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Higher Purpose, Incentives and Economic Performance

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October 2020

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We thank Bo Becker and other participants at the 2nd Marstrand Finance Conference, Sweden, for their helpful comments. We alone are responsibible for remaining errors.

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Abstract

How does organizational higher purpose affect employee behavior and firm output? We develop an optimal-contracting model which shows that pursuing organizational higher purpose dissipates agency frictions, lowers wage costs and elicits higher employee effort. The effect on profits, however, depends on whether the authenticity of the firm's higher purpose matters to employees or they care only about how much the firm invests in that purpose. When authenticity does not matter, the firm's profit declines with its investment in higher purpose. But when authenticity matters, firm profit is non-monotonic in the commitment to higher purpose. The possibility of agency costs of external finance in some firms creates a negative externality, crowding out higher-purpose investments by other firms, with profits nonincreasing in higher-purpose investments cross-sectionally. When customers and/or investors care about the firm's higher purpose, the equilibrium wages of employees decline and higher purpose investments by firms increase.

Keywords: Organizational performance, higher purpose, incentives, agency frictions

JEL Classifications: D02, D21, D23, D64

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HIGHER PURPOSE, INCENTIVES AND ECONOMIC PERFORMANCE

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Abstract (5/28/2020)

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HIGHER PURPOSE, INCENTIVES AND ECONOMIC PERFORMANCE

I. INTRODUCTION

A. Research Question and Motivation

What is organizational higher purpose? We define it as a prosocial contribution goal that transcends the usual business goals like profit maximization, but is intrinsically a part of the business of the organization. Thus, our interest is in the *intersection* of higher purpose and business decisions, *not* in corporate charity.[1] The goal is to analyze how this intersection affects contracting in organizations, employee effort and organizational output.

Our work is motivated by a growing recent practice, as some firms that we think of as primarily seeking to maximize shareholder value are focusing on organizational higher purpose as an additional goal. For example, DTE Energy clarifies its higher purpose[2] as being "a force for growth and prosperity". The company identifies four pillars through which this social impact will be manifested: people ("improving lives and creating opportunity"), places ("partners with communities for growth"), planet ("leadership toward cleaner energy and environmental stewardship") and progress ("powering a brighter tomorrow"). Tree T-PEE articulates its higher purpose as helping farmers conserve water and energy in farming, and its business is to sell a water and nutrient containment system to farmers.

There is also recent empirical evidence on the effect of higher purpose pursuit. Gartenberg, Prat and Serafeim (2019)) used a sample of nearly 500,000 people across 429 firms involving 917 firm-year observations from 2006 to 2011 and found that an authentic higher purpose communicated with clarity positively impacts both operating financial performance and stock price.[3] Quinn and Thakor (2018)

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[1] Thus, our focus differs from the literature on gifts and donations (e.g., Buraschi and Cornelli (2002) and Prendergast and Stole (2001)) as well as that on corporate social responsibility (CSR) initiatives that are distinct from the firm's normal business, say a grocery store donating money to cancer research.
[2] See the discussion of DTE Energy and its higher purpose in Quinn and Thakor (2018).
[3] Specifically, they found that the high performers had both clarity of higher purpose and comradery among employees. In other words, the mere adoption of higher purpose does not positively affect output; authenticity of purpose and clarity of communication are also needed.

provide interview-based evidence that organizations in which leaders embrace an authentic higher purpose, employees provide exceptionally high effort and creativity.[4] Hedblom, Hickman and List (2019) provide evidence based on a field experiment that "…when a firm convinces its workers that their efforts make the world a better place (as opposed to purely making money)…", output increases and wage costs go down. Grant et al (2007) conducted a field experiment in which treatment-group call center employees tasked with fund raising for a university were connected to the higher purpose of that activity,[5] and they performed significantly better in fund raising than employees in a control group who had the same "fund-raising script" for calls but were not similarly connected to the higher purpose.

While the economics literature has provided some insights on the issue of why organizations embrace higher purpose, it leaves unanswered many questions raised by the stylized facts documented in the literature discussed above. First, higher purpose is prosocial and affects organizational output, sometimes increasing it, but not always. What are the channels through which higher purpose affects organizational output, and what are the circumstances in which it increases output and those in which it decreases output? Second, the *authenticity* of purpose adopted by the firm matters to employees. Why? What is the impact of the possibility that the pursuit may be inauthentic? Third, only a small number of publicly-traded firms are pursuing an authentic higher purpose, and there is considerable cross-sectional heterogeneity among firms in their commitments to higher purpose. Why? What determines which of these firms pursue purpose and the extent of their commitments? How do the agency costs of external finance affect higher purpose investments in publicly-traded firms? Fourth, some firms that adopt higher purpose attract customers who value the same purpose (e.g., *4Ocean*). How does this affect the firm's optimal contracting with its *employees* and its investment in higher purpose? Fifth, what are the

[4] The definition of authenticity is that the leader is not using higher purpose merely as a public relations tool, but truthfully attaches positive utility to it. Therefore, the leader is willing to make decisions that may sacrifice economic output and personal wealth to pursue the higher purpose. When this happens, it generates positive emotions in employees. Fredrickson (2003) reviews the empirical literature on how positive emotions impact collective behavior. Lack of authenticity can actually backfire, especially when employees view the firm's intention as only to increase profits by using higher purpose solely as a motivational tool. See, for example, Cassar and Meier (2018). The possibility that the pursuit of purpose may be inauthentic plays a role in our analysis.

[5] Specifically, they were given some time to interact with scholarship recipients, i.e., those who benefit from the fund-raising.

economic consequences of investors also valuing the firm's higher purpose? Larry Fink of Blackrock, in his 2018 letter to CEOs, stated, "without a sense of purpose, no company, either public or private, can achieve its full potential … And ultimately, that company will provide subpar returns to the investors who depend on it to finance their retirement, home purchases, or higher education." With the world's largest institutional investor prescribing higher purpose, the question of how investors can influence firms is an interesting one to explore.

In Section II, we provide a further discussion of what we mean by organizational higher purpose, and how it is related to other familiar concepts like strategy, vision, mission and corporate social responsibility.

In Section III, we develop the basic model to address the five questions discussed above. In this model, the firm's owner cares about its articulated higher purpose, as do its employees. We provide a microfoundation for why employees care about the firm's higher purpose by positing that purpose can develop or strengthen the employees' *identity* and *social reputation*. This follows Henderson and Van den Steen (2015) and builds on the idea that people care about having a positive identity and social reputation (which affects their social interactions outside the firm). Akerlof and Kranton (2000) propose that identity – a person's sense of self – affects how individuals behave in their interactions with others. Benabou and Tirole (2011) develop a model of identity in which people "care about who they are" and infer their own values and preferences from past choices. Since the firm can influence these choices, it can shape its employees' identities through its adoption of an authentic higher purpose. This is also related to self-determination theory in psychology (e.g., Deci and Ryan (1985, 2000), and Ryan and Deci (2000)) which emphasizes the idea that people need growth, and this growth is higher with intrinsic motivation. This motivation, in turn, is stronger when employees share a collective higher purpose (e.g.,Sekerka and Fredrickson (2008)). We join this idea of identity shaping and stronger intrinsic motivation with the notion that the firm's higher purpose can affect how its employees are perceived in society and hence the value of their social interactions. The firm enjoys scale benefits because its actions affect *all* of its employees, whereas an investment in the same purpose by an individual employee lacks that scale effect.

In Section IV, we analyze the model and derive the following results. First, organizational higher purpose induces employees to work harder for the same wage or just as hard for a lower wage. Second, even when employees work harder, net profit is *lower* with higher purpose if the employee's utility from higher purpose is unrelated to the owner's utility from the purpose, i.e., the authenticity of the pursuit of purpose does not matter to the employees. Third, when the owner's authenticity of purpose matters to the employees, the impact of higher purpose on firm profit is non-monotonic, initially increasing in the leader's personal utility from purpose and then decreasing in it. This result also explains why there may be substantial cross-sectional variation in the investments firms make in higher purpose. Fourth, in Section V, we introduce external financing and the possibility that the firm's owner may be inauthentic in the pursuit of higher purpose and engage in inefficient personal consumption (e.g., pet projects that benefit the owner personally but have no prosocial benefits) that can undetectably masquerade as higher purpose investment. We show that in this case, equilibrium investment in higher purpose declines, and cross-sectionally profit is nonincreasing in purpose investment. Fifth, we also examine two other extensions. In one, we assume that the firm's customers also value the firm's higher purpose. We find that this increases the firm's investment in higher purpose and lowers wages. In the other extension, we introduce the assumption that outside investors care about the firm's purpose and find results similar to the case in which customers attach value to the firm's purpose.

Section VI concludes. It discusses the implications of the analysis for competitive interactions among firms, and the testable empirical predictions of the model. All proofs are in the Appendix.

B. Related Literature

This paper is broadly related to the literature on how prosocial goals affect organizational outcomes, e.g, Delautre and Abriata (2018). The research on organizational higher purpose is the most closely related; see, for example, Bartlett and Ghoshal (1994), Chapman et al (2017), Gartenberg, Prat and Serafeim (2019), Gartenberg and Serafeim (2019), Grant et al (2007), Hedblom, Heckman and List (2019), Hollensbe et al (2019), and Quinn and Thakor (2018). Some of these papers are randomized controlled trials, some are empirical, some provide interview-based and survey-based evidence and some

are qualitative or descriptive. They have provided valuable insights into corporate higher purpose and also some of the stylized facts that motivate our paper. In contrast to these papers, we formally model organizational higher purpose in an optimal contracting framework and extract its implications, including new testable predictions. From this perspective, the most closely related paper is Henderson and Van den Steen (2015). It is a theoretical model of organizational higher purpose that explains why purpose has to be prosocial and authentic to be effective and why employees care deeply about it. The main insight of the paper is that organizational purpose creates value beyond its social contribution because it develops its employees' (social) identity and reputation. Our paper builds on that insight in their paper to provide a microfoundation for why employees may prefer that the firm invest in its articulated higher purpose rather than having the firm pay that investment out as cash to the employees. While our analysis also finds that organizational higher purpose induces employees to work harder for the same wage and lowers the firm's equilibrium wage, this paper differs in many respects. Specifically, we focus on various uncertainties that impact higher purpose investments—that is, the channels through which higher purpose investments are crowded out—and thereby explain the large cross-sectional heterogeneity in higher purpose investments. Moreover, other novel aspects of our analysis are that we also focus on the agency costs of external finance in the context of higher purpose investments, and also show that when customers and investors value the firm's purpose, its wage cost declines and it invests more in purpose.

Our paper is also related to papers that examine the relationship between external finance and "socially responsible" investments by the firm. Morgan and Tumlinson (2019) assume that shareholders care about the provision of a public good and show that managers redirect more profits toward public goods than shareholders would when acting separately. That is, like our paper, this paper too views an investment in prosocial activities like higher purpose as imposing a direct financial cost (loss of profit or revenue) on the firm. Oehmke and Opp (2020) develop a model in which firm production generates social costs and is subject to financing constraints. They show that social impact requires investors to internalize social costs, which is similar to an assumption we make in one of our extensions that investors attach a value to socially responsible behavior by the firm, but for the most part we focus on a different set of

issues. Our paper also differs significantly from Morgan and Tumlinson (2019), in whose analysis there are no manager-shareholder agency problems, in that we focus on the importance of *authenticity* in higher purpose, how higher purpose affects optimal contracting with employees and the firm's equilibrium wage costs in a moral-hazard setting, and how the agency costs of external finance *crowd out* higher purpose investments by the firm. Cheng, Ioannou and Serafeim (2011) examine whether superior performance on corporate social responsibility (CSR) affects the firm's access to external finance. They document that superior CSR performance improves the firm's access to external finance because CSR strategies reduce agency costs and informational asymmetries. The finding that the pursuit of prosocial activities can reduce agency costs is consistent with our theory. But our analysis also reverses their causality and generates the additional insight that agency costs and information asymmetries *reduce* access to external finance and thus depress higher purpose investments.

Another strand of this literature deals with other aspects of CSR, e.g., Bénabou and Tirole (2010). A theoretical examination appears in Bénabou and Tirole (2006) who develop a model in which doubt about the true motive for good deeds leads to an "overjustification effect", with diminished prosocial behavior; see also Seabright (2009).[6] Malik (2014) provides a review of the literature and notes the lack of a consistent theoretical framework for analyzing CSR. The empirical evidence on how the adoption of CSR affects organizational performance is mixed. Some papers report a positive effect on firm profits (e.g., Waddock and Graves (1997)), while others report mixed, negative or no effects (e.g., Barett and Salomon (2012), Godfrey, et al, (2009), and Servaes and Tamayo (2013)). Most of these studies focus on how CSR is a tool for firms to engage in "virtue signaling" to customers who value CSR. Other papers focus on how CSR works through the supply channel in firms, in terms of affecting the motivation of employees. The empirical evidence of CSR on firm performance through this employee behavior channel is also mixed. List and Momeni (2017) use a large-scale field experiment to document that the adoption of

[6] More tangentially related is Bénabou and Tirole (2003) in which a tension between extrinsic and intrinsic motivations arises because giving high-powered incentives may convey bad news about the task or agent ability. Bolton, Brunnermeier and Veldkamp (2013) examine the impact of the organizational leader in overcoming a misalignment of incentives that inhibits coordination.

CSR increases employee *misbehavior*—there is a greater propensity for employees to shirk on their primary job responsibility. The paper suggests that this is due to "moral licensing" in the sense that the "doing good" feeling associated with CSR induces workers to misbehave on another dimension. Hedblom, Hickman and List (2019) also use a field experiment and document that CSR has both a selection effect in employee hiring and a treatment effect in positively influencing their effort and output. Similarly, Eccles, Ioannou and Serafeim (2014) conduct an empirical examination of 180 companies and show that companies that adopt environmental and social policies related to CSR have more stakeholder engagement and adopt more long-term oriented policies than firms that do not; these CSR-adopting firms also exhibit better accounting and stock performance over the long run. Dijk and Holmen (2017) show in a lab experiment with a principal-agent setting that CSR generates a "warm glow" in employees that makes them work harder.

Our paper differs in many respects from this literature. First, CSR is a broader concept than higher purpose in that while all HP initiatives may fall under the broad umbrella of CSR, there may be numerous CSR activities that do not represent authentic higher purpose[7]; we discuss this distinction in Section II.

Second, we focus on organizational higher purpose with the goal of developing a model that enables an exploration of how higher purpose affects employees' effort supply incentives and the firm's profits. This leads to new results, like the possible non-monotonicity of profit in purpose investment.

Third, we introduce external financing and allow for the possibility that the so-called higher-purpose investment may simply be a diversion of organizational resources for private benefit; this agency problem is front and center when one considers Friedman's (1970) exhortation for firms to focus

[7] For example, in the Dijk and Holmen (2017) lab experiment, agents were told that the company would contribute its profits to the Swedish Red Cross. This is CSR, but it has little to do with the firm's business itself, so it is *not* higher purpose as we define it. One possible reason for the mixed results in the empirical literature on the impact of CSR on firm performance may have to do with the fact the literature does not distinguish between broad CSR initiatives unrelated to the firm's core business and the special subset of activities representing higher purpose, so in cases involving authentic higher purpose the performance impact may have been positive and in other cases it may have been insignificant or negative.

exclusively on shareholder value maximization. We show that this possibility crowds out authentic higher purpose investments.

Our paper is also related to Besley and Ghatak's (2005) work on "mission-oriented" organizations. That paper focuses on how matching mission-oriented employees to principals who have the same mission economizes on the need for high-powered incentives, and it explains why non-profits may function differently from profit-seeking organizations. The similarity is that our paper also focuses on how the pursuit of higher purpose reduces wage costs for firms. However, there are numerous key differences in that we are not concerned with the difference between for-profit and non-profit organizations; we show how higher purpose alters decisionmaking in for-profit organizations. Moreover, our focus is *not* on matching principals and agents with similar missions. Other differences have to do with our focus on the role of external financing frictions, as well as different types of uncertainties and how they impinge on the cost of external finance and the higher purpose investments of firms.

The research of Akerlof and Kranton (2005) on identity economics is also relevant to this paper. They argue that organizations shape the self-images of their workers, and this can flatten reward schedules while dissipating agency frictions. We can view the adoption of a higher purpose by the organization as one channel of influence in shaping workers' identities or self-images.

Finally, the external financing part of our analysis links our paper to recent research on how agency costs can be minimized by matching external financing instruments with agents. Starmans (2019) develops a model in which entrepreneurs (agents) have projects with different probability distributions of cash flows and identical mean cash flows. Financiers (principals) choose debt or equity or a combination, depending on which minimizes agency costs. In our external financing analysis, we focus on equity because we have a single type of entrepreneur seeking financing. As a more general point, our analysis is not a search for the mechanism that minimizes agency costs, although we show how the pursuit of higher purpose can reduce agency costs by motivating employees. Rather, our focus is on the interaction of organizational higher purpose, agency frictions within the firm, external financing frictions and economic

output.[8]

II. DISCUSSION OF HIGHER PURPOSE: EXAMPLES AND CONNECTIONS TO RELATED CONCEPTS

There are numerous concepts that are closely related to higher purpose (HP). In this section we discuss these relationships as well as differences between these concepts and HP.

A. Strategy, Vision, Mission and HP

A firm's *strategy* is a roadmap for allocating resources to achieve business goals like shareholder value maximization. It is the "*how*" of the firm's operations.[9]

A firm's *vision* is a picture of where the firm eventually wants to go. An example is Microsoft's famous vision statement: "A computer on every desk in every home." It is a big, audacious goal that may never be achieved but creates an inspiring picture that shines a light on the direction in which the company wants to go. It is the "*where* we are going" of the company's operation.

A *mission statement* is a roadmap of sorts for achieving the company's vision. It illuminates the economic activities the company will engage in to achieve its vision. For example, American Express describes its mission as: "We work hard every day to make American Express the world's most respected service brand." DTE Energy describes its mission as: "To be the best operated energy company in North America." Nordstrom describes its mission as: "To give customers the most compelling shopping experience possible." Mission is the *what* of the company's operations.

A *higher purpose* is the *why* of the company's existence. For example, Quinn and Thakor (2019) describe in detail the exercise that Edward Jones went through with Peter Drucker to discover its HP.

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[8] Thus, we do not exhaustively compare the agency-cost implications of higher purpose pursuit with other ways to reduce agency costs like organization structure, design, investing in technology to reduce the agent's effort cost, and so on.

[9] An example is Michael Eisner's articulation of Disney's strategy in September 1984 as that of making 16 films the following year as a way to revive Disney's film business and support the growth of other business (e.g., theme parks and consumer products) in the portfolio.

When the Edward Jones executives were first asked: "What is the purpose of Edward Jones?", they said: "To make a profit." They were told that was the *outcome* of their purpose, not their *raison d'etre*. They eventually settled on their HP as: "Helping clients – individuals and families – make financial decisions to achieve their life goals."[10] This then led to the strengthening of a culture that seeks to treat its employees as part of the Jones family. DTE Energy states its HP as "We will be a force for growth and prosperity in the communities where we live and serve." As a foundational part of this purpose, DTE Energy made a strong commitment to care for its employees.[11] Barry-Wehmiller states its HP as: "Building a better world through our products, services and culture."

Having provided these descriptions and examples, we wish to note a few things. First, not every company explicitly and publicly states a HP. Second, in some instances, the HP statement is actually a part of the mission statement, so it is difficult to disentangle the two, and attempts to do so become an exercise in semantics. Third, in some cases, the mission statement describes the way in which the firm will serve its HP. For example, Barry-Wehmiller states its mission as: "One of the most fundamental ways we are building a better world is through a sustainable business that provides security to our team members and creates long-term value for all stakeholders."[12]

B. The "Cost" of HP

As Quinn and Thakor (2018) note based on the empirical evidence they collected, and Henderson and Van den Steen (2015) note in their theoretical model, the credibility and effectiveness of HP depend on the firm sacrificing revenue/profit to implement its HP. This is the way we model it.

In some cases, the commitment to HP is a direct reduction of revenue/profit, mirroring precisely the way we model it. For example, Hobby Lobby gives a 10% in-store discount to churches, schools and

[10] See Chapter 5 (p. 62) in Quinn and Thakor (2019).
[11] As mentioned earlier, DTE Energy's HP statement clarifies four pillars: people (improving lives and creating prosperity), places (partnering with communities for growth), planet (environmental stewardship), progress (stimulating economic growth in the state). The people dimension includes taking care of employees as members of the corporate family.
[12] As in the case of HP, a mission statement will positively impact employee behavior only if it is authentic.

national charitable organizations. This is closely related to the firm's HP[13], is integrated with the firm's day-to-day operations and has the direct effect of reducing revenue.[14] Zingerman's, the Ann-Arbor-based restaurant and deli firm, states its HP as providing its customers an exceptional experience and contributing to the development of its employees as entrepreneuers[15]. It shuts down for a few days every year to provide leadership development for its employees in how to manage the *whole* company as if they were entrepreneur-owners, i.e., it goes beyond on-the-job training aimed at just improving the employees' capabilities to do their assigned jobs. This exercise is expensive and has the direct effect of reducing profits. White (2016) discusses three additional examples. In 2014, US healthcare retailer CVS decided to stop selling cigarettes, at an estimated revenue sacrifice of $2 billion per year. Unilever announced that it would source 100% of its raw materials using environmental, social and ethical principles. The food company Mars has focused on aligning its business activities with its stated purpose of "better food today, a better world tomorrow" by stating to its customers that "new labeling will indicate how often it is recommended you consume those products, based on how long it takes the body to restore balance after eating these meals". In discussing the CVS, Unilever and Mars examples, White (2016) observes:

"In all three cases, we are not only seeing companies articulate a purpose that goes beyond just delivering returns to shareholders – but also making decisions that, at least in the short-term, will cost them in terms of reduced revenues and/or increased costs."

This discussion surfaces two important points. First, there is a rich variety of ways in which companies make HP investments that reduce revenue/profit in the short run. Second, the revenue-reducing investment in HP is closely tied to the firm's HP and its routine business operations, as opposed to being a broader CSR initiative that is divorced from its day-to-day business.

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[13] Hobby Lobby states its HP as honoring God and "…operating the company in a manner consistent with Biblical principles", serving its employees and their families, and "…investing in our community".

[14] Another possible example is SpaceX, which states its HP as helping mankind colonize other planets. It has experienced impressive revenue growth and received high valuation estimates from analysts. But its profit performance has been weak, primarily because of large reinvestments in innovation and new hardware and software, initiatives that facilitate its HP.

[15] See Quinn and Thakor (2019) for a discussion of Zingerman's HP.

Having said this, not every HP involves a direct cost as soon as it is adopted, and there may be some aspects of HP that do not involve any financial cost. Nonetheless, Quinn and Thakor (2018, 2019) report that in the vast majority of the cases they examined, *authentic* HP involved a financial sacrifice by the firm at *some* point in time, even when it was not an *immediate* sacrifice of revenue. In the case of Edward Jones, the company faced considerable financial pressure to cut costs significantly during the 2007-09 financial crisis. Since 50% of the company's total costs are employee wages and benefits, the most expedient way to achieve a big cost reduction would have been to lay off people. But the company decided not to do it. Instead it made a commitment to its employees that there would be no layoffs – a financially costly move – and encouraged them to find innovative ways to improve cost productivity.[16] Similarly, Gerry Anderson, the CEO of DTE Energy, made a commitment to his employees that there would be no layoffs during the 2007-09 crisis when the company was severely financially stressed and he was advised by many to shut down some plants and lay off some people.[17] Dick Mahoney, CEO of Monsanto, came up with the "Monsanto pledge" to reduce polluting emissions by 90% in 6 years during his tenure as CEO in the late 1980's, which was financially very costly. Jimmy Dunne, CEO of Sandler-O'Neill and Partners, a Wall Street investment bank, lost a major fraction of his workforce during the terrorist attacks on the Twin Towers on 9/11, and decided to pay wages and benefits to families of *dead* employees for an extended period even though the firm was badly wounded financially.[18]

Thus, even though the *direct* adverse financial impact of adopting a HP may not be immediate, it often creates what amounts to a *state-contingent* financial cost for the firm. The approach we take in our analysis that a commitment to HP reduces revenue is meant to cover both the direct-revenue-reduction cases discussed earlier and the state-contingent profit reduction cases above.

C. HP and CSR

[16] Edward Jones also makes a revenue sacrifice in not selling/using complex financial products like options in its wealth management business because they believe that would be inconsistent with their HP.
[17] Similarly, after the 9/11 terrorist attacks, Southwest decided not to lay anyone off despite suffering millions of dollars in losses every week. See Quinn and Thakor (2019).
[18] See Quinn and Thakor (2018, 2019) for detailed accounts of all these companies.

Corporate Social Responsibility (CSR) is a closely related concept. Wang, Tong, Takeuchi and George (2016) define CSR as "… businesses bearing a responsibility to society and a broader set of stakeholders beyond its shareholders." CSR and HP overlap in that both are prosocial goals and may enhance the standing of the firm in society. However, CSR is broader than HP in the sense that it includes activities that we would not classify under HP, as well as those we would. Some examples of CSR initiatives include: improving labor policies, corporate policies that would benefit the environment, reducing the firm's carbon footprint, participating in fair trade, making charitable contributions, and volunteering to help with community projects. While the first three initiatives could be readily viewed also as HP initiatives for many firms, the last three are unlikely to be authentic HP initiatives for a lot of firms.[19] The reason is that an authentic HP has to be integrated into the firm's strategy and daily operations. As mentioned in the Introduction, HP becomes the arbiter of the firm's decisions. An example is provided by Barry-Wehmiller, whose explanation of its HP includes "touching the lives of people." Their CEO, Bob Chapman, states, "The GPL[20] has become our moral compass, steering us time after time to approach challenges with this question. If we measure success by the way we touch the lives of people, then how does that relate to the problem at hand?" Van Damm and Rogers (2020) provide an example of how the company has used this moral compass. During the 2007-09 crisis, the company faced a substantial decline in its business and needed to cut costs. In line with its HP, the company's CEO Bob Chapman asked: "What would a caring family do when faced with such a crisis?" He decided that "…all family members would pull together and each take a bit of the sacrifice for the survival of the whole family"[21]. They devised a plan in which all associates took four weeks of unpaid furlough, executive bonuses and 401K matches were suspended, and the CEO gave up most of his own salary.

To sum up, the firm can be socially responsible by adopting CSR, but only in some cases will the CSR initiatives also be HP initiatives. Our theory focuses on the role of authentic HP in motivating

[19] Glavas' (2016) classification scheme would refer to the first three as "embedded" CSR activities and the last three as "peripheral" CSR activities.
[20] GPL stand for "Guiding Principles of Leadership."
[21] See Van Damm and Rogers (2020).

employees and does not speak to the economic consequences of CSR initiatives that are not HP initiatives.

III. THE MODEL

A. The Model

A. Preferences, Production and Contracting:

All agents are risk neutral[22] and the riskless rate is zero. The "firm" consists of a principal (owner henceforth) who owns an asset and *N* agents (employees henceforth) who collaborate with the owner in producing a random output. The production function for employee *i* is:

$$z_i = \begin{cases} Z_i \in \mathbb{R}_+ & \text{with probability } e \\ 0 & \text{with probability } 1\text{-}e \end{cases} \tag{1}$$

where $\mathbb{R}_+$ is the positive real line, *e* is the employee's effort, chosen from a compact set $\boldsymbol{E}$. Each employee's choice of *e* is privately observed, privately costly, and non-contractible. The employee is paid a wage $w_i \geq 0$ at the end of the period based on z_i, which can be observed and contracted upon. The firm's aggregate output is $\mathbf{z_N} = \sum_{i=1}^{N} z_i$. For simplicity, it is assumed that the outputs of the *N* employers are conditionally perfectly correlated, i.e., conditional on $e_i = e \forall i \in \{1, ---, N\}$, all N z_i 's are perfectly correlated. This means, conditional on $e_i = e \forall i$, we have:

[22] Risk aversion *may* affect our results. For example, in a dynamic model with the possibility of employment termination, an employee-centric higher purpose will lead to lower wage costs, strengthening our results. On the other hand, one can imagine a variation of our model in which a prosocial HP may increase output and wage uncertainty, which may increase wage costs, unless the organization takes explicit steps to shield employees from this uncertainty (for example, by reducing financial leverage; see Jaggia and Thakor (1994)).

$$\mathbf{z_N} = \begin{cases} \mathbf{Z_N} = \sum_{i=1}^{N} Z_i & \text{with probabilty } e \\ 0 & \text{with probability } 1-e \end{cases} \tag{2}$$

The owner can obscure and contract on each employee's output, but those outside the firm can observe only the aggregate firm output $\mathbf{z_N}$. In (2) above, we can write $z_i = z, and\ Z_i = Z \forall i$ since all employees are identical. Thus, $\mathbf{Z_N} = NZ$ and $\mathbf{z_N} = Nz$.

Since the employee's effort cannot be contracted upon, the only contractible variable is z_i. The employee's wage contract is thus a function $\tilde{w}(z_i)$ that determines employee *i*'s wage as a function of his output z_i. The employee's reservation utility from working for the firm relative to not working for it is zero. The agent has no wealth and so cannot post a performance bond. Thus, there is a limited liability constraint, which guarantees the agent a non-negative wage.

At date *t*=0 (start of the period), the owner makes a take-it-or-leave-it offer of $\tilde{w}(z_i)$ to the employee that stipulates an output-contingent wage at date *t*=1 (end of the period). All consumption occurs at *t*=1. With non-negative wages, it is obvious that the employee will receive $\tilde{w}(z_i) = w>0$ if $z_i = Z_i$ and $\tilde{w}(0) = 0$ at *t*=1. The wage contract must satisfy the incentive compatibility constraint to motivate the employee to choose *e*. The employee's disutility of effort $\Psi e^2/2$, where $\Psi > 0$ is a constant.

B. Sequence of Events and the Value of Higher Purpose:

The sequence of events is as follows: At $t = 0$, the firm's owner declares a binding precommitment to divert a fraction of $\alpha \in [0,1]$ of the realized output to serving a higher purpose. This diversion is a subtraction from the tangible output available. Thus, the firm's observed output will be $[1-\alpha]\mathbf{z_N}$. The owner enjoys, a utility $\beta\ \Omega(\alpha \mathbf{z_N})$, where $\beta \geq 0, \Omega' > 0, \Omega'' < 0,$ from this diversion, with $\Omega(0) = 0$ and the Inada conditions $\Omega'(0) = \infty$ and $\Omega'(ZN) = 0$. We will allow β to vary in the cross-section. Although some of our comparative statics analysis will treat β as being chosen from a continuum, our discussion will focus on $\beta \in \{0, \beta_l, \beta_h\}$, with $0 < \beta_l < \beta_h$. We assume each owner knows

her β privately.

Having observed α, agents approach the firm for employment opportunities. Without loss of generality, we assume that agents are plentiful and available in elastic supply in the labor market.[23] The firm makes each agent a take-it-or-leave-it offer of a wage contract $\tilde{w}(z_i)$ at $t = 0$. If the agent accepts the offer, he becomes one of *N* employees. He then chooses *e* at $t = 0$ and the output from his effort is realized at $t = 1$. All employees are then paid at $t = 1$ in accordance with their wage contracts. The owner/shareholders claim the total firm output net of wages.

Following the earlier literature discussed in the previous section (most notably Benabou and Tirole (2011) and Van den Steen (2015)), we assume that the firm's adoption of a higher purpose strengthens the employee's identity and hence commitment to the purpose when it is authentic and clearly communicated in a way made formal below. Moreover, the higher purpose also improves the employee's "social reputation" (Benabou and Tirole (2011)) in a way that is more efficient than the employee attempting to do this on his own, as the formalization below shows. These benefits of enhanced identity and social reputation enjoyed by the employee create a positive utility for the employee that the firm takes into account in designing wage contracts, as we shall see.

C. Formalizing Employees' Benefit from the Firm's HP:

To formalize the social reputation benefit to the employee, assume that in addition to the utility employees get from wages, they also derive utility from their social interactions outside the firm. Suppose there are two types of observationally identical agents in the economy who attach different values to the firm's articulated higher purpose and who employees can interact with. The "type h" agents attach positive value to the higher purpose – call this $u(h) > 0$. If an employee who is himself such an agent interacts socially (outside of the firm) with such an agent, he gets a utility $\bar{u}(h, \zeta) = \zeta u(h)$ where ζ is a variable that represents the strength of the employee's commitment to the higher purpose based on the

[23] This assumption simply means that the firm will design contracts to extract all the surplus net of what must be paid to the agent to satisfy participation and incentive constraints.

identity development experienced in the firm; we will say more about ζ shortly. The basic idea here is that since firms are effective "carriers" of both identity and social reputation, an employee who has been exposed to authentic and clear communication of higher purpose within the firm will find his own identity shaped in a way that influences his commitment to the purpose and will thus affect the utility from interacting socially with other purpose-driven agents. For example, an employee of *4Ocean* is likely to be someone who cares even more deeply about the contamination of our oceans with plastic garbage than the average environmentally-conscious person in society (so $\zeta > 1$). When such an employee interacts socially with an environmentally conscious agent, both will enjoy positive utilities, but the *4Ocean* employee even more so.

Of course, not everyone will care about the company's chosen HP. A person who does not care about the firm's HP attaches zero utility to interacting socially with someone who cares about that HP. Call this person a "type ℓ" agent. When a "type *h*" agent interacts socially with a "type ℓ" agent, both get zero utility from the encounter.[24] Each agent privately knows whether he is type *h* or type ℓ. However, the firm's screening process enables it to identify whether the agent applying for a job is type *h* or type ℓ, so it will hire only the type *h*.

The commonly-shared prior belief is that the probability that a randomly-chosen agent will be type *h* is $g \in (0,1)$, and the probability that a randomly-chosen agent will be type ℓ is 1- *g*.

The adoption of HP by the firm is a highly visible event and the more the firm invests in HP, the greater the visibility and salience. We assume that social interactions result from search and matching processes (see, for example, Burnazoglu (2017) and Feeney and Collins (2015)). Absent any HP investment by the firm, the probability that an employee will interact with someone[25] who values the firm's chosen HP is *g*. Thus, the employee's social interaction will generate a utility of $u(h)$ with probability *g* and 0 with probability 1- *g*. However, the enhanced social reputation and visibility gained

[24] Imagine a *4Ocean* employee interacting socially with someone who views the entire save-the-environment movement as a hoax and a waste of resources.
[25] For simplicity, we assume only one social interaction.

by the employee due to the firm's investment of αNZ in HP increases the likelihood of the employee attracting another agent for social interaction who also cares about that HP – the probability now increases from *g* to:

$$\upsilon(\alpha NZ) = g + \mu(\alpha NZ) \tag{3}$$

where $\mu(0) = 0,\ \mu' \geq 0,\ \mu'' < 0,$ and the Inada conditions $\mu'(0) = \infty, \mu'(NZ) = 0,$ with $\mu(NZ) = 1 - g$. Thus, the social interaction related utility of the employee when the firm invests in HP is:

$$e\,\upsilon(\alpha NZ)\bar{u}(h,\zeta) + [1-e]\,g\bar{u}(h,\zeta) \tag{4}$$

which simplifies to:

Employee's social-interaction-related expected utility:

$$g\zeta u(h) + e\mu(\alpha ZN)\zeta u(h) \tag{5}$$

The parameter ζ will be influenced, among other things, by the authenticity of the higher purpose pursuit by the owner. HP is authentic only when it is a part of the owner's utility function, i.e., when $\beta > 0$. While those outside the firm may be unable to determine this authenticity, employees will generally be able to see through inauthentic pursuits, such as posters on walls that state "organizational values" but are meaningless to employees who observe that organizational decisionmaking is not aligned with the stated values and purpose.[26] To capture this, we assume that ζ is a function of β , i.e., $\zeta(\beta)$ with $\zeta(0) = 0,\ \zeta' > 0,\ \zeta'' < 0,$ up to some $\beta = \hat{\beta},$ and $\zeta' = 0,\ \zeta'' = 0,\ \forall \beta > \hat{\beta}.$ Thus, ζ attains its maximum value, $\hat{\zeta}$, at $\beta = \hat{\beta}$ and stays constant after that. In the specific case in which $\beta \in \{0, \beta_\ell, \beta_h\},$ we assume that $\hat{\beta} \in (\beta_\ell, \beta_h),$ so $\zeta(\beta_h) > \zeta(\beta_\ell) > 1$. The idea is that even a firm that hires type-*h* agents can shape their identities in a way that strengthens their commitment to the purpose, and this effect is stronger when the owner authentically believes more strongly in the purpose (higher β). This effect does not exist when the owner's commitment to the HP is inauthentic $(\beta = 0)$.

[26] See Quinn and Thakor (2019) for an extensive discussion of this and examples of authentic and inauthentic pursuits of HP.

Recall that β is privately known to the owner. We assume that after accepting $\tilde{w}(z_i)$ and joining the firm but *before* choosing *e*, each employee discovers the owner's β. This may be an extreme assumption but it corresponds in many cases to reality because, as insiders, employees are able to observe whether decisions that are at odds with the stated HP are being pursued. In any case, this extreme assumption is made to simplify the analysis. What would suffice for the analysis is that the precision with which the employees observe β is higher than the precision of outsiders.

Now, for the firm an alternative to investing αNZ in HP is to pay out αZ to each of its employees in cash and let them choose what they wish to do with it. Clearly, doing so will not generate the utility $\beta\Omega(\alpha NZ)$, for the owner that is provided by the firm's investment in HP. Nonetheless, since in the subsequent analysis we also consider whether an owner with $\beta = 0$ will invest in HP, it is useful to have a sufficiency condition which ensures that employees prefer the option of the firm investing in HP to that of the firm adding αZ to each employee's performance wage *w*. To obtain this condition note that if αZ is paid as a cash bonus, the social-interaction-related utility of the employee is

$$gu(h) + e\alpha Z > 0 \tag{6}$$

since the cash bonus of αZ can only be paid in the successful state. For the employee to prefer the firm to invest in HP, we need the expression in (5) to exceed that in (6). Simplifying we see that this condition becomes:

Condition for employee to prefer corporate HP investment to cash bonus:

$$gu(h)\left[\zeta - 1\right] + e\left[\mu\left(\alpha ZN\right)\zeta u(h) - \alpha Z\right] > 0 \tag{7}$$

Henceforth, we will assume that (7) holds for $\zeta(\beta_\ell)$. It clearly fails to hold when $\beta = 0$. For $\beta > 0$, it is a condition that requires that the social interaction utility, $u(h)$, be high enough.

For the subsequent analysis, we write the employee's social-interaction-related expected utility (in (5)) as:

$$\hat{V}(\alpha ZN) = g\zeta(\beta)u(h) + eV(\alpha ZN) \tag{8}$$

where

$$V(\alpha ZN) \equiv \mu(\alpha ZN)\zeta u(h) \tag{9}$$

D. Comments on the model:

We wish to comment on the key features of the model.

(1) First, our modeling of the firm's observable HP commitment as a diversion of a fraction of revenue is simply meant to capture the idea that there must be a tradeoff between profit and social impact. If the action that maximizes profit also maximizes social impact, every firm will choose that action and the pursuit of HP will be indistinguishable from profit maximization. As our subsequent analysis will show, cross-sectional heterogeneity in the pursuit of HP and the implications of this for the development of the employee's social reputation arise *only* when the pursuit of HP leads to a sacrifice of profits; see also Henderson and Van den Steen (2015) for a similar point. Of course, diverting a share of revenue to HP is not the only way to make HP investment costly for the firm.[27] But in our simple set-up, this is mathematically similar to a revenue-sharing scheme, with the difference being that employees value one dollar of salary (linear utility) differently from one dollar in the revenue-sharing scheme $(\hat{V}(\alpha NZ))$.[28]

This raises the obvious question: why does the firm simply not give αZ to its employees and give them the freedom to invest on their own in the HP the firm is investing in? In our earlier discussion, we stated a sufficiency condition for the employees to prefer the firm's HP investment to a cash bonus that they simply consume. But we did not consider the possibility that employees could use the bonus not for consumption but for private individual investment in the HP. In the next section, we will show that such private investment is strictly dominated by investment at the firm level.

A related issue is the extent to which this way of modeling an HP investment by the firm matches what we see in practice, an issue discussed earlier in Section IIB. Gartenberg, Prat and Serafeim (2019), for example, document that HP leads to greater camaraderie among employees when authentic and

[27] Quinn and Thakor (2019) provide various examples. See also our discussion in Section II B.
[28] We thank an anonymous referee for this observation.

communicated with clarity. This does not, on the face of it, seem to connote some costly investment in HP by the firm. Two points are germane here. One is that the Gartnerberg, Prat and Serafeim (2019) paper focuses on the *consequences* of HP in terms of economic outcomes and employee happiness. It does not seek to measure the direct and indirect underlying investment the firm made in the HP, which is what we focus on, so there is no inconsistency between their finding and our modeling. The other point is that *not* all aspects of HP pursuit have to be costly for the firm. But our point is that *some* aspects have to be, or else HP becomes a "cheap good" that makes HP pursuit and profit maximization indistinguishable.

(2) The second issue is: how reasonable is it to posit that the firm's HP commitment, αNZ is contractible? That is, employees accept wage contracts that depend on αNZ, but this diversion occurs after the employees join and choose effort levels. Why should employees believe the owner? This is where authenticity of HP plays a role. In a world in which the owner cannot credibly precommit to devoting a share of revenue to HP, employees will believe that will happen only if they learn that the owner actually derives utility from the purpose. That is, $\zeta(\beta)$ can be viewed as a *commitment device*.[29] Note that employees learn the owner's β before choosing *e* and it shapes their identities as well as the utility they derive from the HP. If the β is lower than what the $N\alpha Z$ announced by the firm implied (so the firm cannot be believed when it says $N\alpha Z$ will be invested in HP), then the wage contract accepted by the employee will lead to a lower effort provision, as the subsequent analysis will show.

(3) The third issue, closely related to (2) above, is: how do employees know that $N\alpha Z$ is being invested in the stated HP and not in some pet project of the owner being dressed up to look like something with social impact? How do the employees know that the HP commitment is not just cheap talk? One answer to this question lies in the authenticity discussion above. If employees can discover β after joining the firm, then this is not an issue. Nonetheless, in Section V, we consider an extension of the model with external financing in which we allow the owner to *unobservably* invest αNZ in something other than the stated HP in order to enjoy private benefits. That is, the analysis explicitly confronts the

[29] We thank an anonymous referee for suggesting this.

possibility that the owner may be able to pull a "bait and switch" and invest αNZ in something other than what is promised by the owner to the employees.

(4) Finally, the model thus far has assumed that customers and financiers do not value the firm's HP. In practice, there are numerous examples of both these stakeholder groups valuing HP. In Section V, we consider an extension in these stakeholders assign value to HP.

E. The Maximization Problem

Returning to the model, the owner solves the following maximization problem (where we drop the subscript *i* on wage contracts since all *N* employees are identical):

Owner's Problem 1 (OP 1):

$$\underset{\alpha_1 w}{\text{Max}}\; e\left\{N[1-\alpha]Z+\beta\,\Omega(\alpha NZ)-Nw\right\} \tag{10}$$

subject to:

Individual Rationality (IR) Constraint:

$$e\left\{w+V(\alpha ZN)\right\}+g\zeta(\beta)u(h)-\left[\Psi e^2/2\right]\geq gu(h) \tag{11}$$

Incentive Compatibility (IC) Constraint:

$$e\in\underset{e\in\boldsymbol{E}}{\arg\max}\left[e\left\{w+V(\alpha ZN)\right\}+g\zeta(\beta)u(h)-\left[\Psi e^2/2\right]\right] \tag{12}$$

OP 1 (10) maximizes the owner's expected utility over the firm's revenue net of the total wages, *Nw*, paid to the *N* employees (in the successful state). The revenue in the successful state, net of the HP investment of αNZ, is $[1-\alpha]Z$ per employee, so it is $N[1-\alpha]Z$ for the firm as a whole. We will refer to $\Pi(\alpha)\equiv e\left\{N[1-\alpha]Z-Nw\right\}$ as the firm's net profit. Inspection of $\Pi(\alpha)$ reveals that α introduces a tradeoff between gross profits, $N[1-\alpha]Z$, and wages, Nw, both of which are decreasing in α. The IR constraint (11), which utilizes (8) and (9), ensures that each employee accepts the offered wage contract in that, given contract and the employee's effort choice in response, the employee gets at least his reservation utility of 0 from working for the firm relative to not working for it. The left-hand side (LHS) of (11) is the employee's utility from working for the firm, whereas the right-hand side (RHS) is the employee's utility if unemployed. That is, the utility from working, net of the utility available from not

working, has to be at least zero. The IC constraint (12) is the Nash constraint that the owner's assumption in designing *w* that the employee's choice of *e* will maximize the employee's expected utility is validated by the employee's choice of *e*, i.e., the employee chooses *e* to maximize his expected utility over wages and social interaction outside the firm.

IV. ANALYSIS OF BASE MODEL

In this section, we present an analysis of the base model presented in the previous section. The results depend significantly on the complementarity between the firm's capital contribution and the employees' effort provision described in the model development in Section III.

A. An Overarching Observation About Tradeoffs in the Model

Later in the analysis, we will introduce external financing wherein the owner sells a fraction $f \in (0,1)$ of the firm in a competitive capital market to raise *I* for investment. Defining the firm's expected pecuniary payoff as $\boldsymbol{P} \equiv e\{[1-\alpha]Z - w\}N,$ the owner's problem is to maximize the sum of this expected pecuniary payoff and the expected utility from the HP, $\boldsymbol{P} + e\beta\,\Omega(\alpha NZ),$ subject to (7), (8), and the pricing condition, $f\boldsymbol{P} = I$. Note that the pricing condition simply states that f must be set to ensure that outside investors receive a share of the expected pecuniary payoff that equals I, the financing they provide.

HP may be valued by four groups: the owner, the employees, the customers who buy the firm's product, and the investors. The key is that it takes only one of these four groups to value HP for the firm to wish to invest in it, and this incentive to invest in HP is strengthened by more groups attaching value to it. The parameter β represents the weight the owner attaches to HP, so if $\beta > 0$, the firm will invest in purpose even if no one else values it. If employees value purpose (i.e., $V(\alpha Z) > 0$ for $\alpha > 0$), then we will show that the wage *w* is lowered, and this creates an inducement for the owner to invest in HP even if $\beta = 0$ in the case in which credible precommitment by the owner is possible and $\zeta(\beta)$ does not play a role. If customers value the firm's HP, then NZ will be increasing in α , so $N(1-\alpha)Z$ may be increasing

and concave in α rather than being strictly decreasing. If investors value the HP, then f will be decreasing in α.

In the subsequent analysis, we first shut down the last two channels through which the owner may be induced to invest in HP. That is, we assume that customers and investors do not care *per se* about the firm's HP. In extensions of the analysis in Section V, we will examine the effects of opening up these two channels.

B. Why Employees Prefer That the Firm Invest in HP:

In this section, we show that employees would prefer the firm invest αZN in HP. The alternative is for the firm to give each employee $e_o^* = \frac{w_o^* + V(\alpha NZ)}{\Psi}$ and let each employee pursue the HP on his own. The lemma below shows this result.

Lemma 1: *The employee would prefer the firm to invest* αZN *in HP than to pay the employee* αZ *more in wages in addition to w in the successful state in firms with* $\beta \in \{\beta_\ell, \beta_h\}$ *and would prefer to receive the cash payment in a firm with* $\beta = 0$.

The intuition is as follows. As argued previously, when $\beta = 0$, the employee does not benefit from the firm's HP investment because it is inauthentic. For $\beta > 0$, the employee prefers the firm's HP investment to direct consumption, as discussed earlier. But the employee also strictly prefers the firm to invest in HP rather than the employee doing it on his own. The reason, as explained in the previous literature by Benabou and Tirole (2011), is that there are scale economies at the firm level that benefit *all* employees. That is, a dollar invested authentically in HP has an effect on shaping the identities and enhancing the social reputations of *all* employees, whereas the same dollar invested by an individual employee benefits only that employee.

C. Analysis

Our analysis involves solving OP 1 ((10)) subject to the IR and IC constraints ((11)) and (12)) and providing a characterization of the solution. All through the analysis, we will assume that (7) holds for $\beta = \beta_\ell$. Thus, the results in this section should be viewed as "possibility results." We will examine two distinct cases: (1) $\zeta(\beta) = 1 \forall \beta,$ and (2) the more general case of $\zeta(\beta)$ with $\zeta(0) = 0$ and $\zeta'(\beta) > 0$. Case (1) can be viewed as one in which the firm can make a credible precommitment to make the promised investment of αNZ in HP without any verification of authenticity by employees. That is, this is a case in which authenticity of HP is basically assumed. The assumption $\zeta(\beta) = 1 \forall \beta$ is arbitrary. Although it implies that the firm adopting the HP does not shape the employee's identity, we could just as easily assume $\zeta(\beta) = \bar{\zeta} > 1 \forall \beta$ to give HP a role in shaping employee identity. It would not qualitatively change the results.

Case (1) $\zeta(\beta) = 1 \forall \beta$

Now the firm owner's problem is to maximize OP 1 ((10)) subject to:

IR: $$e\left\{w + V(\alpha ZN)\right\} + gu(h) - \left[\Psi e^2 / 2\right] \geq gu(h) \tag{13}$$

IC: $$e \in \arg\max_{e \in \boldsymbol{E}} \left[e\left\{w + V(\alpha ZN)\right\} + gu(h) - \left[\Psi e^2 / 2\right]\right] \tag{14}$$

where $V(\alpha ZN) = \mu(\alpha ZN) u(h)$. This allows us to characterize the following result:

Lemma 2: *The solution to maximizing OP subject to the IR ((13)) and IC ((14)) constraints above is:*

$$e_o^* = \frac{w_o^* + V(\alpha NZ)}{\Psi} \tag{15}$$

$$w_o^* = \frac{[1-\alpha]Z + \left[\dfrac{\beta\Omega(\alpha NZ)}{N}\right] - V(\alpha NZ)}{2} \tag{16}$$

The IR constraint (13) is slack at the optimum.

This lemma characterizes the optimal wage contract and the employee's effort choice in response to that contract. (15) shows that as the optimal performance wage w_o^* increases, so does the optimal effort e_o^*. As the employee's marginal effort disutility, Ψ, increases, e_o^* declines. As the owner attaches more

weight, β, to HP, she pays the employee a higher performance wage to elicit higher effort. These are all intuitive comparative statistics.

Note that w_o^* is decreasing in $V(\alpha ZN)$. This means that as the social reputation benefit of HP for the employee, $\mu(\alpha NZ)u(h)$ increases, the firm can pay a lower wage to elicit the same effort. In other words, the firm's adoption of HP allows it to lower its wage bill.

The reason why the employee's IR constraint is slack is limited liability. Absent limited liability, the employee would get a negative wage in the failure state. This would not violate the IC constraint, but would enable the firm to make the IR constraint bind. This implies that a firm pursuing an authentic HP will have a higher employee retention rate than one not pursuing HP, as employees strictly benefit from staying with the firm rather than being at their reservation utility.

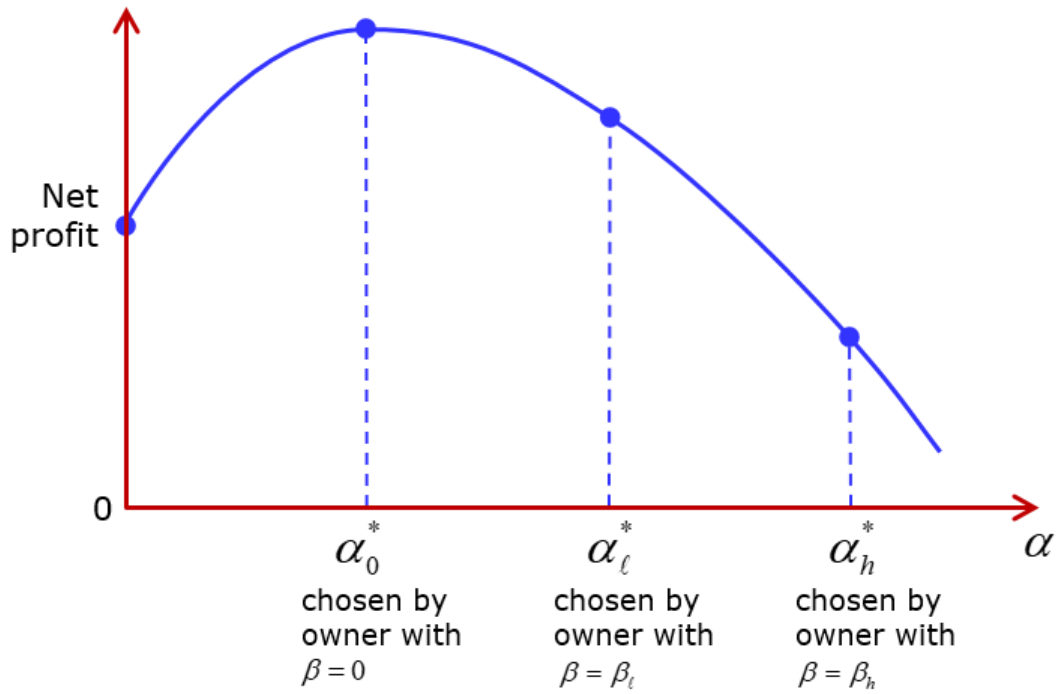
The next result characterizes the firm's choice of the optimal α, call it α_o^*.

Proposition 1: *There is a uniquely optimal value of α, call it α_o^*, that is strictly increasing in β. Net profit is maximized by the profit-maximizing owner who attaches weight $\beta = 0$ to higher purpose. An owner with a higher β allocates a higher fraction α of resources to higher purpose and generates a lower net profit.*

It is intuitive that an owner with a higher β would invest more in HP. The marginal cost of an HP investment is independent of β, but the marginal benefit is higher for an owner with a higher β.

Can an owner who values HP ever generate a higher net profit than one who does not? The above analysis says no. *Figure 1* plots net profit as a function of α. It shows that net profit peaks at $\beta = 0$. Thus, if different owners have different β values, there will be cross-sectional heterogeneity in HP investments.

Figure 1. Net Profit as a Function of Commitment to Higher Purpose



Case (2): $\zeta(\beta)$ increasing in β :

We now return to the general case in which the problem being solved is that described in (10) – (12). The optimal solutions for this case will be designated as e_1^*, w_1^* and $\alpha_1^*(\beta)$. The following result is now immediate.

Lemma 3: *An owner with* $\beta = 0$ *chooses* $\alpha_1^*(0) = 0$.

This is intuitive. An owner who does not care about higher purpose wants to invest in it only to reduce her wage cost. But when authenticity of HP matters, investment in HP by an owner with $\beta = 0$ is viewed by employees as inauthentic and this has a deleterious effect on the employees' social-interaction-related utility via the identity-shaping channel. This leads to employees not caring about purpose either in this case, so the wage cost is unaffected and the owner chooses $\alpha = 0$.

The next result is about the optimal wage contract.

Lemma 4: *The solution to maximizing OP 1 ((10)) subject to the IR ((11)) and IC ((12)) constraints is:*

$$e_1^* = \frac{w_1^* + \zeta(\beta)u(h)\mu(\alpha ZN)}{\Psi} \tag{17}$$

$$w_1^* = \frac{[1-\alpha]Z + \left[\frac{\beta\Omega(\alpha NZ)}{N}\right] - \zeta(\beta)u(h)\mu(\alpha NZ)}{2} \tag{18}$$

The IR constraint (11) is slack at the optimum.

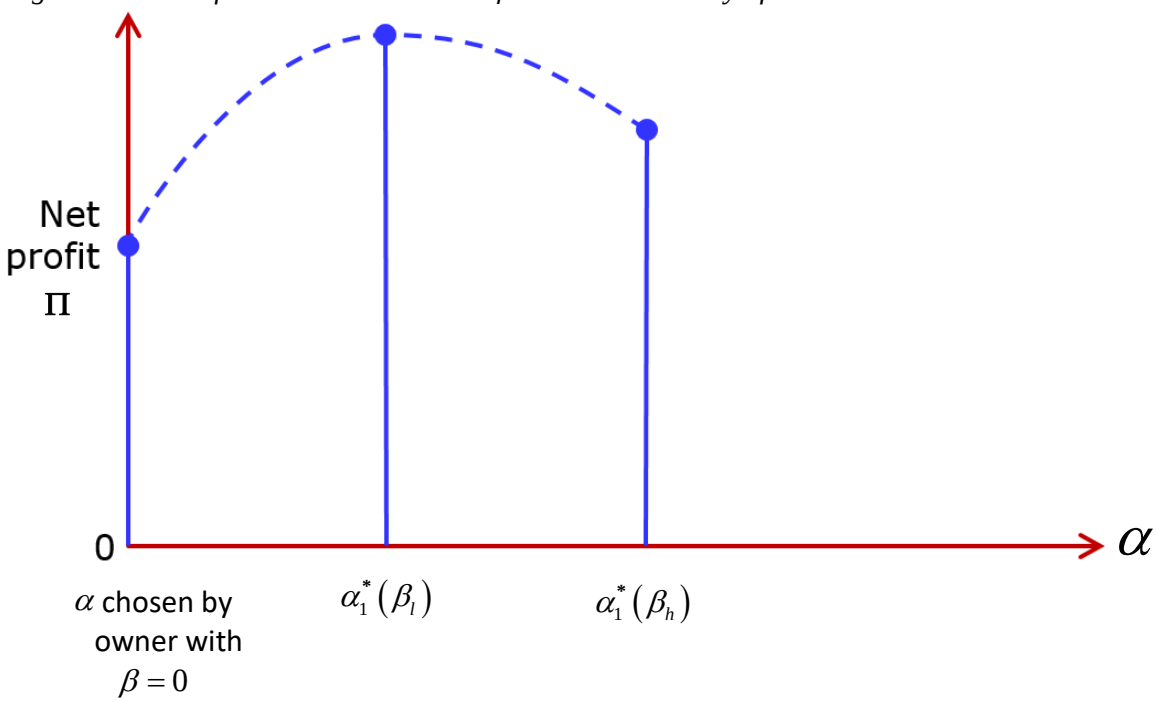
The structure of contracts in this case is the same as in Lemma 2. Next we have:

Proposition 2: *When* $\zeta(\beta)$ *is increasing in* β *with* $\zeta(0)=0$*, there is an interior optimal value of* α*, say* $\alpha_1^*(\beta)$*, for every* β*. Every firm with* $\beta > 0$ *invests more in HP than the level that maximizes net profit. In the cross-section of firm net profit* $\Pi(\alpha(\beta))$ *is maximized at an interior value of* $\beta > 0$*.*

The intuition is as follows. Because the owner with $\beta = 0$ cannot benefit from an HP investment, she chooses $\alpha = 0.$ An owner with $\beta > 0$ trades off the cost of the HP investment, αNZ, against the benefits of a higher direct utility, $\beta\Omega(\alpha NZ),$ and a lower wage cost. This tradeoff leads to an interior optimum in the choice of $\alpha.$ An owner with a sufficiently high β will "overinvest" in HP in the sense of achieving a lower net profit.

The situation in Proposition 2 is depicted in *Figure 2* below, where it is assumed, for illustration purposes, that Π peaks at the α chosen by the owner with $\beta = \beta_\ell$. This figure shows that owners with moderate levels of "passion" for higher purpose produce the maximum net profit in the cross-section, even though all owners with $\beta > 0$ overinvest relative to profit maximization.

Figure 2. Net Profit is Non-Monotonic in β When Authenticity of HP Matters



The above result about the non-monotonicity of profits in HP investments cross-sectionally depends on the assumption that $\zeta(\beta)$ peaks at $\hat{\beta}$ and then remains flat. The result will hold more generally for specifications in which ζ is becoming vanishingly small in the interior of all possible β values. If this is not true, then it means that the social reputation value of the firm's HP investment can grow so big that wages monotonically decline as the firms HP investment grows. We do not think this is reasonable economically, but the main point here is that this non-monotonicity result should be viewed as a possibility result**.**

V. EXTENSIONS

In this section, we analyze three extensions of the model: external financing with moral hazard, the case in which customers derive utility from the firm's HP, and the case in which investors value the firm's HP.

For this analysis, we will use the general specification in which $\zeta(\beta)$ is increasing in $\beta,$ with $\zeta(0)=0,$ i.e., case 2 of the previous section.

A. Misrepresenting Higher Purpose with External Financing

The analysis above uses two strong assumptions, which are that the owner's utility of HP is observable, and there is no external financing. We relax these assumptions now and assume that the owner's HP utility is unobservable. For the purpose of this analysis, it is convenient to work with the discrete specification of β. The common prior is that the probability is $b \in (0,1)$ that the owner has $\beta = \beta_l$ or $\beta = \beta_h$ and $1-b$ that $\beta = 0$, with the priors $\Pr(\beta = \beta_\ell) = b_\ell \in (0,b)$ and $\Pr(\beta = \beta_h) = b - b_\ell$. Further, every owner raises the entire financing for the project, *I*, from outside investors using equity. A fraction $f \in [0,1]$ of ownership, endogenously determined below, is given to outside investors in exchange for *I*. This partial separation of ownership and control creates moral hazard – each owner enjoys a private benefit of $B \in (0,1)$, conditional on project success, from diverting a unit of output for personal consumption.[30] The sequence of events is as follows. The owner announces α and the wage contract (binding, publicly verifiable commitments), then *I* is raised from investors, then the employee chooses *e*, and the owner's actual diversion of output for higher purpose or personal consumption (both unobservable) occur. This can be viewed as (inefficient) perquisites consumption *a lá* Jensen and Meckling (1976). Thus, the owner can announce a diversion as an HP investment when it is undetectably a personal consumption.[31] The diversion itself is publicly observable, although not whether it is for HP or personal consumption. We start by assuming that the owner either diverts for HP or personal consumption, but not both. We verify later this must hold in equilibrium.

An example of a diversion for personal consumption may be a bank CEO who makes highly-subsidized loans to borrowers in a particular low-income neighborhood in the guise of being socially responsible, but with the real purpose of driving up property values for a friend or relative who owns property in the neighborhood. Another example would be a CEO making corporate contributions to the development of a community with the (secret) intention of later running for elected office in that

[30] That is, like the utility from higher purpose, this benefit is only available with probability e.
[31] This is the classic worry that investors have, and it is part of the rationale for the Friedmanian emphasis on profit maximization as a goal; see Friedman (1970).

community.

Note that we are introducing two features simultaneously – external financing and an agency problem between inside and outside shareholders in terms of the insider's ability to invest unobservably in a bad project. The reason is that, absent the agency problem, the introduction of external financing would make no difference.[32] We would be in a Modigliani and Miller "irrelevance" world in which the owner is indifferent to how much external financing is raised, and the solution in terms of wages, employee effort and HP investment with external financing would be the same as in the case with no external financing.[33] Nonetheless, in a later extension in this section, we will drop the agency problem of external finance but will introduce the assumption that outside investors value the firm's purpose.

Now the owner solves:

Owner's Problem 2 (OP 2):

$$\max_{\alpha,w}[1-f]e\{N[1-\alpha]Z-Nw\}+\beta\Omega(\alpha NZ) \tag{19}$$

subject to

IR Constraint:

$$e\{w+V_b(\alpha ZN)\}+g\zeta(\beta)u(h)-[\Psi e^2/2]\geq gu(h) \tag{20}$$

IC Constraint:

$$e\in\arg\max_{e\in \boldsymbol{E}}\left[e\{w+V_b(\alpha ZN)\}+g\zeta(\beta)u(h)-\left[\Psi e^2/2\right]\right] \tag{21}$$

Pricing Constraint:

$$fe\left\{N[1-\alpha]Z-Nw\right\}=I \tag{22}$$

where

$$V_b(\alpha ZN)=\tilde{b}(i)\zeta(\beta_i)u(h)M(\alpha ZN) \tag{23}$$

[32] This is under the assumption that investors do not value the firm's higher purpose.
[33] A formal proof is available upon request.

and $\tilde{b}(i)$ is the equilibrium probability that the employee is joining a firm with $\beta = \beta_i$, i.e., $\{0, l, h\}$ and $\beta_0 = 0$.

Define

$$\Delta(\alpha) \equiv \beta_h \Omega(\alpha Z) - \alpha BZN \tag{24}$$

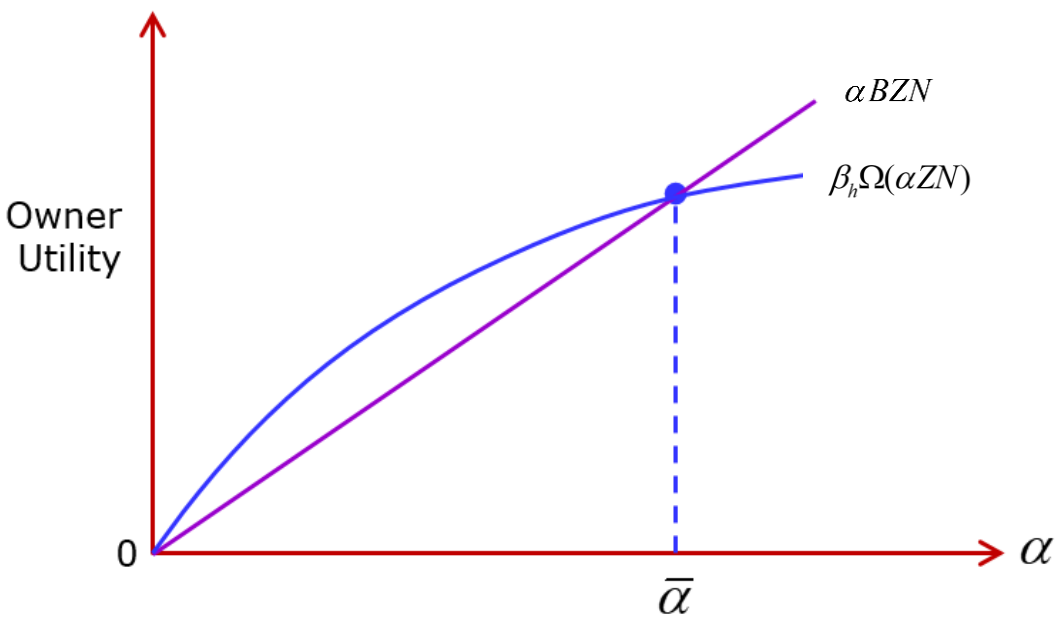
as the difference between the owner's utility from investing αZN in higher purpose and the utility from diverting it for personal consumption, when the owner has $\beta = \beta_h$.

It is clear that Δ is concave, initially positive and increasing in α and eventually negative. Let $\bar{\alpha}$ satisfy

$$\Delta(\bar{\alpha}) = 0 \tag{22}$$

Thus, $\bar{\alpha}$ is the maximum level of diversion such that for $\alpha > \bar{\alpha}$ even an owner with $\beta = \beta_h$ prefers personal consumption over higher purpose. See *Figure 3.*

Figure 3. Owner Utility as a Function of α.



The next result establishes that the possibility of diversion for personal consumption by the owner crowds out investment in higher purpose.

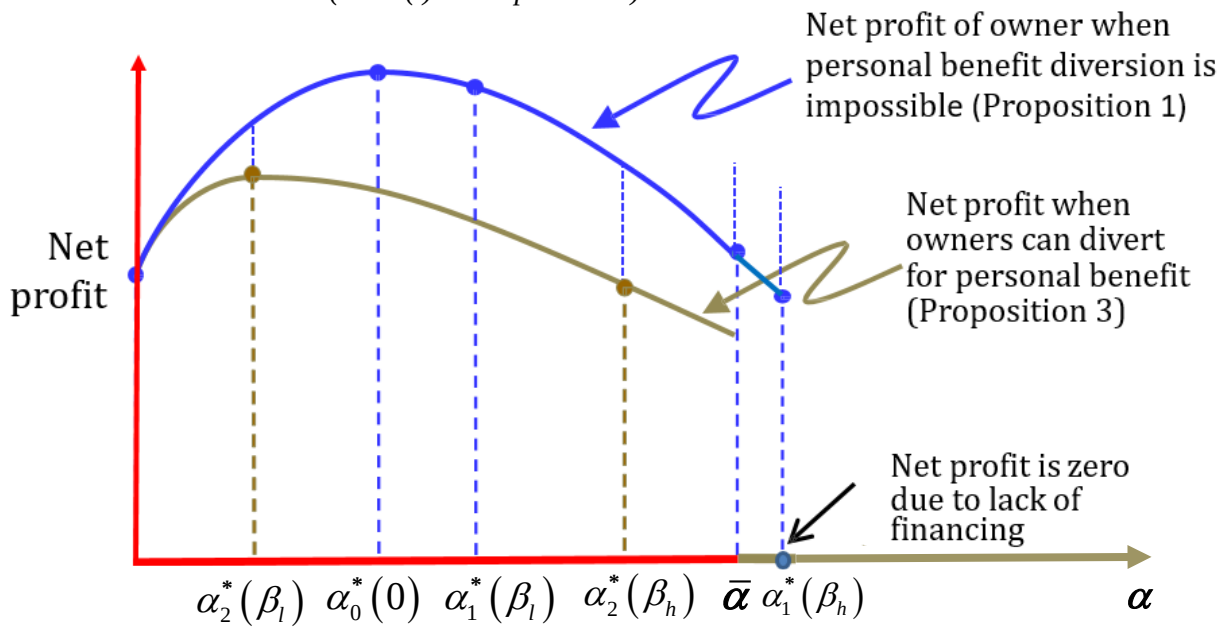
Proposition 3: *Suppose the conditions of Proposition 2 hold, so net profit is maximized by $\beta = \beta_l$ firms.*

No equilibrium diversion choice exceeds $\bar{\alpha}$*. Depending on parameter values, the sequential equilibrium involves either: (i) partial separation in which the firms with* β=0 *and* $\beta = \beta_l$ *pool at some* $\alpha_2^*(\beta_l) < \alpha_1^*(\beta_l)$ *(Proposition 2) and firms with* $\beta = \beta_h$ *choose* $\alpha_2^*(\beta_h) \leq \alpha_1^*(\beta_h)$*, or (ii) pooling in which all firms choose some* $\alpha_2^*(pool) = \bar{\alpha} < \alpha_1^*(\beta_l)$*. The out-of-equilibrium belief is that any owner choosing* $\alpha \notin \{\alpha_2^*(\beta_l), \alpha_2^*(\beta_h)\}$ *is an owner with* $\beta = 0$.

This proposition is depicted in *Figure 4*. The proposition shows that when personal consumption can masquerade as an HP investment, employees need to be paid higher wages to choose any effort e, and equilibrium effort choices in firms with $\beta > 0$ are lower. This makes purpose more costly and reduces HP investments by firms that are pooled in equilibrium with those whose owners divert only for personal consumption. Thus, self-interested behavior by some firms creates a negative externality, crowding out the HP investments of other firms. This is reminiscent of the "overjustification" effect in Bénabou and Tirole (2006). However, in that paper the crowding out of intrinsic motivation by extrinsic rewards is due to a signal extraction problem – agents may believe that the prosocial behavior is motivated by external rewards, which spoils the "image enhancement" from prosocial behavior. In our model, it stems from external financing frictions and is due to adverse selection that reduces employee motivation and increases expected wages, making the pursuit of HP financially more costly for the owner. Moreover, we now return to net profit being nonincreasing (strictly decreasing in any separating equilibrium) in equilibrium HP investment in the cross-section.

This analysis highlights the fact that different firms in even the same industry may invest different amounts in HP, despite the impact of HP investments in lowering wages. Quite clearly, the assumption that the authenticity of HP matters to employees and that there is cross-sectional heterogeneity in β play a role in this. But there may also be additional differences across (even possibly competing) firms that can increase heterogeneity in HP investments. One such difference is in the agency costs of external finance; in our model this could be because different firms have different probabilities of the owner having access to the private benefit project (in our analysis we assume this probability is 1).

Figure 4. Net Profit as a Function of Commitment to Higher Purpose with External Financing and Possible Personal Diversion (Case (i) in Proposition 3)



B. Analysis When Customers Value the Firm's HP

There are numerous instances of firms whose HP attracts a customer base that values the same purpose. These customers are willing to pay more for the product because they believe in the purpose. For example, the customers of *4Ocean* are willing to pay a relatively high price for plastic bracelets because they believe that cleaning up our oceans to rid them of plastic waste matters. The customers of Tree T-PEE have a stronger interest in buying the company's product because they too believe in the company's HP of water and energy conservation.

To capture the assumption that customers are willing to pay more because they believe in the firm's HP, assume that Z is an increasing and concave function of, $Z(\alpha)$, with the Inada conditions $Z'(0)=\infty,\ Z'(1)=0.$

We return to the case in which the firm does not need external financing, $\zeta'>0,\ \zeta(0)=0,$ and employees learn the owner's β after joining the firm. There will now be a value of α that maximizes the firm's net revenue $[1-\alpha]Z(\alpha)$. This value satisfies:

$$\alpha^c = 1 - \left[\frac{Z(\alpha^c)}{Z'(\alpha^c)} \right] \tag{26}$$

The owner now solves:

Owner's Problem 3 (OP 3)

$$e\{N[1-\alpha]Z(\alpha) - Nw\} + \beta\,\Omega(\alpha NZ) \tag{27}$$

subject to the IR ((20)) and IC ((21)) constraints. Let the optimal solution be denoted by $\alpha_3^*(\beta)$. This now leads to the following intuitive result:

Proposition 4*: Every owner, including the one with* $\beta = 0$, *invests a fraction of* α *in HP that is strictly greater than* α^c, *i.e.* $\alpha_3^*(\beta) > \alpha^c \forall \beta \geq 0$. *The firm's wage bill is lower when customers value the firm's HP.*

The intuition is as follows. When the customer values the firm's HP, even a firm whose owner *and* employees do not value HP would invest a fraction α^c of its revenue in HP. When one adds the value that the owner and employees attach to the HP, then α is higher.

An interesting aspect of this proposition is that firms face lower labor costs when they attract customers who value their HPs. The economic intuition is that firms invest more in HP when their customers value it, and this induces employees to provide the same effort at a lower (performance) wage.

C. Analysis When Investors Value the Firm's HP

There are also examples of shareholders caring about prosocial causes like HP. Larry Fink, the CEO of Blackrock, urged in his 2018 Annual Letter to CEOs that they should run their companies to "make a positive contribution to society."[34] This was viewed as an inflection point in the argument over the state of global capitalism. It induced CEOs to begin articulating their companies' HP.[35] How is our analysis affected if we include this outside investors' preference in the model?

[34] See Fink (2018),

[35] As Sorkin (2019) reports, "Chief executives began explicitly talking about their companies' "purpose" – not just in high-minded mission statements but in government filings and investor reports."

To answer this question, suppose investors attach value $\Omega(\alpha NZ)$ to the firm's HP, and assume $\beta_l > 1$. This means that investors attach less value to the firm's HP than any owner with $\beta > 0$, but more value than an owner with $\beta = 0$. This assumption is made for expositional simplicity only – a different preference function will not affect the conclusions. For this analysis we assume that customers do not value the firm's HP, and there is no agency problem between the owner and outside investors, i.e., the owner cannot unobservably switch projects.

OP 2 in (19) is now modified as follows:

Owner's Problem 4 (OP 4):

$$\underset{a_1^* w}{Max} \left[1 - f(\alpha)\right] e\left\{N\left[1-\alpha\right]Z - Nw\right\} + \beta\, \Omega(\alpha NZ) \tag{28}$$

subject to

IR constraint (20).

IC constraint (21).

Pricing Constraint

$$f(\alpha)\left\{N\left[1-\alpha\right] - Nw\right\} + \Omega(\alpha NZ) = I \tag{29}$$

This now leads to our final result.

Proposition 5: *When investors value the firm's HP, every owner, including the one with $\beta = 0$, invests more in HP than when investors do not value the firm's HP. Moreover the firm's wage bill is lower.*

The intuition here is similar to that for Proposition 5. When investors value the firm's HP, the cost of external finance, represented by $f(\alpha)$, goes down; as (29) indicates, $f'(\alpha) < 0$. This increases the marginal value of HP to the firm and increases the equilibrium investment in HP. And since α increases, the equilibrium wage falls.

Although we do not explore this issue formally here, the fact that the firm's cost of financing declines when investors value the firm's HP means that the firm's capital budgeting may also be affected

by its HP. This is because the firm will invest in projects whose internal rates of return exceed its cost of capital, so when this cost of capital falls, the firm may invest in more projects.

VI. CONCLUSION

We have developed an economic model of organizational higher purpose. We define higher purpose as a prosocial goal that transcends the usual business goals of the organization, but yet acts as the arbiter of the firm's business decisions in the sense that decisions that conflict with that higher purpose are avoided. That is, decisions are made at the intersection of business goals and higher purpose. We have also analyzed the importance of authenticity in higher purpose. In the standard economic paradigm—say Friedman's famous exhortation to firms to focus on profit maximization—there is no role for higher purpose. Yet, there are many examples of organizations where an authentic higher purpose improved economic performance, and our model explains why.

The theory has several empirical implications. One is that there will be heterogeneity in the profits of firms pursuing higher purpose, with some doing better than those not pursuing purpose and some doing worse, and a mediating variable in this relationship will be whether authenticity of purpose matters to employees. Second, firms pursuing higher purpose will elicit higher effort, and have a lower wage bill. Third, firms that rely on external financing will invest less in higher purpose when there is an agency problem between inside and outside shareholders,[36] i.e., there are some shareholders engaged in running the firm and others who are passive investors. Finally, firms will have lower wage bills and invest more in higher purpose when customers and/or investors also value the firm's higher purpose.

While some of our results depend on specific sufficiency conditions involving the deep parameters of the model, the general results are that: authentic higher purpose reduces the firm's wage cost and increases employee effort, the relationship between higher purrpose investments and firm profit depends on whether authenticity of purpose *per se* matters to employees, and the possibility of agency costs of external financing in some firms crowds out purpose investments by *all* firms.

[36] This agency problem is the one involving undetected diversion of the HP investment for personal consumption by the owner.

Our analysis also has implications for competitive interactions among firms, both in the labor and product markets. In the labor market, firms that are pursuing an authentic higher purpose will be able to lower their labor costs and also provide their employees higher expected utility from working for the firm than enjoying their reservation utility (see Lemma 2). This makes it personally costly for employees to quit, and lowers labor turnover. Thus, firms pursuing authentic higher purpose will have both lower wage bills and higher employee retention rates than competing firms that lack an authentic higher purpose. In the product market, firms pursuing authentic higher purpose will have a competitive advantage if their customers value their higher purpose (see Proposition 4).[37]

Higher purpose also engenders trust both within the firm and with its stakeholders.[38] This stylized fact has played no role in our analysis and may be explored in future research.

[37] An example of both of these effects is provided by Sandler O'Neill and Partners. When the firm's higher purpose emerged after the 9/11 terrorist attacks on the Twin Towers, employees engagement and commitment to the firm increased. Moreover, the CEO, Jimmy Dunne, said that their customers *wanted* to do business with them, and the firm's recovery from the economic downturn following 9/11 was faster than that of other Wall Street firms as a result. See Quin and Thakor (2019) for a discussion.

[38] Thakor and Merton (2019) have recently developed a theory of trust in the context of lending.

REFERENCES

Akerlof, George, and Rachel E. Kranton, "Economics and Identity", *Quarterly Journal of Economics* 115-3, August 2000, pp. 715-753.

Akerlof, George, and Rachel E. Kranton, "Identity and the Economics of Organizations", *Journal of of Economic Perspectives* 19-1, Winter 2005, 9-32.

Barnett, Michael L. and Robert M. Salomon, "Does it Pay to Be Really Good? Addressing the Shape of the Relationship Between Social and Financial Performance", *Strategic Management Journal* 33(11), 2012, pp. 1304–1320.

Bartlett, Christopher A., and Sumantra Ghoshal, "Changing the Role of Top Management: Beyond Strategy to Purpose", *Harvard Business Review* 72-6, 1994, 79-88.

Bénabou, Roland and Jean Tirole, "Incentives and Prosocial Behavior", *The American Economic Review* 96(5), December 2006, pp. 1652–1678.

Bénabou, Roland and Jean Tirole, "Identity, Morals, and Taboos: Beliefs as Assets", *Quarterly Journal of Economics* 126(2), 2011, pp. 805-855.

Bénabou, Roland and Jean Tirole, "Individual and Corporate Social Responsibility", *Economica* 77(305), January 2010, pp. 1–19.

Bénabou, Roland and Jean Tirole, "Intrinsic and Extrinsic Motivation", *Review of Economic Studies* 70(3), 2003, pp. 489–520.

Besley, Timothy and Maitreesh Ghatak, "Competition and Incentives with Motivated Agents", *The American Economic Review* 95(3), June 2005, pp. 616-636.

Bolton, Patrick, Marcus K. Brunnermeier and Laura Veldkamp, "Leadership, Coordination and Corporate Culture", *Review of Economic Studies* 80, 2013, pp. 512–537.

Buraschi, Andrea and Francesca Cornelli, "Donations", Centre for Economic Policy Research Discussion Paper 3488, August 2002.

Burnazoglu, Merve, " An Identity-Based matching Theory Approach to Integration", *Forum for Social*

Economics, online November 24, 2017.

Cassar, Lea and Stephen Meier, "Intentions for Doing Good Matter for Doing Well: The (Negative) Signaling Value of Prosocial Incentives", NBER Working Paper No. 24109, Columbia University, January 22, 2018.

Chapman, Clare, Alex Edmans, Tom Gosling, Will Hutton and Colin Mayer, *The Purposeful Company Executive Remuneration Report*, 2017.

Cheng, Beiting, Ioannis Ioannou, and George Serafeim, "Corporate Social Responsibility and Access to Finance", *Strategic Management Journal* 35 (1), May 2011, pp. 1-23.

Deci, E.L. and R. M. Ryan, *Intrinsic Motivation and Self-Determination in Human Behavior*, New York, NY: Plenum, 1985.

Deci, E. L. and R. M. Ryan, "The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Detrmination of Behavior", *Pyschological Inquiry* 11, 2000, 227-268.

Delautre, Guillaum and Bruno Dante Abriata, "Corporate Social Responsbility: Exploring Determinants and Complementarities", Research Department Working Paper No. 38, *International Labour Office*, December 2018.

Dijk, Oege and Martin Holmen, "Charity, Incentives and Performance", *Journal of Behavioral and Experimental Economics* 66, 2017, pp. 119–128.

Eccles, Robert G., Ioannis Ioannou, and George Serafeim, "The Impact of Corporate Social Sustainability on Organizational Processes and Performance", *Management Science* 60 (11), February 2014, pp. 2835-2857.

Feeney, Brooke, and Nancy Collins, " New Look at Social Support: A Theoretical Perspective on Thriving Through Relationships", *Personality and Social Psychology Review* 19(2), May 2015, 113-147.

Fink, Larry, "A Sense of Purpose", *Larry's Fink's Annual Letter to CEOs*, Blackrock, January 16, 2018.

Fredrickson, Barbara L. "Positive Emotions and Upward Spirals in Organizations." In Cameron, Kim S., Jane E. Dutton & Robert E. Quinn (eds), *Positive Organizational Scholarship: Foundations of a*

New Discipline, 2003, (pp. 163–175). San Francisco: Berrett-Koehler Publishers.

Friedman, Milton, "The Social Responsibility of Business is to Increase its Profits", *The New York Times Magazine*, 1970, pp. 32–33.

Gartenberg, Claudine, Andrea Prat and George Serafeim, "Corporate Purpose and Financial Performance", *Organization Science*, 30(1), January–February 2019, pp. 1–18.

Gartenberg, Claudine and George Serafeim, " Corporate Purpose and Firm Ownership", HBS Working Paper, September 25, 2019.

Glavas, Ante, "Corporate Social Responsibility and Organizational Psychology: An Integrative Review", *Frontiers in Psychology-7*, February 2016, pp. 1-13.

Godfrey, Paul C., Craig B. Merrill and Jared M. Hansen, "The Relationship Between Corporate Social Responsibility and Shareholder Value: An Empirical Test of the Risk Management Hypothesis", *Strategic Management Journal* 30(4), 2009, pp. 425–445.

Grant, Adam M., Elizabeth M. Campbell, Grace Chen, Keenan Cottone, David Lapedis, and Karen Lee, "Impact and the Art of Motivation Maintenance: The Effects of Contact with Beneficiaries on Persistence Behavior", *Organization Behavior and Human Decision Processes* 103-1, May 2007, 53-57.

Henderson, Rebecca and Eric Van den Steen, "Why Do Firms Have "Purpose"? The Firm's Role as a Carrier of Identity and Reputation", *American Economic Review :Papers & Proceedings* 105-5, May 2015, 326-330.

Hedblom, Daniel, Brent R. Hickman and John A. List, "Toward an Understanding of Corporate Social Responsibility: Theory and Field Experimental Evidence", working paper, University of Chicago, March 26, 2019.

Hollensbe, Elaine, Charles Wookey, Loughlin Hickey, Gerard George and Cardinal Vincent Nicholas, "Organizations with Purpose", *Academy of Management Journal* 57-5, 2014, 1227-1234.

Jaggia, Priscilla and Anjan V. Thakor, "Firm-specific Human Capital and Optimal Capital Structure",

International Economic Review 35-2, May 1994, 283-308.

Jensen, Michael and William Meckling, "The Theory of the Firm, Managerial Behavior Agency Costs and Ownership Structure", *Journal of Financial Economics* 3(4), October 1976, pp. 305–360.

List, John A. and Fatemah Momeni, "When Corporate Social Responsibility Backfires: Theory and Evidence From a Natural Field Experiment", NBER working paper 24169, December 2017.

Malik, Mahfuja, "Value-Enhancing Capabilities of CSR: A Brief Review of Contemporary Literature", *Journal of Business Ethics* 127 (2), March 2014.

Martin, Oehmke and Marcus Opp, " A Theory of Socially Responsible Investments", CEPR Discussion Paper DP 14351, January 2020.

Morgan, John and Justin Tumlinson, "Corporate Provision of Public Goods", *Management Science* 65 (10), 2019, pp. 4489-4504.

Prendergast, Canice and Lars Stole, "The Non-monetary Nature of Gifts", *European Economic Review* 45(10), 2001, pp. 1793–1810.

Quinn, Robert and Anjan V. Thakor, "Creating a Purpose-Driven Organization", *Harvard Business Review*, July-August 2018, pp. 78–85.

Quinn, Robert and Anjan V. Thakor, *The Economics of Higher Purpose*, Barrett-Koehler Press, 2019.

Ryan, R.M. and E. L. Deci, " Self-determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being", *American Psychologist* 55, 2000, 68-78.

Seabright, Paul, "Continuous Preferences and Discontinuous Choices: How Altruists Respond to Incentives", *The BE Journal of Theoretical Economics* 9(1), April 2019, Article 14.

Sekerka, L.E. and Barbara L. Fredrickson, "Establishing Positive Emotional Climates to Advance Organizaional Transformation", in *Research Compnaion to Emotion in Organizations* (N.M. Ashkanasy and C.L. Cooper, eds.), Chetenham, UK: Edward Elger Publishing, pp. 531-545.

Servaes, Henri and Ane Tamayo, "The Impact of Corporate Social Responsibility on Firm Value: The Role of Customer Awareness", *Management Science* 59(5), 2013, pp. 1045–1061.

Sorkin, Andrew Ross, "World's Biggest Investor Tells C.E.O.s Purpose is the 'Animating Force' for

Profits", *DealBook/Business & Policy, The New York Times*, January 17, 2019.

Starmans, Jan, "Optimal Agents", working paper, Stockholm School of Economics, May 14, 2019.

Thakor, Richard and Robert Merton, "Trust in Lending", MIT Sloan Working Paper, revised, February 2019.

Tirole, Jean, "A Theory of Collective Reputations (with Applications to the Persistence of Corruption and to Firm Quality)", *Review of Economic Studies* 63, 1999, pp. 1-22.

Van Damm, Nick, and Eileen M. Rogers, *People, Purpose and Performance at Barry-Wehmiller: Business as a Powerful Force for Good*, IE Business Publishing, Maria de Molina 13, 28006-Madrid, Spain, January 2020.

Van den Steen, Eric, J. " On the Origin of Shared Beliefs (and Corporate Culture)", *RAND Journal of Economics* 41-4, Winter 2010, 617-648.

Waddock, Sandra A. and Samuel B. Graves, "The Corporate Social Performance-Financial Performance Link", *Strategic Management Journal* 1997, pp. 303–319.

Wang, Heli, Li Tong, Riki Takeuchi and Gerard George, "Corporate Social Responsibility: An Overview and New Research Directions", *Academy of Management Journal* 59-2, 2016, pp. 534-544.

White, Andrew, "Lessons from Companies that Put Purpose Ahead of Short-term Profits", *Harvard Business Review*, June 9, 2016.

APPENDIX: PROOFS

Proof of Lemma 1: If $\beta = 0,$ then obviously (7) is violated. So receiving a cash payout is strictly preferred by the employee. So now consider $\beta \in \{\beta_l, \beta_h\}.$ Since (7) holds for both, the employee prefers the firm's investment in HP to a direct consumption of αZ paid out as a bonus in the successful state. But what if the employee invest αZ individually in HP? Now the utility from social interaction becomes:

$$\hat{V}(\alpha Z) = \left[g + e\mu(\alpha Z)\right]u(h) \tag{A-1}$$

Since there is no influence of the firm's HP investment on the employee's identity. Comparing (8) to (A-1), we need to show that:

$$g\zeta(\beta)u(h) + e\zeta(\beta)u(h)\mu(\alpha NZ) > \left[g + e\mu(\alpha Z)\right]u(h) \tag{A-2}$$

Subsituting (9) in (A-2) and simplifying, (A-2) becomes:

$$gu(h)\left[\zeta(\beta) - 1\right] + eu(h)\left[\zeta(\beta)\mu(\alpha NZ) - \mu(\alpha Z)\right] > 1 \tag{A-3}$$

We know that $\zeta(\beta) > 1 \forall \beta \in \{\beta_l, \beta_h\}$ and $\mu' > 0$ implies that $\mu(\alpha NZ) > \mu(aZ).$ Thus, (A-3) holds. ■

Proof of Lemma 2: The first-order condition (FOC) corresponding to (14) is:

$$w + V(\alpha NZ) - \Psi e_0^* = 0 \tag{A-4}$$

which yields (15). Note that the second-order conition (SOC)

$$-\Psi < 0 \tag{A-5}$$

is satisfied.

Substituing (15) for e into OP1 ((10)) yields:

$$\left[\frac{w + V(\alpha NZ)}{\Psi}\right]\left[N\left[1-\alpha\right]Z + \beta\Omega(\alpha NZ) - Nw\right] \tag{A-6}$$

The FOC for w is now:

$$\left[\frac{N\left[1-\alpha\right]Z + \beta\Omega(aNZ) - Nw_0^*}{\Psi}\right] - N\left[\frac{w_0^* + V(\alpha NZ)}{\Psi}\right] = 0 \tag{A-7}$$

Solving (A-7) yields (16). The SOC is:

$$-\frac{2}{\Psi} < 0 \tag{A-8}$$

which is satisfied. It is easy to verify that the IR constraint is slack by plugging in (15) and (16) on the LHS of (13) to see that the employee's equilibrium utility is $\frac{\left[w+V\left(\alpha NZ\right)\right]^2}{2\Psi} > 0.$ ■

Proof of Proposition 1: Substituting for e_0^* and w_0^* from (15) and (16) into (10) and simplifying yields:

$$\frac{NA_1^2}{4\Psi} \tag{A-9}$$

where

$$A_1 \equiv \left[1-\alpha\right]Z + \left[\frac{\beta\Omega\left(\alpha NZ\right)}{N}\right] + V\left(\alpha NZ\right) \tag{A-10}$$

The FOC on α is

$$\frac{2NA_1}{4\Psi}\left\{-Z + \beta\Omega'\left(\alpha NZ\right)Z + NZV'\left(\alpha NZ\right)\right\} = 0 \tag{A-11}$$

Since $A_1 > 0,$ it follows that

$$B\Omega'\left(\alpha_0^* NZ\right) + NV'(\alpha_0^* NZ) = 1 \tag{A-12}$$

The Inada conditions on Ω' and V' guarantee that α_0^* is in the interior. The SOC is:

$$\text{SOC}\left(\alpha\right) \equiv \frac{NA_1}{2\Psi}\left\{\beta NZ^2\Omega''\left(\alpha NZ\right) + \left(NZ\right)^2 V''\left(\alpha NZ\right)\right\} + \frac{N}{2\Psi}\left\{-Z + \beta\Omega'\left(\alpha NZ\right)Z + NZV'\left(\alpha NZ\right)\right\}^2 \tag{A-13}$$

$$= \frac{NA_1}{2\Psi}\left\{\beta NZ^2\Omega''\left(\alpha NZ\right) + \left(NZ\right)^2 V''\left(\alpha NZ\right)\right\} \tag{A-14}$$
$$< 0$$

since $\Omega'' < 0,\ V'' < 0,$ and we use (A-12) to go from (A-13) to (A-14).

Now, totally differentiate the FOC in (A-11):

$$\left[SOC\left(\alpha\right)\right]\frac{d\alpha_0^*}{d\beta} + \frac{NA_1}{2\Psi}\left\{Z\Omega'\left(\alpha NZ\right)\right\} = 0 \tag{A-15}$$

Thus,

$$\frac{d\alpha_0^*}{d\beta} = \frac{-NA_1\left\{Z\Omega'\left(\alpha NZ\right)\right\}\left[2\Psi\right]^{-1}}{SOC\left(\alpha\right)} \tag{A-16}$$
$$< 0.$$

Finally, we prove that the firm's net profit is maximized at $\beta = 0.$ When $\beta = 0,$ the owner maximizes:

$$\Pi\left(\alpha\right) = \frac{N\left\{\left[1-\alpha\right]Z + V\left(\alpha NZ\right)\right\}^2}{4\Psi} \tag{A-17}$$

The FOC on α is:

$$\frac{\partial\Pi}{\partial\alpha} = \frac{N\left\{\left[1-\alpha\right]Z + V\left(\alpha NZ\right)\right\}\left[NZV'\left(\alpha NZ\right) - Z\right]}{2\Psi} = 0 \tag{A-18}$$

This implies that:

$$NV'\left(\hat{\alpha}_0^* NZ\right) = 1 \tag{A-19}$$

where $\hat{\alpha}_0^*$ is the optimum with $\beta = 0.$ Note that this is the α that maximizes net profit sine the owner with $\beta = 0$ has the objective to maximize net profit.

Comparing (A-12) and (A-19), it follows that

$$NV'\left(\hat{\alpha}_0^* NZ\right) < 1 \tag{A-20}$$

which means that $\alpha_0^* > \hat{\alpha}_0^*$ and since $\hat{\alpha}_0^*$ maximizes net profit and net-profit is concave in $\alpha,$ the firm's net profit is lower with α_0^* when $\beta > 0.$ ■

Proof of Lemma 3: With $\beta = 0,$ we know that $\zeta\left(0\right) = 0,$ so using (9) we have $V\left(\alpha NZ\right) = 0 \forall \alpha.$ Thus, using (A-17), we see that the owner chooses α to maximize

$$\frac{N\left\{\left[1-\alpha\right]Z\right\}^2}{4\Psi} \tag{A-21}$$

which is strictly decreasing in $\alpha.$ ■

Proof of Lemma 4: This proof mirrors that of Lemma 2. ■

Proof of Proposition 2: The first-order condition determining $\alpha_1^*\left(\beta\right)$ is the same as (A-11) and (A-12) in

the proof of Preposition 1, as are the arguments for an interior optimal $\alpha_1^*(\beta)$ and uniqueness of the optimum. Lemma 3 has already proved that $\alpha_1^*(0)=0.$ This proves that, for every $\beta,$ there is a unique interior optimum value of $\alpha_1^*(\beta),$ with $\alpha_1^*(0)=0.$ Next we prove that $\frac{d\alpha_1^*}{d\beta}>0.$ The analog of the total derivitative in (A-15) is now

$$\left[SOC\left(\alpha_1^*\right)\right]\frac{d\alpha_1^*}{d\beta}+\frac{NA_1}{2\psi}\left\{Z\Omega'\left(\alpha NZ\right)+\zeta'\left(\beta\right)u\left(h\right)\mu'\left(\alpha ZN\right)ZN\right\}=0. \tag{A-22}$$

which yields

$$\frac{d\alpha_1^*}{d\beta}=\frac{-NA_1\left\{Z\Omega'\left(\alpha NZ\right)+\zeta'\left(\beta\right)u\left(h\right)\mu'\left(\alpha ZN\right)ZN\right\}}{2\psi\left[SOC\left(\alpha_1^*\right)\right]} \tag{A-23}$$
$$>0.$$

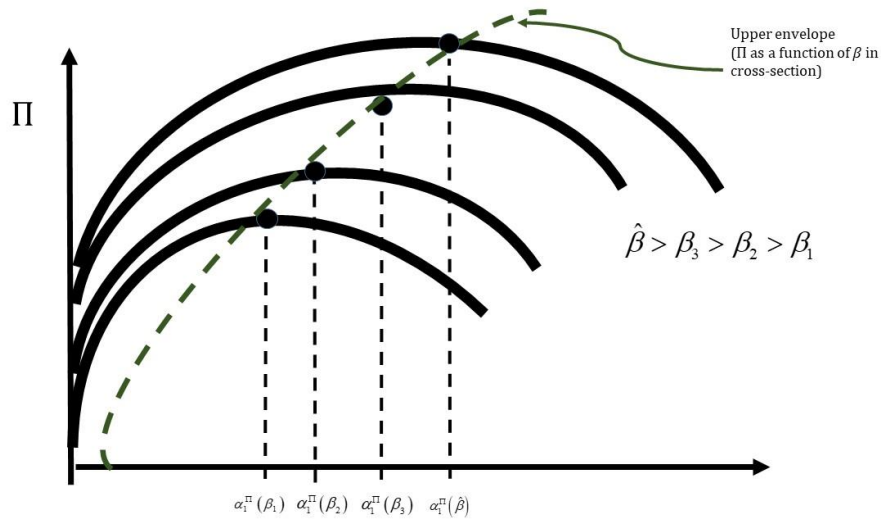
Now, note that the firm's net profit, $\Pi\left(\alpha\left(\beta\right)\right)$, is given by (A-17), with $V\left(\alpha NZ\right)=\zeta\left(\beta\right)u\left(h\right)\mu\left(\alpha ZN\right).$ We already showed in the proof of Proposition 1 that, for every $\beta,\Pi\left(\alpha\left(\beta\right)\right)$ is maximized at an interior and unique value of $\alpha,$ call it $\alpha_1^{\Pi}(\beta).$ Moreover, following steps similar to those in the proof of Proposition 1, we can show that

$$\alpha_1^*\left(\beta\right)>\alpha_1^{\Pi}\left(\beta\right) \tag{A-24}$$

and $\frac{d\alpha_1^*}{d\beta}>0,$ $\frac{d\alpha_1^{\Pi}}{d\beta}>0\forall\beta\le\hat{\beta}.$ Now, recalling (A-19), the FOC for α_1^{Π} can be written as:

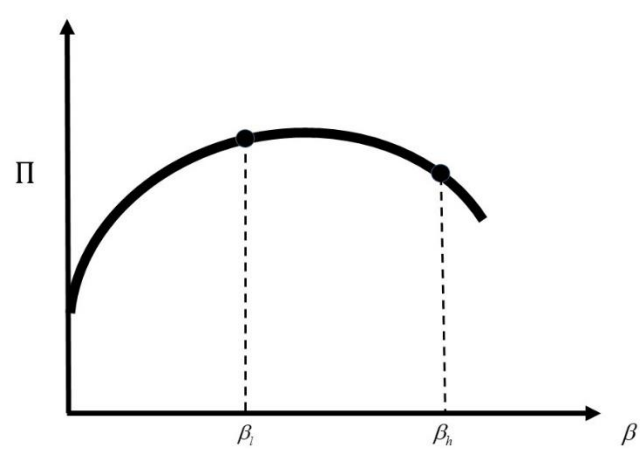
$$N\zeta\left(\beta\right)u\left(h\right)\mu'\left(\alpha_1^{\pi}ZN\right)=1 \tag{A-25}$$

It is clear that $\forall\beta\le\hat{\beta},\ \zeta'(\beta)>0,$ so from (A-25), it follows that $\alpha_1^{\Pi}(\beta)$ must be increasing in β (since $\mu''<0$). Moreover, inspection of (A-17) reveals that $\Pi(\alpha(\beta))$ is higher for higher β at every value of $\alpha.$ The figure below shows this and the maximum profit $\Pi(\alpha_1^{\Pi}(\beta))$ as a function of β in the cross-section.



It increases up to $\hat{\beta}$ and is then flat as $\alpha_1^{\pi}\left(\hat{\beta}\right)$ is the chosen value of $\alpha \forall \beta \geq \hat{\beta}$ (see (A-25), which shows that once ζ stops increasing in β so does the LHS of (A-25)). Thus, in the cross-section, $\alpha_1^{\pi}\left(\hat{\beta}\right)$ is the value of α at which net profit Π is at its maximum.

Since $\alpha_1^{*}(\beta) > \alpha_1^{\pi}(\beta)$, it follows that at every β, Π will be lower with $\alpha_1^{*}(\beta)$ than its maximum possible value for that β. For $\beta > \hat{\beta}$, therefore, as β increases, $\alpha_1^{*}(\beta)$ moves further and further away from (and above) $\alpha_1^{\pi}(\beta)$. Hence, Π falls as β increases, given the choice of $\alpha_1^{*}(\beta)$, and it will attain its maximum value at $\beta < \hat{\beta}$. This means Π as a function of given $\alpha_1^{*}(\beta)$, looks like in the figure below.



Thus, since $\beta_l < \hat{\beta} < \beta_h$, if β_h is sufficiently large, we will have $\Pi\left(\alpha_1^{\Pi}(\beta_l)\right) > \Pi\left(\alpha_1^{\Pi}(\beta_h)\right)$, as shown above. ■

Proof of Proposition 3: *Define:*

$$\mathcal{L} \equiv e\{[1-\alpha]Z - w\}N \tag{A-26}$$

Then an owner with higher purpose maximizes $[1-f]\mathcal{L} + e\beta\,\Omega(\alpha ZN)$ subject to

$$f\mathcal{L} = I \tag{A-27}$$

and (20) and (21). For an owner with $\beta > 0$ who diverts for personal consumption, the objective function is to maximize.

$$[1-f]\mathcal{L} + e\alpha BZN \tag{A-28}$$

This owner maximizes $\mathcal{L} + e\alpha BZN - I$, after substituting $f\mathcal{L} = I$, which assumes this owner is separating in equilibrium from owners with $\beta = 0$. Since $\beta < 1$, we know that owner's utility, $\mathcal{L} + e\alpha BZN - I$, which becomes $e\{NZ - N\alpha Z\{1-B\} - I\}$ after substituting for $\mathcal{L}$, is strictly decreasing in α. Thus, if an owner with $\beta = 0$ separates from owners with $\beta > 0$, his diversion is 0.

Recalling that $\alpha_1^*(\beta_h)$ and $\alpha_1^*(\beta_l)$ are the optimal diversions of the β_ℓ and β_h owners when personal consumption is disallowed, note that the equilibrium diversions cannot exceed $\bar{\alpha}$ since even owners with $\beta > 0$ would choose personal consumption with $\alpha > \bar{\alpha}$. With investors rationally pricing this, external financing would be impossible. Thus, there are four cases:

Case 1: $\boldsymbol{\alpha_1^*(\beta_h) \le \bar{\alpha}}$: Now suppose the owner with β_h chooses $\alpha_2^*(\beta_h) = \alpha_1^*(\beta_h)$ and the owner with β_ℓ chooses $\alpha_2^*(\beta_l) = \alpha_1^*(\beta_l)$. An owner with $\beta = 0$ must either choose $\alpha = 0$ or pool with a β_h or β_ℓ owner. Pooling with an owner with β_ℓ means a higher net profit than pooling with a β_h owner, so pooling with an owner with β_ℓ is preferred. Moreover, if β_ℓ chooses $\alpha_2^*(\beta_l) = \alpha_1^*(\beta_l)$, then net profit is higher than with $\alpha = 0$. Thus, the owner with $\beta = 0$ chooses to pool with the β_ℓ owner. Define

$$\hat{b}_\ell \equiv b_\ell\left[b_\ell + 1 - b\right]^{-1} \tag{A-29}$$

as the probability that an owner who chooses $\alpha_2^*(\beta_l)$ is the one with $\beta = \beta_\ell$ when the owner with β =0

pools with her. This means that

$$V_b(\alpha ZN) = \hat{b}_l \zeta(\beta_l) u(h) \mu(\alpha ZN) \tag{A-30}$$

Then, wage offered by the pooling firms is:

$$w_2^*(\beta_l) = \frac{[1-\alpha]Z + [\beta\Omega(\alpha NZ)/N] - V_b(\alpha ZN)}{2} \tag{A-31}$$

and employee effort is

$$e_2^*(\beta_l) = \frac{w_2^*(\beta_l) + V_b(\alpha ZN)}{\Psi} \tag{A-32}$$

The owner chooses $\alpha_2^*(\beta_l)$ to satisfy the FOC and SOC; these are similar to (A-11), (A-12), (A-13) and (A-14). Totally differentiating the FOC yields:

$$\frac{d\alpha_2^*(\beta_l)}{d\hat{b}_l} = \frac{NA_1\{\zeta(\beta_l)u(h)ZN\mu'(\alpha NZ)\}}{2\Psi SOC(\alpha_2^*(\beta_l))} \tag{A-33}$$

Thus, the β_h owner chooses $\alpha_h^* \le \bar{\alpha}$, and the β_ℓ owner chooses $\alpha_\ell^{**} < \alpha_\ell^*$ when the owner with $\beta = 0$ pools with her.

Case 2: $\boldsymbol{\alpha_1^*(\beta_h) > \bar{\alpha} \ge \alpha_1^*(\beta_l)}$: Using arguments similar to those above, it follows that the β_h owner will choose $\alpha_2^*(\beta_h) = \bar{\alpha}$, and the owners with $\beta = 0$ and $\beta = \beta_\ell$ will choose $\alpha_2^*(\beta_l) \in (0, \alpha_1^*(\beta_l))$ as in Case 1.

Case 3: $\boldsymbol{\alpha_1^*(\beta_l) > \bar{\alpha} > \alpha_2^*(\beta_l)}$ ***of Case 1:*** Again, the equilibrium is partially separating with the β_h owner choosing $\alpha_2^*(\beta_h) = \bar{\alpha}$, and the β_ℓ and $\beta = 0$ owners choosing $\alpha_2^*(\beta_l)$ as in Case 1.

Case 4: $\boldsymbol{\bar{\alpha} \le \alpha_2^*(\beta_l)}$***:*** The equilibrium is now pooling with all types of owners choosing $\alpha_2^*(pool) = \bar{\alpha}$.

Thus, it has been proved that $\alpha_2^*(\beta_l) < \alpha_1^*(\beta_l)$ and $\alpha_2^*(\beta_h) \le \alpha_1^*(\beta_h)$. Finally, the proof shows that the owner with $\beta = 0$ personally consumes the entire diversion, whereas the β_ℓ and β_h owners strictly prefer investing in higher purpose. So no owner engages in both personal consumption and higher purpose investment while diverting $\alpha \in \{\alpha_2^*(\beta_l), \alpha_2^*(\beta_h)\}$. And no owner chooses a different α because investors then believe the owner has $\beta = 0$. ■

Proof of Proposition 4: The FOC on α (recalling (A-11)) is:

$$\frac{2NA_1Z}{4\Psi}\left\{B\Omega'(\alpha NZ)\left[1+\alpha\left(\tfrac{Z'}{Z}\right)\right]+N\zeta(\beta)u(h)\mu'(\alpha NZ)\left[1+\alpha\left(\tfrac{Z'}{Z}\right)\right]-1+[1-\alpha]\left[\tfrac{Z'}{Z}\right]\right\}=0 \tag{A-34}$$

Thus, the FOC yields

$$B\Omega'(\alpha NZ)\left[1+\alpha\left(\tfrac{Z'}{Z}\right)\right]+N\zeta(\beta)u(h)\mu'(\alpha NZ)\left[1+\alpha\left(\tfrac{Z'}{Z}\right)\right]-1+[1-\alpha]\left[\tfrac{Z'}{Z}\right]=0 \tag{A-35}$$

Since $\Omega'>0,\ \mu'>0,$ it follows that

$$\begin{aligned}&-1+[1-\alpha]\left[\tfrac{Z'}{Z}\right]<0\\ &\text{or}\quad [1-\alpha]\left[\tfrac{Z'}{Z}\right]<1\end{aligned} \tag{A-36}$$

Since $\left[1-\alpha^c\right]\left[\tfrac{Z'}{Z}\right]=1$ it follows that $\alpha_3^*(\beta)>\alpha^c\forall\beta\geq 0.$

Finally, we prove that wages go down due to customers attaching value to the firm's HP. The optimal wage contract in this case is (use (18)):

$$w_3^*=\frac{\left\{[1-\alpha]Z(\alpha)+\beta\Omega(\alpha NZ)-\zeta(\beta)u(h)\mu(\alpha NZ)\right\}}{2} \tag{A-37}$$

Thus,

$$\frac{dw_3^*}{d\alpha}=\frac{Z\left\{\left[1+\alpha\left\{\tfrac{Z'}{Z}\right\}\right]\left[\beta\Omega'(\alpha NZ)-\zeta u\mu'(\alpha NZ)\right]+A_2\right\}}{2} \tag{A-38}$$

where

$$A_2\equiv -1+[1-\alpha]\left[\tfrac{Z'}{Z}\right] \tag{A-39}$$

Comparing (A-38) above to (A-35), we see that

$$\frac{dw_3^*}{d\alpha}<0. \tag{A-40}$$

Proof of Proposition 5: Substituting (29) in (28), we see that OP4 becomes:

$$e\left\{N[1-\alpha]Z-Nw\right\}-I+\beta\Omega+\Omega \tag{A-41}$$

This objective function adds the term Ω to the objective function we have when investors do not value the firm's HP. Thus, the FOC will lead to a higher optimal value for α_4^*. The proof of w_4^* being lower due to investors valuing the firm's HP is similar to that of Proposition 4. ■

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