Spotlight
by CeFEO

Are green patents a smart investment for family firms?

Does it pay to patent green innovations? Stock market reactions to family and nonfamily firms' green patents

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Environmental sustainability is at the forefront of corporate strategy, with firms investing heavily in green technologies to align with regulatory and consumer expectations. Green patents—intellectual property rights for environmentally friendly innovations—serve as a key indicator of a firm's commitment to sustainability. But do they pay off in financial terms? More specifically, does the market reward family firms for their green innovations in the same way it does nonfamily firms?

This study addresses these questions by examining how the stock market reacts to green patents issued to family and nonfamily firms. By integrating research on green innovation, family business, and signaling theory, the study provides insights into how different types of firms should approach green patenting to maximize their financial returns.

WHAT WE STUDIED

The researchers analyzed 8,918 green patents granted to family and nonfamily firms between 2014 and 2018. The study aimed to determine whether the market values green patents differently depending on whether they are issued to a family-controlled firm or a nonfamily business.

The analysis focused on three key attributes of green patents:

1. **Patent radicalness** – How innovative and disruptive the patent is.
2. **Non-patent citations** – The extent to which the patent is based on scientific research rather than existing patents.
3. **Grant lag** – The time taken between applying for and being granted the patent, which may signal due diligence or bureaucratic delays.

The study applied signaling theory, which suggests that firms use patents to send signals to investors about their innovation capabilities and commitment to sustainability. The market's response depends on whether these signals align with investors' perceptions of the firm.

KEY INSIGHTS

1. Family Firms Are Not Necessarily More Rewarded for Green Patents

Contrary to expectations, the market does not inherently value green patents from family firms more than those from nonfamily firms. However, specific characteristics of the patents influence market perception differently for each type of firm.

2. Market Rewards Stability in Family Firms and Radicalness in Nonfamily Firms

- Family firms benefit from longer patent grant lags, as they signal a commitment to long-term sustainability.
- Nonfamily firms benefit from highly radical green patents, as investors expect them to be more aggressive in innovation.
- Family firms with radical green patents experience a negative stock market reaction, possibly due to misalignment with their reputation for risk aversion.

3. Non-Patent Citations Do Not Significantly Impact Market Reactions

Unlike patent radicalness and grant lag, non-patent citations (which indicate reliance on scientific

literature) do not significantly affect investor responses. This suggests that investors may not view scientific references as a strong indicator of innovation quality.

4. ESG Risk Moderates Market Reactions

When firms face high ESG (Environmental, Social, and Governance) risks, the market reacts more positively to family firms securing green patents. This indicates that investors see family firms as more credible in their environmental commitments when sustainability risks are high.

TAKEAWAYS FOR FAMILY BUSINESSES

1. Prioritize Long-Term Commitment Over Radical Innovation

Family firms should focus on incremental green innovation rather than highly radical projects. Investors value stability in family businesses, so patents that align with a long-term, strategic commitment to sustainability will be rewarded.

2. Communicate Green Innovation as a Legacy Investment

Since family firms often emphasize stewardship and intergenerational continuity, they should frame green innovations as part of their long-term vision. This can help investors interpret even radical innovations as aligned with the firm's enduring values.

3. Manage Market Expectations When Filing for Radical Green Patents

If family firms pursue disruptive green technologies, they should proactively manage investor perceptions. Clear communication about how these innovations fit within the firm's strategic direction can prevent negative market reactions.

4. Leverage Green Patents in High ESG Risk Environments

If a family firm operates in an industry with high ESG scrutiny, green patents can help differentiate the company and attract sustainability-conscious investors.

IMPACT

This study highlights the complex relationship between ownership structure, green innovation, and market value. The findings suggest that one-size-fits-all innovation strategies do not work—family and nonfamily firms must adopt different approaches to green patenting to maximize their financial gains.

For policymakers and investors, the study underscores the need to recognize the nuances of green innovation across different types of firms. Governments looking to encourage green innovation should consider designing tailored incentives that align with the distinct characteristics of family-owned businesses.

RECOMMENDATIONS

- **Family firms should focus on green patents that signal stability and long-term investment**. This means prioritizing well-researched innovations with gradual implementation.
- **Nonfamily firms should embrace radical green innovations**. The market rewards them for taking bold steps in environmental technology.
- **All firms should communicate their green innovation strategy clearly to investors**. Signaling alignment with market expectations is crucial for financial returns.
- **Policymakers should create incentives that support family firms' green innovation efforts**. Since they face unique challenges, policies should encourage their participation in sustainability-driven initiatives.

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