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EMPLOYER SIZE AND DUAL LABOR MARKETS

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ABSTRACT

Recently developed effort regulation models argue that labor markets are segmented because of differences in the technology of supervision across firms. Primary jobs pay above market clearing wages because these jobs are difficult to monitor. Secondary jobs, in contrast, pose no monitoring difficulties and therefore pay a market clearing wage. If, as the literature suggests, increases in employer size make supervision more difficult, we should observe that wages increase with employer size in primary jobs but not in secondary jobs.

We test this hypothesis using a switching regression model. We find evidence of an employer size wage effect in both primary and secondary labor markets. However, consistent with the prediction of effort control models, the size effect on wages is considerably larger in primary than secondary jobs.

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I. INTRODUCTION

According to conventional microeconomic theory, identical commodities should sell for the same price in a freely competitive market. Short-run deviations from this equilibrium state will be competed away as buyers abandon high price commodities for their low price equivalents. In the context of labor markets this "law of one price" means that, abstracting from compensating wage differentials, workers with identical productive characteristics should be paid the same wage.

The theory of dual labor markets argues that the law of one price will not prevail in labor markets, even in the long run. Equilibrium in labor markets will instead be characterized by the rationing of primary jobs, i.e. jobs that offer high wages and large returns to education and experience. As a result of this rationing, capable workers who are willing to accept primary jobs at going wages will find themselves in low wage, secondary jobs-perhaps for long periods of time. In contrast to primary jobs, secondary jobs offer small returns to education and experience.

The theory of dual labor markets has generated a large body of qualitative and quantitative research (reviewed in Cain, 1976, Lang and Dickens, 1988, and Rebitzer, 1989). However, until recently, the development of a microeconomic theory of dual labor markets has been hampered by the absence of formal models explaining: (1) why firms offer primary and secondary jobs and (2) how an excess supply of workers to primary jobs can persist in a competitive labor market. Empirical explorations of dual

labor markets have been hampered by the difficulties involved in identifying which workers are in which market segments.

Two recent papers have attempted to fill these theoretical and empirical lacunae in the dual labor market literature. The first of these papers, Dickens and Lang (1985b), employs a switching regression technique to distinguish primary and secondary labor markets (see also Dickens and Lang 1985a, 1987 and 1988. This approach allows the authors to examine wage determination in primary and secondary labor markets without relying on arbitrary classification schemes that may produce biased results.

The second paper, Bulow and Summers (1986), proposes an effort-regulation model of dual labor markets in which firms offering primary jobs use the threat of dismissal to prevent employee shirking.[1] Since the effectiveness of dismissal threats depends upon the cost to the worker of losing the job, primary employers set wages above market clearing levels. Secondary jobs, in contrast, occur where it is easy to monitor the activities of workers. In this situation, firms do not rely upon dismissal threats to maintain work intensity and therefore wages tend towards market clearing levels.

One of the implications of the preceding model is that in primary jobs, wages will be higher where monitoring is more difficult. Bulow and Summers suggest that monitoring is more difficult or costly for large employers.[2] These heightened monitoring difficulties will cause the wage premia offered in primary jobs to increase with employer size. A further

implication of the Bulow and Summers model is that in secondary jobs, where monitoring is easy, there should be a smaller size effect on wages.

In this paper, we examine the effect of employer size on wages in primary and secondary labor markets. Our approach differs from previous studies of the effect of employer size on wages in that we use the switching regression techniques developed by Dickens and Lang to estimate separate wage equations for primary and secondary labor markets (see Mellow, 1982, Evans and Leighton, 1989, and Brown and Medoff, 1989).

II. AN ILLUSTRATIVE MODEL

Consider an economy composed of homogeneous workers and two types of firms, primary and secondary. [3] Jobs in primary firms are presumed to be difficult to monitor, perhaps because they involve complex sets of tasks. In contrast, jobs in secondary firms are easy to monitor.[4]

Workers are presumed to have control over their work activities and can choose, at any moment, whether to work or to shirk. In secondary firms, workers do not shirk because employers immediately detect and dismiss employees found not to be working. In primary firms, on the other hand, firms detect and dismiss shirkers with probability $D < 1$. Employees in primary firms can be induced to work at a high level of work intensity only if the expected costs of being dismissed for shirking exceed the expected benefits of shirking.

Following Bulow and Summers (1986) and Shapiro and Stiglitz (1984), an employee's utility function is presumed to be

additively separable over time, so that the utility of employment in any period is described by the following utility function:

(1) $U=U(Y-\beta_1)$, $U'>0$, $U''<0$ and

where Y is income, β_1 is the dollar value of the dis-utility of working at intensity i. Thus the current period utility for a non-shirker who holds a primary job is

(2) $U_N=U(w_1-\beta_1)$,

where w_1 is the wage paid to primary workers and β_1 is the dis-utility of working at the high level of work intensity.

A worker in a secondary job enjoys current utility,

(3) $U_C=U(w_2-\beta_2)$

where w_2 is the wage offered to secondary workers and β_2 is the dis-utility of work effort in a secondary job.

Primary workers who choose to work at the "low" level of work intensity reduce the dis-utility of work effort from β_1 to zero.[5] In this model, we assume that firms pay primary workers prior to observation of their work activities in each period.[6] Thus a shirking worker will receive the following utility in each current period:

(4) $U_S = U(w_1)$.

Following Bulow and Summers (1986), we assume that workers have infinite lives and exogenously determined job retention probabilities. In particular, we assume that non-shirkers in a primary job have a fixed probability, (1-q), of remaining in their job from one period to the next. Primary workers who shirk risk dismissal and therefore reduce this retention probability to (1-q)(1-D).[7] Similarly, workers in secondary jobs have a fixed probability, (1-s), of remaining employed in a secondary job.

Define V^N and V^S to be the discounted present value of lifetime utility for non-shirking and shirking primary workers respectively. Workers who maximize expected utility will not shirk if $V^N-V^S \geq 0$. Using equations (1), (2) and (3), it is straightforward to derive the following expression for this no-shirking condition[8]

$$(5)\quad U_N-U_C \geq \frac{(U_S-U_N)(r+q+s)}{D(1-q)},$$

where r is the worker's discount rate.

Notice that this no-shirking condition implies that the utility of employment in a primary job (U_N) exceeds that available in a secondary job (U_S). Thus in equilibrium there will be a persistent excess supply of secondary workers who are able and willing to accept primary jobs at the prevailing wage.

This rationing of primary jobs results in labor market segmentation.

Bulow and Summers' (1986) hypothesis that supervision is more difficult for large employers can be expressed in this model by the statement that D, the probability of dismissal for shirking, falls as employer size increases. [9] Implicitly differentiating equation (5) we find the partial derivative of w_1 with respect to D to be:

$$(6)\quad \frac{\partial w_1}{\partial D} = - \frac{[U_S - U_N](r+q+s)/[D^2(1-q)]}{U'_N[1 + \frac{r+q+s}{D(1-q)}] - U'_S[\frac{r+q+s}{D(1-q)}]} < 0.$$

Equation (6) suggests that increases in employer size will cause employers offering primary jobs to increase the utility of primary jobs vis-a-vis secondary jobs. In this simple model, they can do this only by increasing the wage in the primary job.

Thus if increases in employer size reduce the probability of detection and dismissal for shirking, the wage offered in primary jobs will be larger for larger employers. In secondary jobs, supervision is not problematic and we would expect to see a reduced size effect on wages.

III. ESTIMATING A MODEL OF DUAL LABOR MARKETS

Following Dickens and Lang (1985b), we specify a three equation model of dual labor markets consisting of: (1) a wage equation for the labor market composed of primary jobs; (2) a

wage equation for the labor market composed of secondary jobs; and (3) a "switch" equation that allocates workers to one labor market or the other.

The primary and secondary wage equations can be written as:

$$(7)\quad \ln(W_i) = X_i B_p + \varepsilon_{pi}$$

and

$$(8)\quad \ln(W_i) = X_i B_S + \varepsilon_{si}$$

where $\ln(W_i)$ is the natural log of the hourly wage of individual i; X_i is a vector of explanatory variables; B_p is a vector of coefficients for the primary sector; B_s is a vector of coefficients for the secondary sector; and ε_{pi} and ε_{si} are normally distributed, mean zero error terms for the primary and secondary wage equations respectively.

The switching equation is specified as

$$(9)\quad Y_i^* = Z_i \Gamma + \varepsilon_{wi}$$

where Y_i^* is an unobserved latent variable; Z_i is a vector of explanatory variables; Γ is a vector of parameters; and ε_{wi} is a normally distributed, mean zero error term. If $Y^* > 0$, the individual's wage is determined by the primary wage equation. If $Y^* \leq 0$, the individual's wage is determined by the secondary wage equation. Since Y^* is

unobserved, equations (7)-(9) must be estimated using maximum likelihood techniques.[10]

Intuitively the switching regression can be understood as describing the ability of an individual to obtain a job in either the primary or secondary labor market. From this perspective, the right hand side variables in this equation should include variables measuring the personal characteristics of individuals, but not characteristics of the job.

We estimated the dual labor market model for a sample of non-union, private sector, male workers taken from the May 1983, Current Population Survey.[11] This survey offers two distinct measures of employer size. The first, which we call PLANT SIZE, records the number of employees at the respondent's location of work. The second, which we call FIRM SIZE, records the respondent's estimate of the number working at all the employer's work locations. Both measures of employer size were recorded as categorical variables with employment grouped into five categories: 1-24; 25-99; 100-499; 500-999; and $\geq$ 1000. FIRM SIZE differs from PLANT SIZE only if the respondent indicates that the employer has more than one plant. The existence of multiplant employers is coded in the dummy variable MULTI-PLANT.

Table 1 presents estimates of the dual labor market model described above. Column 1 of this table presents estimates of the switching equation, while columns 2 and 3 present estimates of the primary and secondary sector wage equations. [12]

[INSERT TABLE 1 ABOUT HERE]

Looking at column 2 of Table 1, we find that increases in plant size have a positive, statistically significant effect on wages in the primary labor market. The wage premium associated with larger plants is substantial and appears to increase as the size of the plant increases. All else equal, an employee in the primary labor market working at a plant having between 25 and 99 workers will receive a wage 3.9% higher than an employee working at a plant with less than 25 workers. This compares with a plant size wage premium of 17.8% for employees in plants with 1000 or more employees.

Increases in firm size also appear to result in rising wage premia in primary sector jobs, but the pattern is less consistent than for plant size. All else equal, an employee in a firm with 25-99 employees can expect a 3.4% wage premium over an employee in the smallest plant and firm size category. However this size effect is not measured precisely and we cannot reject the hypothesis that the true firm size effect is zero. The wage premium associated with employment in a firm with 100-499 employees is 6.7% and statistically significant at the 1% level. The premia associated with employment in a firm between 500-999 is 4.7% but not statistically significant. Finally employment in the largest firm size category is associated with a substantial and statistically significant wage premium. Point estimates indicate that, all else equal, employment in a firm having 1000 or more employees increases primary wages by 12.9%.

The results look different in the secondary sector (column 3 of Table 1) and, using a log likelihood ratio test, we can reject

the hypothesis that plant and firm size coefficients are identical in the primary and secondary labor markets. In the secondary sector we do not find a significant, positive plant size effect in categories 2 and 3. Indeed, employment in plant size category 2 has a large, statistically significant, negative effect on wages. We do observe plant size effects comparable to those in the primary sector for employees in plants with at least 500 employees. However, with the exception of firm size category 2, we do not generally observe any statistically significant firm size effect on the wage.

Columns (4)-(6) of Table 1 repeat the preceding estimation but add an additional variable, MULTI-PLANT, indicating whether the employer has more than one plant. This variable is strongly positive and statistically significant in the primary sector-but not in the secondary sector. The plant size coefficients not substantially changed by this modification. However, with the exception of firms having 25-99 employees in the secondary sector, the firm size coefficients become statistically insignificant. These results suggest that the firm size effect on wages in primary jobs is largely due to the presence of multiple plants rather than to increases in the number employed at all plants.[13]

In addition to the inclusion of establishment size variables, our estimates differ from those of Dickens and Lang (1985a,b, 1987, and 1988) in that we estimate the effects of both current job tenure and prior labor market experience on wage determination in primary and secondary labor markets. The

coefficients on variables measuring prior labor market experience (EXPERIENCE and EXPERIENSQ) in the switching equation indicate that increasing labor market experience prior to the current job increases the probability an individual will be hired into a primary job.[14] Turning to the wage equations, we find positive returns to prior experience in both the secondary and primary labor markets with slightly higher returns in the primary sector.

The coefficients on the tenure variables (TENURE and TENURESQ) indicate higher returns to job tenure in primary than secondary jobs. Coefficient estimates in column 2 indicate that, at the mean tenure of 6.64 years, an additional year of tenure increases primary sector wages by 3.5 percent. The comparable effect in a secondary job (derived from column 3) is 1.5 percent. This pattern is consistent with greater amounts of investment in firm specific human capital in primary sector jobs. Even in the absence of firm specific human capital, however, one would expect primary employers to offer increased returns to tenure because by doing so they will be increasing the effectiveness of dismissal threats (Lazear, 1981).

As in all previous studies of dual labor markets based on switching regression models, we find that increasing years of schooling (SCHOOLING) increases the probability a worker will be hired for a primary job. Although we find significant and positive returns to education in both primary and secondary jobs, the coefficients on the schooling variable in the primary wage equation are more than double the size of the schooling coefficients in the secondary wage equations.

Finally, we find that the union density in two digit census industries (UNION DENSITY) and race (WHITE) each has a statistically significant effect on sector location and on earnings in both sectors. Unlike previous studies, we find that the effect of race on wage determination is much larger in primary than secondary sector jobs (Dickens and Lang 1986 and 1987).

As a check on the coefficients presented in Table 1, it would be useful to see if workers in the primary and secondary labor markets have characteristics similar to those identified using other classification schemes. Unfortunately, switching regression models of the type estimated in this paper do not allow us to identify which workers are in which labor market segments. We can, however, use the coefficient estimates to calculate the probability a worker is in the primary labor market contingent on observed wages, human capital and job characteristics (Dickens and Lang 1985b).

Table 2 compares workers with a high probability of primary sector employment with other workers. Consistent with other studies, we find that relative to other workers these "primary" workers have: (1) higher average hourly earnings; (2) greater access to health insurance and pension benefits; (3) a higher incidence of employment in large plants and firms; (4) a lower incidence of part-time employment; (5) longer current job tenure (6) more years of schooling; and (7) a higher concentration of white workers (Dickens and Lang 1985a and Edwards 1979). As a

group, "primary" workers are also found to be more heavily concentrated in large plants and firms.

[INSERT TABLE 2 ABOUT HERE]

IV. CONCLUSION

This paper uses a switching regression model to estimate the effect of employer size on wages in primary and secondary labor markets. We find that there are large and positive wage premia associated with increases in plant and firm size in primary sector jobs. Interestingly, the firm size effect on wages in primary jobs appears to be largely due to the presence of multi-plant employers. The pattern is different in secondary jobs and point estimates indicate that increases in employer size have a much larger effect on wages in the primary sector than the secondary sector. These findings are consistent with the predictions of Bulow and Summers' model of dual labor markets.

Labor market segmentation is a complicated phenomenon and it is unlikely that any simple model will offer a completely satisfactory explanation. We conclude this paper by discussing two unresolved issues that we believe should be pursued in future research.

First, one cannot infer from Bulow and Summer's account where monitoring problems arise in primary sector firms. If monitoring difficulties only involve problems relating to the direct supervision of production, then one should expect to see plant size but not firm size wage effects in primary jobs. The various firm size and multi-plant wage effects we observe suggest that monitoring difficulties involving upper level managers may

also be important in understanding labor market segmentation. Further development of effort regulation models of labor market segmentation models would benefit from a more detailed study of the nature of monitoring problems at different levels of business organizations. [15]

Secondly our empirical results do not eliminate the possibility that the effect of employer size on wages in primary jobs may be due to factors other than heightened monitoring difficulties (see Brown and Medoff, 1989 p. 1055). Two alternative explanations are suggested by the literature on efficiency wages- rent sharing theories and sociological theories (or theories of social norms).

If employer size in the primary sector is a proxy for the success of the enterprise, it may be that employer size wage premia reflect the sharing of economic rents between firms and employees. This explanation is attractive in that it can easily account for both plant and firm size wage effects. Of course any complete rent sharing model must explain why employers would voluntarily share their profits with the non-union workforce studied in this paper.

Sociological theories of wage determination emphasize the importance of social norms in creating a climate of reciprocity that make workers willing to work hard (see Akerloff, 1982). In this view large employers may be reluctant to exercise dismissal threats for fear that dismissals would undermine worker loyalty to the firm and increase the threat of costly unionization drives or litigation (see Edwards, 1979; Foulkes, 1980; and Krueger,

1989). The reduced use of dismissal threats in large plants or firms would lead to employer size wage premia in primary jobs, even if supervision of primary workers were no more difficult in large and small firms.

Sociological theories also offer a possible explanation for the plant size wage effects we observe in secondary jobs. If employer size effects result from monitoring difficulties and if secondary jobs pose no monitoring difficulties, it is not clear why we should observe any size effect on wages in the secondary sector. One possible explanation is that large employers face some equity constraints that prevent the wages of secondary workers from falling too far below those of primary workers. If equity constraints are important in determining wages in the secondary sector, one then needs to consider the possibility that secondary sector jobs pose monitoring difficulties more substantial than those suggested by Bulow and Summer's model (see Rebitzer, 1987 and 1988; and Green and Weisskopf, 1989).

Notes:

[1] The notion that the threat of unemployment is an important disciplinary device long predates Bulow and Summers. For a discussion of earlier literature see Ackerloff and Yellen (1986), Rebitzer (1989) and Bowles (1985).

[2] The thesis that increases in employer size are associated with increased difficulty in monitoring employees has a long history. See, for example, Coase (1937), Williamson (1967), Calvo and Wellisz (1978), Oi (1983), and Garen (1985). If monitoring difficulties are associated with primary jobs but not with secondary jobs, then we would expect to see wages increase with employer size in primary jobs and not secondary jobs.

[3] The assumption of primary and secondary jobs being offered by distinct primary and secondary firms follows the presentation in Bulow and Summers (1986) and is analytically convenient. However, Rebitzer and Taylor (1989) demonstrate that if product demand is uncertain, dual labor markets may emerge even in an economy having only primary firms.

[4] It is reasonable to suppose that jobs entailing more complex skills will be more difficult to monitor and will also require larger investments in human capital. There is therefore a natural affinity between the Bulow and Summers model of dual labor markets and the theory of human capital (see Lang and Dickens (1988) for a discussion of this point). However, as we demonstrate below, dual labor markets can arise even when we abstract from issues of job skill and investments in human capital.

[5] The assumption that shirking primary workers have zero disutility from work is made for analytical convenience. No important results hinge on this assumption.

[6] Since workers in primary jobs are paid prior to the observation of their work activities in each period, the cost to the worker of dismissal for shirking does not depend upon the wage paid in the current period. By reducing wages in the current period, however, firms signal to workers that promises of future wage offers are not reliable. Thus, a wage cut in the current period would induce shirking.

[7] Exits may occur because of quits or layoffs. We assume that those who exit a primary job always find employment in a secondary job. We do not analyze the determination of exit probabilities in this paper. However, Rebitzer and Taylor (1989) present a model in which exit probabilities from primary jobs are endogenously determined. The basic results reported below are not substantially altered by this complication.

[8] This result is standard in the literature. For explicit derivations of similar no-shirking conditions see Bulow and Summers (1986); Shapiro and Stiglitz (1984); and Rebitzer and Taylor (1989).

[9] Bulow and Summers (p. 388) make this point by assuming that supervision in large firms is more costly. The formulation used here is simpler in that we do not have to introduce a supervisory cost function.

[10] The maximum likelihood equation is described in Dickens and Lang (1985b).

[11] The determination of wages and the use of dismissal threats are likely to be quite different in union and non-union firms (see Idson and Feaster, 1990). To avoid confusing the effect of labor market sector with the effects of unions, we estimate our model for a sample of non-union males.

[12] The single OLS wage equation is nested within the maximum likelihood equation used to estimate the system of two wage equations and the switching equation. Using a likelihood ratio test, we can reject the restrictions implied by the OLS wage equation.

[13] Estimating the model with plant size and mult-plant variables but without firm size variables produces results quite similar to those described in Table 1.

[14] The variable EXPERIENCE = age - SCHOOLING - TENURE - 5. The quadratic term indicates that increases in prior experience increase the probability of primary employment up until 21.32 years. Thus for high school graduates with continuous labor market experience, the probability of starting a new job in the primary sector increases with age up until age 38 and decreases thereafter.

[15] Oi (1983) offers a model in which the opportunity cost of monitoring is high for top managment in large firms and management therefore economizes on the time spent monitoring. A natural extension of Oi's argument to effort regulation models of the sort discussed here would be for employers to substitute higher wage premia for reduced monitoring intensity.

TABLE 1 [a]

DUAL LABOR MARKET MODEL

	(without Multiplant)			(with Multiplant)		
Variable	Switch	Primary	Secondary	Switch	Primary	Secondary
PLANT SIZE 24-99		0.038 (2.094)	-0.098 (-2.288)		0.0728 (3.858)	-0.075 (-1.720)
PLANT SIZE 100-499		0.061 (3.061)	0.033 (0.760)		0.105 (4.982)	0.060 (1.271)
PLANT SIZE 500-999		0.120 (4.039)	0.138 (1.751)		0.170 (5.526)	0.172 (2.172)
PLANT SIZE 1000+		0.164 (6.757)	0.111 (2.018)		0.206 (8.144)	0.123 (2.111)
FIRM SIZE 24-99		0.033 (1.531)	0.134 (2.666)		-0.019 (-0.833)	0.107 (2.073)
FIRM SIZE 100-499		0.065 (3.169)	0.015 (0.328)		-0.029 (-1.176)	-0.244 (-0.454)
FIRM SIZE 500-999		0.046 (1.503)	0.041 (0.542)		-0.0644 (-1.851)	-0.002 (-0.023)
FIRM SIZE 1000+		0.121 (6.353)	0.051 (1.354)		-0.884 (-0.330)	-0.710 (-0.133)
MULTI-PLANT					0.118 (7.262)	0.034 (1.135)
EXPERIENCE	0.058 (7.224)	0.032 (20.776)	0.021 (7.313)	0.058 (6.963)	0.032 (20.670)	0.020 (7.227)
EXPERIENSQ[b]	-0.136 (-6.999)	-0.058 (-15.127)	-0.045 (-7.431)	-0.140 (-6.801)	-0.057 (-14.958)	-0.044 (-7.432)
TENURE		0.046 (24.987)	0.021 (5.968)		0.045 (24.487)	0.020 (5.414)
TENURESQ [b]		-0.081 (-13.938)	-0.043 (-3.773)		-0.078 (-13.323)	-0.039 (-3.372)
SCHOOLING	0.213 (17.826)	0.095 (38.566)	0.039 (7.199)	0.215 (17.210)	0.094 (37.871)	0.037 (6.737)
WHITE	0.298 (2.616)	0.142 (6.198)	0.073 (1.813)	0.302 (2.529)	0.140 (6.185)	0.069 (1.687)
UNION DENSITY		0.418 (8.464)	1.003 (9.810)		0.416 (8.460)	0.989 (9.377)
CONSTANT	-1.938 (-9.587)	0.065 (1.414)	1.008 (15.055)	-1.952 (-9.129)	0.064 (1.386)	1.033 (15.325)
Covariance with Switching Error		0.429 (73.269)	0.372 (13.438)		0.426 (71.300)	0.364 (12.853)
Variance of Error Term	[c]	0.192 (49.132)	0.152 (8.501)	[c]	0.190 (49.282)	0.148 (8.423)
Log-Likelihood		-3156.82			-3130.31	
# Observations		6215			6215	

[a] Asymptotic t-statistics in (). Dependent variable is the log of hourly earnings. All data from the May 1983 Current Population Survey Pension Supplement

[b] The square of the preceding variable divided by 100.

[c] Normalized to 1.

Variables Used in Table 1 [1]

Dependent Variable:

ln(W) (2.065; 0.559): The natural log of the hourly earnings of non-union, male, wage and salary workers in the private, non-agricultural sector of the U.S. economy. Hourly earnings were calculated by dividing usual weekly earnings by usual weekly hours at the respondent's primary job. Questions on earnings and usual hours at the primary job were asked of out-going rotations in May and June of 1983. The June responses were matched to the May 1983 Current Population Survey.

Independent Variables:

PLANT SIZE[2] : A set of dummy variables equal to one if respondent works in a plant in size categories 1 through 5 respectively. The size categories refer to the respondent's estimates of the number of employees at their work place. The categories are 1-24, 25-99, 100-499, 500-999, and >1000.

FIRM SIZE[3] : A set of dummy variables equal to one if respondent works in a firm in size categories 1 through 5 respectively. The size categories refer to the respondent's estimates of the number of employees at all work sites owned by the employer. The categories are 1-24, 25-99, 100-499, 500-999, and >1000.

MULTI-PLANT: (0.547; 0.498): A dichotomous variable equal to one when employer operates at more than one plant.

SCHOOLING (13.049; 2.848): Years of schooling.

TENURE (6.641; 8.169): Years with current employer.

WHITE (0.930; 0.256): A dummy variable equal to 1 if the respondent is white.

EXPERIENCE (11.099; 11.298): Years of potential experience prior to current job. Calculated as Age-TENURE-SCHOOLING-5.

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(1) Data taken from the May 1983 CPS. In constructing our sample we eliminated respondents with earnings less than $2.00/hr. and EXPERIENCE less than -5. Numbers in () are respectively the mean and standard deviations of the variables.

2 The mean and standard deviations of PLANT SIZE dummy variables ranging from the smallest to the largest size categories are: (0.461; 0.499), (0.220; 0.414),(0.164;0.370),(0.053; 0.224), (0.101; 0.302).

3 The mean and standard deviations of FIRM SIZE dummy variables ranging from the smallest to the largest size categories are: (0.338; 0.473), (0.155;0.362), (0.130; 0.337), (0.046; 0.209), (0.330; 0.470).

UNION DENSITY: (0.203; 0.119): The fraction all employees who are union members in the two digit census industry in which the respondent works.

TABLE 2

Aggregate Characteristics of Workers
With High Probability of Primary Sector Employment[1]

	High Probability Primary[2]	Others
Mean Hourly Earnings:	$10.93	$4.32
Fraction with Health Insurance:[3]	0.794	0.396
Fraction with Employer who Offers a Pension Plan:[3]	0.597	0.286
Fraction Part-time:	0.049	0.314
Current Tenure (years):	7.32	4.68
Years of Schooling:	13.8	10.8
Fraction White:	0.946	0.883
Mean Age:	36.9	32.5
Proportion of Sample of non-union men:	0.743	0.257
Fraction in Plant with:		
1-24	0.412	0.604
25-99	0.231	0.190
100-499	0.176	0.130
500-999	0.060	0.032
1,000+:	0.121	0.044
Fraction in Firm with:		
1-24	0.288	0.482
25-99	0.148	0.175
100-499	0.137	0.112
500-999	0.050	0.033
1,000+:	0.376	0.197

(1) Using the coefficients and sample reported in Table 1.

(2) Probability of primary employment > 90% Very similar results were obtained if the cutoff point were set at 95% or 99%..

(3) Data from the same Current Population Survey described in Table 1.

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