was raised by Moody's Investors Service to AAA, joining Johnson & Johnson and Microsoft Corp. as the only American companies in the S&P 500 with the highest possible credit rating [7]. This rating showcases Apple's reliability and financial stability, attracting risk-averse investors to purchase Apple's bonds. Apple's superior credit rating and substantial cash flow instill confidence in investors to invest in Apple bonds.

However, investors seem upbeat about the long-term prospects of the company. A number of Apple bonds trade at a lower yield than U.S. Treasuries with the same maturity, suggesting that investors view the company's debt as having little to no credit risk [7]. This means that Apple bonds are as safe as government bonds and have almost no risk. Indeed, while green bonds also have their own risks, they are generally considered to carry lower risks compared to brown bonds. By issuing green bonds, Apple can effectively lower its repayment risk. The positive disclosure of information also provides reassurance to investors. Although the creditworthiness of the issuer determines how dangerous a bond is, green bonds have some special characteristics that make them less risky than other bonds of a similar nature [8]. While green bonds come with their own set of risks, they possess unique characteristics compared to brown bonds. The issuance of green bonds allows companies to avoid a series of significant risk factors associated with reputation, environmental compliance, and climate change.

3.4 Issuance Efficiency

3.4.1 Environment

The issuance of green bonds has made significant contributions to environmental protection on Earth. The funds from these bonds are specifically dedicated to supporting various environmental and sustainable development projects, thereby directly promoting environmental conservation and reducing carbon emissions. Some key projects include the development and promotion of renewable energy, enhancing energy efficiency, implementing measures to reduce greenhouse gas emissions to mitigate climate change, and building resilience to climate change impacts. Although they are optional, certified green bonds can persuade businesses to

fund successful CO₂ reduction initiatives. This is because, as abnormal stock returns demonstrate, companies' announcements of green projects with certification provide favorable information about the profitability of these projects [9].

3.4.2 Investors

Green bonds provide investors with targeted and environmentally relevant investment opportunities, allowing them to allocate funds to projects that meet ESG (Environmental, Social, and Governance) standards. For investors who strongly prioritize sustainability and social responsibility, purchasing green bonds is a practical way to implement sustainable investment strategies. This not only offers financial returns for investors but also satisfies the consciousness of contributing to environmental protection. Furthermore, green bonds typically exhibit lower environmental risks and offer more reliable long-term stable returns, making them a resilient investment option for investors seeking to mitigate risks. In addition to their ecological importance in facilitating a smooth transition to a low-carbon economy, green fixed-income assets have been shown to be effective at providing investors with diversification, hedging, and safe-haven advantages in both normal and erratic market conditions [10]. This is a very advantageous situation for investors. Purchasing green bonds allows investors to incorporate environmental factors into their investment portfolios, reducing overall risks, and achieving substantial returns in the field of sustainable development. As society's awareness of environmental issues and sustainability continues to grow, more and more investors are seeking investment opportunities that align with their values. In summary, green bonds not only meet investors' financial goals but also align with their commitment to environmental and social responsibility. By investing in green bonds, investors can gain financial returns while contributing to the planet's environmental conservation, achieving dual benefits of wealth and value.

3.4.3 Enterprises

The issuance of green bonds demonstrates a company's commitment to environmental and social responsibility, aiding in establishing a sustainable development image

and attracting ESG investors and societal support. The issuance of green bonds allows companies to enhance their brand reputation and corporate image. This positively influences attracting consumers, investors, and partners, thus improving the company's competitiveness. It also contributes to achieving long-term sustainable development goals. By raising funds through green bonds, companies gain access to a new financing channel, attracting investors seeking to invest in environmentally friendly projects. The issuance of green bonds also encourages companies to accelerate their transition to sustainable business models, driving industries and economies towards more environmentally friendly and sustainable directions. The requirement for transparency in green bond issuance promotes corporate accountability and awareness towards sustainable development goals. As a leading technology company, Apple has set an example by pioneering the issuance of green bonds, showcasing its determination to contribute to environmental protection on Earth.

4 Suggestions and Enlightenment

This case study demonstrates that green bonds provide businesses with a beneficial financing avenue for environmental protection and sustainable development, supporting green projects and renewable energy initiatives. Through issuing green bonds, companies can accelerate their transition towards sustainable business practices, reducing their environmental impact and pollution, thereby effectively mitigating sensitivity to climate change risks. Apple Inc., as a representative example, solidified its leadership in environmental protection and sustainable development by successfully issuing green bonds. This leadership has earned Apple positive social reputation and brand image, attracting an increasing number of ESG investors and environmental advocates.

Although initially requiring significant investment in green projects, companies often witness substantial returns later on. By improving resource utilization, companies can lower costs and avoid potential government taxes or fines on high carbon emissions. Through green bond issuance, companies not only gain access to low-cost financing but also actively respond to investors' and society's concerns regarding sustainability. Such responsive actions further enhance cooperation

with investors and stakeholders, boosting social recognition and competitive advantage.

Hence, green bonds offer a powerful tool for businesses to drive their transformation into environmentally-friendly and sustainable enterprises, while also mitigating the impact of climate change risks on their operations. Through issuing green bonds, companies demonstrate their commitment to environmental causes, contribute actively to sustainable development, and maintain a leading position in future business competition.

5 Conclusion

The case study of Apple Inc.'s issuance of green bonds highlights the powerful role this financial instrument plays in driving sustainable development and promoting environmental stewardship. By issuing green bonds, Apple demonstrated its commitment to environmental responsibility and sustainability, using the funds to support eco-friendly projects and renewable energy initiatives. The company's strategic decision to embrace green finance not only enhanced its brand reputation but also attracted a growing number of ESG-focused investors and environmental advocates. In conclusion, green bonds have emerged as a promising solution for addressing climate change challenges and accelerating sustainable development. As companies like Apple take a proactive stance in adopting green finance strategies, they set an inspiring example for others to follow suit. By integrating environmental considerations into their financial strategies, businesses can not only achieve positive environmental impacts but also bolster their financial performance and reputation. Ultimately, the adoption of green bonds serves as a catalyst for businesses worldwide to foster a sustainable future and drive positive change for the planet.

Due to green bonds being a relatively new financing method, their long-term impact may not be immediately evident. Future research can conduct longitudinal analyses to gain a more comprehensive understanding of the long-term effects of green bond issuance on companies. This approach involves tracking the performance of companies over an extended period after they issue green bonds. Such research would provide insights into the sustainability and effectiveness of projects funded by green bonds and their contribution to

long-term environmental objectives.

References

1. A. G. Marrero (n.d.). The Rise of Apple Inc: Opportunities and Challenges in the International Marketplace.
2. E. Karim. Apple Ecosystem Explained. Techjourneyman.com. (June 21, 2021).
3. Yahoo Finance. Apple Inc. (AAPL) Income Statement (2021).
4. A. Y. Yevgenyevna, & M. M. Igorevich. n.d. Economics Analytical Review of Apple Inc. Sustainable Development Goals Implementation. n.d.
5. Apple.com.cn. Annual Green Bond Impact Report. n.d.
6. V. Volcovici. Apple Issues \$1.5 Billion in Green Bonds in First Sale. Yahoo News (February 18, 2016).
7. J.Pitcher & M.Gurman. Apple upgraded to top bond rating by Moody's on growth prospects.
8. L.P. Jena, and M. Siva. 2022. Are Green Bonds a Good Option for Retail Investors? Mint (May 24, 2022).
9. J. X. Daubanes, S. Frédéric Mitali, and J.C. Rochet. 2021. Why Do Firms Issue Green Bonds? SSRN Electronic Journal (December 2021).
10. M. Khamis, & D. Aassouli. The Eligibility of Green Bonds as Safe Haven Assets: A Systematic Review. Sustainability. 15(8), 6841 (2023).