# SHAREHOLDER THEORY, STAKEHOLDER THEORY, AND THE CAPITAL BUDGETING DECISION

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## Abstract

This paper constructs a capital budgeting framework within which shareholder theory and stakeholder theory are complements, not substitutes. Shareholder theory focuses managerial attention on a single goal: the maximization of a firm's long-term value. Stakeholder theory identifies the necessary prerequisites for long-term value maximization. In particular, to create long-term value for shareholders, a firm must first create value for current and future customers and employees, and it must not do so at the expense of the broader community, or society as a whole. The new model is unique in that encourages managers making capital budgeting decisions to explicitly consider tail risks, defined as events that, while unlikely, could have a significant impact on a firm's operations and valuation. Within this framework, the net present value (NPV) rule provides an objective decision rule to constrain managerial discretion and to balance the interests of competing stakeholders in the project selection process.

**Keywords:** Shareholder Theory, Stakeholder Theory, Capital Budgeting, NPV, Risk Management

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## 1. INTRODUCTION

Shareholder theory and stakeholder theory provide seemingly contradictory guidance about how firms should make operating and investment decisions. Following Friedman (1962), shareholder theory instructs managers to pursue policies that will maximize shareholder value. When applied to capital budgeting decisions, shareholder theory provides prospective managers with a precise decision rule: accept all independent positive net present value (NPV) projects and reject those with negative NPVs. In contrast, stakeholder theory (Freeman, 1984, 1994) encourages firms to balance the interests of their multiple constituencies when making business decisions. However, stakeholder theory does not explicitly define the NPV rule's role (if any) within the capital budgeting process. If managers must consider the interests of all stakeholders when making investment decisions, is it appropriate for firms to reject some positive NPV projects and to accept some projects with negative NPVs? If so, when would it be appropriate for managers to make either of these ostensibly unacceptable (from the perspective of capital budgeting theory) decisions?[1]

Motivated by these questions, we construct a capital budgeting framework within which shareholder theory and stakeholder theory are complements, not substitutes. The new model is

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[1] Nwanji and Howell (2007) provide a detailed review of the academic literature debating the relative merits and drawbacks of the shareholder and stakeholder models of corporate governance. Marcoux (2000) and Jensen (2002) criticize stakeholder theory because they claim that it does not explicitly specify how managers should balance the potentially conflicting interests of various stakeholders when making capital budgeting and other business investment decisions. Nevertheless, recent studies such as Dhaliwal et al. (2011), Wang and Qian (2011), Flammer (2013), Koh et al. (2014), Harrison and Wicks (2013), Wang et al. (2016), Matos (2020) and Vishwanathan et al. (2020) find that the consideration of stakeholder concerns when making business decisions can have a positive impact on firm performance.

unique in that encourages managers to explicitly consider tail risks — events that are unlikely to occur but could have a significant impact on a firm's operations — when making business decisions[2]. Within this framework, shareholder theory and stakeholder theory both provide prospective managers with useful advice on how to make sound business decisions.

Shareholder theory focuses managerial attention on a single goal: the maximization of a firm's long-term value. Jensen (2010) argues that only one goal can logically be maximized at a time and that the goal should be related to long-term value maximization. Although some equate shareholder theory with the maximization of a firm's current stock price, this is an incorrect interpretation of the theory. As Danielson et al. (2008) note, a firm's current stock price can be manipulated in the short term by unscrupulous managers or distorted by transitory market imperfections. Shareholder theory, when properly interpreted, encourages managers to maximize the value of a firm's long-term cash flow stream.

Stakeholder theory identifies the necessary prerequisites for long-term value maximization. In particular, for a firm to create long-term value for shareholders, it must first create value for current and future customers and employees, and it must not do so at the expense of the broader community, or society as a whole. Rather than being incompatible with stakeholder theory, the NPV rule provides an objective decision rule to constrain managerial discretion and to balance the interests of competing stakeholders in the project selection process.

When combined in this manner — which Jensen (2010) calls enlightened shareholder theory — the two theories augment each other and do not inherently conflict[3]. For a firm to generate sales, it must create value for some segment of society. If these sales also create profits for the firm, the firm can continue operating into future years. If these sales are not profitable, the firm will not survive to create value for society in future years. Thus, for a firm to contribute to societal sustainability efforts in the long term, it must first sustain itself[4].

The remainder of this paper is organized as follows. Section 2 discusses the practical challenges that make it difficult to identify a project's true NPV. These challenges create gray areas within the capital budgeting process in which ethical and agency conflicts between stakeholders can arise. Section 3 takes a closer look at the NPV rule when future cash flows — and their riskiness — are difficult to estimate and when externalities exist. Incorporating externalities into the decision-making process may change a negative NPV project and a reject decision into a positive NPV project and an accept decision, or vice versa. Section 4 constructs an enlightened capital budgeting process that specifically recognizes stakeholder interests and tail risks in the NPV valuation process. While difficult to quantify, the consideration of stakeholder interests and tail risks within the capital budgeting decision-making

process can provide a roadmap to long-term shareholder value maximization and the survival of the firm. Section 5 concludes the paper and provides recommendations.

## 2. THE DECEPTIVELY IMPRECISE NPV RULE

The NPV rule compares the marginal benefits and marginal costs of a prospective investment. If all future cash flows can be reasonably estimated, and if all marginal benefits and costs will accrue to a single decision-maker, the NPV rule will unambiguously lead to the correct economic decision. An independent project with a positive NPV will create economic value for the decision-maker without necessarily creating negative externalities for any other stakeholder.

In practice, however, the benefits and costs from most projects will be realized over time and will span a potentially wide range of possible outcomes with varying probabilities of occurrence. While it may be possible to estimate cash flows with a reasonable degree of certainty over short time horizons, cash flow estimates become increasingly imprecise as the forecast period lengthens. Unforeseen macroeconomic and microeconomic events can result in a project's cash flows being much different than was originally expected. For example, how many businesses in 2019 incorporated the effects of the pandemic into cash flow forecasts for 2020 to 2023? This uncertainty can be partially addressed when managers evaluate the sensitivity of a project's NPV to changes in various inputs and when future cash flows are discounted by exponentially increasing percentages. Nevertheless, a project's realized cash flows may differ dramatically from their expected values[5].

Moreover, some future benefits and costs are difficult to identify, let alone quantify, when the initial investment decision is being made. For example, a new sustainability initiative project that appears to have a negative NPV (when considering only the project's direct costs and benefits) might create indirect benefits by helping to foster brand loyalty within a firm's customer base, by increasing employee productivity, or by opening new markets to the firm's products. Conversely, a project that appears to have a positive NPV (when considering only the project's direct costs and benefits) might ultimately expose the firm to legal liability and litigation fees. For example, Bayer AG (a leader in the life science industry) purchased *Monsanto*, the maker of glyphosate, better known as *Roundup,* weed killer, just prior to litigation linking glyphosate to cancer. In response to this litigation, including cases that went as far as the Supreme Court, Bayer was forced to develop contingency plans to mitigate the litigation costs associated with *Roundup* and repair its reputation. Clearly, the consideration of these potentially sizeable, but nebulous, indirect benefits and costs can change the sign of a project's estimated NPV.

Thus, a project's expected NPV can be difficult to estimate with precision in practice. Depending on

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[2] Pagach and Wieczorek-Kosmala (2020) argue that managers must consider what they call tail risks (i.e., events that are unlikely to occur, but would have a significant impact on a firm's operations) when making business decisions.
[3] As noted by Bebchuk and Tallarita (2020), enlightened shareholder theory is not really new, as it is just a more detailed articulation of "old-fashioned shareholder theory".
[4] Similarly, Pichet (2011) argues that shareholder and stakeholder interests will tend to converge when evaluated within a long-term framework.

[5] Ideally, the decision maker's information set includes all qualitative and quantitative information that affects the magnitude and riskiness of the cash flows associated with the project. However, time, moral hazard, and financial constraints preclude a firm's ability to always generate the optimal information set (Thakor, 1993; Chui & Park, 1998; Colman, 2011; Almazan et al., 2017).

the firm's ability to generate unbiased estimates of a project's potential costs and benefits, especially as the estimation period lengthens, the calculated NPV may or may not be a reasonable approximation of the project's true, but unobservable, NPV. Even if a project's true, ex-ante NPV is positive, unfavorable future developments could cause the firm's realized NPV to be negative. Therefore, a project's realized NPV could differ from its expected NPV because the expectations were incorrect or because the project's ultimate performance reflected an unfavorable draw from the population of potential outcomes. Karpoff (2021) notes that misestimated costs and benefits are frequently the reason why many projects succeed beyond managerial expectations while others fail miserably.

Complicating matters, the underlying benefits and costs created by a project can accrue to, or be borne by, many different economic entities. Even though most, if not all, of a firm's capital investments will ultimately affect many distinct stakeholder groups, a firm's capital budgeting decisions are delegated to one specific stakeholder group: the firm's managers. Because a project's direct and indirect cash flows cannot all be easily quantified on an ex-ante basis, a firm's managers are afforded a great deal of discretion when making capital budgeting decisions. Depending on how managers exercise this discretion, ethical conflicts between competing stakeholder groups can arise.

For example, a firm's managers might choose to artificially inflate the estimated NPV of a project that provides personal benefits to members of the management team, especially if the project creates positive cash inflows during its early years[6]. In the short term, this type of project — which might otherwise have a negative NPV — can help managers achieve firm-level performance goals (e.g., growth targets) and potentially increase their value in the managerial labor markets. In particular, this type of project can create career-enhancing opportunities for certain members of the management team (e.g., those managers selected to run the new project). In the long term, however, the cash flows generated by the project might decrease or stagnate as the firm's competitors replicate the project's innovation. Thus, from a cradle-to-grave perspective, the NPV of the project might be negative. Nevertheless, the project's early success might provide managers with career advancement opportunities or with plausible deniability if the project ultimately fails.

Conversely, managers might be hesitant to pursue positive NPV projects that rely too heavily on cash inflows that might take several years to develop. In this scenario, a project's short-term costs could reduce the cash flows available for dividends, employee compensation, or research and development. As a result, the job security of the firm's top managers could be threatened. Even if this type of project is ultimately successful, the managers might not realize positive career-enhancing benefits until many (uncertain) years into the future. From the perspective of the firm as a whole, this type of project might have an acceptable risk-return trade-off. However, if the firm's managers believe that the personal risks of accepting the project exceed

the potential personal rewards, they might attempt to artificially decrease the project's estimated NPV so that the project can be rejected[7].

Ideally, managers would exercise their discretion after considering all relevant marginal costs and benefits, including those accruing to non-shareholder stakeholder groups, in an unbiased manner. Certainly, a benevolent segment of the managerial population might voluntarily do so. However, even in this case, the role of the NPV rule is unclear. Under what circumstances, if any, can a firm's managers justifiably overrule the verdict of the NPV rule?

## 3. IS THE NPV RULE ABSOLUTE?

Karpoff (2021) developed a framework in which firm activities are classified into four quadrants based upon: 1) whether or not they create value for shareholders, and 2) whether or not the activities are beneficial for other stakeholders. Figure A.1 (see Appendix A) restates this framework within the context of a firm's capital budgeting decisions. Quadrant I projects create value for both shareholders (NPV > 0) and other stakeholders. Quadrant II projects decrease value for shareholders (NPV < 0) but create value for other stakeholders. Quadrant III projects decrease value for both shareholders (NPV < 0) and other stakeholders. Finally, Quadrant IV projects create value for shareholders (NPV > 0) but decrease value for other stakeholders.

Because Quadrant I projects promise to create benefits for both shareholders and other stakeholders, the firm should invest in these projects. Conversely, projects in Quadrant III should be rejected. What is less clear, is whether or not firms should pursue projects in Quadrants II and IV.

### 3.1. Should a firm ever invest in a negative NPV project?

Projects in Quadrant II appear to create value for one or more stakeholder groups at the expense of a firm's shareholders. For example, a project might have a negative NPV because employees will be paid above-market wages or because customers are charged prices that are too low. At a minimum, investing in such projects could hurt the shareholders and decrease the firm's value. In more extreme cases, a firm that invests a substantial amount of capital in negative NPV projects will have difficulty surviving (Denis, 2016; Karpoff, 2021). If the firm does not survive, both shareholders and the firm's potential future stakeholders, who cannot benefit from a firm that does not exist, will be harmed by the negative NPV investments. From this perspective, a firm should not invest in any negative NPV project, even if the project promises to create immediate, but potentially transitory, benefits for some stakeholders.

One of the challenges managers face in the capital budgeting process is that most projects should not be considered in isolation but should also include potential benefits and costs that are not directly related to the project. In addition, it will always be easier for managers to quantify a project's

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[6] The estimated NPV of a project can be artificially inflated if cash flow estimates are overly optimistic or if the discount rate is too low.

[7] The estimated NPV of a project can be artificially decreased if cash flow estimates are too pessimistic or if the discount rate is too high.

short-term cash flows than its long-term benefits and costs. For example, a new project might require a firm to make a sizeable investment to develop a new technology or product. If the new technology or product is truly innovative and will create benefits for customers, employees, or other stakeholders, it may be impossible to identify all of its potential applications before the initial investment decision is made. Yet, the direct cash flows generated by the project may be limited. If the present value of the potential cash inflows within the initial market is not large enough to cover the required initial investment, the project's NPV, calculated using only the direct, estimable, cash flows, will be negative. Nevertheless, the presence of potentially valuable positive externalities, or benefits not directly related to the initial project, may justify the investment.

Positive externalities can be measured through real options, which gives the decision-makers the right, but not the obligation, to change course as new information becomes available. As discussed in Brealey et al. (2020), Brigham and Daves (2022), and Ross et al. (2022), the value of the real options created by a project can be estimated using the Black-Scholes (or other) option pricing formulas. However, to do so, the firm must obtain estimates of the distribution and timing of the potential future cash flows associated with the positive externalities. If the size and nature of the potential new markets cannot be precisely defined, the process of estimating the value of a project's real options can easily devolve into an exercise of simply making up numbers.

An example of this type of scenario might be the development of a new treatment for a rare form of cancer. Because only a small number of individuals suffer from this disease, the present value of the direct cash inflows may be less than the costs required to develop the treatment. If so, the project's direct NPV will be negative. However, if the treatment is successful, the firm will, at a minimum, benefit from favorable publicity. More important, this success, and the knowledge gained from it, may open up new opportunities for the firm to modify the product to treat other, related, medical conditions. It is precisely because the initial project will generate benefits for consumers or other stakeholders that the project may also create potentially profitable real options for the firm. The challenge facing firms in this scenario is that the exact nature of these potential future applications might be unknowable at the time of the initial decision. Thus, it is difficult, if not impossible, for the firm to estimate the value of the real options created by the initial investment.

It is also possible that a negative NPV project will have the indirect benefit of positioning a firm for survival. Functional shifts in technology often require substantial capital investments, sometimes long before the associated cash inflows that might be created can be estimated. Unfortunately, as noted by Mellal (2020), the failure to adopt new technologies can push a firm towards obsolescence. For example, Kodak — after inventing digital film — then chose to forgo the uncertain investment in this new technology for the perceived certain cash flows from their cash cow traditional film business. Clearly, this was a bad decision.

This possibility creates a conundrum for managers attempting to make capital budgeting decisions. The presence of valuable, but hard to quantify, real options means that some projects that appear to be Quadrant II negative NPV projects might actually belong in Quadrant I. Indeed, Karpoff (2021) suggests that the number of projects in Quadrant II might be limited, as policies that benefit a firm's stakeholders may also directly or indirectly benefit shareholders. Karpoff (2021) states that "one way to view the enlightened self-interest rationale for a stakeholder focus is ... that many stakeholder-friendly activities that might appear to reside in QII are, in fact, profitable for firms and reside in QI" (p. 333). However, this possibility does not mean that managers should be given free rein to invest in negative NPV projects as a matter of policy. Instead, managers should be given appropriate incentives to encourage them to distinguish between cases in which potential real options are valuable enough to switch the sign of an estimated NPV from negative to positive and cases in which the value of these options is illusory.

## 3.2. Should a firm ever reject a positive NPV project?

Projects in Quadrant IV appear to create value for shareholders at the expense of one or more groups of stakeholders. A Quadrant IV project might generate positive cash flows in its early years because the firm inappropriately reduces certain costs. For example, the firm might increase the profitability of a project in the short term by relaxing quality control standards or its workplace safety policies. However, such policies could negatively impact other stakeholders and the project's cash flows in the long run due to higher costs (e.g., litigation costs) and lower revenues (customers shy away from doing business with such firms). In addition, Karpoff (2021) argues that projects imposing negative externalities on stakeholders are also likely to harm a firm's reputation and might thus trigger a broader decrease in its market value[8]. For these reasons, many projects that might appear to be in Quadrant IV are actually Quadrant III projects and should be rejected.

## 3.3. NPV rule summary

According to the NPV rule, a firm should invest in all positive NPV projects, and avoid investing in projects with negative NPVs. So, from a theoretical perspective, the NPV rule is absolute. In practice, however, Figure A.1 reveals that capital budgeting decisions are rarely that simple. Projects that appear to offer a negative NPV — when considering only the cash flows that might be produced during the foreseeable future — might open up new markets for the firm, and thus might create value for the firm's shareholders in the long term. At the other end of the spectrum, a firm should not invest in a positive NPV project if that positive NPV is created at the expense of other direct or indirect stakeholders, as this type of project is likely to destroy value in the long term. As a result of these apparent conundrums, Section 4 modifies the NPV equation to explicitly acknowledge these possibilities.

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[8] As an exception, Karpoff (2021) cites research revealing that reputational losses tend to be smaller for firms that violate environmental regulations. These firms might face fines, lawsuit costs, and clean-up expenditures. However, empirical evidence suggests that these types of violations do not reduce the willingness of customers, vendors, and employees to continue doing business with the firm.

## 4. A MORE COMPLETE NPV EQUATION

The standard NPV formula can be written as:

$$NPV = \sum_{1}^{N} \frac{c_n}{(1+r)^n} - I \tag{1}$$

where, $I$ is the initial investment, $r$ is the risk-adjusted required return, and $c_n$ is the cash inflow during year $n$.

One of the shortcomings of many corporate finance textbooks is that these cash flow estimates often appear without explanation. This is unfortunate because positive NPV projects are created by a segment of a firm's stakeholders (i.e., its employees) for the benefit of another stakeholder group (i.e., a firm's customers).

The idea that capital budgeting decisions can be made without considering the interests of a wide range of a firm's stakeholders is a fallacy. The cash flow estimates required by the NPV calculation must be developed using input from line managers throughout the company. Revenue estimates should be supported by market research. Similarly, cost estimates should accurately reflect the expenditures that will be required to:

- purchase, install, and maintain the necessary equipment.
- hire, train, and retain a competent, motivated workforce.
- acquire high-quality raw materials or inventory.

In order to highlight these links between shareholder and stakeholder interests, in both the short-term and the long-term, an expanded form of the NPV equation can be used as depicted in Eq. (2).

$$NPV = \sum_{1}^{N} \frac{c_n}{(1+r)^n} - I + \rho_G G - \rho_L L \tag{2}$$

where,
- $I = f$ (fixed asset costs, environmental regulations, Occupational Safety and Health Administration — OSHA);
- $c_n = R_n - E_n$;
- $R_n = f$ (consumer value, product market competition);
- $E_n = f$ (employee training and retention, employee productivity, production innovations);
- $\rho_G$ = probability product opens up new markets in the future;
- $G$ = present value of the real options the product might create;
- $\rho_L$ = probability project creates future liability;
- $L$ = present value of the amount of the potential future liability.

Eq. (2) acknowledges that a firm cannot create long-term value by "cutting corners" when investing in a new project. The firm must create the infrastructure to efficiently produce the new product, but it must also do so in a way that complies with relevant government regulations and ensures employee safety. Failure to do so can lead to unexpected, potentially catastrophic, liabilities in the long run.

This specification also explicitly acknowledges that positive NPV cash flows are only possible if the project benefits from a sustainable competitive advantage (Brealey et al., 2020). For a project to have a sustainable competitive advantage, it must either create value for a stakeholder (e.g., a customer) or benefit from the value created by a stakeholder (e.g., efficient employees). In addition, the project must also benefit from entry barriers, making it difficult for rivals to replicate the project's innovation.

Finally, this specification also requires managers to attempt to quantify the unquantifiable. What is the probability that the project will produce additional benefits or unexpected costs? And, what are the plausible ranges of such potential benefits or costs? At a minimum, this information should be considered within the sensitivity analysis phase of the project selection process.

Ultimately, a firm should not invest in any project that appears to have a positive NPV unless it can identify how its customers and employees will benefit from, or are not harmed by, the endeavour. If a project does not create value for at least one non-shareholder stakeholder group, the project's NPV cannot be positive unless wealth is transferred from other stakeholders to the firm's shareholders. Conversely, a firm should not immediately reject a project that appears to have a negative NPV if that project will create large benefits for one or more stakeholder groups. In this case, the firm might reconsider its pricing or compensation strategies: Would customers be willing to pay a slightly higher price, or would employees be willing to accept a slightly lower wage? The firm should also try to identify the potentially valuable real options the project might create. If a project will create value for one or more groups of non-shareholder stakeholders in the short term, it is possible that the project could be modified to provide benefits to additional stakeholders in the future. If so, the project will create benefits for the firm's shareholders in the long term.

Ideally, a firm's managers will evaluate subjective estimates of a proposed project's benefits and costs in an unbiased manner, for the benefit of both the firm's shareholders and its stakeholders. In an effort to align managerial and shareholder interests, Bebchuk and Tallarita (2020) observe that corporate compensation policies today "commonly tie the payoffs of corporate leaders directly to shareholder value but not to stakeholder welfare" (p. 158). However, this practice has been criticized in that it can encourage managers to focus on short-term profit maximization (Smith, 2003) and can potentially create benefits for shareholders at the expense of other stakeholders (Freeman et al., 2004).

One alternative to this practice would be to develop compensation frameworks in which managerial compensation is also tied to tangible measures of non-shareholder stakeholder welfare (Blair & Stout, 1999). However, as noted in Bebchuk and Tallarita (2020), such frameworks would be difficult to design and implement, as stakeholder welfare cannot be easily quantified, and distinct stakeholder groups often have competing interests. For example, customers benefit from lower prices while employees desire higher wages. In addition, because the identity of a firm's customers, employees, and managers will change over time, such plans have the potential to prioritize

the interests of today's stakeholders at the expense of future stakeholders. Danielson et al. (2008) note that stakeholder theory can encourage managers to adopt a short-term focus to the detriment of a firm's long-term health. Furthermore, they argue that shareholders are unique among stakeholder groups because they are the only stakeholders who must find their replacement if they choose to sever ties with the firm. In particular, a departing shareholder must sell the ownership interest in the secondary market to an investor who believes that future cash flows will justify the current stock price. For this reason, they claim that shareholder wealth maximization is inherently a long-term goal.

To avoid these problems, compensation plans should be designed with longer-term incentives. As noted by Delves and Resch (2019), "a longer term focus would allow for investments in people, innovation, product development and other stakeholder interests to pay off and contribute to longer term performance. Hence, longer term vesting or holding requirements, or possibly longer term performance cycles, may help balance results for multiple stakeholders". Thus, this type of incentive plan would encourage a firm to fulfill its role as a social institution that provides benefits to both current and future stakeholders (Freeman, 1994; DesJardins & McCall, 2005).

## 5. CONCLUSION

The benefits and costs of most NPV projects will be realized over time and can be difficult to estimate with precision in an unknown future. Also, the underlying costs and benefits created by a project can accrue to (or be borne by) many different economic entities. Indeed, estimation challenges and potential externalities create the gray areas within the capital budgeting process in which ethical and agency conflicts between stakeholder groups can arise.

However, simply replacing shareholder theory with stakeholder theory will not necessarily lead to better investment decisions. As noted by Bebchuk and Tallarita (2020), stakeholder theory relies on "well-meaning corporate leaders using their discretion to incorporate stakeholder interests into their objectives" (p. 164). As a result, the adoption of stakeholder theory as the key principle guiding business decisions might make managers "freer in their decision making" and might allow them to "attempt to advance a managerialist agenda dressed in stakeholder clothing to make it more appealing to the general public" (Bebchuk & Tallarita, 2020, p. 165).

This paper reconciles shareholder theory to stakeholder theory within the context of the capital budgeting decision. To do this, we present a more fully specified version of the NPV equation. The new model is unique in that it explicitly encourages managers making capital budgeting decisions to consider tail risks, defined as events that, while unlikely, could have a significant impact on a firm's operations. The new equation reveals that shareholder and stakeholder interests are inherently linked. In order to survive in the long term, a firm must create — and cannot destroy — value for other stakeholders or society as a whole. However, the requirement to consider the societal impact of a potential project does not give a blank check to a firm's management. If a project does not also generate sufficient profits, the firm's ability to survive and create future societal benefits will be impaired.

Rather than abandoning the NPV rule, we recommend enriching it by acknowledging that managers should explicitly consider stakeholder considerations when developing estimates of future cash flows. The new model does not eliminate uncertainty from the capital budgeting process, but it does provide managers with a more well-defined way to balance the current and future interests of all stakeholders when making investment decisions. Within this framework, the main prescription of capital budgeting theory remains unchanged and provides an objective (albeit hard to quantify) decision rule to constrain managerial discretion: a firm should accept all projects with positive NPVs and reject those with negative NPVs. To achieve this objective, incentives that align managerial interests with the ability of a firm to maximize its long-term value are appropriate and will benefit a broad range of current and future stakeholders.

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## APPENDIX A

**Figure A.1.** The capital budgeting decision — two perspectives

*Project value: Shareholder perspective*

|  | *NPV > 0* | *NPV < 0* |
|---|---|---|
| **Beneficial** | **Quadrant I**: Positive NPV projects that also create benefits for other stakeholders. | **Quadrant II**: Negative NPV projects that nevertheless create benefits for other stakeholders (e.g., a highly valued product in a market of limited size or high-paying employment opportunities). |
| **Not beneficial** | **Quadrant IV**: Positive NPV projects that impose negative externalities (e.g., pollution, dangerous products, or unsafe working conditions). | **Quadrant III**: Negative NPV projects that do not create benefits for any other stakeholder group. |

*Project value: Perspective of other stakeholders*