



THEORY AND MODELS UNDERLYING ETHICAL INVESTMENT RESEARCH

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ABSTRACT

The purpose of this article is to explore in depth the literature on the theories and models that underlie ethical investment research. Through a literature review study, the research found 10 journals that are ready to be reviewed. The literature search found several theories and models that underlie ethical investment research. The theories and models include agency theory, Angel and Rivoli model (1997), Heinkel, Krause and Zechner model (2001), Barnea, Heinkel and Krause model (2005) and Hypothesis Model of Ethical Investment and Stock Price Relationship of Derwall, Koedijk and Ter Horst (2011).

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1. INTRODUCTION

Ethical investment has experienced very fast and high growth in the last decade (Renneboog et al., 2007; Albaity and Ahmad, 2011; Pena and Cortez, 2017; Mubarak, 2022). This investment activity has shifted from marginal to mainstream (Louche and Lydenberg, 2006). The growth and development of ethical investment is both at the global level and in Indonesia (Mubarak, 2022). At the global level, GSIA (2018) recorded the value of ethical investments, particularly in the five major world markets, namely Europe, the United States, Japan, Canada, Australia and New Zealand reaching \$22.89 trillion in 2016. The number rose 34.05% to \$30.683 trillion in 2018. Meanwhile in Indonesia, the growth of ethical investment can be seen from the stock market capitalization value in ethical stock indexes such as the Bisnis-27 Index, Sri-Kehati Index, JII, ISSI and JII70 Index. For example, The Financial Services Authority (OJK) recorded the market capitalization value of sharia shares in ISSI index of Rp.3,666,688.31 billion at 2018. There is a significant increase of 96.22% compared to 2011, where the index was first launched (Rp1,968,091.37).

The growth of ethical investment than has attracted the interest of academics to conduct studies and research. The growth can be seen, both from the number of public discussions (von Wallis and Klein, 2015) and from the academic literature (Sandberg et al. 2009; von Wallis and Klein, 2015). Ethical investment research has developed since the 1970s (Ortas and Moneva, 2010), namely after the emergence of the issue of corporate social responsibility as discussed by Friedman (1970) (Forte and Miglietta, 2011). It was Grossman and Sharpe (1986), researchers who first analyzed the performance of ethical portfolios and the relationship between financial investments and ethical issues. The analysis was conducted on shares of companies in South Africa, as a result of the response to apartheid, a US social movement that tried to convince churches and charities to divest from company shares in South Africa. After that, several studies emerged such as done by Luther et al., (1992), Hamilton et al. (1993), Gregory et al., (1997), Orlitzky et al., (2003), and Bauer et al. (2005) (Forte and Miglietta, 2011).

Widyawati (2019) reviewed the literature on SRI research (ethical investment) and concluded that there are three main themes of ethical investment research (i) investor behavior, (ii) ethical investment development and (iii) ethical investment performance. Investor behavior research focuses on examining the characteristics of ethical investors such

as related to motivation, investor investment patterns and investor decision making. Research on ethical investment development focuses on the description of ethical investment in a particular area, arguments for ethical investment theory and the role of participants in the ethical investment market, including discussion of the mechanism (strategy) of developing ethical investment (negative, positive screening and activism). As for ethical investment performance research is conducted by comparing ethical investment returns with its benchmark (nonethical investment).

However, there is no literature that comprehensively discusses the theories that underlie ethical investment research. Consider the matter, the authors are interested in exploring more deeply the literature on the theoretical and model basis of ethical investment research.

LITERATURE REVIEW

Ethical Investment Concept

Mubarok (2022), after exploring the existing ethical investment literature, explained that the term ethical investment is synonymous with the term socially responsible investments (SRI) (Sandberg et al., 2009; Cowton, 2018), even Michelson et al. (2004) use the two terms interchangeably. Nevertheless, the term ethical investment is seen as the oldest terminology which is slowly being replaced by the terminology of socially responsible investment (Sparkes 2001). Some academics view the term socially responsible investment have narrower scope than the term ethical investment. Socially responsible investments only covers social aspects, not included ethical aspects, while the term ethical investment, besides covering the social responsibility also includes ethical aspects based on religious beliefs (Mazouz et al., 2016; Gillet and Salaber-Ayton, 2017). The term ethical investment is more commonly used in the UK while the term socially responsible investment is used more in the United States (Reich et al., 2001; Michelson et al., 2004).

Other terms for ethical investment besides SRI include values-based investing (Schueth, 2003; Magnússon and Dyremyhr, 2011; von Wallis and Klein, 2015), sustainable investment (Forte and Miglietta, 2011; Ortas and Moneva, 2010), corporate responsible investments, green, environmental or value based investing (Magnússon and Dyremyhr, 2011), social investing (Schueth, 2003; Sandberg et al., 2009), socially aware investing or socially conscious investing, missionbased or mission-related investing (Schueth, 2003), investing based on social norms (Al-Awadhi, 2017), responsible investment, sustainable and responsible investment, socially and environmentally responsible investment and governance and socially responsible investment (Sandberg et al., 2009).

Cowton (1994) defines ethical investment as an investment in which the selection and management of its portfolio is based on ethical and social criteria. In another article Cowton (2018) defines ethical investment (SRI) as the practice of integrating social, environmental and ethical considerations in investment decisions. Humphrey and Lee (2011) define ethical investment as an investment approach that considers ethical, religious, social or other normative selections in making investment decisions. Meanwhile, Dunfee (2003) describes ethical (social) investment as an investment strategy using non-financial criteria. The Non-financial criteria include social or religious criteria (Dunfee, 2003) or ethics, social, environment and corporate governance (Sandberg et al., 2009).

Theory and Models Underlying Ethical Investment

Literature exploration found theory and several models that underlie ethical investment research. The theory and models include agency theory (Hong et al., 2012; Easton and Pinder, 2018), Angel and Rivoli Model (1997) (Vanwalleghem, 2013), Heinkel, Krause and Zechner Model (2001) (Renneboog et al., 2007; Vanwalleghem, 2013), Barnea, Heinkel and Krause Model (2005) (Renneboog et al., 2007) and Hypothesis Model of Ethical Investment Relationship and Stock Price of Derwall, Koedijk and Ter Horst (2011) (Claassen, 2011). Agency theory is discussed by Harrison Hongy, Jerrey D. Kubikz and Jose A. Scheinkman in an article entitled "Financial Constraints on Corporate Goodness" and Steve Easton and Sean Pinder in an article entitled "Theory and empirical evidence on socially responsible investing and investment performance: Implications for fund trustees and their members"

Angel and Rivoli model (1997) is described by James J. Angel and Pietra Rivoli in an article entitled "Does Ethical Investing Impose A Cost Upon The Firm A Theoretical Perspective" and Dieter Vanwalleghem in the article "The real effects of socially responsible investing: Disagreement on the doing well while doing the good hypothesis and the cost of capital". The Heinkel, Krause and Zechner model (2001) is described by Robert Heinkel, Alan Kraus and Josef Zechner in an article entitled "The Effect of Green Investment on Corporate Behavior", Luc Renneboog, Jenke ter Horst and Chendi Zhang in an article entitled "Socially Responsible Investments: Methodology, Risk Exposure and Performance" and Dieter Vanwalleghem in the article "The real effects of socially responsible investing: Disagreement on doing well while doing good hypothesis and the cost of capital". The Barnea, Heinkel and Krause model (2005) is described by Amir Barnea, Robert Heinkel, Alan Kraus in an article entitled "Green investors and corporate investment" and Luc Renneboog, Jenke ter Horst and Chendi Zhang in an article entitled "Socially Responsible Investments: Methodology, Risk Exposure. and Performance". The Hypothesis Model for the Relationship between Ethical Investment and Stock Prices of Derwall, Koedijk and Ter Horst (2011) is explained by Jeroen Derwall, Kees



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Koedijk and Jenke Ter Horst in an article entitled "A tale of values-driven and profit-seeking social investors" and D.B. Claassen in an article entitled, "Are sin stock returns higher in collectivistic countries than in individualistic ones?"

METHOD

This research design uses a literature review study, namely by identifying, evaluating and synthesizing research results and thoughts generated by researchers and practitioners. The results and thoughts are usually published through various sources such as journals, books, the internet, and other libraries. The search of the publication article through "a google search" tool with the keywords "ethical investment", "socially responsible investments", "values-based investing", "sustainable investment", green investing", "mission based investing", social norms investment, environmentally responsible investment". Articles or journals that match the criteria are then downloaded for further analysis. The literature review uses articles published up to 2021 which can be accessed in full text in pdf and scholarly formats (peer reviewed journals).

In compiling the literature review, the authors followed four stages of activity, as explained by Ramdhani et al. (2014), namely (1) selecting topics to be reviewed, (2) tracking and selecting relevant articles, (3) analyzing and synthesizing literature and (4) organizing review writing. Regarding the analysis and synthesis of literature, the author analyzes articles that are relevant to the topic to be reviewed. Then discussing articles by making identification and classification based on the elements that will be reviewed from several articles that discuss almost the same topic. Next, integrating the results of the analysis of the articles based on the similarities and differences of each article and drawing conclusions based on the similarities and differences of each article.

RESULT AND DISCUSSION

Based on search results on Google Scholar and Google search, the authors found 128 journals that matched the keywords. Furthermore, selected based on the theme of the article, namely the theory and model underlying ethical investment, and found 10 full text journals that are ready to be reviewed. In general, there are one theory and four models that underlie ethical investment research, namely agency theory, Angel and Rivoli Model (1997), Heinkel, Krause and Zechner Model (2001), Barnea, Heinkel and Krause Model (2005) and Hypothesis Model of Ethical Investment and Stock Price Relationship of Derwall, Koedijk and Ter Horst (2011).

Agency Theory

One of the theories that underlie the existence of ethical investment and ethical investment strategies is agency theory (Easton and Pinder, 2018). Agency theory tries to discuss problems within the company due to the separation between owners and management and efforts to reduce the problems (Panda and Leepsa, 2017). The problem is the behavior of fulfilling the personal interests of an agent that makes it not manage the company in the best interests of the owner (Bendickson et al., 2016). Agency theory explains that in a joint stock company, the company is owned by an individual or a group of shareholders. The shareholders (owners) then delegate their authority to management (agents) in the form of company management in order to maximize the interests of the owners (Panda and Leepsa, 2017).

However, agents often have interests and goals that differ from those of the owner. Agents do not always act in the best interests of the owner (Jensen and Meckling, 1976). The condition then triggers a conflict known as an agency conflict (problem) (Panda and Leepsa, 2017). The owner can direct the negative behavior of the agent, among others, by setting incentives for appropriate and appropriate agents or incurring monitoring costs to limit the agent's deviant activities. In some situations, the owner can also force the agent to spend resources (bondage fees) to ensure that the agent will not take certain actions that will harm the owner (Jensen and Meckling, 1976).

Regarding ethical investing, Hong et al. (2012) explained that companies with low financial constraints will incur more corporate goodness costs (such as environmental, social and governance (ESG) costs). The corporate goodness expenditure is more sensitive to financial slack than capital expenditure (R&D spending). The shows that corporate goodness activities are expensive activities and can affect profits.

Following Hong et al. (2012), Easton and Pinder (2018) explain when the company is performing well (doing well), the financial constraints experienced by managers in order to maximize the value of the company will be smaller. This allows managers to spend company money on other areas such as employee welfare and various philanthropic activities, including the ESG activities. These areas may be of benefit to managers, but they do not increase the value and may actually decrease the value of the company.

Hanafi's findings (2013) show that ethical investment can complement dividends and debt as a mechanism to reduce agency conflicts between management and shareholders. Regarding dividends, ethical investment mechanisms can reduce the effectiveness of dividend policies in reducing conflicts between management and owners. Ethical

investment activities are generally oriented towards sustainability and disclosure to all stakeholders. The activity can minimize information asymmetry and improve company performance so that it is expected to increase investor confidence in the company and reduce expectations of dividends.

Ethical Investment Model

- **Angel and Rivoli Model (1997)**

Angel and Rivoli (1997) developed a model to explain the impact of screening ethical investments. The model is generally based on Merton's (1987) market segmentation model. Angel and Rivoli (1997) explain that some investors (potential owners) try to do screening by excluding certain companies from their portfolios. When some investors do not invest in a company, the market for that company's equity becomes segmented. Under segmented conditions, cost of firm capital then rises above the unsegmented equity market. When the company's cash flow is not affected, the increase in the cost of capital will reduce the economic profit associated with the company's activities.

- **Heinkel, Krause and Zechner model (2001)**

Heinkel et al. (2001) developed a theoretical model to test and answer the fundamental question whether the presence of ethical investors (owners), with a negative screening approach, can make companies change their behavior. Those who previously applied polluting technology to clean technology (Renneboog et al., 2007).

This model assumes (i) investors are risk averse, (ii) consists of two types: neutral investors and ethical investors. Neutral investors will ignore ethical considerations in forming their optimal portfolio, while ethical investors will refuse to invest in companies that do not meet ethical criteria. (iii) there are a number of companies each of which has one of two types of production technology: polluting technology and pollution-free (clean) technology. Companies with clean technology satisfy the investment criteria of ethical investors, while companies with polluting technology are excluded from the portfolio unless they change the technology. (iv) The company will maximize the share price. (v) Investor ownership is constant, meaning that an increase in ownership by ethical investors means a decrease in ownership by neutral investors (Heinkel et al., 2001).

The results of the model process explain that if fund managers adopt negative screening, they will include less companies with polluting technology in their investment portfolio. This will reduce risk sharing opportunities among investors, so that the share price of companies with polluting technology will fall, and then increase the cost of capital. When the increase in the cost of capital exceeds the cost of capital for ethical companies, companies with polluting technology tend to turn into clean technology companies (Renneboog et al., 2007a). In other words, ethical investment can change the company's behavior (Heinkel et al., 2001).

- **Barnea, Heinkel and Krause Model (2005)**

Complementing pepper Heinkel et al. (2001), Barnea, Heinkel and Krause (2005) developed a theoretical model to investigate and explain the impact of negative screening on the investment decisions of firms with polluting technologies. In contrast to the Heinkel, Krause and Zechner model (2001) which assumes the firm is constant, Barnea, Heinkel and Krause (2005) attempted to endogenize investment and examine the impact of negative screening on total economic investment.

The model assumes (i) a risk-neutral entrepreneur owns a project that wishes to implement and sell to a risk-averse investor. (ii) The projects are of two types: clean technology projects and polluting technology projects. (iii) the expected returns and variance (risk) of the two types of projects are identical, but the correlation between returns is less than 1.0, thus offering diversification benefits to investors. (iv) There are two types of risk-averse investors: neutral investors and ethical investors. (v) Projects with polluting technology, before being sold to the public, can be transferred and become reformed projects. The reformed project retains the characteristics of a project with polluting technology but is acceptable to ethical investors. (vi) The number of projects with polluting technology turning into reformed projects is endogenous.

The results of the process model conclude that negative screening can reduce the incentives of polluting firms to invest (Renneboog et al. 2007). Ethical investors (owners) can encourage polluting companies to reform to become environmentally friendly companies. If the costs of reform were not limited, ethical screening would reduce the total investment in an economy significantly. When the reform activities are free of charge, ethical investors have no impact at all and total investment remains constant for each level (Barnea et al., 2005).

- **Hypothesis Model of Ethical Investment and Stock Price Relationship of Derwall, Koedijk and Ter Horst (2011)**

Based on the existing ethical investing literature, Derwall et al. (2011) proposed two hypotheses of the relationship between ethical investment (SRI) and stock prices, namely (i) the shunned-stock hypothesis and (ii) the errors-in-expectations hypothesis. The shunned-stock hypothesis explains that ethically controversial stocks trade at relatively low prices. This is because value-based investors try to avoid and refuse to own the stock and thus push the price of an ethically controversial stock below the ethical share price.



The shunned-stock hypothesis is based on two assumptions (i) ethical investors are value driven, not related to the profit motive. The motivation of these investors' decisions varies between purely emotional or social norms. (ii) in order to be able to influence the price of securities, value-based investors must be large enough, for example there are 10% ethical-based investors from the total number of investors in the financial market. Value-based investors primarily use "negative" screening to avoid ethically controversial stocks.

The errors-in-expectations hypothesis explains that ethical stocks have higher risk-adjusted returns. This is because the market is slow to recognize the positive impact of implementing CSR on the company's expected cash flow or the market systematically underestimates the importance of CSR in influencing the company's expected cash flow. Investors in the hypothesis are profit-oriented investors and use positive screening in the selection of financial assets.

There are several requirements for the errors-in-expectations hypothesis. (i) the expected future cash flows should be related to the use of CSR practices. (ii) stock prices should not reflect all value-related information related to CSR practices, because superior profits from CSR can only be a source of abnormal returns to the extent that investors do not expect them.

CONCLUSION

The purpose of the article is to explore in depth the literature on the theories and models that underlie ethical investment research. The results of the article search found one theory and four models that underlie ethical investment research. The theory and models include agency theory, Angel and Rivoli Model (1997), Heinkel, Krause and Zechner Model (2001), Barnea, Heinkel and Krause Model (2005) and Hypothesis Model of Ethical Investment and Stock Price Relationship of Derwall, Koedijk and Ter Horst (2011). The theories and models are expected to complement and become a reference in research activities on ethical investment.

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