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Can Insider Power Affect Employment?

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Abstract

Do firms reduce employment when their insiders (established, incumbent employees) claim higher wages? The conventional answer in the theoretical literature is that insider power has no influence on employment, provided that the newly hired employees (entrants) receive their reservation wages. The reason given is that an increase in insider wages gives rise to a countervailing fall in reservation wages, leaving the present value of wage costs unchanged. Our analysis contradicts this conventional answer. We show that, in the context of a stochastic model of the labor market, an increase in insider wages promotes firing in recessions, while leaving hiring in booms unchanged. Thereby insider power reduces average employment.

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1 Introduction

There is a long-standing debate about whether insider wages affect employment. When the insiders - established, incumbent employees whose positions are protected by labor turnover costs - use their market power to push up their wages, do they thereby induce firms to reduce employment?

Although non-economists generally think that the answer must be an unequivocal "yes," the theoretical literature on this important issue is divided, and the mainstream answer is "no." The rationale for the mainstream position is well-known, running along the following lines. Not all employees have protected jobs and market power. In particular, before employees become insiders, they are commonly "entrants," whose positions are usually not associated with significant turnover costs and who have no substantial market power. Then, it is argued, the entrant gets paid his reservation wage, i.e. the wage at which the present value of expected utility from employment over the entrant's working lifetime is equal to the corresponding present value from unemployment. The higher the insider wage that the entrants expect to receive in the future, the lower is their reservation wage. Consequently, when insiders push up their wages, they redistribute labor income over their job tenure, away from their junior (entrant) period and towards their senior (insider) period. But the present value of wage payments over the workers' tenure at their firms is unaffected, since it remains equal to the present value from unemployment. For this reason, it is alleged, insider power does not discourage employment.

The opposing view is that entrants may not in practice receive their reservation wage. There are many reasons why this might be so.[1] Since insider wages are often substantially higher than the minimum amount necessary to keep them from quitting and since these wages are often paid over substantial periods of time, an entrants' reservation wage must be very low, generally a large negative number. But, first, credit constraints, minimum wage laws, and social conventions may all prevent entrants from paying substantial sums to purchase their jobs. Second, entrants may often have some market power, since firms commonly expend advertising and screening costs before the entrant wage is negotiated; alternatively, entrants may gain market power by joining a union. Third, insiders may use their market power to keep the entrant wage high and thereby discourage the firm from hiring many entrants and thereby reducing the marginal product of labor and putting downward pressure on the insider wage. Fourth, entrants may receive more than their reservation wage for efficiency wage reasons, namely, to stimulate effort or to

[1] These reasons are surveyed in Lindbeck and Snower (2001).

attract high-quality job applicants. And finally, firms may voluntarily offer entrants more than their reservation wage, for otherwise the entrants may become more profitable than the insiders. In that event, the firms would then have an incentive to churn (i.e. replace all their insiders by entrants), thereby eliminating the entrants' prospect of becoming insiders and thereby driving up the entrant reservation wage.[2] In short, if a rise in the insider wage does not lead to an equal fall in the entrant wage (in present value terms), then insider power will indeed reduce employment, since it leads to a rise in the present value of firm's wage payments.

This controversy is of far-reaching importance, central to all branches of labor theory in which workers have some market power. If the mainstream view is correct, then factors that enhance insiders' bargaining power - such as union density, the rights to strike and work-to-rule, and union militancy - have no employment repercussions. Moreover, the employment effect of job security legislation and a host labor turnover costs will be independent of its influence on wage formation. If, on the other hand, the opposing view is correct, there is a much stronger case to be wary of insider power, for anything that strengthens the insiders' hand in wage determination will thereby adversely affect employment.

There is a large literature in support of the mainstream position.[3] What has made it appear persuasive is the widespread view that, in practice, entrant wages are a reasonable approximation of the reservation wage, and that the above rationales for discrepancies between these wages are the exception that proves the rule. After all, it is argued, firms usually have a much stronger influence over wages than their new recruits (particularly when they are junior and inexperienced) and thus there is little to stop these firms from driving entrant wages down as far as they will go, namely, to the reservation wage.

This paper calls this mainstream position into question. We argue that *even if* entrants receive their reservation wage, insider power *still* has a contractionary influence on employment. The underlying intuition may be summarized succinctly as follows.

The effect of insider power on employment works through two decisions by firms: the hiring decision (in economic upturns) and the firing decision (in downturns). The mainstream view is correct with regard to the hiring decision: A rise in the insider wage reduces the entrants' (reservation) wage by an equal amount (in present value terms), and thus the fall in employment

[2] For a formal model of this incentive problem, see Manzini and Snower (1996).

[3] See, for example, Bertola (1990), Booth (1996), Burda (1992), Fehr (1989), Fehr and Kirchsteiger (1994), Frank (1985), Frank and Malcomson (1994), Gottfries and Sjostrom (2000), Lazear (1990) and Vetter and Andersen (1994).

from the insider-wage increase is exactly offset by the rise in employment from the entrant-wage decrease.

But the firing decision *is* affected. Here insider (recession-time) employment is reduced not only by the insider-wage increase, but also by the entrant-wage decrease. When entrants become more profitable relative to insiders, firms fire more insiders in a recession. After all, it is now cheaper to lay off the high-wage insiders when demand is low, and replace them by the low-wage entrants when demand is high.

Since hiring is unchanged but firing rises, it follows that in the long run - over upturns and downturns - insider power reduces employment. And this is so even if there are no wage floors that prevent the entrants' wage from falling to the reservation wage.

The paper is organized as follows. Section 2 describes our model. In this context, Section 3 examines the influence of insider power on the hiring decision. Section 4 investigates this influence on the firing decision. Finally, Section 5 concludes.

2 The Model

To make our point as simply and transparently as possible, consider a labor market[4] with a fixed number of identical firms that can be in two states, a "boom" (represented by the superscript "+") and a "recession" (represented by the superscript "−").[5] The two states are generated by fluctuations in productivity taking the form of a two-state Markov process, in which P is the probability of remaining in the same state and $(1-P)$ is the probability of switching to the other state. These fluctuations are assumed to be of sufficient magnitude to lead to changes in employment. In particular, in an upturn (i.e. the economy moves from a recession to a boom), firms hire entrants, and in a downturn (i.e. the economy moves from a boom into a recession), firms fire some insiders. When conditions are unchanged, they retain their existing insiders. (Although our Markov model provides a simple

[4] For simplicity, we do not consider feedback effects via other markets for two reasons. First, this makes our analysis comparable with the relevant literature, which is also based on partial equilibrium models of the labor market. Second, such feedback effects do not generate conceptually interesting insights. (For example, when an insider wage hike reduces employment, it affects insider income and profit income, which in turn influence product demand, and this might affect labor demand. Such a feedback effect could be incorporated into the magnitude of our assumed shocks, described below.)

[5] Alternatively, we could restrict ourselves to the microeconomic analysis of a single firm, and then our "booms" and "recessions" may be interpreted simply as firm-specific productivity or revenue shocks.

analytical setting for examining how insider wages affect employment, it is important to note that our qualitative results do not depend on the Markov structure. In Appendix A, for example, we show how our results emerge when the distribution of productivity swings does not depend on the current state of the world.)

Since the focus of our analysis is about how employment decisions respond to insider wages, it is natural to assume that wages are predetermined when the employment decisions are made and it is not necessary to specify precisely how insider wages are set. Although the qualitative conclusions of our analysis could easily be generated through a model in which the insider wage is the outcome of a bargaining process, in this paper it suffices, for simplicity, to take the insider wage as exogenously given: W^+ in a boom and W^- in a recession.[6] (We adopt the simple convention that upper-case variables refer to insiders and lower-case variables refer to entrants.)

Entrants are assumed to have no bargaining power when they enter the firm; thus the entrant wage is equal to the reservation wage. An unemployed worker receives an unemployment benefit of b (a positive constant) per period. For simplicity, but without any substantial loss of generality, we assume that workers' utility is measured by their income.

The entrant wage is relevant to employment only in upturns, when the economy moves from recession to boom and the firm thus hire entrants. The entrant (reservation) wage in a boom is determined simply as follows. Let r_t^+ be the entrant's reservation wage in a boom, $\mathcal{Y}_t$ be the present value of an unemployed person's income, and δ be the discount factor. Then the present value of an entrant's expected income is[7]

$$y_t = r_t + \delta P\ Y_{t+1}^+ + \delta(1-P)\ \mathcal{Y}_{t+1}^- \tag{1}$$

(In the current boom, the entrant receives the reservation wage r_t; in the following period, the entrant has a probability P of remaining in a boom and receiving the present value of an insider's income Y_{t+1}^+, and a probability $1-P$ of encountering a recession and becoming jobless[8] with the present

[6] In other words, it is sufficient to assume that wages are exogenous in order to analyze the effect of insider wages on employment. If, however, we ask how cyclical swings affect employment, then our analysis needs to be combined with a model of wage determination.

[7] Since hiring takes place only in a boom, our analysis is concerned with the entrant's income only in a boom. Thus, for simplicity, we suppress the superscript "+" from the present value of the entrant's expected income, taking it for granted that $y_t = y_t^+$. For the same reason, we also suppress the superscript "+" from the reservation wage, accepting that $r_t^+ = r_t$.

[8] Note that, in our stationary two-stage Markov process, all entrants are fired when the firm moves from a boom into a recession. (If this were not the case, so that some

value of an unemployed worker's expected income $\mathcal{Y}_{t+1}^-$.) Moreover, since the entrant receives the reservation wage, the expected incomes of an entrant and an unemployed person are equal:

$$y_t = \mathcal{Y}_t^+ \tag{2}$$

The present value of an insider's expected income in a boom is

$$Y_t^+ = W_t^+ + \delta P Y_{t+1}^+ + \delta(1-P)\mathcal{Y}_{t+1}^- \tag{3}$$

(The insider receives the insider wage W^+ in time period t, and in period $t+1$ receives the present value Y_{t+1}^+ of the insider's expected income if there is a boom or the present value $\mathcal{Y}_{t+1}^-$ of the unemployed worker's income if there is a recession.[9])

The present value of an unemployed person's expected income in a boom is

$$\mathcal{Y}_t^+ = b + \delta P(1-u_{t+1})y_{t+1} + \delta P u_{t+1}\mathcal{Y}_{t+1}^+ + \delta(1-P)\mathcal{Y}_{t+1}^- \tag{4}$$

where u_{t+1} is the unemployment rate.[10] (The unemployed person obtains the unemployment benefit b in the current period t. With probability P there is a boom in the following period, and then the person has a chance $1-u_{t+1}$ of becoming an entrant with income y, or a chance u_{t+1} of remaining jobless with income $\mathcal{Y}_{t+1}^+$. With probability $1-P$ a recession occurs, and then the person remains unemployed, receiving the present value of an unemployed worker's income $\mathcal{Y}_{t+1}^-$.)

In the stationary state corresponding to our Markov process, $y_t = y_{t+j} = y$, $Y_t^+ = Y_{t+j}^+ = Y^+$, $\mathcal{Y}_t^+ = \mathcal{Y}_{t+j}^+ = \mathcal{Y}^+$, $\mathcal{Y}_t^- = \mathcal{Y}_{t+j}^- = \mathcal{Y}^-$and $W_t^+ = W_{t+j}^+ = W^+$ for all integers j. On this account, and recalling equation (2), the present value of the unemployed worker's expected income in a boom simplifies to

$$\mathcal{Y}^+ = b + \delta P \mathcal{Y}^+ + \delta(1-P)\ \mathcal{Y}^-$$

Likewise, the present value of an unemployed worker's income in a recession is $\mathcal{Y}^- = b + \delta P \mathcal{Y}^- + \delta(1-P)\ \mathcal{Y}^+$. By these two equations (for $\mathcal{Y}^-$ and for

entrants hired in an upturn were not fired in a downturn, long-run employment would not be stationary.)

[9] We assume that firing takes place in accordance with seniority. In equation (1), the present value Y_{t+1} refers to a worker who becomes an insider in period $t+1$. This junior insider, whose present value of income is described in equation (3), becomes unemployed if there is a recession in the following period, on account of firing by seniority.

[10] Our analysis is concerned with the unemployment rate only in a boom. Thus, for notational simplicity, we omit the superscript "+" from u_t, taking it for granted that $u_t = u_t^+$.

$\mathcal{Y}^+$), the present value of the unemployed worker's expected income simplifies to

$$\mathcal{Y}^- = \mathcal{Y}^+ = b/(1-\delta) \tag{5}$$

By equations (1), (2), (3) and (5), we find that the reservation wage is

$$r_t = r = b - \frac{\delta P}{1-\delta P}(W^+ - b) \tag{6}$$

i.e. the reservation wage is equal to the unemployment benefit minus the expected future income differential between an insider and an unemployed worker.

The firms make their employment decisions given this entrant (reservation) wage and the insider wage W^i, $i = +, -$.

For simplicity, let all workers be equally productive,[11] so that the production function can be expressed as $Q = F^i(N+n)$, $i = +, -$. The production function features positive and diminishing returns: $F^{i\prime} > 0$, $F^{i\prime\prime} < 0$. We assume, plausibly, that the marginal product of labor is greater in a boom than in a recession ($F^{+\prime} > F^{-\prime}$).

We suppose that the parameter values of our model are that we can exclude trivial and irrelevant cases. In particular, we assume that the boom-recession differential in marginal products ($F^{+\prime} > F^{-\prime}$) is sufficiently large, relative to the hiring and firing cost, so that the firm has an incentive to hire in an upturn and fire in a downturn. We also assume that the insider wage is sufficiently low relative to the entrant wage (given the hiring and firing costs) so that the firm has an incentive to retain its insiders.[12]

[11] Díaz-Vázquez and Snower (2002) analyse the consequences of relaxing this assumption by allowing insiders to be more productive than entrants.

[12] The relevant restrictions on the parameters of the model are the following. In order for the firm to hire in an upturn ($n^+ > 0$ in an upturn),

$$n_t^+ = \left(F^{+\prime}\right)^{-1}\{(b+h) - \delta P[h - \delta(1-P)f]\} - N_t^+ > 0$$

where $(F^{+\prime})^{-1}$ is the inverse function, by the marginal condition for hiring in (12), and $N_t^+ = N_{t-1}^-$ (because in an upturn the firm moves from recession into a boom), where

$$N_{t-1}^- = \left(F^{-\prime}\right)^{-1}\left\{W^- - \delta(1-P)\left[h - \frac{1}{1-\delta P}(W^+ - b) - \delta(1-P)f\right] + \delta P f - f\right\}$$

by the marginal condition for firing in equation (14). Additionally, the firm must not have an incentive to fire insiders and put entrants in their place if the boom persists: the expected marginal profitability of the insider in (11) must be greater than the firing cost:

$$\Pi_{t+1}^{+\prime} = h + w^+ - W^+ - \delta(1-P)f > -f$$

Hiring entrants involves a hiring cost of h (a positive constant) per entrant. If entrants are retained for more than one period, they become "insiders," who can be fired only if the firm expends a firing cost f (a positive constant) per insider. By contrast, entrants can be fired costlessly. We assume a limited seniority rule for firing, whereby entrants hired in the current boom are the first to be fired if the economy falls into recession.

The firm's problem is to maximize the present value of its profit. Consequently, in an upturn its hiring decision problem is[13]

$$\underset{n_t^+}{Max}\ F^+(n_t^+ + N_t^+) - w^+ n_t^+ - W^+ N_t^+ - h n_t^+ + \delta E\ \Pi_{t+1} \tag{7}$$

where $F^+(n_t^+ + N_t^+)$ is revenue, $w^+ n_t^+ + W^+ N_t^+ + h n_t^+$ is its labor cost, and $\delta E\ \Pi_{t+1}$ is expected future profit. In a downturn, its firing decision problem is

$$\underset{N_t^-}{Max}\ F^-(N_t^-) - W^- N_t^- - f\left[N_{t-1}^+ - N_t^-\right] + \delta E\ \Pi_{t+1} \tag{8}$$

To derive the effect of insider wages on employment, we now examine the hiring and firing decisions and their implications.

3 The Hiring decision

The first-order condition for the hiring problem (7) is

$$F^{+\prime}(n_t^+ + N_t^+) - (w^+ + h) + \delta P\ \Pi_{t+1}^{+\prime} = 0 \tag{9}$$

In words, in an upturn the firm hires entrants until the present value of their expected marginal profitability is zero. In the current period t, the entrant generates profit $F^{+\prime}(n_t^+ + N_t^+) - (w^+ + h)$. In the following period $t+1$, the economy may either continue in the boom (with probability P) or fall into a recession (with probability $(1-P)$). If there is a recession in period $t+1$,

which equals (by equation 6):

$$h + f > \frac{1}{1-\delta P}(W^+ - b) + \delta(1-P)f$$

Appendix B explains how these restrictions enable us to ignore the trivial and irrelevant cases.

[13] For simplicity, we assume that the firm is a perfect competitor in the product market, so that revenue in real terms is equal to output. This assumption has no bearing on our qualitative conclusions.

the marginal entrant will be fired. Since the firm incurs no firing cost, the expected marginal profit the marginal entrant generates is zero (and thus does not appear in equation (9)).[14] If boom continues into period $t+1$, the firm retains all its workers and all the entrants become insiders, each generating the present value of expected profit $\Pi^{+\prime}_{t+1}$:

$$\Pi^{+\prime}_{t+1} = F^{+\prime}(n^+_t + N^+_t) - W^+ + \delta P\, \Pi^{+\prime}_{t+2} + \delta(1-P)\, \Pi^{-\prime}_{t+2} \qquad (10)$$

In period $t+1$ the insider generates profit $F^{+\prime}(n^+_t + N^+_t) - W^+$. In the following period $t+2$, with probability P the boom continues and the insider generates profit $\Pi^{+'}_{t+2}$; and with probability $1-P$ the economy goes into recession, the marginal insider is fired, and the firm pays the firing cost f, so that $\Pi^{-\prime}_{t+2} = -f$. In the stationary equilibrium, $\Pi^{+\prime}_{t+1} = \Pi^{+'}_{t+2}$, and thus, from (10) and (9), the insider's profitability simplifies to[15]

$$\Pi^{+\prime}_{t+1} = \left[h + w^+ - W^+ - \delta(1-P)f\right] \qquad (11)$$

Substituting this equation (11) and the reservation wage (6) into (9), the marginal hiring condition becomes:

$$F^{+\prime}(n^+_t + N^+_t) - (b+h) + \delta P\left[h - \delta(1-P)f\right] = 0 \qquad (12)$$

This hiring condition determines total boom-time employment $n^+_t + N^+_t$. Observe that the insider wage does not appear in this condition. Consequently, boom-time employment is unaffected by the insider wage. The reason is that an increase in the insider wage leads to a one-for-one reduction in the reservation wage, in present value terms.

4 The Firing decision

The first-order condition for the firing problem (8) is

$$F^{-\prime}(N^-_t) - W^- + \delta P\, \Pi^{-\prime}_{t+1} + \delta(1-P)\, \Pi^{+\prime}_{t+1} = -f \qquad (13)$$

(In a recession, the marginal insider generates a profit of $F^{-\prime}(N^-_t) - W^-$ in the current period t. In the following period, there is a probability P that the recession will continue and thus the marginal profit will be $\Pi^{-\prime}_{t+1}$, and there

[14] This follows from the seniority rule, whereby entrants are fired before insiders.

[15] Note that the marginal insider's profitability differs from that of the entrant on three counts: (a) hiring an entrant involves a hiring cost h, (b) the insider's wage differs from that of the entrant $(w^+ - W^+)$, and (c) if the entrant is fired, the firm pays no firing cost, but it pays a firing cost f if fires the insider $(-\delta(1-P)f)$.

is a probability $(1-P)$ of a boom and the marginal profit will be $\Pi^{+\prime}_{t+1}$.) The marginal firing condition indicates that the firm continues firing until the present value of the marginal insider's expected profitability is equal to the firing cost f.[16]

Note that if the firm remains in a recession in period $t+1$, then the marginal insider's expected profitability will continue to be equal to the firing cost ($\Pi^{-\prime}_{t+1} = -f$). Substituting this equation, the marginal insider's profitability (11), and the reservation wage (6) into the firing condition (13), we obtain:

$$F^{-\prime}(N_t^-) - W^- + \delta(1-P)\left[h - \frac{1}{1-\delta P}(W^+ - b) - \delta(1-P)f\right] - \delta P f = -f \tag{14}$$

This firing condition determines total recession-time employment N_t^-, and, in contrast with the hiring condition, it does depend on the insider wage. Here we can see that an increase in insider bargaining power, which raises the insider wage in a recession and a boom, has the following effects:

(a) In the current recession, the rise in the insider wage W^- reduces current (recession-time) employment N_t^-.[17]

(b) A rise in the insider wage W^+ in a future boom, reduces current (recession-time) employment N_t^-. Additionally, the rise in the insider wage W^+ drives down the entrant wage in a future boom (since a higher insider wage implies a lower reservation wage). (In equation (14), note that $\frac{1}{1-\delta P}(W^+ - b) = W^+ - w^+$, which is the insider-entrant wage differential. Thus the term $\frac{1}{1-\delta P}(W^+ - b)$ incorporates not only the rise in the insider wage, but also the fall in the entrant (reservation) wage.) The reduction in the entrant wage leads to a fall in recession-time employment N_t^-.[18] The reason is straightforward.[19] If entrants become more profitable relative to insiders in a future boom, the firms have less of an incentive to retain insiders in a current recession. In other words, firms find it more profitable to fire insiders, the cheaper it is to hire entrants.[20]

[16] In the stationary equilibrium, all entrants are fired and the marginal worker is an insider.

[17] In the firing condition (14), a rise in W^- must be matched by an increase in $F^{-\prime}(N_t^-)$, so that employment N_t^- must fall.

[18] By contrast, the entrant wage reduction has no influence on employment in a boom, since this reduction is exactly offset by the rise in the insider wage, so that the present value of wage income is unchanged.

[19] Once again, in the firing condition (14), a rise in $W^+ - w^+$ must be matched by an increase in $F^{-\prime}(N_t^-)$, so that employment N_t^- must fall.

[20] Observe that these effects are not operative in booms. In boom the marginal worker is

5 Conclusion

The upshot of our analysis may be summarized as follows:

Proposition 1 *In the above model of recessions and booms, insider bargaining power is harmful to employment, i.e. an increase in insider wages reduces average employment (over recessions and booms). This result holds even when entrants receive their reservation wages. In particular, an increase in the insider wages promotes firing in a recession, while leaving hiring in a boom unchanged.*

As we have seen, hiring in a boom is unchanged, because the rise in the insider wage is equal to the fall in the entrant wage (in present value terms). Thus the contractionary employment effect of the insider-wage increase is exactly offset by the expansionary employment effect of the entrant-wage decrease.

But for the firing decision in a recession, these effects do *not* offset one another. On the contrary, they both pull in the same direction: both the rise in the insider wage and the fall in the entrant wage give firms an incentive to fire more insiders in a recession.

On this account, a rise in insider wages drives down average employment.

Thereby our paper calls into question an influential strand of the literature according to which a rise in insider wages reduces entrant wages, but leaves employment unaffected. According to the conventional reasoning, the wages of infra-marginal workers make no difference to employment; only the wages of the marginal workers matter. The marginal workers are commonly identified as the entrants. After all, every insider must have started out as an entrant, and if entrants are paid the reservation wage, then any change in the insider wage leaves the firm's present value of wage payments over the worker's job tenure unaffected and consequently the firm has no incentive to change employment.

Our analysis challenges this conventional wisdom by showing that, in the presence of cyclical fluctuations, the insiders are not necessarily the infra-marginal workers. To be precise, they are infra-marginal in upturns, when entrants are hired, but they are marginal in downturns, when insiders are fired. It is on this account that a rise in insider wages has no effect on hiring, but promotes firing.

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an entrant, who receives the reservation wage. Since an increase in the insider wage is met by an equal drop in the reservation wage (in present value terms), boom-time employment is not affected.

In the absence of cyclical downturns of sufficient magnitude to induce firing, the conventional wisdom is correct. But when firing occurs, higher insider wages lead to lower average employment.

A Appendix A

The central conclusion of our analysis - that a rise in insider wages leads to a fall in employment when entrants receive the reservation wage - does not depend on the Markov structure of productivity swings. Suppose, on the contrary, that the distribution of productivity movements is independent of the current productivity state. In particular, suppose that with probability P productivity is Z^+ (a boom), and with probability $(1-P)$ productivity is Z^- (a recession), where $Z^+ > Z^-$.

The expression for the reservation wage in equation (6) and the hiring condition in equation (7) remain unchanged. The firing condition under the stable probability distribution now becomes

$$F^{-\prime}(N_t^-) - W^- + \delta P \left[h - \frac{1}{1-\delta P}(W^+ - b) - \delta(1-P)f \right] - \delta(1-P)f = -f$$

This equation shows that an increase in insider bargaining power, which raises the insider wage in a recession and a boom, has the two effects described in section 4.

B Appendix B

If the restrictions on the parameters of our model (specified in footnote 12) are not satisfied, we generate trivial or irrelevant cases, along the following lines.

(1) Suppose that the insider wage is so high (relative to hiring and firing costs) that, in a boom, the firm has an incentive to fire the entrants before they become insiders. Then the firm will have no incentive to retain its entrants in a recession (since the marginal product is less in a recession than in a boom). Consequently, the firm will have no insiders, and thus it is irrelevant to examine the employment implications of an increase in insider power.

(2) Suppose that the parameter values are such that the firm hires new entrants when economic conditions improve, retains the workers if economic conditions do not change but does not fire insiders in a recession. Then an

increase in insider wages has no effect on employment for a trivial reason: since insiders are never fired (by assumption), an increase in insider wages cannot lead to a fall in employment.

(3) Suppose that the parameter values are such that the firm has no incentive to hire new entrants in a boom. In the absence of entrants, employment is zero and the firm ceases operation.

(4) The firm has an incentive to hire entrants in a boom and to fire all its insiders in a recession. Then an increase in insider wages has no effect on employment for the trivial reason that, regardless of insider wages, recession-time employment is always zero.

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