Online Appendices for the paper "Leadership styles and Labor-Market Conditions" by Robert Dur, Ola Kvaløy, and Anja Schöttner

Online Appendix A

Proof of Proposition 1. First consider the case $r \leq k_F^h$. By (F), style F is dominated by pure monetary incentives. From $\min\{r, \underline{u} - \underline{w}\} \leq r$ and $k_F^h \leq \rho k_F^h + (1-\rho)k_F^l$, it follows that (FF) is not satisfied, which implies that style FF is also dominated by pure monetary incentives.

Now consider the case $r > k_F^h$. By (F), style F dominates pure monetary incentives. By (FF), style FF also dominates pure monetary incentives iff

$$(1-\rho)k_F^l < \min\{r, \underline{u} - \underline{w}\} - \rho k_F^h.$$

Moreover, comparing C_F and C_{FF}, style FF dominates style F iff

$$\max\{\underline{u} - r, \underline{w}\} + \rho k_F^h + (1-\rho)k_F^l < -\rho(r - k_F^h) + \underline{u}$$
$$\Leftrightarrow (1-\rho)k_F^l < \min\{r, \underline{u} - \underline{w}\} - \rho r.$$

Overall, style FF dominates both style F and pure monetary incentives iff

$$(1-\rho)k_F^l < \min\{\min\{r, \underline{u} - \underline{w}\} - \rho k_F^h, \min\{r, \underline{u} - \underline{w}\} - \rho r\} = \min\{r, \underline{u} - \underline{w}\} - \rho r.$$

■

Proof of Proposition 2. First note that condition (U) holds if and only if the following two conditions are satisfied simultaneously:

$$\frac{k_U^l}{s} < \frac{\rho}{1-\rho}, \quad (1-\rho)(s + k_U^l) < \underline{w} - \underline{u}.$$

Case (i) of the proposition thus immediately follows from conditions (F) and (U) as well as Lemma 4.

Now consider case (ii). By condition (F), style F dominates the benchmark of pure monetary incentives. From Lemma 4 and condition (U), additionally engaging in unfriendly leadership actions in case of low output is optimal if $\frac{k_U^l}{s} < \frac{\rho}{1-\rho}$ and (U') holds. The claim thus follows.

Finally, consider case (iii). From (F) and Lemma 4, neither style F nor style FU are profitable relative to pure monetary incentives. The claim thus follows from condition (U). ■

Proof of Proposition 3. We first address the question when—given that implementing a given leadership style is worthwhile relative to the benchmark with pure monetary incentives—the leadership style is also self-enforcing. First consider the conditional friendly leadership style F, and assume it is beneficial compared to the benchmark, i.e., condition (F) holds and hence $k_F^h < r$. Style F is self-enforcing if:

$$k_F^h \leq \sum_{t=1}^{\infty} \delta^t (C_0 - C_F) \quad \Leftrightarrow \quad k_F^h \leq \frac{\delta}{1-\delta}\rho(r - k_F^h). \tag{A1}$$

The condition reflects that the leader will comply with her announcement when her short-term gain from non-compliance, k_F^h, does not exceed her long-term loss, the term on the right-hand side. If the leader deviates from her announcement, the worker cannot be motivated by leadership anymore. Hence, the leader can only use monetary incentives to induce high effort, implying that expected per-period wage costs increase by $C_0 - C_F$.

Next consider unconditional friendly leadership, style FF, and assume it dominates the benchmark of pure monetary incentives, i.e., condition (FF) holds. Style FF is self-enforcing if the leader finds it beneficial to undertake the friendly action even if output is low (recall that $k_F^l \geq k_F^h$):

$$k_F^l \leq \sum_{t=1}^{\infty} \delta^t (C_0 - C_{FF}) \quad \Leftrightarrow \quad k_F^l \leq \frac{\delta}{1-\delta}(\min\{r, \underline{u} - \underline{w}\} - \rho k_F^h - (1-\rho)k_F^l). \tag{A2}$$

Condition (A1) shows that, whether style F is self-enforcing or not is independent of labor-market conditions as characterized by $\underline{w}$ and $\underline{u}$. By contrast, unconditional friendliness, style FF, is self-enforcing for (weakly) lower δ when $\underline{u} - \underline{w}$ increases, i.e., if the worker's labor market prospects become more attractive.

Now consider conditional unfriendly leadership, style U, and assume that this style is beneficial relative to no leadership, i.e., condition (U) holds. Unfriendly leadership is self-enforcing if:

$$k_U^l \leq \sum_{t=1}^{\infty} \delta^t (C_0 - C_U). \tag{A3}$$

Inspection of C_0 and C_U shows that the difference between the two wage-cost functions depends on whether $\underline{w} > \underline{u} + s$ holds or not. First assume that $\underline{w} > \underline{u} + s$. Condition (A3) then becomes:

$$k_U^l \leq \frac{\delta}{1-\delta}\left[\rho s - (1-\rho)k_U^l\right]. \tag{A4}$$

If $\underline{w} \leq \underline{u} + s$, condition (A3) is equivalent to:

$$k_U^l \leq \frac{\delta}{1-\delta}\left[\underline{w} - \underline{u} - (1-\rho)(k_U^l + s)\right]. \tag{A5}$$

Finally, consider the carrot-and-stick style FU and assume both (F) and (U) hold, so that the style dominates pure monetary incentives. The style is self-enforcing if:

$$\max\{k_F^h, k_U^l\} \leq \sum_{t=1}^{\infty} \delta^t (C_0 - C_{FU})$$

$$\Leftrightarrow \quad \max\{k_F^h, k_U^l\} \leq \frac{\delta}{1-\delta}(\min\{\underline{w} - \underline{u} - s, 0\} + \rho(s+r) - \rho k_F^h - (1-\rho)k_U^l). \quad \text{(A6)}$$

The conditions (A4), (A5), and (A6) indicate that a leadership style that involves unfriendly actions becomes self-enforcing for lower values of δ when $\underline{w} - \underline{u}$ increases, i.e., the worker's labor market prospects deteriorate.

Overall, from conditions (A1)—(A6) it follows that, if a leadership style dominates pure monetary incentives, the leadership style will be self-enforcing for sufficiently high discount factors or, in other words, when the leader sufficiently cares about future wage costs. ■

Proof of Lemma 6. Fix an arbitrary style $LS \in \{FF, F, U, UU, 0\}$ and consider a leader of type θ who will engage in this style, as described in Lemma 5. Defining u_l^{LS} as the leader's wage net of leadership costs and u_w^{LS} as the worker's expected utility under the style, the leader will accept the contract if and only if her expected utility is at least as high as her reservation utility,

$$(1-\theta)u_l^{LS} + \theta u_w^{LS} \geq \underline{u}_l \quad \Leftrightarrow \quad u_l^{LS} \geq \frac{\underline{u}_l - \theta u_w^{LS}}{1-\theta}. \quad \text{(A7)}$$

The term u_w^{LS} is composed of the worker's expected utility from the leadership actions, his cost of effort, and his expected compensation under style LS. When the leader is altruistic, she receives extra utility when the worker earns more, allowing the principal to reduce the leader's wage. However, to satisfy the leader's participation constraint, increasing the worker's wage is (weakly) dominated by giving the money directly to the leader because $\theta \leq 1/2$. When the leader is spiteful, she would prefer the worker to earn less, which is however not possible without violating the worker's incentive compatibility constraint, wage floor constraint, or participation constraint. Hence, u_w^{LS} follows from our analysis in Section 4, and the leader's optimal wage is such that (A7) binds. The optimal leader type, θ_{LS}^*, thus minimizes the term on the right-hand side of (A7), subject to the restriction that the type engages in style LS.

We first consider $LS = 0$. The leader's participation constraint is given by

$$(1-\theta)w_l + \theta(w^* + \rho b^* - c) \geq \underline{u}_l \Leftrightarrow w_l \geq \frac{1}{1-\theta}(\underline{u}_l - \theta \max\{\underline{u}, \underline{w}\}),$$

where $\max\{\underline{u}, \underline{w}\}$ corresponds to the worker's expected utility u_w^0. Using Lemma 5, the optimal leader type θ_0^* thus solves

$$\min_{\theta\in[\underline{\theta}_U,\underline{\theta}_F]} \frac{1}{1-\theta}(\underline{u}_l - \theta\max\{\underline{u},\underline{w}\}),$$

The objective function is strictly increasing in θ if and only if $\underline{u}_l > \max\{\underline{u},\underline{w}\}$ and strictly decreasing in θ if and only if $\underline{u}_l < \max\{\underline{u},\underline{w}\}$, which implies:

$$\theta_0^* = \begin{cases} \underline{\theta}_U & \text{if } \underline{u}_l > \max\{\underline{u},\underline{w}\} \\ \underline{\theta}_F & \text{if } \underline{u}_l < \max\{\underline{u},\underline{w}\} \end{cases}$$

If $\underline{u}_l = \max\{\underline{u},\underline{w}\}$, then θ_0^* can be any type $\theta\in[\underline{\theta}_U,\underline{\theta}_F]$. Hence, the results presented in the lemma for $LS=0$ follow.

Now consider $LS=F$. The leader's participation constraint is

$$\begin{aligned}(1-\theta)(w_l-\rho k_F^h) + \theta(w_F^* + \rho(b_F^*+r)-c) &\geq u_l \\ \Leftrightarrow w_l \geq \frac{1}{1-\theta}(u_l - \theta\max\{\underline{u},\underline{w}\}) + \rho k_F^h,&\end{aligned}$$

where $\max\{\underline{u},\underline{w}\}$ corresponds to the worker's expected utility u_w^F. The optimal leader type θ_F^* thus solves

$$\min_{\theta\in[\underline{\theta}_F,\underline{\theta}_{FF}]} \frac{1}{1-\theta}(\underline{u}_l - \theta\max\{\underline{u},\underline{w}\}),$$

which implies that

$$\theta_F^* = \begin{cases} \underline{\theta}_F & \text{if } \underline{u}_l \geq \max\{\underline{u},\underline{w}\} \\ \underline{\theta}_{FF}, & \text{if } \underline{u}_l < \max\{\underline{u},\underline{w}\} \end{cases}$$

and $\hat{C}_F$ as given in the lemma. The results for $LS\in\{FF,U,UU\}$ are derived analogously. ■

Proof of Proposition 5. If $\underline{w} < \underline{u}$ and $\underline{u}_l < \underline{u}$, the principal's cost functions become

$$\begin{aligned}\hat{C}_F &= c + \underline{u} - \rho(r - k_F^h) + w_l^c(\underline{\theta}_{FF}), \\ \hat{C}_0 &= c + \underline{u} + w_l^c(\underline{\theta}_F), \\ \hat{C}_U &= c + \underline{u} + s - \rho s + (1-\rho)k_U^l + w_l^c(\underline{\theta}_U), \\ \hat{C}_{UU} &= c + \underline{u} + s + \rho k_U^h + (1-\rho)k_U^l + w_l^c(\underline{\theta}_{UU}).\end{aligned}$$

We have $w_l^c(\underline{\theta}_{FF}) \leq w_l^c(\underline{\theta}_F) < w_l^c(\underline{\theta}_U) \leq w_l^c(\underline{\theta}_{UU})$ and hence, using also that $r \geq k_F^h$, $\hat{C}_F \leq \hat{C}_0 < \hat{C}_U < \hat{C}_{UU}$. It remains to show that $\hat{C}_{FF} \leq \hat{C}_F$. For $\underline{u} \geq \underline{w} + r$ we obtain

$$\hat{C}_{FF} = c + \underline{u} - r + \rho k_F^h + (1-\rho)k_F^l + w_l^c(\bar{\theta}).$$

From $w_l^c(\bar{\theta}) < w_l^c(\underline{\theta}_{FF})$ and $r \geq k_F^l$ it follows that $\hat{C}_{FF} < \hat{C}_F$. For $\underline{u} < \underline{w} + r$, using $\bar{\theta} = 1/2$, we have

$$\hat{C}_{FF} = c + \rho k_F^h + (1-\rho)k_F^l + 2\underline{u}_l - r = c - \rho(r - k_F^h) - (1-\rho)(r - k_F^l) + 2\underline{u}_l.$$

For $\hat{C}_F$, using $\underline{\theta}_{FF} = k_F^l/(r + k_F^l)$, we obtain

$$\hat{C}_F = c + \underline{u} - \rho(r - k_F^h) + \frac{r + k_F^l}{r}\underline{u}_l - \frac{k_F^l}{r}\underline{u} = c - \rho(r - k_F^h) + \frac{r + k_F^l}{r}\underline{u}_l + \frac{r - k_F^l}{r}\underline{u}.$$

It is straightforward to verify that $2\underline{u}_l \leq \frac{r+k_F^l}{r}\underline{u}_l + \frac{r-k_F^l}{r}\underline{u}$. Hence, because $r \geq k_F^l$, we have $\hat{C}_{FF} \leq \hat{C}_F$. ■

Optimal leadership styles for the case where $\underline{w} > \underline{u}$, $\theta = 0$, and style FU is not available. In this situation, the principal's total costs are:

$$\hat{C}_{FF} = c + \underline{w} + \left[\rho k_F^h + (1-\rho)k_F^l + \underline{u}_l\right],$$
$$\hat{C}_F = c + \underline{w} - \rho r + \left[\rho k_F^h + \underline{u}_l\right],$$
$$\hat{C}_0 = c + \underline{w} + \underline{u}_l,$$
$$\hat{C}_U = c + \max\{\underline{u} + s, \underline{w}\} - \rho s + \left[(1-\rho)k_U^l + \underline{u}_l\right],$$
$$\hat{C}_{UU} = c + \max\{\underline{u} + s, \underline{w}\} + \left[\rho k_U^h + (1-\rho)k_U^l + \underline{u}_l\right].$$

Because $\hat{C}_{FF} > \hat{C}_F$ and $\hat{C}_{UU} > \hat{C}_U$, the principal never implements styles FF and UU. Because of Assumption 1, $\hat{C}_0 \geq \hat{C}_F$ so that pure monetary incentives are weakly dominated by style F. Style U dominates style F iff:

$$\max\{\underline{u} + s, \underline{w}\} - \rho s + (1-\rho)k_U^l < \underline{w} - \rho r + \rho k_F^h.$$

In case $\underline{w} \geq \underline{u} + s$, the above condition becomes:

$$-s + \frac{1-\rho}{\rho}k_U^l < -r + k_F^h.$$

In case $\underline{w} < \underline{u} + s$, the condition becomes:

$$(1-\rho)(s + k_U^l) + \rho(r - k_F^h) < \underline{w} - \underline{u}.$$

Hence, style U dominates style F either if

$$(1-\rho)(s + k_U^l) + \rho(r - k_F^h) < \underline{w} - \underline{u} < s$$

or if

$$s \le \underline{w} - \underline{u} \text{ and } -s + \frac{1-\rho}{\rho} k_U^l < -r + k_F^h.$$

■

Online Appendix B

We now discuss how our assumption that the leader incurs costs when she engages in leadership actions affects our results. Suppose that the leader does not incur any costs, i.e., $k_F^l = k_F^h = k_U^h = k_U^l = 0$. If the principal hires a selfish leader, the leader will always follow the principal's announced leadership style because she is indifferent between undertaking and not undertaking any leadership action. Thus, the adoption of all leadership styles is credible with a selfish leader in a one-shot interaction. Moreover, the results presented in Proposition 1 and Proposition 2 continue to hold for zero leadership costs. Hence, unfriendly leadership is never used under competitive wage-setting. Moreover, under non-competitive wage-setting and zero leadership costs, case (ii) of Proposition 2 applies, implying that unfriendly leadership actions continue to be optimal—as part of leadership style FU—when the worker's rent in the benchmark case is sufficiently high.

If the principal hires an altruistic leader, the leader will always praise the worker, i.e., implement leadership style FF. By contrast, if the principal hires a spiteful leader, the leader will always scold the worker, i.e., adopt leadership style UU. The principal can now benefit from hiring a leader with social preferences only if such a leader demands a lower wage than a selfish leader because of income gaps between workers and leaders.

Online Appendix C

In the model presented in the main body of our paper, we have shown that the existence of worker rents may entail unfriendly leadership actions. These rents arise or are amplified because the principal needs to provide the worker with effort incentives in the presence of a wage floor.[21] We now present a variant of our model where rents may emerge due to exogenous firm characteristics instead of incentive provision. Nevertheless, a wage floor remains essential in our analysis, as will become clear below.

As in Section 5, we consider a one-period employment relationship where the principal may hire a leader with social preferences. In contrast to our previous setting, we now assume that output is observable but not contractible so that the worker cannot be

[21] If effort was contractible, the principal could pay the worker a flat wage $\underline{u} + c$, so that a rent arises if and only if $\underline{w} > \underline{u} + c$. With non-contractible effort, however, a flat wage is not incentive compatible. The worker therefore earns a rent for lower values of $\underline{w}$, namely if and only if $\underline{w} > \underline{u}$, as we have shown in Section 4.1.

motivated through monetary incentives. Moreover, when the worker accepts the principal's contract offer and works at the principal's firm, he realizes an exogenous expected benefit Δ, with $0 \leq \Delta \leq \bar{\Delta}$, which arises because of firm-specific characteristics. For instance, the firm may allow the worker to acquire particularly valuable general human capital, or offer unique networking opportunities, or allow the worker to signal a high ability to future employers, all of which will lead to more attractive job opportunities in the future. The firm could be a starred restaurant that allows the worker to learn from its ingenious chef, or a research institution that offers access to a valuable network of researchers, or a major law firm that allows the worker to work on high-profile cases.

The principal still wants the worker to exert high effort, but the worker can be motivated only through leadership actions. We assume that both style U and style F provide the worker with sufficient incentives to exert high effort, i.e., $s, r \geq c/\rho$. As a consequence, style FU is dominated because this style would only lead to additional leadership costs compared to style F or style U. Moreover, the unconditional styles UU and FF are not feasible because they cannot incentivize the worker. We can thus focus on comparing the principal's overall costs under style F and style U. For simplicity, we further assume that styles F and U are equally effective regarding the provision of incentives, i.e., $s = r$, and equally costly, i.e., $k_F^h = k_U^l =: k > 0$. The benefit Δ is independent of the adopted leadership style. All other assumptions remain as specified in Section 3.

Under style F, the worker's wage w has to satisfy the following constraints:

$$\begin{aligned} w + \rho r - c &\geq w, \\ w + \rho r - c + \Delta &\geq \underline{u}, \\ w &\geq \underline{w}. \end{aligned}$$

The first constraint ensures that the worker will choose high instead of low effort and is satisfied by assumption. The second constraint ensures the worker's participation, and the third constraint describes the wage floor. We thus obtain for the principal's total wage costs under style F, denoted Γ_F:

$$\Gamma_F = \max\{\underline{u} + c - \rho r - \Delta, \underline{w}\} + \rho k + W_l^F.$$

W_l^F denotes the leader's wage net of leadership costs. The worker earns a rent if and only if $\underline{u} + c - \rho r - \Delta < \underline{w}$, i.e., if the extra benefit from working for the principal, Δ, is sufficiently large. We assume that $\underline{u} + c - \rho r \geq \underline{w}$, which implies that the worker does not earn a rent when there is no extra benefit from working for the principal. In other words, a wage floor alone does not lead to worker rents, but its existence is required to obtain worker rents for sufficiently high Δ. Without a wage floor, the principal can always extract all rents from the worker, no matter how high those rents are. Arguably, a wage floor exists for nearly every employment relationship.

W_l^F can be derived analogously to our analysis in Section 5:

$$W_l^F = \frac{1}{1-\tilde{\theta}_F}(\underline{u}_l - \tilde{\theta}_F \max\{\underline{u}, \underline{w} + \rho r - c + \Delta\}).$$

Here, $\tilde{\theta}_F$ denotes the leader's optimal type, which is given by:

$$\tilde{\theta}_F = \begin{cases} \frac{k}{r+k} & \text{if } \underline{u}_l \geq \max\{\underline{u}, \underline{w} + \rho r - c + \Delta\} \\ \frac{k_F^l}{r+k_l^F} & \text{otherwise} \end{cases}.$$

Under style U, it needs to hold that:

$$\begin{aligned} w - (1-\rho)r - c &\geq w - r, \\ w - (1-\rho)r - c + \Delta &\geq \underline{u}, \\ w &\geq \underline{w}. \end{aligned}$$

For the principal's total wage costs under style U, denoted Γ_U, we obtain:

$$\Gamma_U = \max\{\underline{u} + c + (1-\rho)r - \Delta, \underline{w}\} + (1-\rho)k + W_l^U.$$

Because we assume that $\underline{u} + c - \rho r > \underline{w}$, the worker does not earn a rent under style U if $\Delta = 0$, but he earns a rent if $\underline{u} + c + (1-\rho)r - \Delta < \underline{w}$. W_l^U denotes the leader's wage net of leadership costs:

$$W_l^U = \frac{1}{1-\tilde{\theta}_U}(\underline{u}_l - \tilde{\theta}_U \max\{\underline{u}, \underline{w} - (1-\rho)r - c + \Delta\}).$$

The leader's optimal type, $\tilde{\theta}_U$, is given by:

$$\tilde{\theta}_U = \begin{cases} -\frac{k_U^h}{r-k_U^h} & \text{if } \underline{u}_l \geq \max\{\underline{u}, \underline{w} - (1-\rho)r - c + \Delta\} \\ -\frac{k}{r-k} & \text{otherwise} \end{cases}.$$

Comparing Γ_F and Γ_U, we see that style F always leads to weakly lower wage payments to the worker than style U. However, the difference between the wage payments depends on Δ and will be eliminated if Δ is sufficiently large because the worker then obtains the lowest feasible wage $\underline{w}$ under either style.

In order to describe the principal's optimal choice between leadership style, we define thresholds Δ_F and Δ_U,

$$\Delta_F := \underline{u} + c - \rho r - \underline{w}, \quad \Delta_U := \underline{u} + c + (1-\rho)r - \underline{w},$$

where it holds that $0 < \Delta_F < \Delta_U$. We focus on a situation where the leader's wage net of leadership costs is higher under style F than under style U, i.e., $W_l^F - W_l^U \geq 0$. This is the case if the leader's reservation utility is always weakly higher than the worker's net payoff, i.e., $\underline{u}_l \geq \max\{\underline{u}, \underline{w} + \rho r - c + \bar{\Delta}\}$.

We obtain the following result:

(i) If $\Delta < \Delta_F$, style U strictly dominates style F if and only if:

$$r < (2\rho - 1)k + W_l^F - W_l^U.$$

$W_l^F - W_l^U$ is independent of Δ.

(ii) If $\Delta_F \leq \Delta < \Delta_U$, style U strictly dominates style F if and only if:

$$\underline{u} + c + (1-\rho)r - \underline{w} - (2\rho - 1)k < \Delta + (W_l^F - W_l^U).$$

$\Delta + (W_l^F - W_l^U)$ is increasing in Δ.

(iii) If $\Delta_U < \Delta$, style U strictly dominates style F if and only if:

$$(1 - 2\rho)k < W_l^F - W_l^U.$$

$W_l^F - W_l^U$ is decreasing in Δ.

In case (i), the worker does not earn a rent under either style. Suppose for a moment that $\underline{u}_l = \underline{u}$, which implies that the leader's wage net of leadership costs is independent of his type, i.e., $W_l^F = W_l^U$. Necessary conditions for style U to dominate style F are then $\rho > 1/2$ and $k > r$. The former condition implies that unfriendly leadership is less costly to implement than friendly leadership, whereas the latter condition implies that engaging in friendly leadership actions is socially inefficient because the leader's costs exceed the worker's benefit.[22] If $\underline{u}_l > \underline{u}$ implementing style U becomes more attractive because $W_l^F > W_l^U$.

In case (ii), the worker earns a rent under style F, but not under style U. Relative to case (i), style U becomes more attractive. Suppose for a moment that $W_l^F = W_l^U$. The principal prefers style U if $\rho > 1/2$ and the worker's rent under style F is sufficiently large due to a high benefit Δ. Our assumption $\underline{u}_l \geq \max\{\underline{u}, \underline{w} + \rho r - c + \bar{\Delta}\}$ implies

[22] Note that, in the current setting, the principal may implement style F even if $k > r$ because monetary incentives are not available.

that $W_l^F > W_l^U$. Thus, because $\Delta + (W_l^F - W_l^U)$ is increasing in Δ, a higher benefit Δ makes the principal implement style U for a greater region among the other parameters.

In case (iii), the benefit Δ is so large that the worker earns a rent under either style, which also implies that the worker's wage is independent of the adopted style. Again, suppose for a moment that $W_l^F = W_l^U$. Then, the principal chooses style U whenever it entails lower leadership costs than style F, i.e., $\rho > 1/2$. Our assumption $\underline{u}_l \geq \max\{\underline{u}, \underline{w} + \rho r - c + \bar{\Delta}\}$ still implies that $W_l^F > W_l^U$. Thus, $\rho > 1/2$ is sufficient for the implementation of style U. If $\rho \leq 1/2$, adoption of style U can still be optimal but is optimal for a smaller region among the other parameters as Δ increases. The reason is that hiring an altruistic instead of a spiteful leader becomes less costly when the worker earns a higher rent.

Overall, provided that $\rho > 1/2$, style U dominates style F for a larger region among the other parameters the higher Δ. The worker's rent is weakly increasing in Δ under either style, but the rent is higher under style F than under style U for intermediate values of Δ. The existence of worker rents reduces or even eliminates the comparative advantage that style F has over style U in terms of the expected wage that the principal needs to pay to the worker, similar to the results obtained in the model discussed in the main body of the paper.

Worker rents may also arise in a different kind of model where the employment relationship generates a quasi-rent that principal and agent share according to their relative bargaining powers. Quasi-rents can arise due to labor market frictions as studied in, e.g., Acemoglu and Pischke (1999). Consider a two-period model where the firm trains the worker in the first period and the worker exerts effort to produce an output in the second period as in our model above. In the first period, the worker may acquire firm-specific human capital that makes him more productive with the current firm than with other firms, leading to a quasi-rent. Alternatively, workers could have low or high ability and the firm learns the worker's ability in the first period, whereas other firms on the labor market do not learn the worker's ability. Again, a quasi-rent arises when the worker stays with the firm in the second period. Similar to the above model, the existence of quasi-rents that are shared between firm and worker may make the adoption of unfriendly styles less costly for the principal.