COMPLAINING ABOUT NONCOMPLIANCE WITH THE MINIMUM WAGE LAW

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ABSTRACT

Government enforcement of the minimum wage law is mainly initiated by workers' complaints of minimum wage violations. However, no attempt has been made in the growing literature on noncompliance to explore the role of labor market and enforcement parameters in generating an incentive for complaining, nor to explicitly incorporate the risk of complaining into the noncompliance decision. Addressing the issue of complaining, the present paper identifies the determinants of the decision to complain and examines the implications of a complaint based enforcement system on the incentive for noncompliance.
I. INTRODUCTION

In their seminal paper on noncompliance with the minimum wage law, Ashenfelter and Smith (1979), along with investigating the extent and patterns of employers' compliance with the federal minimum wage provisions, have applied a simple profit-maximizing decision model to determine the effects of law enforcement and labor market parameters on a competitive (and risk-neutral) firm's incentive for noncompliance. This inquiry has triggered several theoretical contributions over the last decade which encompass various aspects of the noncomplying decision. Grenier (1982) has examined the incentive for noncompliance under the assumption that the monetary punishment is imposed on the difference between the statutory minimum and the free market wage actually paid to workers (rather than being an exogenously fixed amount, as assumed by Ashenfelter and Smith). Chang and Ehrlich (1985) have extended the analysis to take account not only of the wage evasion aspect of the noncompliance decision but of the employment avoidance implication as well. Yaniv (1988) has addressed the issue of partial compliance by a monopsonist who may choose to pay lower than the minimum but higher than the wage determined in the absence of a law, whereas Kim and Yoo (1989) have focused on a different notion of partiality, analyzing the market equilibrium to explain why some firms may comply and others may not.

A crucial determinant of the firm's compliance decision in this literature is government enforcement effort, initiated mainly by workers' allegations of minimum wage violations.1 Being the direct (and sole) victims of noncompliance, underpaid workers are naturally perceived as the faithful guardians of the minimum wage law.2 Still, no attempt has been made in the literature to model the worker's decision to complain about receiving less than the statutory minimum, nor to explicitly incorporate the possibility of complaining into the noncompliance decision. While the expected gain from complaining is obvious, there is a serious risk involved: losing one's job. However, when a worker's complaint is placed anonymously (or when the enforcement agency is bound not to disclose his identity), there is no reason to expect a personal reaction on the part of his employer.3 If detection follows, a thereafter complying employer would cut down employment (given that his labor demand curve is negatively sloped), a profit-maximizing response that does not
necessarily affect an anonymous complainer; the latter may be lucky enough to keep his job and earn the minimum wage. Hence, complaining may have a positive (expected) return sufficient to establish its superiority over the passivity of noncomplaining.

The purpose of the present paper is twofold: (a) to identify the role of labor market and enforcement parameters as determinants of the incentive to complain, and (b) to examine the implications of the employer's awareness of the determinants of complaining on the incentive for noncompliance. Sections II and III discuss these issues, respectively. The analysis is carried out under the assumption that both the employer and workers are risk-neutral, a behavioral property without which little of a qualitative nature can be gleaned from the comparative statics. Section IV concludes with a summary of the main results and some related remarks.

II. THE ECONOMICS OF COMPLAINING

Consider a utility-maximizing worker holding a single job which involves the provision of H hours of labor services per given period of time. Suppose that the minimum wage per hour due for his efforts is \( w \), yet the worker is paid the free market wage, \( w_0(<m) \). Suppose further that the worker has no other income and cannot borrow. At the beginning of the employment period he considers the possibility of complaining about his employer for paying less than the statutory minimum. If he does not complain, he will attain with certainty a utility of

\[
U(w_0H, H) = w_0H - \phi(H),
\]

(1)

where \( \phi'(H)>0 \) and \( \phi''(H)>0 \). That is, the worker's utility function, defined on income and hours of work, is assumed to be strongly separable in its two arguments; the marginal utility of income is positive and constant, as the worker is risk-neutral; the marginal disutility of working hours is positive and increasing.

However, if the worker does complain, there is a known probability of \( 0<\gamma<1 \) that the enforcement agency will decide to investigate his complaint. In this case, it will take the enforcement agency, on average, a fraction \( 0<\gamma<1 \) of the employment period to trace the employer, verify the worker's allegation (without disclosing his identity) and reach a settlement under which the violating employer will pay workers back a multiple \( k>0 \) of the difference between the minimum wage and the wage actually paid per each hour of employment. Thereafter the employer is assumed to comply by paying the minimum wage and readjusting his labor stock accordingly. Consequently, there is some known probability \( 0<\delta<1 \) that the worker will be dismissed by his employer, in which case he is assumed to be able to immediately find a less suitable job for which the free market wage is only

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z(w₀) per hour. Having failed (and been 'punished') in attempting to improve his initial pay, the worker is assumed not to consider the possibility of complaining against his new employer. Assuming also that placing a complaint does not involve any direct cost in terms of time or money, the expected utility of a complaining worker will be:

\[ E[U(wH, H), \gamma, \lambda, s] = \lambda[U((w₀+k(m-w₀))H, H) + (1-\gamma)[sU(zH, H) + (1-s)U(mH, H))] + (1-\lambda)U(w₀H, H) \]

\[ = [E(w)H - \phi(H)], \quad (2) \]

where

\[ E(w) = \lambda[sw^a+(1-s)w^{na}] + (1-\lambda)w₀ \quad (3) \]

denotes the expected wage, and

\[ w^a = \gamma[w₀+k(m-w₀)] + (1-\gamma)z \quad (4) \]

and

\[ w^{na} = \gamma[w₀+k(m-w₀)] + (1-\gamma)m \quad (5) \]

represent the (weighted) hourly wage obtained on average over the employment period in case of dismissal and non-dismissal, respectively. Notice that if it takes the enforcement agency no time at all to investigate a complained-about employer (i.e., \( \gamma=0 \)), \( w^a=z \) and \( w^{na}=m \), whereas if the investigation of a complaint is carried out over the entire employment period (i.e., \( \gamma=1 \)), \( w^a=w^{na}=w₀+k(m-w₀) \). While \( w^a \) rises with \( \gamma \), \( w^{na} \) falls as \( \gamma \) increases.

(a) Fixed Working Hours

Suppose first that the number of working hours over the employment period is set institutionally at \( H=H \). Under utility-maximizing behavior, the worker will decide in favor of complaining if

\[ E[U(wH, H), \gamma, \lambda, s] > U(w₀H, H). \quad (6) \]

Substituting (1), (2) and (3) into (6) and rearranging, the complaining condition becomes

\[ \Omega = E(w) - w₀ = \lambda[(1-s)(w^{na}-w₀) - s(w₀-w^a)] > 0. \quad (7) \]

Hence, the worker will choose to complain if the expected gain (EGN) per hour exceeds the expected loss (ELS). We may thus say that an incentive to complain exists if \( \Omega > 0 \), and that it does not if \( \Omega < 0 \). While the sign of \( \Omega \) is of critical interest for the decision itself, we still may be interested in the magnitude and direction of change in \( \Omega \) with respect to enforcement and labor market parameters, regardless of whether condition (7) actually holds. Therefore, the incentive to complain will be said to be greater, or to increase with a given parameter change, whenever EGN increases, ELS decreases, or both, where (upon substituting
(4) and (5) into (7))

\[ \text{EGN} = \lambda (1-s)[1 - \gamma (1-k)](m-w_o) \quad (8) \]

and

\[ \text{ELS} = \lambda s[(1-\gamma)(w_o-z) - \gamma k(m-w_o)]. \quad (9) \]

Three propositions concerning the role of enforcement (i.e., the parameters \( \lambda, \gamma \) and \( k \)) as a determinant of the incentive to complain immediately suggest themselves upon the inspection of condition (7) subject to (8) and (9):

(a) The existence of an incentive to complain is totally independent of the probability that the complaint will actually be investigated by the enforcement agency. This is so because both EGN and ELS increase proportionally with \( \lambda \). A change in \( \lambda \) will thus be able to affect the magnitude of \( \Omega \), but not its sign.

(b) An incentive to complain will unambiguously exist if the investigation period is sufficiently long. More specifically, the worker will definitely decide in favor of complaining if \( \gamma \gamma^* \), where \( \gamma^* = (w_o-z)/(w_o-z+k(m-w_o)) \) equates ELS to zero. At such values of \( \gamma \) he is either equally well off or better off even if he loses his job, since the back pay of minimum wage underpayments at the time of dismissal (exactly or more than) outweighs the fall in wages thereafter. This, however, does not imply that the incentive to complain necessarily increases with \( \gamma \), since both EGN and ELS may fall as \( \gamma \) increases. In fact, since

\[ \frac{d\Omega}{d\gamma} = \lambda [s(m-z) - (1-k)(m-w_o)], \quad (10) \]

the incentive to complain will unambiguously increase with \( \gamma \) only if \( k<1 \) (for which EGN rises or does not vary with \( \gamma \)). If, as is very often the case, \( k<1,^9 \) the incentive to complain will increase with \( \gamma \) if \( s > (1-k)(m-w_o)/(m-z) \), but will decline (or will not vary with \( \gamma \)) otherwise. The reason for this result is that only if complaining is sufficiently risky will it become more desirable; the further in time dismissal may be expected. If it is not, the incentive to complain will be greater the closer in time compliance is about to occur.

(c) The incentive to complain, as may be expected, is positively related to the multiple of the minimum wage underpayment paid back to workers. This is so since the higher the value of \( k \), the higher is EGN and the lower is ELS. The latter observation implies also that the greater the back pay rate, the shorter the investigation period sufficient to ensure complaining (\( \gamma^* \)).

Another intuitive expectation is that the incentive to complain is greater the lower is the actual wage below the
statutory minimum (and the lower it is above the post-dismissal wage). Indeed, the lower is \( w_o \), the smaller is ELS (and \( \gamma^* \)) and the greater is EGN. However, the relationship between the incentive to complain and \( w_o \) is not at all obvious when one realizes that the probability of dismissal facing the complaining worker increases as \( w_o \) falls. In fact, assuming that all workers employed by the employer are identical in their scope of work and productivity, the probability of dismissal is given by the proportionate reduction in employment following compliance. This in turn can be approximated by \([(m-w_o)/w_o] \varepsilon \) (=s), where \( \varepsilon(\geq 0) \) denotes the arc elasticity of labor demand (in absolute terms) between the relevant wage rates. Examining now the total effect of a fall in \( w_o \) on the incentive to complain, we obtain

\[
\frac{d\Omega}{dw_o} = \lambda(\gamma k + \gamma(1-\gamma)[1 + (m-z) \frac{ds}{dw_o}]) \tag{11}
\]

which is indeed ambiguous (unless \( \gamma=1 \), for which the risk of dismissal is irrelevant). Substituting \( ds/dw_o = -ms/w_o(m-w_o) \) into (11) we find that only if \( s \leq (m-w_o)w_o/(m-z)m \) would the relationship between \( \Omega \) and \( w_o \) unambiguously conform with the intuitive expectation. Otherwise the incentive to complain may well fall with \( w_o \), implying that the increased gain from complaining associated with a greater wage disparity is more than offset by the increased risk of dismissal.

While the incentive to complain clearly rises with \( z \), its variation with \( m \) is again ambiguous (unless \( \gamma=1 \)), since

\[
\frac{d\Omega}{dm} = \lambda(\gamma k + \gamma(1-\gamma)[1-s - (m-z) \frac{ds}{dm}]) \tag{12}
\]

Substituting \( ds/dm = s/(m-w_o) \) into (12) reveals again that only if the probability of dismissal is sufficiently small, in this case only if \( s \leq (m-w_o)/(2m-w_o-z) \), would the sign of (12) be unambiguously positive. Otherwise, a counter-intuitive (negative) relationship between the incentive to complain and the statutory minimum may dominate.

(b) Variable Working Hours

Suppose now that the worker is free to choose his preferred amount of work over the employment period. Differentiating (1) and (2) with respect to \( H \), the first-order conditions determining his choice would be

\[
w_o = \phi'(H^*) \tag{13}
\]

and

\[
E(w) = \phi'(H^{**}), \tag{14}
\]
where $H^{**}$ and $H^*$ denote the number of working hours which maximizes (expected) utility in case of complaining and non-complaining, respectively. The worker would then decide in favor of complaining if

$$\cap = V[E(w)] - V(w_0) > 0,$$

(15)

where $V[E(w)]$ and $V(w_0)$ represent the indirect utility function reflecting his maximized utility at wages $E(w)$ and $w_0$, respectively. Since the maximum utility level increases with the wage rate, it follows that $\cap > 0$ if $E(w) > w_0$. Therefore, $\Omega > 0$ would also constitute a sufficient condition for complaining when working hours become a choice variable. Moreover, conditions (13) and (14) imply that $H^{**} > H^*$ if $E(w) > w_0$. Hence, the worker would unambiguously supply more hours to work when complaining.

Considering the direction of change in $\cap$ following a change in any parameter $i (\neq \lambda, \gamma, k, w_0, z, m)$ we have (noticing that $E(w) = \Omega + w_0$)

$$\frac{d\cap}{di} = H^{**} \frac{d\Omega}{di} + (H^{**} - H^*) \frac{dw_0}{di},$$

(16)

which implies that the conclusions reached earlier concerning the effects of enforcement and labor market parameters on the incentive to complain apply to this case as well, with the exception of $w_0$, for which a negative sign of $d\Omega/dw_0$ might be offset by $H^{**} - H^*$. Finally, condition (14) reveals that

$$\frac{dH^{**}}{di} = \frac{1}{\phi''(H)} \left( \frac{d\Omega}{di} + \frac{dw_0}{di} \right),$$

(17)

so that a change in $i$ would affect $H^{**}$ in the same direction as it affects $\Omega$ (again, with the possible sign reversal in the case of $w_0$).

III. COMPLAINING AND NONCOMPLIANCE

Consider now a profit-maximizing employer who during the given period of employment produces a single product with labor input only. His production function, $F$, has number of workers, $L$, as its only argument, where the marginal product of $L$ is positive and decreasing (i.e., $F'(L) > 0$ and $F''(L) < 0$). Suppose that the employer is subject to the minimum wage law and that at the beginning of the employment period he faces the choice of paying each worker either the statutory minimum, $M (= mH)$, or the free market wage, $w_0 (= w_0H)$. If he complies with the law, he will attain with certainty a profit of (assuming, for simplicity, that the price of output is unity)

$$\pi(M, L_m) = F(L_m) - ML_m,$$

(18)
where \( L_m \) denotes the number of workers employed at wage \( M \). However, if the employer does not comply, there is a probability \( 0 < p < 1 \) that one (or more) of his workers will complain about his noncompliance. His expected profit will thus be

\[
E[\pi(W, L), \gamma, \lambda, \rho] = p(\lambda [\gamma p(W_o + k(M - W_o)), L_o])
+ (1 - \gamma) \pi(M, L_m]) + (1 - \lambda) \pi(W_o, L_o)) + (1 - p) \pi(W_o, L_o)
= [1 - p\lambda(1 - \gamma)] [F(L_o) - W_xL_o] + p\lambda(1 - \gamma) [F(L_m) - ML_m],
\]

(19)

where \( L_o \) denotes the number of workers employed at wage \( W_o \), and

\[
W_x = W_o + \frac{\gamma p\lambda}{1 - p\lambda(1 - \gamma)} k(M - W_o)
\]

(20)

represents the effective ('risk-adjusted') wage facing the noncomplying employer. Notice that if \( \gamma = 1 \) (for which the preceding section implies that \( p = 1 \)), (19) and (20) reduce into

\[
E[\pi(W_x, L_o)] = F(L_o) - W_xL_o,
\]

(19')

and

\[
W_x = W_o + \lambda k(M - W_o),
\]

(20')

respectively, which is identical to Chang and Ehrlich’s (1985, hereafter CE) exposition, who explicitly assumed that detection may only occur at the end of the employment period.

Differentiating (19) with respect to \( L_o \) and \( L_m \), the first-order conditions for the maximization of the expected profit are given by

\[
F'(L_o) = W_x
\]

(21)

and (providing that \( \gamma < 1 \))

\[
F'(L_m) = M,
\]

(22)

respectively, the latter being also the first-order condition for the maximization of (18). The former implies, in consistence with CE’s result, that the noncomplying employer will hire less workers than he would in the absence of a minimum wage. This, however, holds only if \( \gamma > 0 \). If \( \gamma = 0 \), noncompliance will not have an adverse effect on employment. It may follow, intuitively, that the higher the value of \( \gamma \), the greater will be the decline in the amount of labor hired at \( W_o \). This, however, is true only if \( p \) increases with \( \gamma \) or at \( \gamma > \gamma^* \), where \( p = 1 \). If \( p \) decreases in \( \gamma \), it would help moderate the decline in employment at \( W_o \) or even to reduce it.

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Under profit-maximizing behavior, the employer will decide in favor of noncompliance with the minimum wage law if

\[ [1-p\lambda(1-\gamma)]\Gamma(W_x) + p\lambda(1-\gamma)\Gamma(M) > \Gamma(M), \] (23)

where \(\Gamma(W_x)\) and \(\Gamma(M)\) denote the indirect profit function reflecting his maximized profit at wages \(W_x\) and \(M\), respectively. Rearranging terms, the noncompliance condition becomes

\[ \delta = \Gamma(W_x) - \Gamma(M) > 0, \] (24)

so that the decision to comply with the law would depend strictly on the sign of \(\delta\). Since the maximum profit level decreases in the wage rate, and since \(W_x\) is positively related to \(p\), it immediately follows that the incentive for noncompliance is lower the higher the probability of complaining. The inverse relationship between the maximum profit level and wages implies also that \(\delta > 0\) if \(W_x < M\), which definitely holds if \(k < 1\). Hence, as also concluded by CE's, an enforcement policy requiring the noncomplying employer to pay workers back only a fraction of the difference between the statutory minimum and the free market wage cannot constitute an effective deterrent for noncompliance.

A special emphasis is placed by CE on arguing that contrary to previous contributions (and as intuitively expected), the incentive for noncompliance (if positive) will be greater the lower is the market wage below the statutory minimum. While CE's analysis is restricted to the case of \(\gamma = 1\), the present model allows for \(\gamma < 1\), where the probability of workers' complaining may rise or fall with parameter changes (corresponding to a rise or fall in \(\Omega\)), thus affecting the incentive for noncompliance. Indeed, equation (24) implies that

\[ \frac{d\delta}{dw_o} = \frac{-\gamma k}{1-p\lambda(1-\gamma)} \left[ p - \frac{M-w_o}{1-p\lambda(1-\gamma)} \right] (dp/dw_o). \] (25)

When \(\gamma \geq 1\) (particularly when \(\gamma = 1\)), \(p = 1\) \((dp/dw_o = 0)\) and, in consistence with CE's result, \(d\delta/dw_o < 0\), given that \(k < 1\). However, at \(\gamma < 1\), \(dp/dw_o\) may be negative if the incentive to complain increases as \(w_o\) falls (Section II). Thus, taking into account that workers will respond to a lower market wage in the way expected, the incentive for noncompliance might actually fall along with \(w_o\), as the increased risk of detection outweighs the increased benefit from noncomplying. Moreover, equation (24) implies also that

\[ \frac{d\delta}{dM} = \frac{-\gamma k}{1-p\lambda(1-\gamma)} \left[ p - \frac{M-w_o}{1-p\lambda(1-\gamma)} \right] (dp/dw_o) + L_m. \]
which for \( \gamma > \gamma^* \) is not unambiguously positive, as CE surprisingly pointed out. When \( \gamma < \gamma^* \), this ambiguity is even sharpened, if, as intuitively expected, \( dp/dM > 0 \).

However, it is worth noticing that taking account of workers' response does not obscure the deterrent effect associated with the traditional law enforcement parameters \( \lambda \) and \( k \), as both

\[
\frac{\partial \delta}{\partial \lambda} = - \frac{\gamma k (M-W_o) L_o}{[1-p \lambda (1-\gamma)]^2} [p + \lambda (dp/d\lambda)]
\]

(27)

and

\[
\frac{\partial \delta}{\partial k} = - \frac{\gamma \lambda (M-W_o) L_o}{[1-p \lambda (1-\gamma)]^2} \{p[1-p \lambda (1-\gamma)] + k (dp/dk)\}
\]

(28)

are negative in sign, recalling that \( dp/d\lambda = 0 \) (regardless of \( \gamma \)), and \( dp/dk > 0 \) (at \( \gamma < \gamma^* \)). Finally, the effect on the incentive for noncompliance of variations in \( \gamma \), a parameter which has not been previously considered in the literature, is given by

\[
\frac{\partial \delta}{\partial \gamma} = - \frac{\lambda k (M-W_o) L_o}{[1-p \lambda (1-\gamma)]^2} [p(1-p \lambda) + \gamma (dp/d\gamma)],
\]

(29)

which is unambiguously negative at \( \gamma > \gamma^* \). That is, the incentive for noncompliance falls as \( \gamma \) increases. At \( \gamma < \gamma^* \), this result still holds if the probability of complaining increases with \( \gamma \). Otherwise, ambiguity dominates.

IV. CONCLUDING REMARKS

We have considered the determinants of workers' incentive to complain about their employer for paying less than the minimum wage and the implications of a variable probability of complaining on the employer's noncompliance decision. While the paper's conclusions concerning the incentive for noncompliance are consistent with the literature if it takes the enforcement agency the whole of the employment period to investigate a complained-about employer (so that workers complain with certainty since there is no risk involved), different implications may arise if the investigation process is shorter and workers' complaining is uncertain. In particular, an increase in the discrepancy between the statutory minimum and the free market wage might, contrary to intuition, discourage the incentive to complain, since the increased gain from complaining might be offset by the
increased risk of dismissal. However, if the incentive to complain does increase, it may help to restrain the increased incentive for noncompliance associated with a greater wage disparity.

The subject matter of this paper is closely related to the more frequently addressed issue of victims' underreporting of crime to the police. Myers (1980), for example, has argued that it does not always serve the victim's best interest to report; the gain from reporting a crime is clearly the possible recovery of losses and damages and the capture and punishment of the offender, but there is also a cost to consider since time must be spent detailing the incident to the police and possibly testifying in court, and the risk of retaliation on the part of the offender must be faced. Still, victims' reporting of crime is viewed by policy makers and researchers to be an important component of government enforcement strategy. While a rigorous theoretical investigation of victims' reporting decision and its possible (deterrent) effect on criminal behavior is still absent in the literature, Goldberg and Nord (1980), like Ashenfelter and Smith (1979), have provided strong empirical support to the hypothesis that burglaries, the same as minimum wage violations, are less likely to occur where victims are more likely to report.
FOOTNOTES

1In Israel, for example, the enforcement agency relies entirely on workers' complaints to initiate inspections. In the U.S. about 80 percent of total inspections are complaint-based (see U.S. Department of Labor, 1974).

2On the effectiveness of relying on victims to provide the information necessary to detect and punish minimum wage violators, see Lott and Russell (1989).

3Another possible cost of complaining is the embarrassment involved in revealing working at a sub-minimum wage. This cost may be ignored if complaining is allowed anonymously.

4Of course, an underpaid worker could avoid this risk altogether by complaining after the termination of his employment. However, ex-post complaining is, in many cases, bound to be fruitless, either because the life expectancy of employers who pay below minimum wages is very short (they may disappear right after the termination of the employment period) or because the enforcement agency is unlikely to consider the complainer as "most in need of assistance" (see footnote 5 below), having been able to survive on less than the minimum wage without complaining.

As pointed out by Ashenfelter and Smith (1979), government enforcement policy aims to "help the greatest number of people most in need of assistance". Consequently, compliance officers handle workers' complaints on a "worst-first" basis, rather than dealing with every complaint received (see also U.S. Department of Labor, 1974).

5The worker may, however, be eligible to collect unemployment benefits at some hourly rate \( b \) during the rest of the period while avoiding work altogether. This possibility can be ruled out by assuming that \( b < z \) and that \( (z-b)H > \phi(H) \).

6Alternatively, the expected utility can be written as

\[
E(U) = \lambda [SU(w^dH,H)] + (1-s)U(w^dH,H) + (1-\lambda)U(w_0H,H).
\]

Under risk-neutrality, both formulations reduce to identical expressions.

7Notice that the complaining criterion below holds even if all workers in the firm are not alike and there is some probability, \( 0 < \alpha < 1 \), that if the worker considered does not complain, another worker will. This is so since the worker's expected utility if not complaining would in this case be \( E(U)' = (1-\alpha)U_0 + \alpha E(U) \). Complaining would take place if \( E(U) > E(U)' \), which reduces into \( E(U) > U_0 \).

*Ashenfelter and Smith (1979) have pointed out that when a
to attempt a negotiated settlement in which the employer will pay the affected employees the difference between the actual wage received and the appropriate minimum. However, in the average settlement, only about one-half of the minimum wage underpayment is actually recovered (See also U.S. Department of Labor, 1974).

Alternatively, the preceding discussion implies that if condition (7) holds, then

\[ E[U(wh^{**}, h^{**}), \gamma, \lambda, s] \geq E[U(wh^*, h^*), \gamma, \lambda, s] > U(w_0 h^*, h^*). \]

Hence, (7) constitutes a sufficient condition for complaining in this case as well.
REFERENCES


