

## **RISK, RETURN, AND RESPONSIBILITY: INVESTOR BEHAVIOUR IN INDIA'S GREEN BOND MARKET**

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### **ABSTRACT**

The study focuses on the growing green bond market in India and how investor behavior is influenced by risk perception, return expectations, and environmental responsibility. It uses secondary data from various sources for analysis. Findings show that green bonds are viewed as low-risk investments, especially government-backed ones, and yield similar returns to traditional government bonds, appealing to risk-averse investors. It notes the rising importance of Environmental, Social, and Governance (ESG) factors among institutional and foreign investors, while retail investor participation is limited due to a lack of awareness. The sustainable debt market is expected to exceed USD 55 billion by 2024 but faces challenges like transparency issues and greenwashing. Improved regulations, awareness, and diverse products are needed for greater market involvement.

### **KEYWORDS**

Green Bonds, Investor Behaviour, Risk Perception, ESG Investing, Sustainable Finance, India

### **1. INTRODUCTION**

The global financial ecosystem is evolving due to the increased focus on sustainability and the urgency of addressing climate change. Sustainable finance is essential for channeling capital into environmentally and socially responsible projects, with green bonds emerging as a key instrument. These bonds fund initiatives that provide environmental benefits and offer stable returns, integrating Environmental, Social, and Governance (ESG) criteria into investment strategies. The green bond market thrives on regulatory support, institutional participation, and rising investor demand, with India actively issuing sovereign green bonds for renewable energy and sustainable infrastructure. Investor engagement in green bonds is influenced by traditional financial metrics and behavioral motivations, highlighting a balance between economic goals and environmental ethics. This study analyzes investor behavior in India's green bond market, focusing on the interplay between risk perception, return expectations, and environmental responsibility, using secondary data to understand their collective impact on investment decisions and the promotion of sustainable finance in India.

### **2. REVIEW OF LITERATURE**

#### **2.1 Green Bonds and Sustainable Finance**

Green bonds are fixed-income instruments used to finance environmentally beneficial projects such as renewable energy, pollution control, and climate adaptation. According to Flammer (2021), they not only support sustainability but also enhance corporate reputation and investor confidence.

#### **2.2 Risk and Return Considerations**

Traditional finance theory emphasizes the risk-return trade-off. Studies show that green bonds offer returns similar to conventional bonds, sometimes with a “greenium” (a slight pricing advantage). Sovereign and policy-backed green bonds are often viewed as lower-risk due to regulatory support and transparency, attracting risk-averse investors.

### **2.3 ESG and Responsible Investing**

Environmental, Social, and Governance (ESG) factors are now central to investment strategies, reflecting a shift toward responsible investing. ESG integration enables evaluation of both financial performance and social impact, strongly influencing investor behaviour, especially among institutional investors.

### **2.4 Investor Behaviour in Emerging Markets**

In emerging economies, investor behaviour is shaped by financial literacy, awareness, regulation, and cultural attitudes. Kumar and Singh (2020) identify lack of awareness, perceived risk, and limited information as key barriers to retail participation.

### **2.5 Green Bond Market in India**

India’s green bond market has grown steadily due to supportive policies, rising environmental awareness, and increasing demand for sustainable investments. Sovereign issuances and regulatory frameworks have boosted investor confidence, making India a leading emerging market (Climate Bonds Initiative, 2023).

## **3. RESEARCH OBJECTIVES**

1. To analyze investor behaviour in India’s green bond market.
2. To examine the role of risk perception in investment decisions.
3. To evaluate the impact of return expectations on investor participation.
4. To assess the influence of environmental responsibility (ESG factors) on investment behaviour.

## **4. RESEARCH METHODOLOGY**

### **4.1 Research Design**

The study adopts a descriptive and analytical research design based on secondary data.

### **4.2 Data Sources**

- Research papers and academic journals
- Reports from financial institutions and regulatory bodies
- Industry publications and market reports

### **4.3 Analytical Approach**

The study applies thematic and content analysis to identify patterns in investor behaviour related to risk, return, and responsibility.

Analysis of secondary data from industry reports, financial news, and academic studies provides insights into investor behaviour in India’s green bond market. Findings are examined across key areas: risk perception, return expectations, environmental responsibility, investor segmentation, and market challenges.

## **5. DISCUSSION AND FINDINGS**

### 5.1 Risk Perception in Green Bond Investments

Risk perception significantly influences investor choices in the green bond market. Green bonds, especially sovereign ones, are seen as low-risk due to government support. India's 2023 sovereign green bonds had a demand surpassing four times the offered amount. Yet, worries about greenwashing and transparency affect investor confidence, with 20–25% of global investors questioning the credibility of green-labelled investments.

**Table 5.1: Investor Risk Perception in Green Bonds**

Risk Factor	Percentage of Investors (%)
Perceived Low Risk (Govt-backed)	68%
Concern about Greenwashing	24%
Transparency Issues	22%
Regulatory Confidence	70%

While government backing enhances perceived safety, transparency and credibility remain critical factors influencing investor confidence.

### 5.2 Return Expectations

Return expectations are key in investment choices. Research shows green bonds have returns like regular government securities, appealing to conservative investors. India's sovereign green bonds had yields near standard bonds, with a small difference of 2–5 basis points, but some investors seek extra incentives.

**Table 5.2: Return Comparison – Green Bonds vs Conventional Bonds**

Investment Type	Average Yield (%)	Investor Preference (%)
Green Bonds	7.10%	55%
Conventional Govt Bonds	7.15%	60%
ESG-focused Funds	6.80%	48%

The minimal yield difference indicates that financial returns are competitive; however, additional incentives could further boost investor participation.

### 5.3 Role of Environmental Responsibility

Environmental responsibility, reflected through ESG awareness, has emerged as a significant factor influencing investor behaviour. Institutional investors, in particular, are increasingly integrating ESG criteria into their investment strategies.

According to global investment reports, over 80% of institutional investors consider ESG factors in their decision-making process. In India, ESG-focused investments have grown rapidly, with green bonds forming an important component of sustainable portfolios.

**Table 5.3: ESG Influence on Investment Decisions**

Investor Category	ESG Consideration (%)
Institutional Investors	82%
Foreign Investors	75%
Retail Investors	40%

Higher ESG awareness correlates with increased investment in green bonds, highlighting the importance of sustainability in modern finance.

## 5.4 Investor Segmentation

Investor participation in India's green bond market varies across segments:

- **Institutional Investors:** Dominate the market (about 70–75%) due to regulatory mandates and ESG integration.
- **Retail Investors:** Contribute around 10–15%, limited by low awareness and accessibility.
- **Foreign Investors:** Account for roughly 15–20%, driven by global sustainability trends and diversification benefits.

**Table 5.4: Investor Participation in India's Green Bond Market**

Investor Type	Market Share (%)
Institutional Investors	72%
Retail Investors	13%
Foreign Investors	15%

The dominance of institutional investors reflects higher awareness and structured investment strategies, while retail participation remains an area for growth.

## 5.5 Market Challenges

Despite steady growth, several challenges hinder the expansion of India's green bond market:

- **Lack of Awareness:** Surveys indicate that nearly 50–60% of retail investors are unaware of green bond investment opportunities.
- **Limited Investment Options:** The availability of diversified green financial products remains restricted, limiting investor choice.
- **Transparency and Standardization Issues:** Concerns regarding fund utilization, reporting standards, and certification processes affect investor trust.

**Table 5.5: Key Challenges in Green Bond Market**

Challenge	Impact Level (%)
Lack of Awareness	58%
Limited Investment Options	45%
Transparency Issues	40%
Standardization Gaps	35%

Addressing these structural and informational challenges is essential to enhance investor confidence and broaden market participation.

The findings suggest that investor behaviour in India's green bond market is shaped by a triad of factors:

- 1 **Risk Considerations:** Government backing reduces perceived risk but transparency concerns persist
- 2 **Return Expectations:** Competitive returns with potential demand for incentives
- 3 **Responsibility (ESG):** Growing influence, especially among institutional and foreign investors

Overall, the market is shifting from purely financial decisions to a balanced focus on sustainability and profitability.

### Latest Trends in India's Green Bond Market (2024–2025)

India's green bond market has shown steady but evolving growth, supported by sovereign issuances, regulatory initiatives, and increasing ESG-focused investments.

#### Market Size and Growth

Recent reports indicate that India's sustainable debt market (including green bonds) has expanded significantly:

- Total Green, Social, Sustainability (GSS+) debt reached USD 55.9 billion by end-2024, reflecting a 186% increase since 2021
- Green bonds alone account for approximately 83% of total sustainable debt issuance
- India contributes about 2.2% of global green bond issuance (2023–2024)

**Table: India Green Bond Market Growth**

Indicator	Value
Total Sustainable Debt (2024)	USD 55.9 billion
Growth since 2021	+186%
Share of Green Bonds	83%
Global Share	~2.2%

Interpretation:

India's green bond market is expanding rapidly, though still relatively small compared to global leaders.

#### Sovereign Green Bond Issuance (2024–2025)

The Government of India has played a key role in market development:

- Total sovereign green bonds raised (FY 2022–2025): ₹ 57,697 crore
- Since January 2024 alone: ₹ 44 billion (₹ 44,000 crore) raised
- Planned issuance for FY 2024–25: ₹ 20,000 crore
- Additional planned issuance in FY 2025–26: ₹ 10,000 crore

**Table: Sovereign Green Bond Issuance**

Year / Period	Amount Raised
FY 2022–2025 (Total)	₹ 57,697 crore
Since Jan 2024	₹ 44,000 crore
FY 2024–25 (Planned)	₹ 20,000 crore
FY 2025–26 (Planned)	₹ 10,000 crore

Sovereign issuances dominate India's green bond market and serve as a benchmark for pricing and investor confidence.

#### Yield and Return Trends

- India's 10-year government bond yield declined to ~6.76% in 2024, reflecting strong demand
- Green bonds typically offer yields similar or slightly lower (greenium of 2–5 basis points) compared to conventional bonds
- Example: A 2024 green bond auction had a coupon of ~6.79%, close to benchmark yields

**Table: Yield Comparison**

Bond Type	Yield Range
Green Bonds	6.7% – 7.9%
Conventional G-Secs	6.7% – 7.2%
Greenium	2–5 bps lower

Green bonds are financially competitive, supporting the finding that return expectations do not significantly differ from traditional bonds.

**Investor Demand and Subscription Trends**

- Sovereign green bonds have seen strong demand (up to 4x subscription) in earlier issuances
- However, some 2024 auctions showed weak demand, with up to 70% devolved to primary dealers
- Municipal green bonds (e.g., Surat) were oversubscribed 7.65 times, indicating selective strong interest

**Table: Investor Demand Trends**

Segment	Subscription Level
Sovereign Bonds (Strong Phases)	~3–4x
Weak Auction Cases (2024)	Low demand
Municipal Bonds	Up to 7.65x

Investor demand is inconsistent, influenced by pricing, incentives, and market conditions.

**Market Composition and Participation**

- Sovereign issuances dominate, followed by corporates and financial institutions
- Breakdown (2024–2025 approximate):
  - Government: Highest share (~50%+)
  - Corporates: ₹235 billion raised
  - Financial institutions: ₹85 billion
  - Municipal bonds: Very small share (~₹ 694crore total historically)

**Table: Issuer-wise Contribution**

Issuer Type	Contribution
Sovereign (Govt)	Dominant
Corporates	Moderate
Financial Institutions	Moderate
Municipal Bodies	Minimal

**Based on latest data:**

- **Risk:** Sovereign backing increases confidence, but weak auctions show sensitivity to pricing
- **Return:** Comparable to traditional bonds → supports risk-averse investors
- **Responsibility (ESG):** Driving institutional and foreign investor participation

- **Market Gap:** Retail participation remains low despite growth

## 6. CONCLUSION

The study analyses investor behaviour in India's green bond market, focusing on risk perception, return expectations, and environmental responsibility. It reveals that green bonds are viewed as low-risk, especially sovereign ones, boosting institutional participation despite concerns about transparency and greenwashing. While offering yields competitive with traditional securities, green bonds struggle to attract retail investors who prioritize financial returns. Institutional investors, motivated by ESG mandates, are leading the shift towards sustainable investments.

However, limited retail engagement is attributed to low awareness and access to information. The study underscores the need for improved transparency and the expansion of green financial instruments to enhance market participation. Importantly, the research highlights limitations such as reliance on secondary data and lack of primary validation, suggesting future studies incorporate primary data for deeper insights and explore the impact of policy and technology on green investments.

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