Workers as Partners: a Theory of Responsible Firms in Labor Markets

Francesco Del Prato, Marc Fleurbaey

November 2024

We develop a theoretical framework analyzing responsible firms (REFs) that prioritize worker welfare alongside profits in labor markets with search frictions. At the micro level, REFs' use of market power varies with labor conditions: they refrain from using it in slack markets but may exercise it in tight markets without harming workers. Our macro analysis shows these firms offer higher wages, creating a distinct high-wage sector. When firms endogenously choose worker bargaining power, there is a trade-off between worker surplus and employment, though this improves with elastic labor supply. While REFs cannot survive with free entry, they can coexist with profit-maximizing firms under limited competition, where their presence forces ordinary firms to raise wages.

Francesco Del Prato: Aarhus University (francesco.delprato@econ.au.dk). Marc Fleurbaey: Paris School of Economics (marc.fleurbaey@psemail.eu). We thank Edoardo M. Acabbi for the useful comments. The authors acknowledge the PSE research chair "Measuring the economy" for the financial support.

1. Introduction

Corporate Social Responsibility (CSR) has emerged as a transformative force in modern business practice (Bénabou and Tirole 2010; Kitzmueller and Shimshack 2012). Companies like Patagonia, which consistently offers above-market wages while maintaining profitability, and Microsoft, which has committed to comprehensive stakeholder-oriented practices, show how corporate responsibilities have evolved beyond Milton Friedman's assertion that *"The social responsibility of business is to increase its profits"* (Friedman 1970). Yet, the commitment to Environmental, Social, and Governance (ESG) goals has recently sparked controversy in policy debates. When the Business Roundtable issued a revised "Statement on the Purpose of a Corporation" in 2019, declaring an intention to serve all stakeholders, it was seen as the beginning of a new era of "stakeholder capitalism." This vision has since faced a backlash against what some have labeled "woke capitalism," leading to increased caution among investors.[1]

The research gap. While the study of CSR is active in management science and business ethics, it often remains informal and qualitative (Mayer 2013; De Bakker et al. 2020). There is a pressing need for economic theory to provide a structured framework for analyzing the economic consequences of CSR choices, particularly in labor markets where firms' decisions directly impact worker welfare. Recent studies have explored incorporating broader stakeholder utility into firms' decision-making processes (Magill, Quinzii, and Rochet 2015; Hart and Zingales 2017; Fleurbaey and Ponthière 2023), yet much of the existing literature has focused on CSR in a general context, with limited attention to the implications for labor market dynamics.[2]

A theory of firm's responsibility in the labor market. This paper is meant to fill this gap. It provides the first theoretical analysis of "responsible firm" (REF) behavior in labor markets, exploring both a micro- and macro-perspective. On the one hand, we develop a model of firm behavior in a search setting, where employers and employees encounter frictions. Here, we compare the behavior of profit-maximizing firms with REFs, showing how optimal wage-setting depends on market conditions. On the other hand, we examine the macroeconomic implications of labor market responsibility by modifying two well-known search models: the Burdett-Mortensen (BM) and Diamond-Mortensen-Pissarides

[1] Nevertheless, a joint study by McKinsey and NielsenIQ (Frey et al. 2023) claims that most consumers care about ESG-related characteristics of products and back it up with their wallets.

[2] Empirical evidence indicates that some firms prioritize employee welfare by offering above-market wages, health benefits, and profit-sharing programs, benefiting both workers and firms. Flammer (2015) finds that CSR initiatives reduce turnover and increase labor productivity. Edmans (2011) shows that firms listed as "Best Companies to Work For" outperform peers in profitability, suggesting a link between employee satisfaction and financial performance.

(DMP). In both cases, we introduce REFs as employers that maximize (at least a portion of) the worker-firm surplus. We use the BM model to explore wage dispersion and the DMP model to analyze the interactions between corporate governance seeking joint surplus maximization and macroeconomic effects—particularly on unemployment.

Firm's responsibility in a search setting with frictions. We show that the optimal wage-setting behavior of a REF depends on labor market conditions. When there are no intensive margin issues related to labor time and the labor market is not tight, such a firm behaves as if labor costs are close to the reservation wage. This modifies the standard results that prescribe no use of market power whatsoever from responsible firms, implying that they should take the cost of labor as fixed and equal to the market wage.[3] Our result here implies an even more generous employment policy.

However, using market power can align with maximizing workers' value in tight labor markets or for firms offering low wages because, under such circumstances, the continuation values for workers do not depend strongly on the current wage. Lastly, introducing efficiency wage effects and turnover costs does not differentiate the behavior of profit-maximizing and socially responsible firms, as both treat these factors similarly.

Wage dispersion. We analyze how labor market responsibility affects wage distribution using the BM framework. REFs offer higher wages than profit-maximizing ones, even when only partially considering worker surplus, creating a distinct higher-wage sector. This segmentation may influence job search behavior, as workers prefer these firms, potentially impacting overall matching efficiency. Responsible firms also show greater wage dispersion and size variation than profit maximizers.

However, when REFs fully adopt responsibility, i.e., maximize worker surplus with the same weight as profit, they converge toward the highest sustainable wage, resulting in wage compression at the upper end of the distribution.

While in standard wage-posting models, more productive firms typically offer higher wages, the presence of responsible firms can break this link. Less productive firms may offer higher wages if they weigh worker surplus sufficiently, depending on their degree of responsibility and the productivity gap.

Optimal corporate governance. We next extend the DMP labor market model by endogenizing workers' bargaining power and allowing firms to maximize total stakeholder

[3] As shown by Magill, Quinzii, and Rochet (2015) and Fleurbaey and Ponthière (2023), when firms prioritize stakeholder welfare over profit, they act as if in a perfectly competitive market, avoiding the use of market power. The intuition is that market power reduces consumer and worker surplus more than boosts profit, resulting in lower overall stakeholder value. While these papers formally characterize this result, the idea of a responsible firm abstaining from market power use dates back to 1953 (Bowen 2013).

value either at the firm or economy level. In a certain sense, the standard DMP model can be seen as implicitly embodying a form of corporate social responsibility, as the bargaining process incorporates workers' interests into the firm's governance. Yet, unlike the traditional setting, where firm-level stakeholder surplus is independent of wages and bargaining dynamics, our approach shows that when considering stakeholder surplus at the economy-wide level, the values of unemployment and vacancies become endogenous.

Normative implications in the DMP setting. Under free entry, increased worker bargaining power reduces firm profitability, resulting in fewer firms, fewer vacancies, and lower employment. While higher bargaining power raises wages closer to the marginal product of labor, it has opposing effects on the worker and firm surpluses. We show that, while the overall economic surplus is maximized at low worker bargaining power, firm-level stakeholder surplus peaks at higher bargaining power due to a trade-off between increased worker surplus, lower employment, and improved vacancy-filling rates. Additionally, when labor supply is elastic, higher bargaining power attracts more workers to the labor market, supporting the case for strengthening collective bargaining power.

Positive implications in the DMP setting. From a positive standpoint, we show that in markets with free entry, responsible firms—those offering higher wages due to greater worker bargaining power—struggle to survive against profit-maximizing firms that undercut them on costs. However, in markets without free entry, REFs can coexist with ordinary firms and pay higher wages under mild conditions. Their presence raises the value of unemployment for all workers, improving their outside options during wage negotiations and forcing ordinary firms to raise wages to stay competitive.

Moreover, as the share of responsible firms increases, the wage gap between responsible and ordinary firms narrows, indicating that responsible wage-setting can lift wages market-wide and enhance worker welfare.

Contribution to the literature. Our paper contributes to three main strands of literature.

First, we advance the theoretical understanding of CSR in the labor markets. While recent literature has increasingly incorporated CSR into models of firm behavior, highlighting its potential to enhance social welfare, most studies focus on general settings. Magill, Quinzii, and Rochet (2015) show that firms maximizing stakeholder welfare can reduce underinvestment in risk prevention, though stakeholder equilibrium may still be inefficient with multiple firms or diverse agents. Fleurbaey and Ponthière (2023) extend this by formalizing stakeholder firms that maximize the combined surpluses of customers, suppliers, and workers. We build on these insights but specifically formalize how responsible behavior affects wage-setting, wage dispersion, and macroeconomic outcomes like unemployment in dynamic labor markets with search frictions.

Second, we contribute to understanding how CSR interacts with market competition and firm survival. Brekke and Nyborg (2008) show how CSR helps firms attract morally motivated employees, potentially driving non-responsible firms out of business through productivity gains from unobservable effort. While they focus on employee selection, our models highlight the wage-setting strategies of responsible firms in markets with frictions and their broader macro-level implications. Planer-Friedrich and Sahm (2020) find that while CSR can reduce profits, it may also deter entry and increase market concentration. We extend this by showing how responsible firms affect wage distribution and labor market segmentation, consistently offering higher wages and creating a distinct higher-wage sector.

Third, we provide new insights into how CSR affects market-wide outcomes. While Baron (2008) and Fioretti (2022) argue that prosocial expenditures can enhance welfare but often depend on subsidies or managerial preferences, our model demonstrates that responsible wage-setting raises wages market-wide through endogenous labor market dynamics, improving worker welfare without external support or managerial altruism. We show that when responsible firms increase workers' bargaining power, this strengthens workers' outside options during wage negotiations and forces ordinary firms to raise wages to stay competitive. Moreover, as the share of responsible firms increases, the wage gap between responsible and ordinary firms narrows, indicating that responsible wage-setting can lift wages market-wide. Finally, while Besley and Ghatak (2017) focus on social enterprises, we examine standard firms in competitive markets, showing how responsibility in corporate governance can coexist with market discipline when entry is limited. Our results suggest that responsible firms can survive and enhance social welfare even without special organizational forms or subsidies, provided market conditions allow them to cover costs while maintaining their stakeholder-oriented practices.

Paper's outline. The remainder of the paper is organized as follows. Section 2 introduces a model that characterizes the behavior of a socially responsible firm in the presence of labor market frictions. Section 3 analyzes the effects of the presence of responsible firms on the aggregate wage distribution using a wage-posting model. Section 4 explores the macroeconomic implications of responsible firms adjusting their bargaining power in a DMP framework. Section 5 concludes.

2. Labor market responsibility at the firm level

Here, we introduce a model of firm behavior that features corporate social responsibility in the presence of labor market frictions.

2.1. Environment and setting

Consider a firm that needs to hire workers across different segments of the market to employ them with a production function $y = f(\ell, w)$ where $\ell = (\ell_1, \ldots, \ell_m)$ represents the vector of the number of workers across m different qualifications available in the market and $w = (w_1, \ldots, w_m)$ denotes their corresponding wages. Working hours are assumed to be fixed exogenously, but there is a motivation effect driven by wages, such that the actual production function reads as

$$y = f(\ell, w) = g(\ell_1 e_1(w_1), \ldots, \ell_m e_m(w_m))$$

where the efficiency wage effect is captured by the increasing functions $e_k(w_k)$ for $k = 1, \ldots, m$. To recruit workers, the firm must post vacancies $v = (v_1, \ldots, v_m)$ and offer corresponding wages w.

For each qualification $k = 1, \ldots, m$ the probability of successfully hiring a proportion $l_k \leq v_k$ of the desired workers during a period is given by

$$p_k(\ell_k, v_k, w_k) = \binom{v_k}{\ell_k} q_k(\theta, w_k)^{\ell_k} \left(1 - q_k(\theta_k, w_k)^{v_k - \ell_k}\right)$$

where $q_k(\theta_k, w_k)$ is the probability of filling a vacancy, which decreases in the market tightness $\theta_k = v_k/u_k$ of the kth market segment and increases with the offered wage w_k.

During each period, a proportion of workers turnover, denoted by $\delta(w, e) = (\delta_1(w_1, e_1), \ldots, \delta_m(w_m, e_m))$, occurs. Each instance of worker turnover incurs a fixed cost κ. The proportion $\delta_k(w_k, e_k)$ decreases with both wage w_k and effort e_k, reflecting the idea that higher wages help retain workers and that higher effort levels reduce the likelihood of dismissal. We assume the δ_k function is given, thereby ignoring the firm's ability to implement a more or less lenient dismissal policy.

2.2. Profit-maximizing firm

The expected profit of a firm during a given period, when it posts (v, w), is

$$P(v, w) = \sum_{\ell_1=0}^{v_1} \cdots \sum_{\ell_m=0}^{v_m} p(\ell, v, m) \left[f(\ell, w) - (w + \kappa\delta(w))\,\ell\right]$$

where $p(\ell, v, m) = \prod_{k=1}^{m} p_k(\ell_k, v_k, m_k)$. This formulation sums over all possible hiring outcomes, weighing each by its probability of occurrence, and computes the associated profit as the difference between production output and the total wage bill given the workers' turnover. Note that, due to the independence between market segments, the value of $\int_0^v p(\ell, v, m)d\ell$ conditional on a given value of ℓ_k is simply $p_k(\ell_k, v_k, m_k)$. Similarly, the value of $\int_0^{\nu} p_{\nu_k}(\ell, \nu, m)d\ell$ conditional on a given value for ℓ_k is also $p_{\nu_k}(\ell_k, \nu_k, m_k)$. Let

$$\mathbb{E}(\ell_k(\nu_k, w_k)) = \sum_{\ell_k=0}^{\nu_k} p_k(\ell_k, \nu_k, w_k)\ell_k$$

denote the expected labor force from market k in the firm.

To simplify the analysis, we assume a continuous ν and ℓ, allowing to write profits as

$$P(\nu, w) = \int_0^{\nu} p(\ell, \nu, w) \left[f(\ell, w) - (w + \kappa\delta(w))\, \ell\right] d\ell$$

Given the scalar product structure of $(w + \kappa\delta(w))\, \ell$, one can decompose the total expected labor cost across different market segments, leveraging the independence assumption:

$$\begin{aligned}
\int_0^{\nu} p(\ell, \nu, w)\,(w + \kappa\delta(w))\, \ell d\ell &= \int_0^{\nu} \prod_{k=1}^{m} p_k(\ell_k, \nu_k, w_k) \sum_{k=1}^{m} (w_k + \kappa\delta(w_k))\, \ell_k d\ell \\
&= \sum_{k=1}^{m} (w_k + \kappa\delta(w_k)) \int_0^{\nu_k} p_k(\ell_k, \nu_k, w_k) \int_0^{\nu_k} \prod_{l \neq k}^{m} p_l(\ell_l, \nu_l, w_l) d\ell \\
&= \sum_{k=1}^{m} \int_0^{\nu_k} p_k(\ell_k, \nu_k, w_k)\,(w_k + \kappa\delta(w_k))\, \ell_k d\ell
\end{aligned}$$

Here, the first equality comes from the decomposition of the integral into separate integrals for each market segment, while the second one results from the fact that the product for $l \neq k$ is independent of ℓ_k. The profits thus become

$$P(\nu, w) = \int_0^{\nu} p(\ell, \nu, w) f(\ell, w) - \sum_{k=1}^{m} \int_0^{\nu_k} p_k(\ell_k, \nu_k, w_k)\,(w_k + \kappa\delta(w_k))\, \ell_k d\ell \tag{1}$$

Compared to the original one, this expression separates the production component from the labor cost component, where the latter is now expressed as a sum of separate integrals for each market segment.

First order conditions. We maximize the firm's profit (1) by first taking the FOC for ν_k, which reads as[4]

$$\begin{aligned}
&\int_0^{\nu_{-k}} p(\nu_k, \ell_{-k}, \nu, w) f(\nu_k, \ell_{-k}, w) d\ell_{-k} + \int_0^{\nu} p_{\nu_k}(\ell, \nu, w) f(\ell, w) d\ell \\
&= (w_k + \kappa\delta(w_k)) \left[p_k(\nu_k, \nu_k, w_k)\nu_k + \int_0^{\nu_k} p_{\nu_k}(\ell_k, \nu_k, w_k)\ell_k d\ell_k \right]
\end{aligned} \tag{2}$$

[4]With a slight abuse of notation, we consider $p(\nu_k, \ell_{-k}, \nu, w)$ as equivalent to $p(\ell, \nu, w)$ where $\ell_k = \nu_k$. Similarly, we treat $f(\nu_k, \ell_{-k}, w)$ as equivalent to $f(\ell, w)$, with $\ell_k = \nu_k$.

This expression equates the marginal revenue from opening an additional vacancy with its marginal cost. The marginal revenue consists of two parts: the expected revenue from filling vacancies in the kth segment and the marginal effect of increasing vacancies on the probability of matching, which in turn influences the expected revenue from those matches. On the cost side, the marginal cost includes the direct cost per vacancy in the kth market segment, multiplied by the sum of the probability of filling a vacancy and the marginal change in the expected labor force size. Note that the right-hand side can be written as

$$(w_k + \kappa\delta(w_k))\left[p_k(\nu_k, \nu_k, w_k)\nu_k + \frac{\partial}{\partial \nu_k}\mathbb{E}(\ell_k(\nu_k, w_k))\right]$$

The FOC for w_k reads as

$$\begin{aligned}(3)\qquad &\int_0^{\nu} p_{w_k}(\ell, \nu, w) f(\ell, w) + p(\ell, \nu, w) f_{w_k}(\ell, w) d\ell \\ &= \int_0^{\nu_k}\left[p_{w_k}(\ell_k, \nu_k, w_k)\left(w_k + \kappa\delta_k(w_k)\right) + p_k(\ell_k, \nu_k, w_k)\left(1 + \kappa\delta_k'(w_k)\right)\right]\ell_k d\ell_k\end{aligned}$$

Here, marginal revenues include both the effect of wages on production and the effect mediated by changes in the matching probability. Marginal costs account for the increase driven by changes in the matching probability as well as the effect caused by changes in turnover. Again, the right-hand side can be written as

$$\begin{aligned}(4)\qquad &\frac{\kappa\delta_k(w_k)}{w_k}\left[w_k\frac{\partial}{\partial w_k}\mathbb{E}(\ell_k(\nu_k, w_k)) + \frac{\delta_k'(w_k)}{\delta_k(w_k)}w_k\,\mathbb{E}(\ell_k(\nu_k, w_k))\right] \\ &+ \mathbb{E}(\ell_k(\nu_k, w_k)) + w_k\frac{\partial}{\partial w_k}\mathbb{E}(\ell_k(\nu_k, w_k))\end{aligned}$$

2.3. Labor market power

We now compare these conditions with those typically observed for a wage-posting firm with monopsony power in the labor market.

Standard model. In a standard labor market model, the unique first-order condition equates the marginal productivity of labor to the wage rate adjusted by a markdown factor, which accounts for the firm's monopsony power and decreases with the wage elasticity of labor supply. More specifically, when the profit is equal to $f(\ell(w)) - wl(w)$, the FOC for w_k is

$$(5)\qquad f_k(\ell(w))\ell_k'(w_k) = \ell_k(w_k) + w_k\ell_k'(w_k)$$

In this classical setting, market power arises from the presence of $\ell_k(w_k)$. When labor elasticity is high, this market power diminishes as the terms multiplied by $\ell_k'(w_k)$ become dominant.

Current model. In our setting, the two sides of equation (5) are captured by the marginal change in matching probability in the left-hand side of the FOC (3) and by the last two terms of (4):

$$\int_0^{v} p_{w_k}(\ell, v, w) f(\ell, w) d\ell \quad \text{and} \quad \mathbb{E}(\ell_k(v_k, w_k)) + w_k \frac{\partial}{\partial w_k} \mathbb{E}(\ell_k(v_k, w_k))$$

This latter term shows that market power in this model arises because raising wages only leads to a limited increase in the probability of making hires.

The FOC (3) still exhibits two extra terms. The first one accounts for the efficiency wage effects on the marginal revenue side:

$$\int_0^{v} p(\ell, v, w) f_{w_k}(\ell, w) d\ell = e_k'(w_k) \int_0^{v} p(\ell, v, w) g_k \ell_k d\ell$$

The second one accounts for the turnover effects in

$$\frac{\kappa \delta_k(w_k)}{w_k} \left[w_k \frac{\partial}{\partial w_k} \mathbb{E}(\ell_k(v_k, w_k)) + \frac{\delta_k'(w_k)}{\delta_k(w_k)} w_k \mathbb{E}(\ell_k(v_k, w_k)) \right]$$

Furthermore, the effect of posting job positions in the market is reflected in the new FOC with respect to v_k, which captures a marginal productivity effect on the left-hand side. On the right-hand side, it accounts for the direct wage cost of new positions and an indirect cost driven by the resulting employee turnover.

2.4. The worker surplus

A worker i applies to jobs in their market segment, facing a probability of receiving a job offer.

The worker accepts the offer if it exceeds their current situation—which is either receiving b as unemployment allowance or earning a wage w_i. The worker's surplus is zero if unemployed, or $W - U$ if employed, where W is employment value and U is unemployment value. The present value of employment for a worker i is

$$\begin{aligned} W_i(w_i) = {} & w_i - c_i(e_i(w_i)) + \beta \{\gamma(e_i(w_i)) U \\ & + (1 - \gamma(e_i(w_i))) \left[q(w_i) \mathbb{E}_{w_k > w_i}(W_i(w_k)) + (1 - q(w_i)) W_i(w_i) \right] \} \end{aligned} \tag{6}$$

Here, $c_i(e_i(w_i))$ is the cost of exerting effort at work, with effort expressed as a function of wage, $\beta < 1$ is a discount factor, $\gamma(e_i)$ is the probability of dismissal, which decreases with effort e_i, $q(w_i)$ is the probability of receiving a job offer at a higher wage than w_i, $\mathbb{E}_{w_k > w_i}(W_i(w_k))$ is the expected value of obtaining a wage above w_i in the kth market segment. In words, the workers' present value is the sum of their current net income and a discounted factor, which accounts for the likelihood of the possibility of becoming unemployed, securing a higher-paying job, or that none of this happens. The probability of receiving a better job offer can be broken down into two components: a fixed probability, q_k, of receiving a job offer in market segment k, and a random draw from the wage distribution within that segment. In particular, the probability of receiving an offer w_i is given by $q(w_i) = (1 - F_k(w_i))\, q_k$, where F_k is the cdf of the wage distribution in the kth segment.

Equation (6) can be rewritten in a simpler form that omits the argument of e_i:

$$W_i(w_i) = \frac{w_i - c_i(e_i) + \beta\left[\gamma(e_i)U + (1-\gamma(e_i))\, q(w_i)\, \mathbb{E}_{w_k>w_i}(W_i(w_k))\right]}{1 - \beta\,(1-\gamma(e_i))\,(1-q(w_i))}$$

When unemployed, the worker's value in segment k reads as

$$U = b + \beta\left[(1-q_k)U + q_k\, \mathbb{E}(W_i(w_k))\right] = \frac{b + q_k\, \mathbb{E}(W_i(w_k))}{1-\beta(1-q_k)}$$

This value function includes the present unemployment benefit b and a continuation value that accounts for the probability of securing a job in segment k at a wage w_k.

The worker's surplus is thus defined as $S_i(w_i) = W_i(w_i) - U$:

$$\begin{aligned} S_i(w_i) = {} & \frac{w_i - c_i(e_i) + \beta\left[(1-\gamma(e_i))\, q(w_i)\, \mathbb{E}_{w_k>w_i}(W_i(w_k))\right]}{1 - \beta\,(1-\gamma(e_i))\,(1-q(w_i))} \\ & - \frac{b + q_k\, \mathbb{E}(W_i(w_k))}{1-\beta(1-q_k)}\left(1 - \frac{\beta\gamma(e_i)}{1-\beta\,(1-\gamma(e_i))\,(1-q(w_i))}\right) \end{aligned} \tag{7}$$

The worker chooses their level of effort to maximize this surplus. The FOC for such a maximization requires

$$\begin{aligned} c_i'(e_i)\,[1-\beta(1-q_k)] = {} & -\beta\gamma'(e_i)\,[1-\beta(1-q_k)]\overbrace{\left[(1-q(w_i))\, W_i(w_i) + q(w_i)\, \mathbb{E}_{w_k>w_i}(W_i(w_k))\right]}^{\mathcal{E}(W_i(w_i))} \\ & - b - q_k\, \mathbb{E}(W_i(w_k)) \end{aligned}$$

The right-hand side of this condition is increasing in w_i provided that $\mathcal{E}(W_i(w_i))$, which measures the expected value of W_i conditional on i having wage w_i and accepting offers above it, increases in the wage. This implies that the left-hand side must increase with w_i to maintain equality in the FOC, which, in turn, requires an increase in e_i. Therefore, e_i is an increasing function of w_i, which is intuitive: higher wages motivate workers to exert more effort as they aim to increase their chances of job retention and secure better future opportunities. To check that $\mathcal{E}(W_i(w_i))$ is actually increasing in w_i, first observe that its second term, given by

$$q(w_i)\,\mathbb{E}_{w_k>w_i}(W_i(w_k)) = q_k \int_{w_i}^{\infty} W_i(w_k)dF_k(w_k) \tag{8}$$

captures the value associated with the opportunity of climbing up the job ladder by securing a higher-paying job, and is decreasing in w_k because of the reduced probability of getting a bet offer when w_i is greater. Yet, the derivative of (8) with respect to w_i is equal to $q_k F_k(w_i) W_i'(w_i)$ and therefore shares the sign of $W_i'(w_i)$. Substituting this derivative into the expression for the derivative of $W_i(w_i)$, and applying the envelope theorem to disregard changes in e_i as w_i varies, we obtain

$$W_i'(w_i) = \frac{1}{1-\beta\,(1-\gamma(e_i))\,q_k F_k(w_i)} > 0$$

Therefore, $\mathcal{E}(W_i(w_i))$ increases in w_i, implying that e_i is an increasing function of w_i.

2.5. Socially responsible management

The socially responsible firm seeks to maximize the total surplus of its stakeholders, which in this model is the sum of the present value of the expected profit flow and the present value of the expected surplus of employed workers:

$$\frac{1}{1-\beta} P(v,w) + \sum_k S_k\,\mathbb{E}(\ell_k(v_k,w_k))$$

We assume that all workers in a given category are identical, have the same surplus W_k, and exert the same effort e_k, which is reflected in the production function g.

Standard model. In a standard model, one writes the total surplus as

$$f(\ell(w)) - w\ell(w) + \sum_k S_k\,\mathbb{E}(\ell_k(v_k,w_k))$$

modifying the associated standard FOC as

$$f_k(\ell(w))\ell'(w_k) = \ell_k(w_k) + w_k\ell_k'(w_k) - S_k'(w_k)$$

Still, the workers' surplus is a function of the wage, capturing the difference between their total salary and their reservation wage:

$$S_k(w_k) = w_k\ell_k(w_k) - \int_0^{\ell_k(w_k)} \ell_k^{-1}(l)dl$$

where $\ell_k^{-1}(w)$ is the inverse labor supply function, which represents the reservation wage in market segment k. By substituting the derivative of this surplus expression into the FOC, we obtain:

$$f_k(\ell(w))\ell'(w_k) = w_k \ell_k'(w_k)$$

which simplifies to the perfectly competitive condition $f_k(\ell(w)) = w_k$. This result implies that the responsible firm pays wages equal to the marginal product of labor, just like a profit-maximizing firm in a competitive market. Therefore, the firm does not exploit any potential market power but rather operates as if it were in a perfectly competitive environment (Fleurbaey and Ponthière 2023).

Current model. We now examine whether this standard result holds in the presence of the frictions introduced by our current model. In this case, the FOC for v_k is

$$\int_0^{v_{-k}} p(v_k, \ell_{-k}, v, w) f(v_k, \ell_{-k}, w) d\ell_{-k} + \int_0^{v} p_{v_k}(\ell, v, w) f(\ell, w) d\ell =$$
$$(w_k + \kappa\delta_k(w_k))\, p_k(v_k, v_k, w_k) v_k + [w_k + \kappa\delta_k(w_k) - (1-\beta)S_k] \frac{\partial}{\partial v_k} \mathbb{E}(\ell_k(v_k, w_k))$$

Compared to profit-maximizing firms (2), this condition incorporates the marginal effect of increasing wages on the present value of workers' surplus, adding it to the firm's marginal cost. This addition reduces the cost term and improves the firm's employment policy, similar to how a competitive firm operates compared to a monopsony.

For w_k, the FOC reads as

$$\int_0^{v} p_{w_k}(\ell, v, w) f(\ell, w) + p(\ell, v, w) f_{w_k}(\ell, w) =$$
$$\frac{\kappa\delta_k(w_k)}{w_k}\left[w_k \frac{\partial}{\partial w_k} \mathbb{E}(\ell_k(v_k, w_k)) + \frac{\delta_k'(w_k)}{\delta_k(w_k)} w_k \mathbb{E}(\ell_k(v_k, w_k))\right]$$
$$+ \left(1 - (1-\beta)\frac{\partial S_k}{\partial w_k}\right) \mathbb{E}(\ell_k(v_k, w_k)) + (w_k - (1-\beta)S_k) \frac{\partial}{\partial w_k} \mathbb{E}(\ell_k(v_k, w_k))$$

Note that the role of frictions in the FOC, represented by the $\delta_k(w_k)$ terms, is not influenced by the consideration of worker surplus, as this cost is entirely borne by the firm. In both cases, the key difference is the replacement of w_k with $w_k - (1-\beta)S_k$ (or its derivative). Therefore, we can focus on this term to get insights into the use of market power by the responsible firm.

Drawing from the surplus equation (7), we can compute

$$
\begin{aligned}
w_k - (1-\beta)S_k = {} & w_k\left(1 - \frac{1-\beta}{1-\beta\,(1-\gamma(e_i))\,(1-q(w_i))}\right) \\
& + c_k(e_k)\frac{1-\beta}{1-\beta\,(1-\gamma(e_i))\,(1-q(w_i))} \\
& + b\frac{1-\beta}{1-\beta(1-q_k)}\left(1 - \frac{\beta\gamma(e_i)}{1-\beta\,(1-\gamma(e_i))\,(1-q(w_i))}\right) \\
& + q_k\,\mathbb{E}(W_i(w_k))\frac{1-\beta}{1-\beta(1-q_k)}\left(1 - \frac{\beta\gamma(e_i)}{1-\beta\,(1-\gamma(e_i))\,(1-q(w_i))}\right) \\
& - q(w_i)\,\mathbb{E}_{w>w_k}(W_i(w_k))\frac{(1-\beta)\,\beta\,(1-\gamma(e_i))}{1-\beta\,(1-\gamma(e_i))\,(1-q(w_i))}
\end{aligned}
$$

To simplify the analysis, let's assume that the dismissal probability $\gamma(e_i)$ is small enough to be neglected. We obtain

$$
\begin{aligned}
w_k - (1-\beta)S_k \simeq {} & w_k\frac{\beta q(w_i)}{1-\beta\,(1-q(w_i))} \\
& + c_k(e_k)\frac{1-\beta}{1-\beta\,(1-q(w_i))} + b\frac{1-\beta}{1-\beta(1-q_k)} \\
& + q_k\,\mathbb{E}(W_i(w_k))\frac{1-\beta}{1-\beta(1-q_k)} - q(w_i)\,\mathbb{E}_{w>w_k}(W_i(w_k))\frac{(1-\beta)\,\beta}{1-\beta\,(1-q(w_i))}
\end{aligned}
$$

Three terms are presented across the three lines: the wage on the first line, key components of the reservation wage on the second, and future prospects on the third. The relative importance of these terms depends on the offer rate q_k and the position of w_k within the wage distribution.

When w_k is located in the lower part of the wage distribution for segment k of the market, $q(w_i) \simeq q_k$, and this expression can be approximated by

$$
\begin{aligned}
(w_k - (1-\beta)S_k)\,(1-\beta(1-q_k)) \simeq {} & \beta q_k w_k + (1-\beta)\,(c_k(e_k) + b) + \\
& q_k(1-\beta)\left[\mathbb{E}(W_i(w_k)) - \beta\,\mathbb{E}_{w>w_k}(W_i(w_k))\right]
\end{aligned}
$$

If q_k is low, this tends toward

$$
w_k - (1-\beta)S_k \simeq c_k(e_k) + b
$$

As in the standard model, in this case, the wage disappears from the right-hand side, making the derivative of the surplus constant, implying no use of market power by the responsible firm. If q_k is high, the expression becomes:

$$w_k - (1-\beta)S_k \simeq \beta w_k + (1-\beta)\left(c_k(e_k) + b\right) + \\ (1-\beta)\left(\mathbb{E}(W_i(w_k)) - \beta\, \mathbb{E}_{w>w_k}(W_i(w_k))\right)$$

where the term βw_k appears on the right-hand side, allowing the responsible firm to exercise some degree of market power.

Instead, when w_k is in the highest part of the distribution, $q(w_i) \simeq 0$ and the expression becomes

$$w_k - (1-\beta)S_k = c_k(e_k) + \left[b + q_k\, \mathbb{E}(W_i(w_k))\right] \frac{1-\beta}{1-\beta(1-q_k)}$$

an expression which depends on w_k but in a muffled way, because

$$q_k \frac{1-\beta}{1-\beta(1-q_k)} < \min\left\{q_k, 1-\beta\right\}$$

2.6. Discussion

We now take stock of the results of the responsible firm's behavior obtained through this model.

When future job prospects are low, either due to a low rate of offers or because the current wage is high relative to the market segment, the wage term in our model almost disappears, contrasting with the classical model. In our setting, the wage term remains significant only when the current wage is low compared to the market segment and the rate of offers is high. The primary reason for the reduced wage role is that workers are assumed to be fully available for full-time jobs without any influence of labor time on their willingness to accept a wage. With such inelastic labor supply, the classical model would express the worker's surplus as:

$$S_k(w_k) = \left(w_k - w^r\right) \ell_k(w_k)$$

where w^r is the reservation wage. In this case, the classical FOC becomes $f_k(\ell(w)) = w^r$, meaning wages simply equal the reservation wage. A similar effect occurs in this model, as key components of the reservation wage, such as $c_k(e_k)$ and b, play a dominant role in the FOC.

The wage term and the firm's exploitation of market power remain relevant only when future wage prospects at other jobs influence workers' surplus. In this case, workers' surplus becomes less dependent on the current wage, but the responsible firm's wage-setting decision still remains paramount for its profit. This situation contrasts with the classical model. In that model, workers' surplus is less dependent on the firm's posted wage when the market is competitive, as workers can easily find similar jobs elsewhere.

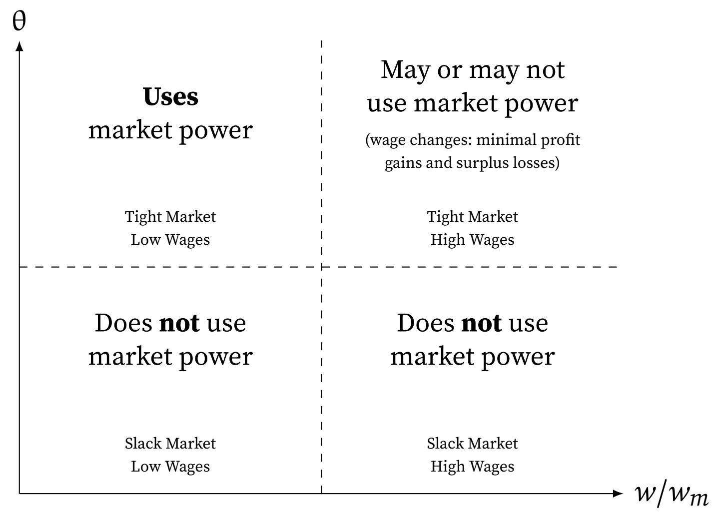

FIGURE 1. Use of labor market power by the responsible firm

The figure summarizes how responsible firms' use of market power varies across labor market conditions. The horizontal axis shows the firm's wage relative to the market one, while the vertical axis represents market tightness. In slack markets with high unemployment, REFs refrain from using market power regardless of their wage level. In tight markets with low unemployment, REFs may exercise market power when offering low wages, as workers face many alternative opportunities. When both market tightness and wages are high, the use of market power has minimal impact on both profits and worker surplus.

In such cases, labor supply elasticity is high, and the firm has little market power. In the model with frictions, however, it is possible to have moderate labor supply elasticity—since the firm's wage does not dramatically affect the likelihood of finding workers—while the worker's surplus depends more on being in the labor market than working for a specific firm.

Thus, unlike the classical model, a responsible firm can exercise its market power in relatively tight labor market segments, where workers can easily find alternative job offers, and when the firm sets wages below the market level, such as when its productivity is low, and workers are likely to find better offers elsewhere. However, in markets with high unemployment, where workers are more dependent on the firm, a responsible firm will refrain from using its market power, as in Fleurbaey and Ponthière (2023). In such cases, the firm behaves as though the true labor cost is closer to the worker's reservation wage, potentially well below the actual wage being paid.

In conclusion, we showed that the optimal wage-setting behavior of a responsible firm depends on labor market conditions. When the labor market is not tight, and workers face no intensive margin issues related to working hours, a socially responsible firm will act as if labor costs were close to the reservation wage. However, using market power can align with maximizing stakeholder value in tight markets or for firms offering low wages. This condition differs from the standard results that prescribe no use of market power whatsoever from responsible firms. Still, it also highlights a limitation: if labor time costs were introduced for workers, the firm would adopt a higher labor cost that reflects this intensive margin. This optimal responsible-firm behavior is conveniently summarized in Figure 1.

Finally, regarding efficiency wages and turnover costs—introduced in this model—these factors do not create a difference between profit-maximizing firms and socially responsible firms. Both types of firms will handle these costs and benefits similarly.

3. A wage-posting model with responsible firms

In this section and the next, we analyze the market-level effects of corporate social responsibility. Specifically, if socially responsible firms hire more workers and offer higher wages, what are the broader market implications? A related question is whether these firms can remain competitive when other firms focus solely on profit maximization. In the standard model, firms that prioritize objectives other than profit maximization, such as stakeholder value, may be disadvantaged and face the risk of being outcompeted in a free-entry market.

We focus here on a specific question: what happens to the endogenous wage distribution when some firms in the market behave responsibly toward their labor force? We answer this by building a wage-posting model that allows for the coexistence of stakeholder-oriented and responsible firms.

3.1. Baseline: the BM model

We begin by briefly reviewing the standard wage-posting model from Burdett and Mortensen (1998) (BM) to provide a foundation for introducing responsible firms.

Environment. The model features a mass 1 of equally productive workers, each with a non-work option b, and a continuum of firms, with mass 1 and N types. Firm i has constant productivity y_i and offers a uniform wage w to maximize steady-state profits. Workers—whether employed or not—receive job offers randomly at an exogenous rate λ, drawn from the endogenous wage distribution $F(w)$. Unemployed workers accept offers above the reservation wage w^r, while employed workers accept offers exceeding their current wage. A fixed proportion δ of employed workers is separated into unemployment each period.

We focus on two firm types with productivities $y_1 < y_2$, resulting in a mixed wage distribution:

$$F(w) = \alpha F_1(w) + (1 - \alpha)F_2(w)$$

where α represents the proportion of lower-productivity firms. Our goal is to recover the equilibrium objects $\{F_1, F_2, \pi_1, \pi_2\}$ and the overall wage distribution F.

The steady-state equilibrium is determined by the four conditions discussed next.

Unemployment condition. The proportion of unemployed workers is u, with the flow of workers into unemployment given by $\delta(1-u)$. The flow of workers out of unemployment is $\lambda\left[1-F(w^r)\right]u$. Equating the two flows yields the condition

$$u = \frac{\delta}{\delta + \lambda}$$

with $F(w^r) = 0$, since no firm will offer a wage below the reservation wage in equilibrium.

Workers' flows condition. Let $G(w)$ be the proportion of employed workers earning a wage no greater than w. The size of the pool of workers in these jobs is $(1-u)G(w)$. The net entry to this set comes from the pool of unemployed workers. The inflow is $u\lambda F(w)$ since a share $\lambda F(w)$ of the unemployed receives offers between w^r and w. The outflow consists of two parts: *a)* the job destruction flow, $\delta(1-u)G(w)$, and *b)* the exit to higher-wage jobs, $\lambda(1-u)G(w)\,(1-F(w))$. Equating inflow and outflow, we get the condition

$$u\lambda F(w) = \delta(1-u)G(w) + \lambda(1-u)G(w)\,(1-F(w))$$

From this, we can derive the steady-state distribution

$$G(w) = \frac{u\lambda F(w)}{(1-u)\left[\delta + \lambda\,(1-F(w))\right]} = \frac{F(w)}{1+\frac{\lambda}{\delta}\,(1-F(w))} < F(w)$$

Profits condition. Denoting $\ell(w)$ as the measure of workers per firm posting a wage w, the profit of a type i firm posting wage w is $\pi_i = \ell(w)\,(y_i - w)$. In the competitive steady-state equilibrium, all active firms of a given type earn the same profit, which implies the supports of F_1 and F_2 are disjoint. Indeed, for any w_1 and w_2 in the supports of F_1 and F_2, respectively, we have

$$\pi_2 = \ell(w_2)\,(y_2 - w_2) \geq \ell(w_1)\,(y_2 - w_1) > \ell(w_1)\,(y_1 - w_1) = \pi_1 > \ell(w_2)\,(y_1 - w_2)$$

This implies that the difference between the two extreme terms exceeds the difference between the two middle terms, i.e., $\ell(w_2)\,(y_2 - y_1) > \ell(w_1)\,(y_2 - y_1)$, and thus $w_2 > w_1$ since ℓ is an increasing function. This segmentation of the market allows us to calculate the labor force of a firm as the proportion of employed workers at the posted wage level:

$$\ell(w) = \lim_{\varepsilon \to 0} \frac{G(w) - G(w-\varepsilon)}{F(w) - F(w-\varepsilon)}(1-u) = \frac{g(w)}{f(w)}(1-u)$$

where

$$g(w) = G'(w) = \frac{\delta(\delta+\lambda)f(w)}{[\delta+\lambda(1-F(w))]^2}$$

Substituting this expression back into $\ell(w)$ allows us to distinguish between the two profit functions:

$$\pi_1 = \ell(w)(y_1 - w) = \frac{\delta\lambda}{[\delta+\lambda(1-\alpha F_1(w))]^2}$$
$$\pi_2 = \ell(w)(y_2 - w) = \frac{\delta\lambda}{[\delta+\lambda(1-\alpha)(1-F_2(w))]^2}$$

since $F_1(w) = 1$ in the case of the most productive firm's type.

Equilibrium wage offers condition. Since profit is uniform in a given type, it is equal to the lowest-wage firm's profit:

$$\pi_i = \frac{\delta\lambda}{[\delta+\lambda(1-\alpha F(w))]^2}(y_i - w) = \frac{\delta\lambda}{[\delta+\lambda(1-\alpha F(\underline{w}_i))]^2}(y_i - \underline{w}_i) \quad \forall i$$

As $F(\underline{w}_1) = 0$ and $F(\underline{w}_2) = \alpha$, we can recover $F_i(w)$ for each $i = 1, 2$ from the mixed wage distribution:

$$F_1(w) = \frac{1}{\alpha}F(w) = \frac{\delta+\lambda}{\lambda\alpha}\left(1-\sqrt{\frac{y_1-w}{y_1-\underline{w}_1}}\right)$$
$$F_2(w) = \frac{F(w)-\alpha}{1-\alpha} = \frac{\delta+\lambda(1-\alpha)}{\lambda(1-\alpha)}\left(1-\sqrt{\frac{y_2-w}{y_2-\underline{w}_2}}\right) \tag{9}$$

Thus, the equilibrium is defined by

$$\begin{cases} \pi_i & = \frac{\delta\lambda}{[\delta+\lambda(1-F(w))]^2}(y_i - w) \\ F_1(w) & = \frac{\delta+\lambda}{\lambda\alpha}\left(1-\sqrt{\frac{y_1-w}{y_1-\underline{w}_1}}\right) \\ F_2(w) & = \frac{\delta+\lambda(1-\alpha)}{\lambda(1-\alpha)}\left(1-\sqrt{\frac{y_2-w}{y_2-\underline{w}_2}}\right) \end{cases}$$

and induces the general wage distribution $F(w) = \alpha F_1(w) + (1-\alpha)F_2(w)$.

3.2. Responsible firms

We introduce the possibility that a group of firms may include (part of the) workers' surplus in their objective function. In particular, we assume that type 2 firms aim to maximize total stakeholder value rather than profit. First, we consider the case where their productivity is equal to that of other firms, such that $y_2 = y_1 = y$. We then generalize our results, allowing the productivities to differ.

We focus on two scenarios: partial responsibility, where the firm includes a portion of the worker surplus in its objective, and full responsibility, where the firm incorporates the entire worker surplus.

Partial responsibility with equal productivity. We first examine the case where responsible firms have the same productivity of profit-maximizers and only partially incorporate worker surplus into their objective. They solve:

$$\max_{w} \ell(w)\left[y - w + \eta(w - w^r)\right]$$

We start by establishing a key result, with the proof detailed in Appendix A:

PROPOSITION 1. *The wage distribution of responsible firms is strictly above that of profit-maximizing firms.*

This Proposition states that responsible firms will be fully separated from profit-maximizing firms, posting higher wages. If several types of firms with varying degrees of responsibility η coexist in the market, this separation persists, with more responsible firms being positioned higher in the wage distribution. Figure 2 directly shows this by comparing the cumulative wage distributions of profit-maximizing and responsible firms under different levels of responsibility, clearly highlighting the separation between their respective supports. This strict division in wage distributions implies that responsibility in corporate governance translates directly into tangible benefits for workers across all skill levels or market segments.

We can now adapt the reasoning from the baseline model to compute the equilibrium wage distribution. The computation remains unchanged for profit-maximizing firms and yields the same formula of (9). For responsible firms, the wage distribution is computed as

$$\frac{\delta\lambda}{\left[\delta + \lambda\left(1 - F(w)\right)\right]^2}\left(y - w + \eta(w - w^r)\right) = \frac{\delta\lambda}{\left[\delta + \lambda\left(1 - F(\underline{w}_2)\right)\right]^2}\left(y - \underline{w}_2 + \eta(\underline{w}_2 - w^r)\right)$$

Since $F(\underline{w}_2) = \alpha$, we have

$$F_2(w) = \frac{\delta + \lambda(1-\alpha)}{\lambda(1-\alpha)}\left(1 - \sqrt{\frac{y - w + \eta(w - w^r)}{y - \underline{w}_2 + \eta(\underline{w}_2 - w^r)}}\right) \tag{10}$$

An interesting characteristic of this wage distribution is that it is flatter than the wage distribution for profit-maximizing firms (Figure 2). This implies that responsible firms exhibit greater wage dispersion, as well as a wider variation in firm size, holding other factors constant. Intuitively, responsible firms must balance profit maximization with

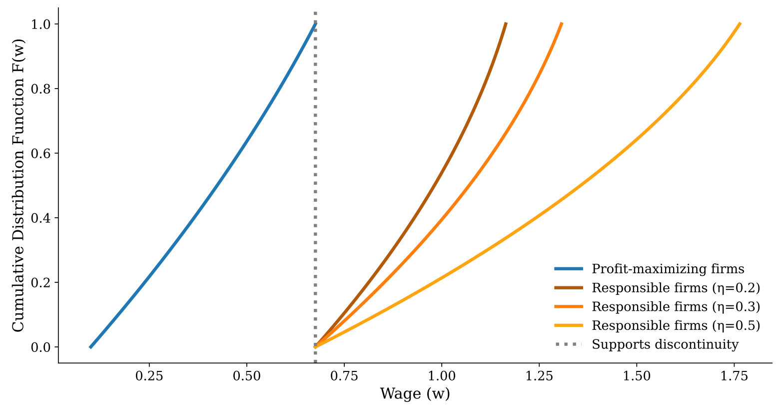

FIGURE 2. Responsible and profit-maximizing firm wage distributions

The figure presents the cumulative wage distributions for profit-maximizing (9) and responsible (10) firms, under varying levels of responsibility while holding productivity constant. The wage distribution for responsible firms is strictly above that of profit-maximizing firms, with greater dispersion as the level of responsibility increases. The parametrization used is $\delta = 0.05$, $\lambda = 0.2$, $\alpha = 0.5$, $y_1 = y_2 = 1$, and $w^r = 0.1$.

providing worker surplus. This dual objective requires offering a broader range of wages to account for varying levels of worker surplus, leading to greater wage dispersion.

Partial responsibility with different productivity. These results extend directly to the case where $y_2 > y_1$, as the productivity gap further strengthens the separation between the two types of firms.

Now, let us examine the case where $y_2 < y_1$, which introduces a conflict between the lower productivity of responsible firms and their tendency to offer higher wages, all else being equal. In this scenario, imperfectly overlapping supports remain impossible for the same reason as before. Consider, for example, the case where $\underline{w}_2 < \underline{w}_1 < \overline{w}_2 < \overline{w}_1$. In the overlapping region, the labor supply equations (A2) still apply. However, for $w > \overline{w}_2$, we would have

$$\ell_1(w) = \frac{\delta\lambda}{[\delta + \lambda(1 - F(w))]^2}$$

which implies a discontinuity in $\ell_1(w)$ at $\overline{w}_2$. This contradicts the requirement that all type 1 firms must earn the same profit.

Thus, firms of types 1 and 2 will post wages on distinct supports, with three possible cases. In the first case, the lower productivity of type 2 dominates, resulting in lower wages for these firms. In the second case, the stronger wage-posting tendency of type 2 dominates, leading to higher wages. In the third case, the two effects offset each other, and both types post wages on the same support.

In this third scenario, the equations from (A2) describe the distribution of labor supply between the two types of firms. Since both types offer wages in the same range, we have $\underline{w}_1 = \underline{w}_2 = w^r$, thus:

$$\frac{\delta\lambda}{[\delta + \lambda(1 - F(w))]^2}(y_1 - w) = \frac{\delta\lambda}{[\delta + \lambda]^2}(y_1 - w^r)$$

for profit-maximing firms, and

$$\frac{\delta\lambda}{[\delta + \lambda(1 - F(w))]^2}\left(y_2 - w + \eta\left(w - w^r\right)\right) = \frac{\delta\lambda}{[\delta + \lambda]^2}\left(y_2 - w^r\right)$$

for responsible firms. Since the cumulative distribution of wages must be the same in both expressions, we can equate the two, implying

$$F(w) = \frac{\delta + \lambda}{\lambda}\left(1 - \sqrt{\frac{y_1 - w}{y_1 - w^r}}\right) = \frac{\delta + \lambda}{\lambda}\left(1 - \sqrt{\frac{y_2 - w + \eta\left(w - w^r\right)}{y_2 - w^r}}\right)$$

This requires a knife-edge condition linking the productivity gap between responsible firms and their degree of responsibility (see Appendix A for details), given by:

$$\eta = \frac{y_1 - y_2}{y_1 - w^r}$$

This condition provides the threshold for η, below which responsible firms post lower wages, and above which they post higher wages than profit-maximizing firms.

Full responsibility. The total stakeholder value a firm generates is given by $\ell(w)\left(y - w^r\right)$. Since this expression increases with w, a firm that seeks to maximize stakeholder value will aim to offer the highest viable wage. This implies that such firms will post a wage w^* where

$$\ell(w^*)\left(y - w^r\right) = 0$$

The responsible firms will converge at this wage level, offering the highest sustainable wage. As a result, these firms will become identical, all concentrated at the maximum wage level they can sustain for their productivity level.

3.3. Discussion

This wage-posting model with responsible firms shows how social responsibility impacts the wage distribution. Responsible firms consistently offer wages higher than profit-maximizing firms, even when only partially accounting for worker surplus, creating a distinct, higher-wage sector in the labor market. This segmentation may affect job search behavior, as workers will likely prefer these firms, with second-order implications on the overall matching efficiency.

Moreover, responsible firms exhibit greater wage dispersion and variation in size compared to profit-maximizing firms. However, in cases of full responsibility, all responsible firms converge to the highest sustainable wage, leading to wage compression at the upper end of the distribution.

Finally, while more productive firms tend to rank higher in the wage distribution in standard wage-posting models, introducing responsible firms can alter this typical link between productivity and wages. Specifically, firms with lower productivity may post higher wages than more productive firms if they place sufficient weight on worker surplus, depending on the degree of responsibility and the productivity gap.

4. A DMP model with responsible firms

In this section, we revisit the foundational Diamond (1982), Mortensen (1982), and Pissarides (1985) (DMP) search model, extending it by introducing labor market responsibility. Again, we allow here a representative firm to include a portion of the worker's surplus in its objective function, reflecting a specific form of corporate social responsibility.

In the standard DMP model, wages are determined through a bargaining process where the relative bargaining power of workers and shareholders is exogenously fixed. We modify this assumption both normatively and positively. First, we characterize optimal governance by allowing firms to endogenously choose the bargaining power allocated to workers to maximize the total surplus of stakeholders. Next, we examine how market equilibrium shifts when some firms increase workers' bargaining power. Our aim here is to provide insights into the macroeconomic implications of corporate social responsibility in labor markets.

4.1. The standard DMP setting

Environment. Time is discrete and infinite. A unit mass of identical workers supplies labor inelastically at wage $w > b$, the exogenous unemployment allowance. Identical firms operate in the labor market, each employing at most one worker and producing with CRS technology using labor as the sole input. Firms can be either operational or idle. Operational firms may open vacancies, incurring a constant cost κ.

Once a vacancy is filled, the match produces y units of output and incurs a wage cost w. In each period, the match dissolves with exogenous probability δ. The firm does not control output, and wages result from an endogenous bargaining process

$$w^* \equiv \underset{w}{\operatorname{argmax}}\, S_\omega^{\phi} S_f^{1-\phi}$$

where ϕ is the worker's bargaining power, and S_ω and S_f are the worker's and firm's surpluses, respectively.

The matching process follows the function $M(u, v)$, where u and v are the aggregate measures of unemployed workers and vacancies, respectively. The matching function is concave and increasing in both arguments. Labor market tightness is $\theta = v/u$. Given $M(u, v)$ is homogeneous of degree one, the probability of filling a vacancy is $q(\theta) = M(1/\theta, 1)$, and the probability an unemployed worker finds a job is $p(\theta) = \theta q(\theta)$. Since $M(u, v)$ is increasing, $q(\theta)$ is decreasing, and $p(\theta)$ is increasing in θ.

Both workers and firms discount the future at a common discount rate $\beta < 1$. A representative worker can be either employed or unemployed at any given time. In stationary equilibrium, the present values of an employed or unemployed worker are respectively given by

$$W = w + \beta\left[\delta U + (1 - \delta)W\right] \quad \text{and} \quad U = b + \beta\left[\theta q(\theta)W + (1 - \theta q(\theta))U\right]$$

respectively. Similarly, a firm with a filled or unfilled vacancy has value

$$J = y - w + \beta\left[\delta V + (1 - \delta)J\right] \quad \text{and} \quad V = \max\left\{-\kappa + \beta\left[q(\theta)J + (1 - q(\theta)V\right], 0 + \beta V\right\}$$

respectively.

The laws of motion establish steady-state relationships between unemployment, vacancies, and market parameters: $u = \frac{\delta}{\delta + \theta q(\theta)}$ and $v = \frac{\delta\theta}{\delta + \theta q(\theta)}$. The total number of firms in the economy is $N = v + (1 - u)$. In a steady state, this becomes

$$N = \theta \frac{\delta + q(\theta)}{\delta + \theta q(\theta)} \tag{11}$$

which implies a positive relationship between N and θ.

Surplus. The worker's surplus, S_ω, is the difference between the present value of employment and unemployment, while the firm's surplus, S_f, is the difference between the present value of employing a worker and the value of an unfilled vacancy:

$$S_\omega = W - U = \frac{w - b}{1 - \beta\left(1 - \delta - \theta q(\theta)\right)} \quad \text{and} \quad S_f = J - V = \frac{y - w + \kappa}{1 - \beta\left(1 - \delta - q(\theta)\right)}$$

The bargaining process at the firm level links w to the underlying parameters, taking the external values U, V, and market tightness θ as given. Consequently, the surpluses that influence the bargaining outcome are computed as

$$\hat{S}_\omega = \frac{w + \beta\delta U}{1 - \beta(1 - \delta)} - U = \frac{w - U(1 - \beta)}{1 - \beta(1 - \delta)} \quad \text{and} \quad \hat{S}_f = \frac{y - w + \beta\delta V}{1 - \beta(1 - \delta)} - V = \frac{y - w - V(1 - \beta)}{1 - \beta(1 - \delta)}$$

and this implies maximizing $(w - U(1-\beta))^{\phi} \left(y - w - V(1-\beta)\right)^{1-\phi}$ and yields

$$w = \phi\left(y - V(1-\beta)\right) + (1-\phi)U(1-\beta) \tag{12}$$

While much of the literature assumes free entry of firms, we also examine the case where free entry does not hold. This is relevant in markets where firms with varying levels of responsibility coexist.

Free entry equilibrium. Under free entry, the number of firms N is endogenous. In equilibrium, firms are indifferent between posting a vacancy or not, implying $V = \beta V \Rightarrow V = 0$. Consequently, $\kappa = \beta q(\theta) J$, allowing us to derive the job creation (Beveridge) curve:

$$w = y - \kappa \frac{1-\beta(1-\delta)}{\beta q(\theta)} \tag{13}$$

which shows a negative relation between w and θ, as $q(\theta)$ decreases in θ.

Another wage relation arises from inserting the equilibrium values of U and V in the bargaining equation (12), obtaining

$$w = \varphi(\theta) y + (1-\varphi(\theta)) b \tag{14}$$

where

$$\varphi(\theta) = \frac{\left[1-\beta\left(1-\delta-\theta q(\theta)\right)\right]\phi}{\left[1-\beta\left(1-\delta-\theta q(\theta)\right)\right]\phi + \left[1-\beta(1-\delta)\right](1-\phi)}$$

This function is increasing in both ϕ and θ. Combining these wage equations determines market tightness through the implicit condition:

$$\varphi(\theta) y + (1-\varphi(\theta)) b = y - \kappa \frac{1-\beta(1-\delta)}{\beta q(\theta)} \tag{15}$$

The left-hand side increases in θ, while the right-hand side decreases, implying a unique solution for θ. This can be conveniently rewritten as

$$q(\theta)(1-\varphi(\theta)) = \frac{\kappa}{y-b}\left(\frac{1}{\beta} - 1 + \delta\right)$$

showing that—since the left-hand side is decreasing in θ—market tightness increases with y and decreases with b, κ, which is intuitive. Furthermore, since $\varphi(\theta)$ increases with ϕ, market tightness decreases as ϕ rises. This is intuitive again, as a higher ϕ raises the equilibrium wage in (13) for a given θ. Additionally, note that inserting the Beveridge curve into the wage equation (12) simplifies the expression for w, which remains increasing in θ:

$$w = \phi y + (1-\phi) b + \phi\theta\kappa$$

Equilibrium with no free entry. Without free entry, the number of firms N is fixed, implicitly determining market tightness via the steady-state conditions on unemployment and vacancies (11). The equilibrium wage is still derived from the bargaining equation (12) and simplifies to

$$w = \hat{\varphi}(\theta)(y + \kappa) + (1 - \hat{\varphi}(\theta))b \tag{16}$$

where $\hat{\varphi}(\theta)$ is defined as:

$$\hat{\varphi}(\theta) = \frac{\phi\left[1 - \beta\left(1 - \delta - \theta q(\theta)\right)\right]}{\phi\left[1 - \beta\left(1 - \delta - \theta q(\theta)\right)\right] + (1 - \phi)\left[1 - \beta\left(1 - \delta - q(\theta)\right)\right]}$$

This function $\hat{\varphi}(\theta)$ shares the same properties as $\varphi(\theta)$ described in the case of free entry.

Elastic labor supply. Instead of assuming an inelastic labor supply of mass 1 (when $w > b$), we can generalize to a labor supply $L(w)$, where $L(w) = 0$ when $w \leq b$. This supply represents the extensive margin (labor market participation), as individual labor time is not a choice in this model.

The steady-state variables become $u = \frac{\delta L(w)}{\delta + \theta q(\theta)}$ and $v = \frac{\delta \theta L(w)}{\delta + \theta q(\theta)}$, while the number of firms is:

$$N = v + \left(L(w) - u\right) = L(w)\theta \frac{\delta + q(\theta)}{\delta + \theta q(\theta)} \tag{17}$$

With free entry, equilibrium wage and market tightness are determined by (14) and (15), unaffected by labor supply, replacing N with $N/L(w)$. Once w is determined, the numbers of firms and workers (employed and unemployed) adjust according to the labor supply.

Without free entry, market tightness depends on the wage and decreases as w rises since a higher wage attracts more workers, reducing tightness. Thus, w and θ are jointly determined by (16) and (17), where the first equation shows a positive relation between w and θ, while the second shows a negative relation.

4.2. Seeking optimal corporate governance

To represent corporate social responsibility, we focus on the total surplus of stakeholders. At the firm level, this is simply $\hat{S}_w + \hat{S}_f$, while at the economy-wide level, it is given by $(N - v)\left(S_w + S_f\right)$. This definition of aggregate stakeholder value abstracts from inequality considerations, which could justify assigning different weights to stakeholders.

Setting. In this model, the firm's only decision affecting its employees is the wage choice, jointly determined through a bargaining process. In some sense, this framework already captures a form of inclusive governance, which can be interpreted as an expression of corporate social responsibility, departing from pure shareholder value maximization. Therefore, the central question regarding corporate social responsibility in this context is determining the optimal balance of power in the bargaining process. This question can be considered at two levels: at the firm level, aiming to maximize total stakeholder value for the firm, and at the economy level, aiming to maximize total stakeholder value across all firms in activity.

At the firm level, the analysis is simplified by the fact that the total surplus is given by $\hat{S}_\omega + \hat{S}_f = \frac{y-(U+V)(1-\beta)}{1-\beta(1-\delta)}$ and does not depend on the wage or the relative bargaining power of the workers. Only inequality considerations—specifically between workers and shareholders—could justify altering the wage. Therefore, without such considerations, there is no rationale for adjusting corporate governance to pursue stakeholder value maximization.

However, more complex considerations arise economy-wide because the equilibrium wage influences U and V. Assuming a uniform equilibrium wage across all firms, this wage affects the continuation values of both workers and shareholders differently. Additionally, under conditions of free entry, the equilibrium wage influences the number of firms in operation and the level of employment.

Equilibrium with no free entry. Consider first the case of no free entry, with a fixed number of firms N and an associated fixed tightness θ. At the equilibrium, the level of total surplus is

$$\begin{aligned}(N-v)\left(S_\omega + S_f\right) &= \frac{\theta q(\theta)}{\delta+\theta q(\theta)}\left[\frac{y-w+\kappa}{1-\beta(1-\delta-q(\theta))}+\frac{w-b}{1-\beta(1-\delta-\theta q(\theta))}\right] \\ &= \frac{\theta q(\theta)}{\delta+\theta q(\theta)}\left[w\frac{\beta q(\theta)(1-\theta)}{[1-\beta(1-\delta-q(\theta))]\,[1-\beta(1-\delta-\theta q(\theta))]}\right. \\ &\quad \left. + \frac{y+\kappa}{1-\beta(1-\delta-q(\theta))}-\frac{b}{1-\beta(1-\delta-\theta q(\theta))}\right]\end{aligned}$$

This relationship shows that a higher wage is desirable when the market is not tight and there is significant unemployment (i.e., $\theta < 1$). This is because workers have a higher discount factor than shareholders, as their probability of finding a job is lower than the probability of a firm filling a vacancy. Note that we compute the surplus here, not the total social welfare, because this model essentially operates in partial equilibrium: the cost of resources such as b is not factored into the calculation. In this framework, both vacant firms and unemployed workers are assumed to have zero surplus.

Free entry equilibrium. Under free entry, an additional consideration is that changing the wage affects not only the surplus but also the number of firms in the market and, consequently, market tightness. Retaining the assumption of identical firms, the total surplus is given by substituting N and w into the previous expression:

$$
\begin{aligned}
(N-v)\left(S_\omega + S_f\right) = \frac{\theta q(\theta)}{\delta+\theta q(\theta)} &\left[\frac{\beta q(\theta)(1-\theta)\left[\phi y + (1-\phi)b + \phi\theta\kappa\right]}{\left[1-\beta\left(1-\delta-q(\theta)\right)\right]\left[1-\beta\left(1-\delta-\theta q(\theta)\right)\right]}\right. \\
&\left. + \frac{(y+\kappa)\left[1-\beta\left(1-\delta-\theta q(\theta)\right) - b\left[1-\beta\left(1-\delta-q(\theta)\right)\right]\right]}{\left[1-\beta\left(1-\delta-q(\theta)\right)\right]\left[1-\beta\left(1-\delta-\theta q(\theta)\right)\right]}\right] \\
= \frac{\theta q(\theta)}{\delta+\theta q(\theta)} &\left[\phi\frac{\beta q(\theta)(1-\theta)\left(y-b+\theta\kappa\right)}{\left[1-\beta\left(1-\delta-q(\theta)\right)\right]\left[1-\beta\left(1-\delta-\theta q(\theta)\right)\right]}\right. \\
&\left. + \frac{y+\kappa-b}{1-\beta\left(1-\delta-\theta q(\theta)\right)}\right]
\end{aligned}
$$

Maximizing this expression with respect to ϕ and obtaining a closed-form solution is impossible, but it is possible to analyze how the different components vary with ϕ.

From (15), we know that $q(\theta)$ increases with ϕ, which implies that θ, $\theta q(\theta)$, and thus $N = \theta\frac{\delta+q(\theta)}{\delta+\theta q(\theta)}$, all decrease as ϕ increases. The depressive effect of higher wages on the number of firms in the free-entry equilibrium counteracts the incentive to increase workers' bargaining power.

The effect of ϕ on $S_\omega + S_f$ through the wage is clearly positive, provided that $\theta < 1$, making it positively dependent on w. However, the indirect effect of ϕ on $S_\omega + S_f$ via θ is ambiguous. An increase in ϕ reduces θ in equilibrium. Such a reduction, in turn, increases S_ω by reducing the probability of finding a job, which lowers the value of the outside option (unemployment). At the same time, it decreases S_f by reducing the firm's share of the surplus.[5] However, macroeconomic effects arise when analyzing the total surplus in the economy, as changes in bargaining power alter the equilibrium number of firms operating in the market. This, in turn, influences the overall surplus.

Calibration and simulations. To better illustrate the endogenous relationships between bargaining power, market tightness, and economy-wide surplus, we calibrate the model following Hagedorn and Manovskii (2008) and Hänsel (2024), and simulate outcomes for different values of ϕ. Figure 3 presents the results of these simulations.

Several key insights emerge from the figure. First, it demonstrates the negative relationship between bargaining power and market tightness, reflected in the employment rate: as workers gain more bargaining power, firm profitability decreases, leading to fewer firms, reduced vacancies, and lower employment in equilibrium. Second, the figure shows the positive relationship between wages and ϕ, as increased bargaining power enables workers to push wages closer to the marginal product of labor. Third, bargaining power affects worker and firm surpluses in opposite ways, as expected.

[5] Keep in mind that the firm's outside option has zero value under free entry.

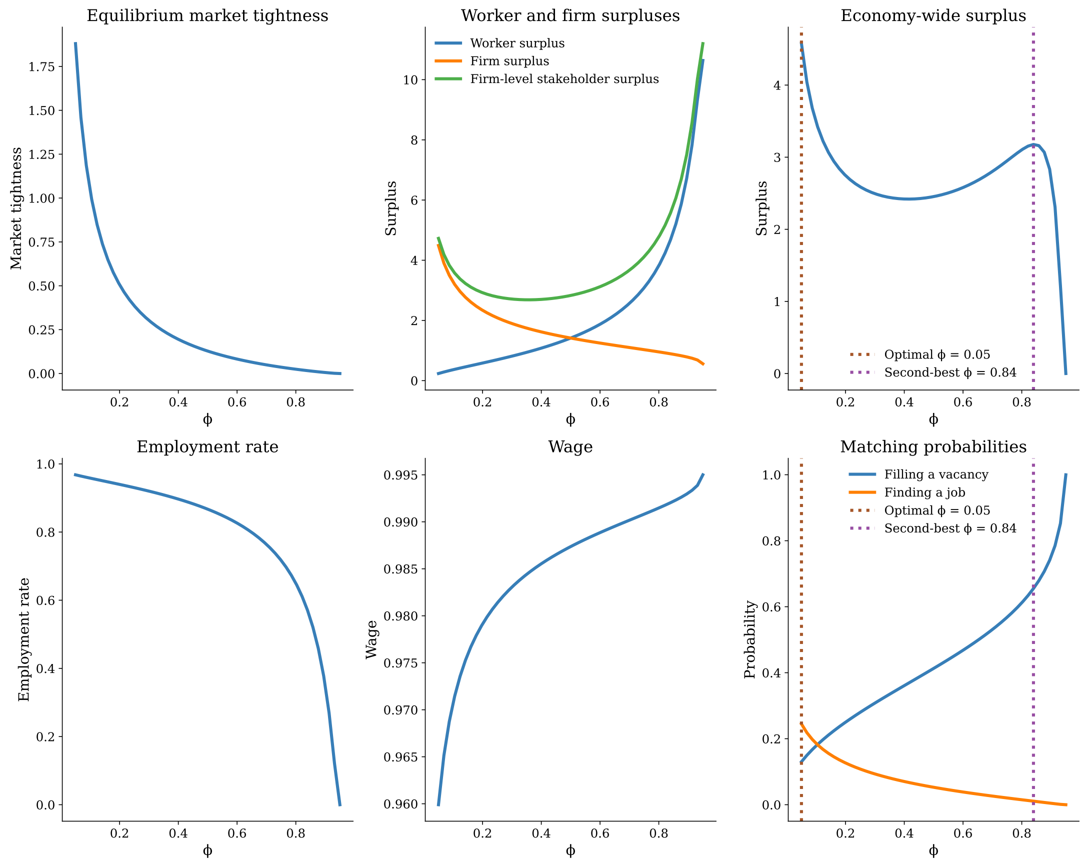

FIGURE 3. Optimal corporate governance in the DMP model

The six panels depict the equilibrium in the DMP model, where responsible firms optimize corporate governance under free entry. The second-best value of ϕ represents the interior solution that maximizes the economy-wide surplus when ϕ is not negligible. The model is calibrated following Hagedorn and Manovskii (2008) and Hänsel (2024), assuming $q(\theta) = (1+\theta^{\alpha})^{1-\alpha}$ with $\alpha = 0.407$, and parameter values set as $y = 1$, $b = 0.9$, $\kappa = 0.584$, $\beta = 0.99^{1/12}$, and $\delta = 0.0081$. The value of ϕ ranges between 0.05 and 0.95.

The firm-level stakeholder surplus ($S_{\omega} + S_f$) exhibits a noteworthy pattern. While the economy-wide surplus is maximized at very low bargaining power, firm-level stakeholder surplus does not reach its maximum at the minimum ϕ. This outcome arises due to the endogenous response of employment reflected by the number of operating firms, which is exceptionally high when bargaining power approaches zero. As the model moves away from this extreme case, an interior solution with a high ϕ emerges, balancing the increase in worker surplus, the reduction in employment, and the decrease in firm surplus. This balance is offset by a significant rise in the probability of filling vacancies.

Additionally, increasing ϕ attracts more workers into the labor market when the labor supply is elastic and responsive to wage changes (Figure 4). In this case, note that the first-best optimal ϕ corresponds to the former second-best value, as the employment effect from the increased number of operating firms is now absorbed by labor supply

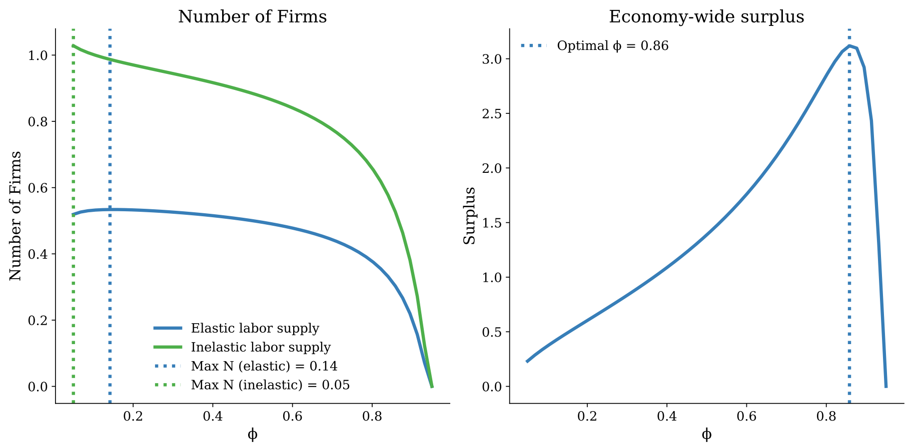

FIGURE 4. Optimal corporate governance with elastic labor supply

The figure reports the equilibrium where responsible firms optimize corporate governance under free entry with an elastic labor supply. The parametrization matches that of Figure 3. Additionally, labor supply is specified as $L(w) = \left(\frac{w-b}{b}\right)^{\gamma}$ with $\gamma = 0.3$, based on the median extensive-margin labor elasticity estimated by Blundell, Bozio, and Laroque (2013).

elasticity. Moreover, the figure shows that the equilibrium number of operating firms becomes concave, as attracting workers mitigates the negative impact of higher wages on firms' profits by ensuring access to a larger labor pool. Despite this mitigation, the overall negative relationship is maintained since increasing bargaining power yields diminishing marginal returns in terms of worker participation. Under these assumptions, this result may further justify strengthening workers' bargaining power in collective negotiations.

4.3. A subset of firms giving more power to the workers

After addressing the normative question of optimal firm governance, we now turn to a positive analysis to examine how market equilibrium is affected when a subset of firms adopts a governance structure that grants workers greater bargaining power. Specifically, we investigate the macroeconomic implications when a fraction γ of firms increase their worker bargaining parameter from ϕ to $\phi_{\mathcal{R}}$ with $\phi < \phi_{\mathcal{R}}$.

We proceed by presenting a series of propositions describing responsible firms' behavior and their impact on regular firms. The proofs of the propositions are provided in Appendix A.

Setup. Consider a DMP-style labor market where firms and workers engage in wage bargaining. A fraction g of "responsible firms" adopt a higher bargaining power parameter for workers, $\phi_{\mathcal{R}}$, while the remaining $1-\gamma$ firms retain the original parameter ϕ. This change does not alter the total surplus at the firm level but may influence the overall market equilibrium. For simplicity, we assume that the higher wages offered by responsible firms do not affect their probability of filling vacancies. The wage equations for the two types of firms are:

$$w = \phi\,(y - V(1-\beta)) + U\,(1-\phi)\,(1-\beta) \tag{18}$$

for the regular firm and

$$w_{\mathcal{R}} = \phi_{\mathcal{R}}\,(y - V_{\mathcal{R}}(1-\beta)) + U\,(1-\phi_{\mathcal{R}})\,(1-\beta) \tag{19}$$

for the responsible one.

We start by establishing the following result on the survival of responsible firms.

PROPOSITION 2. *In a free-entry equilibrium, no responsible firm survives in the market.*

Proposition 2 highlights a significant limitation for responsible firms in competitive labor markets with free entry. The result indicates that firms paying higher wages due to stronger worker bargaining power cannot remain competitive when new firms can enter the market freely. This underscores a fundamental tension between corporate social responsibility in wage-setting and the pressures of highly competitive markets. In a broad sense, it implies that without some form of market protection or differentiation, responsible firms may be pushed out by profit-maximizing competitors who can offer lower prices or higher returns to shareholders.

Equilibrium with no free entry. Given Proposition 2, we focus on a scenario without free entry, where market tightness θ is fixed by the number of firms. This allows for the coexistence of both types of firms.

In this setting, we start by establishing the following proposition regarding the equilibrium wages of a responsible firm.

PROPOSITION 3. *In an equilibrium with fixed market tightness* $\theta < 1$*, responsible firms pay higher wages than ordinary firms, provided the total surplus is positive when wages are zero.*

The condition that the total surplus remains positive when wages are zero is relatively weak, suggesting that this result likely holds in most realistic scenarios. The proposition shows that responsible firms can sustain higher wages in markets with a fixed number of firms and slack labor conditions, which suggests that responsible wage policies may be more feasible in industries with barriers to entry or during economic downturns when labor markets are less tight.

PROPOSITION 4. *The introduction of responsible firms in a market with no free entry raises the wages in both responsible and regular firms above the initial wage level.*

The presence of responsible firms offering higher wages raises the value of unemployment U for all workers, as the expected utility of being unemployed now includes the possibility of matching with a higher-wage responsible firm. This higher U strengthens workers' outside options in wage negotiations, prompting ordinary firms to offer higher wages to remain competitive. Consequently, this reduces V, further reinforcing the increase in w.

PROPOSITION 5. *In a stationary equilibrium with no free entry, the wage gap between responsible and ordinary firms decreases monotonically as the fraction* γ *of responsible firms increases.*

As γ increases, more firms offer higher wages due to the increased worker bargaining power $\phi_{\mathcal{R}}$. This leads to a rise in the overall expected value of unemployment, as workers are more likely to be matched with a high-wage firm. The increase in U strengthens the workers' outside option during wage negotiations with ordinary firms, which drives up wages in these firms. As a result, the wage gap between responsible firms and ordinary firms, $w_{\mathcal{R}} - w$, decreases because the wages in ordinary firms increase. In contrast, the wages in responsible firms remain relatively stable, as these firms already offer higher salaries.

4.4. Discussion

Again, we end by taking the stocks of the insight of this model.

Under free entry, several key relationships emerge in equilibrium: increased worker bargaining power reduces firm profitability, leading to fewer firms, fewer vacancies, and lower employment. Higher bargaining power also raises wages, bringing them closer to the marginal product of labor, but it affects worker and firm surpluses in opposite directions. Notably, while the overall economy's surplus is maximized at low bargaining power, firm-level stakeholder surplus peaks at higher bargaining power due to a balance between increased worker surplus, reduced employment, and improved vacancy-filling rates. Moreover, higher bargaining power attracts more workers into the labor market when labor supply is elastic, providing a rationale for strengthening collective bargaining power as a second-best optimum, particularly when worker bargaining power cannot be reduced to near zero.

Moreover, we established several key findings from a positive perspective. In markets with free entry, responsible firms struggle to survive due to their higher wage offerings, which make them uncompetitive against profit-maximizing firms that undercut them on costs. This highlights the tension between socially responsible wage-setting and competitive pressures. However, responsible firms can coexist with ordinary firms in loose markets without free entry. In these cases, responsible firms pay higher wages under mild conditions. Moreover, these firms' presence raises unemployment value for all workers, improving their outside options during wage negotiations. This forces ordinary firms to increase wages to stay competitive, leading to an overall rise in wage levels. As the share of responsible firms grows, the wage gap between responsible and ordinary firms narrows as ordinary firms continue adjusting wages upward in response to stronger worker bargaining positions. This dynamic suggests that responsible wage-setting practices can lift wages across the market and improve worker welfare.

5. Conclusions

This paper has introduced a theory of responsible firms within labor markets with search frictions. Our analysis provides insights into how corporate responsibility interacts with labor market dynamics.

Responsible firms align with profit-maximizing firms in handling efficiency-wage effects and turnover costs, suggesting that some labor market behaviors are governed more by economic fundamentals than corporate ethos. However, a key difference emerges in how responsible firms use market power. In slack labor markets or when offering comparatively higher wages, responsible firms refrain from exploiting their market position, acknowledging workers' vulnerability with limited employment alternatives. Conversely, in tight labor markets where workers have abundant options, responsible firms may use their market power without adversely impacting worker welfare.

Moreover, responsible firms tend to offer higher wages, leading to greater wage dispersion—unless they fully maximize stakeholder surplus, in which case wages converge at the highest sustainable level. This wage-setting behavior contributes to a distinct segmentation in the labor market, potentially affecting job search dynamics and matching efficiency.

Turning to governance practices, increasing worker bargaining power can enhance the firm's surplus in slack markets due to differing discount rates between workers and shareholders. However, in markets with free entry, higher workers' power may diminish profitability and reduce the number of firms, potentially lowering the total surplus.

Future research could delve deeper into the long-term macroeconomic impacts of responsible behavior, such as its effects on productivity growth and income inequality.

References

Baron, David P. 2008. "Managerial contracting and corporate social responsibility." *Journal of Public Economics* 92 (1-2): 268–288.

Bénabou, Roland, and Jean Tirole. 2010. "Individual and corporate social responsibility." *Economica* 77 (305): 1–19.

Besley, Timothy, and Maitreesh Ghatak. 2017. "Profit with purpose? A theory of social enterprise." *American Economic Journal: Economic Policy* 9 (3): 19–58.

Blundell, Richard, Antoine Bozio, and Guy Laroque. 2013. "Extensive and intensive margins of labour supply: work and working hours in the US, the UK and France." *Fiscal Studies* 34 (1): 1–29.

Bowen, Howard R. 2013. *Social responsibilities of the businessman.*: University of Iowa Press.

Brekke, Kjell Arne, and Karine Nyborg. 2008. "Attracting responsible employees: Green production as labor market screening." *Resource and Energy Economics* 30 (4): 509–526.

Burdett, Kenneth, and Dale T Mortensen. 1998. "Wage differentials, employer size, and unemployment." *International Economic Review*: 257–273.

De Bakker, Frank GA, Dirk Matten, Laura J Spence, and Christopher Wickert. 2020. "The elephant in the room: The nascent research agenda on corporations, social responsibility, and capitalism."

Diamond, Peter A. 1982. "Wage determination and efficiency in search equilibrium." *The Review of Economic Studies* 49 (2): 217–227.

Edmans, Alex. 2011. "Does the stock market fully value intangibles? Employee satisfaction and equity prices." *Journal of Financial economics* 101 (3): 621–640.

Fioretti, Michele. 2022. "Caring or pretending to care? social impact, firms' objectives, and welfare." *Journal of Political Economy* 130 (11): 2898–2942.

Flammer, Caroline. 2015. "Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach." *Management science* 61 (11): 2549–2568.

Fleurbaey, Marc, and Grégory Ponthière. 2023. "The stakeholder corporation and social welfare." *Journal of Political Economy* 131 (9): 2556–2594.

Frey, Sherry, Jordan Bar Am, Vinit Doshi, Anandi Malik, and Steve Noble. 2023. "Consumers care about sustainability-—and back it up with their wallets." *McKinsey and NielsenIQ joint study* https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/consumers-care-about-sustainability-and-back-it-up-with-their-wallets.

Friedman, Milton. 1970. "The Soscial Responsibility of Business is to Increase its Profits." *New York Times Magazine, September* 13: 122–126.

Hagedorn, Marcus, and Iourii Manovskii. 2008. "The cyclical behavior of equilibrium unemployment and vacancies revisited." *American Economic Review* 98 (4): 1692–1706.

Hänsel, Matthias. 2024. "Solving the Diamond–Mortensen–Pissarides model: A hybrid perturbation approach." *Economics Letters* 236: 111621.

Hart, Oliver, and Luigi Zingales. 2017. "Companies Should Maximize Shareholder Welfare Not Market Value." *Journal of Law* 2: 247–274.

Kitzmueller, Markus, and Jay Shimshack. 2012. "Economic perspectives on corporate social responsibility." *Journal of economic literature* 50 (1): 51–84.

Magill, Michael, Martine Quinzii, and Jean-Charles Rochet. 2015. "A theory of the stakeholder corporation." *Econometrica* 83 (5): 1685–1725.

Mayer, Colin. 2013. *Firm commitment: Why the corporation is failing us and how to restore trust in it.*: OUP Oxford.

Mortensen, Dale T. 1982. "The matching process as a noncooperative bargaining game." In *The economics of information and uncertainty*, 233–258: University of Chicago Press.

Pissarides, Christopher A. 1985. "Short-run equilibrium dynamics of unemployment, vacancies, and real wages." *The American Economic Review* 75 (4): 676–690.

Planer-Friedrich, Lisa, and Marco Sahm. 2020. “Strategic corporate social responsibility, imperfect competition, and market concentration.” *Journal of Economics* 129 (1): 79–101.

Appendix A. Additional computations and proofs

A.1. Proof of Proposition 1

PROOF. In competitive equilibrium, all type 2 firms operating in the market generate the same surplus:

$$\text{(A1)} \qquad \begin{cases} \ell(w)\,[y - w + \eta(w - w^r)] = \sigma & w \in \text{Supp}(F_2) \\ \ell(w)\,[y - w + \eta(w - w^r)] < \sigma & w \notin \text{Supp}(F_2) \end{cases}$$

Assume the wage supports of F_1 (profit-maximizing firms) and F_2 (responsible firms) overlap. In the wage range where the wage supports overlap, the labor supply functions are given by:

$$\text{(A2)} \qquad \ell_1(w) = \alpha \frac{\delta\lambda}{[\delta + \lambda\,(1 - F(w))]^2} \quad \text{and} \quad \ell_2(w) = (1-\alpha)\frac{\delta\lambda}{[\delta + \lambda\,(1 - F(w))]^2}$$

Given the fixed proportion of the two firm types, the maximization of the responsible firms' objective, $\ell_2(w)\,[y - w + \eta(w - w^r)]$, yields the same optimal wage as the maximization of the objective $\ell(w)\,[y - w + \eta(w - w^r)]$. This optimal wage is higher than the wage that would be chosen if the firms were only maximizing $\ell(w)(y - w)$, disregarding worker surplus. As a result, if the wage supports overlap, we would have:

$$\underline{w}_1 < \underline{w}_2 < \overline{w}_1 < \overline{w}_2$$

This implies that the lower bound of wages paid by responsible firms is higher than that of profit-maximizing firms, and the same is true for the upper bounds. Under such circumstances, $\ell_2(w)$ would experience a discontinuity at $\overline{w}_1$, as it would lose the factor $(1 - \alpha)$ when crossing this threshold. This discontinuity conflicts with the equilibrium conditions in (A1), indicating that no overlap between the wage supports of the two firm types can occur. □

A.2. Knife-edge condition

We derive here the knife-edge condition linking the productivity gap between the two tupes of firms and the degree of responsibility η of the responsible firms. We start from

$$F(w) = \frac{\delta+\lambda}{\lambda}\left(1 - \sqrt{\frac{y_1 - w}{y_1 - w^r}}\right) = \frac{\delta+\lambda}{\lambda}\left(1 - \sqrt{\frac{y_2 - w + \eta\,(w - w^r)}{y_2 - w^r}}\right)$$

Simplifying and squaring both side we get

$$\frac{y_1 - w}{y_1 - w^r} = \frac{y_2 - w + \eta\left(w - w^r\right)}{y_2 - w^r}$$

We further cross-multiply and rearrange to get

$$(y_1 - w)(y_2 - w^r) = \left(y_1 - w^r\right)\left[y_2 - w + \eta(w - w^r)\right]$$

Now take the difference between the right-hand side and left-hand side:

$$\begin{aligned}
&\left[\left(y_1 - w^r\right)(y_2 - w) + \eta\left(y_1 - w^r\right)\left(w - w^r\right)\right] - \left[y_1 y_2 - y_1 w^r - y_2 w + w w^r\right] = \\
&\left(-y_1 w + y_1 w^r + y_2 w - y_2 w^r + \eta\left(y_1 - w^r\right)\left(w - w^r\right)\right) = \\
&\left[-(y_1 - y_2) + \eta\left(y_1 - w^r\right)\right]\left(w - w^r\right)
\end{aligned}$$

Now set this difference to zero. Since $w - w^r > 0$, we must have

$$-(y_1 - y_2) + \eta(y_1 - w^r) = 0$$

Solving for η leads to

$$\eta = \frac{y_1 - y_2}{y_1 - w^r}$$

A.3. Surplus derivation

The general structure of the value functions $J = \frac{y-w+\beta\delta V}{1-\beta(1-\delta)}$, $V = \frac{-\kappa+\beta q(\theta)J}{1-\beta(1-q(\theta))}$ and $W = \frac{w+\beta\delta U}{1-\beta(1-\delta)}$, $U = \frac{b+\beta\theta q(\theta)W}{1-\beta(1-\theta q(\theta))}$, respectively, can be summarized as

$$A = \frac{a + \beta\delta C}{1 - \beta\left(1 - \delta\right)} \quad \text{and} \quad C = \frac{c + \beta d A}{1 - \beta\left(1 - d\right)}$$

This allows us to compute the general formulas

$$A = \frac{a\left[1 - \beta(1 - d)\right] + \beta\delta c}{(1 - \beta)\left[1 - \beta(1 - \delta - d)\right]} \quad \text{and} \quad C = \frac{c\left(1 - \beta\left(1 - \delta\right)\right) + \beta d a}{(1 - \beta)\left[1 - \beta(1 - \delta - d)\right]}$$

and, in turn,

$$A - C = \frac{a - c}{1 - \beta\left(1 - \delta - d\right)}$$

Applying this formula to the two cases, we get

$$J = \frac{(y - w)\left[1 - \beta\left(1 - q(\theta)\right)\right] - \beta\delta\kappa}{(1 - \beta)\left[-\beta\left(1 - \delta - q(\theta)\right)\right]} \quad \text{and} \quad V = \frac{-\kappa\left[1 - \beta(1 - \delta)\right] + \beta q(\theta)\left(y - w\right)}{(1 - \beta)\left[1 - \beta\left(1 - \delta - q(\theta)\right)\right]}$$

for the firm side, and

$$W = \frac{w\left[1-\beta\left(1-\theta q(\theta)\right)\right]+\beta\delta b}{(1-\beta)\left[1-\beta\left(1-\delta-\theta q(\theta)\right)\right]} \quad \text{and} \quad U = \frac{b\left(1-\beta\left(1-\delta\right)\right)+\beta\theta q(\theta) w}{(1-\beta)\left[1-\beta\left(1-\delta-\theta q(\theta)\right)\right]}$$

for the worker side. Finally, we can compute

$$S_f = J - V = \frac{y-w+\kappa}{1-\beta\left(1-\delta-q(\theta)\right)} \quad \text{and} \quad S_\omega = W - U = \frac{w-b}{1-\beta\left(1-\delta-\theta q(\theta)\right)}$$

A.4. Proof of Proposition 2

PROOF. Under free entry, $V = V_{\mathcal{R}} = 0$, which implies, from the wage equations, that $w_{\mathcal{R}} > w$. Moreover, the following chain of equality must hold:

$$J - V = J = \frac{y-w}{1-\beta\left(1-\delta\right)} = \frac{\kappa}{\beta q(\theta)} = \frac{y-w_{\mathcal{R}}}{1-\beta\left(1-\delta\right)} = J_{\mathcal{R}} = J - V_{\mathcal{R}}$$

However, this leads to a contradiction, since

$$\frac{y-w_{\mathcal{R}}}{1-\beta\left(1-\delta\right)} < \frac{\kappa}{\beta q(\theta)} = \frac{y-w}{1-\beta\left(1-\delta\right)}$$

Therefore, when $V = 0$, it must be that $V_{\mathcal{R}} < 0$, implying that no responsible firm enters the market. □

A.5. Proof of Proposition 3

PROOF. We begin by rearranging the wage equations (18) and (19) into a linear system:

$$w = \frac{c + dw'}{D}$$
$$w_{\mathcal{R}} = \frac{c' + d'w}{D'}$$

where the coefficients are defined as

$$c = \phi(y+\kappa)A + (1-\phi)bB$$
$$d = (1-\phi)\frac{\beta\theta q(\theta)\gamma}{1-\beta\left(1-\delta-\theta q(\theta)\right)}$$
$$D = 1 - \phi E - (1-\phi)F$$

and similarly for c', d', D' with $\phi_{\mathcal{R}}$ and γ adjusted appropriately. Constants A, B, E, and F are functions of the model parameters and θ.

Solving the system yields:

$$w = \frac{D'c + dc'}{DD' - dd'}$$
$$w_{\mathcal{R}} = \frac{Dc' + d'c}{DD' - dd'}$$

To compare $w_{\mathcal{R}}$ and w we analyze the condition $w_{\mathcal{R}} > w$ which is equivalent to:

$$\frac{D' - d'}{D - d} < \frac{c'}{c}$$

The right-hand side is greater than 1 if

$$\frac{y + \kappa}{1 - \beta\,(1 - \delta - q(\theta))} > \frac{b}{1 - \beta\,(1 - \delta - \theta q(\theta))}$$

that is, $S_{\omega} + S_f > 0$ when $w = 0$. The left-hand side is smaller than 1 if and only if $\theta < 1$. □

A.6. Proof of Proposition 4

PROOF. Let w_0 denote the wage when $\gamma = 0$, i.e., where no responsible firms operate in the market. Using the same notation as in previous proofs, we have:

$$w_0 = \frac{c}{D - d}$$

The difference between the wage of regular firms before and after the introduction of responsible firms is:

$$w - w_0 = \frac{c + dw'}{D} - \frac{c}{D - d} = d\frac{c'(D - d) - c(D' - d')}{(DD' - dd')(D - d)} = (w_{\mathcal{R}} - w)\,\frac{d}{D - d}$$

This difference is positive under the same conditions as Proposition 3, since $d > 0$ and $D - d > 0$. □

A.7. Proof of Proposition 5

PROOF. Recall from the previous proofs the expression:

$$w_{\mathcal{R}} - w = \frac{c'(D - d) - c(D' - d')}{DD' - dd'}$$

The numerator does not depend on γ, so we can focus on $DD' - dd'$. This expression can be written as:

$$[1 - \phi E - (1 - \phi)(1 - \gamma)F]\,[1 - \phi_{\mathcal{R}} E - (1 - \phi_{\mathcal{R}})\gamma F] - (1 - \phi)(1 - \gamma)F(1 - \phi_{\mathcal{R}})\gamma F$$

where $E = \frac{\beta q(\theta)}{1-\beta(1-\delta-q(\theta))}$ and $F = \frac{\beta q(\theta)}{1-\beta(1-\delta-\theta q(\theta))}$.

This is an affine function in γ, with a coefficient equal to

$$-[1-\phi E]\left[(1-\phi_{\mathcal{R}}F\right]+\left[(1-\phi)F\right]\left[1-\phi_{\mathcal{R}}E\right]$$

This coefficient is positive if

$$\frac{1-\phi_{\mathcal{R}}E}{1-\phi_{\mathcal{R}}} > \frac{1-\phi E}{1-\phi}$$

which holds because $E < 1$.

Thus, the wage gap monotonically decreases with the proportion of firms that have a higher $\phi_{\mathcal{R}}$. □