Profit Sharing And Employment Stability. Does Profit sharing help you keep your job?

Laura Arranz-Aperte
Swedish School of Economics and Business Administration
Economics Department
Arkadiankatu 7
00014 Helsinki, Finland
E-mail: arranz@shh.fi
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Abstract

The effects of profit sharing in employment stability and firm growth are analyzed. I test the hypothesis that profit sharing creates a more stable workforce, reducing firm turnover. I have found evidence that workers whose pay is partially variable face lower risk of separation and enjoy greater employment stability. The introduction of some kind of incentive pay in workers compensation decreases the probability of separation by 0.14 points. But this effect is milder once simultaneity problems and composition of compensation are taken into account. An increase of 1 % in the proportion of flexible pay reduces the probability of individual separation by 0.0006. Besides, this trend is reversed after a certain threshold.

Key Words: Profit Sharing, Firm Growth, Employment Stability

JEL Classification Numbers:

1. INTRODUCTION

Profit sharing has been extensively used in European and USA manufacturing sectors as part of the compensation package, but there is no agreement about the reasons for the introduction of profit sharing to rank and file workers. Many economists consider that profit sharing is not an adequate incentive device in big groups because of the "1/N" moral hazard problem[1]. Some authors overview this moral hazard effect, stating enforceability via "peer pressure"[2]. Others argue that the introduction of profit sharing is lead by other motivations, like the need of more stable workforce or to align the interest of workers and firms.

Theoretical papers have related the introduction of profit sharing to changes in employment levels, worker turnover and employment stability. Martin Weitzman (1985) advocates profit sharing as means to reduce unemployment levels and employment fluctuations. He argues that profit sharing economy has some natural tendencies towards sustained, non-inflationary, market oriented full employment.

I will study the effect of profit sharing on worker turnover and firm growth and consider the hypothesis that profit sharing is introduced not as an incentive mechanism, but as a way to obtain a more stable workforce.

The introduction of profit sharing might generate a better adjustment of labor costs and indirectly better productivity. The introduced employment flexibility leads to efficiency gains in production and allows workers´ acquisition of firm level specific skills. I expect profit sharing to reduce turnover as workers layoffs will be lower during recessions (labor cost adjusted automatically), and voluntary separations will also be reduced in economic upswings (increase in compensation reduces workers outside options).

If profit sharing is introduced for wage flexibility reasons, firm outcomes – like sales per worker or output per worker- will improve not as a result of enhanced effort or employment flexibility, but due to better adjustment to market conditions.

In this essay I will analyze the effects of profit sharing (versus salary pay) in employment stability and firm turnover among the white-collar workers in the Finnish Manufacturing Sector.

[1] Holmström (1982)

According to Fama (1991), payoffs in labor contracts are of four general types: (1) Time based- or hourly- payments, usually specific for blue-collar tasks (2) Salary, where the contract specifies a weekly or monthly salary; there is an agreement about the tasks and normal hours on the job per salary period, but the current salary payoff is not adjusted when actual hours or output are more of less than normal. Salary payoffs are typical for managers in all types of organizations, for professional service workers, accountants, engineers, researchers investment bankers, business consultants, lawyers etc (3) Piece rate, where the payoff is tied to workers personal output (4) Profit sharing where the payoff is based on some measure of team or organization performance, for example, a bonus based on firms profits or the profits of a division.[3]

I will use this classification throughout my work, and refer to profit sharing as method of payment based on group performance, as opposed to wage or salary (time and piece rates are excluded in my analysis, as are not typical for white collar workers in my study). This term- profit sharing- includes all types of incentive related payments aside from piece rates (where group performance is rewarded). It also includes bonuses and other types of deferred payments (like the stock options plans, etc).

Most empirical studies on incentive pay have been made for the US labor market, and its results have been extrapolated to Europe. Although productivity effects of profit sharing have been widely analyzed in Europe (and Finland), the effect of payoff composition on individual separations has been less noticed. Besides, most studies on incentives do not specifically address to those workers whose effort does account for a small fraction of firm total output, in part due to the lack of suitable data. The existence of extensive statistics records in Finland allows an exhaustive study of the effects and determinants of introduction of profit sharing to rank and file employees, whose output is not easily verifiable, but conform the majority of workers.

The main contribution of this paper is a direct look at the composition of pay and it effects on employment stability and firm turnover. Several empirical studies relate the introduction of profit sharing and other incentive devises and firm level outcomes, but the effect of changes in the composition of pay has been far less noticed. Empirical studies conclude that profit sharing generates employment stability, even in the

[2]Lazear and Kandel (1992)
[3] See Fama (1991)

presence of market frictions[4]. My main contribution is an analysis on how composition of pay affects employment stability and test whether firms can obtain a more stable workforce just varying the proportion of flexible compensation, leaving the total level of compensation unchanged.

2. THE DATA

The dataset from the Confederation of Finnish Employers and Employers includes observations on most white-collar employees in the Finnish Industry for the years 1996 to 2000. It is an unbalanced panel data where firm and individual workers are separately identified. The observations include very exhaustive information on workers´ payments and characteristics of their activities within the firm. This dataset is unique in the sense that it provides a very detailed job description, which makes it really suitable to study incentive schemes and individual performance. It also contains other variables on worker's individual characteristics (like age, education, seniority, working experience etc) needed for the wage equations. It gives information about the employee monthly wage, but also about extra hours, incentive payments and fringe benefits (food, kilometers, telephone etc, as valued by tax authorities). Fringe benefits and daily payments (meals, kilometer etc) are excluded of the analysis, as I consider they are independent of performance or results and might not necessarily imply a higher compensation for workers: they might just repay a cost a worker has incurred as a result of his activity. The existence of a firm and plant code, allows the construction of some firm level variables like firm size (defined as number of white collar workers), location, industry, proportion of workers in different jobs, and aggregate monetary variables like firm level of profit sharing, total wage costs or fringe benefits paid to white collar workers.

The original dataset consists of 719 234 individual observations. The reference universe is the Finnish Manufacturing Sector. After having dropped out outliers and missing values, I end up with a sample of 702 760 observations corresponding to 212 654 different individuals. All monetary figures are given in euros and 1995 prices. Because I track the different individuals along the years, I have excluded the first and last year of

[4] A positive correlation between wage and profit sharing levels might be a signal of such frictions.

the sample in all equation analyses. This leads to a sub sample of 434 224 individuals for the years 1997-1998-1999. Around 42 % of workers in the sample receive some kind of incentive pay other that the regular time salary. Profit sharing does not constitute a big amount of workers income (4.7% on average), but it can in important in some cases (up to 94% in maximum values).

Attrition is a major problem in our dataset. From 2 174 different firms, only 1 036 appear all years in our sample. Once again we have excluded years 1 996 and 2 000 from our analysis, as we lack information about hiring (and layoff) during the first (last) year of our sample. This means that 4 812 observations on firm level outcomes are used in our regressions.

3. THEORETICAL BACKGROUND AND EXISTING LITERATURE

The existing literature studies the effects of the introduction of profit sharing at a macroeconomic, aggregate point of view. Weitzman (1985) argues that profit sharing economy has some natural tendencies toward sustained, noninflationary, market oriented full employment. Anderson and Devereux (1989) examine the effect of introducing profit-sharing arrangements into union firm contracts. Holmlund (1990) finds –in a decentralized wage bargaining setting- profit sharing reduces equilibrium unemployment when the elasticity of substitution between labor and capital is less than one. Koskela and Stenbacka (2003) find that the negotiated profit share depends positively on the relative bargaining power of the trade union and it has effort enhancing and wage moderating effects. Higher profit sharing reduces equilibrium unemployment with sufficiently "rigid" labor market institutions.

I will use the characterization by Weitzman (1985), where fluctuation in employment in profit sharing firms will be less than in the no profit sharing case when there are fluctuations in demand levels. While non profit sharing firms would adjust their employment levels when demand conditions vary, profit sharing firms adjust compensations to their workers. Variability of employment should be less in the profit sharing case, while variability on workers compensation should increase. Non profit sharing firms would face a more pro-cyclical labor force profile than profit sharing

firms, while profit sharing firms adjust making average compensation more variable[5]

However for this model to work, it is essential that the agreed profit sharing fraction (*s)* does not change with demand conditions. It is also crucial that the elasticity of substitution between labor and capital exceeds one. In this model with no uncertainty the profit sharing instrument is assumed to have no incentive effect on effort decisions[6].

Azfar and Danninger (2001) find that employees participating in profit sharing plans where less likely than non participants to separate from their jobs and received training more frequently and for longer durations. Using wage growth as a proxy for productivity growth, they also find that profit sharing improves employment productivity.

Chelius and Smith (1990) also find evidence those employees whose compensation is partly in the form of profit sharing are less susceptible to layoff in the face of a negative shock to product demand than those workers paid a fixed, time-based wage. However, their results are only marginally significant.

In a different approach Kraft (1990) finds that profit sharing decreases the number of dismissals made by firms, by increasing productivity. He compares the effects on productivity of different incentive devises: a credible threat of dismissal, efficiency wages, piece rates and profit sharing. He argues that profit sharing can reduce the need for dismissals for two reasons: the need to dismiss workers in recessions is less severe with downward flexible payments. Second, if profit sharing enhances effort, dismissals have to be made less frequently as penalty for insufficient performance. This study finds no support for the incentive effects of efficiency wages. Dismissals have an incentive effect irrespective of the wage level. Profit sharing has a positive impact on productivity and is used as an alternative to dismissals.

Kruse (1991) found that profit sharing manufacturing firms had smaller employment decreases than other manufacturing firms during economic downturns: when the unemployment rate increased by one point, manufacturing firms in which all employees participated in a profit sharing pension plan had a 2.0 % decrease in employment, compared to a 3.1 % decrease for non-profit-sharing manufacturing firms.

[5] See Kruse (1991)
[6] Koskela and Stenbacka (2003)

I will compare the empirical studies by Azfar and Danninger (2001) and Chelius and Smith (1990) with my own work on the Finnish Manufacturing Sector. Azfar and Danninger run an individual probit model to study the effect of profit sharing on employment stability but they fail to control for the composition of wages. They argue that profit sharing reduces turnover by making wages more flexible, and interpret the higher wage growth of profit sharing workers as a signal of higher productivity. In my opinion, they use of wage growth as proxy for productivity might be misleading, as wage growth can be driven by omitted factors such as rent sharing policies. Besides, the positive correlation between profit sharing increases and wage increases might be a sign of market frictions in case of excess labor demand rather than increased productivity. I will explore more in detail the relation between the wage level and incentive payments. This could be especially important in Finland during our sample period, where unemployment rates fell from over 14 % at the beginning of 1996 to less than 10 % by the end of 2000. Employment levels in the manufacturing sector rose steadily during that period (with a peak at the end of 1997). Rising production, export, investment and employment levels in all manufacturing sector characterized this period of economic upswing which ended in year 2000, which the financial turbulences of the telecommunication sector.

Chelius and Smith study the impact of profit sharing on employment levels during recessions. I want to further explore this connection to times of expansive demand (which characterized the period of my analysis), and take a closer look to composition of compensation rather than profit sharing levels.

4. THE EMPIRICAL FORMULATION

I will use the reduced form model approach to infer the causality relationship between employment stability and the presence of profit sharing payments. Reduced form models rely less on economic theory as guidance, but provide more robust conclusions, as opposed to the structural approach, which requires many assumptions that might not be supported by the data.

My main interest is to check how does the composition of pay influence the probability of separation, and how previous analysis might be biased, as they do not control for the

increase in total compensation due to profit sharing payments. This means that two questions will be answered: how are individual separation rates affected by incentive pay and how does the compensation composition affect separation rates. For the first question profit sharing is introduced as dummy explanatory variable (henceforth y^{d}_{it}). For the second, proportion of profit sharing with respect to total level of compensation is introduced as continuous explanatory variable (y^{p}_{it}).

Two model specifications have been proposed: single equation probit model and bivariate probit model. The single equation probit will provide a raw measurement of the effect of profit sharing on separation rates. The bivariate probit model will provide a more accurate measurement, eliminating simultaneity bias. Because I want I want to explore the relationship between separations and incentive payments, I will focus our analysis on the size and significance of the profit sharing coefficient as explanatory variable and the rho term. If rho=0, the model would reduce to two independent probit equations that can be estimated separately. The correlation coefficient measures the correlation between the disturbances in the equations, which might be due to omitted factors, simultaneity problems etc. The rho factor will be decisive in analyzing the marginal effect of incentive pay on job stability.

In short, four different regression models will be run: two simultaneous regression models (with profit sharing as dummy and percentage explanatory variable) and two single equation probits (again with profit sharing as dummy and percentage explanatory variable).

The four regression models are:

(1) Bivariate recursive model with simultaneous equations

(2) Bivariate probit model

(3) Single probit model with incentive pay as a dummy explanatoty variable

(4) Single probit model with percentage of profit sharing as continuous explanatoty variable.

For specification (1) I use a maximum likelihood two-equation probit model- henceforth bivariate probit model- with a dummy variable for individual separation as limited dependent variable. Because separations and incentive payments can be originated by

some common underlying factors, a recursive, simultaneous-equation model is implemented (note that y^{d}_{2} appears as independent variable in the first equation). The general specification of the model is:

$$y_1^{*} = \beta'_1 X_1 + \gamma_2 \, y^{d}_{2} + \varepsilon_1, \qquad y_1=1 \text{ if } y_1^{*}>0 \text{ , 0 otherwise}$$

$$y_2^{d\,*} = \beta'_2 X_2 + \varepsilon_2, \qquad y_2=1 \text{ if } y_2^{*}>0 \text{ , 0 otherwise}$$

$E(\varepsilon_1)=E(\varepsilon_2)=0$ and $\text{Cov}(\varepsilon_1, \varepsilon_2)=\rho$

For the second specification - (2) general bivariate probit model - the model probability is like follows:

$$y_1^{*} = \beta'_1 X_1 + \gamma y^{p}_{2} \, \varepsilon_1, \qquad y_1=1 \text{ if } y_1^{*}>0 \text{ , 0 otherwise}$$

$$y_2^{d\,*} = \beta'_2 X_2 + \varepsilon_2, \qquad y_2=1 \text{ if } y_2^{*}>0 \text{ , 0 otherwise}$$

$E(\varepsilon_1)=E(\varepsilon_2)=0$ and $\text{Cov}(\varepsilon_1, \varepsilon_2)=\rho$

One could expect a lower correlation between disturbances within this second specification, as y^{d}_{2} is not included in the first equation as independent variable.

In order to compute the marginal effects of flexible pay on workers separations and compute the robustness of previous results, I will run two different probit equations, with a dichotomous variable for employment termination and the percentage of flexible pay in total compensation among the explanatory variables. The model specifications (3) and (4) are like follows:

$$y_1^{*} = \beta'_1 X_1 + \gamma y^{d}_{2} \, \varepsilon_1, \qquad y_1=1 \text{ if } y_1^{*}>0 \text{ , 0 otherwise}$$

$$y_1^{*} = \beta'_1 X_1 + \gamma y^{p}_{2} \, \varepsilon_1, \qquad y_1=1 \text{ if } y_1^{*}>0 \text{ , 0 otherwise}$$

Marginal effects are measured at mean points. Marginal effects show the change in probability for an infinitesimal change in each independent continuous variable. In the case of dummy variables they reflect the change in probability for a discrete change of dummy variable from 0 to 1. The expression for the marginal effects is given by

$$m_i = \frac{\partial F(X, \beta)}{\partial x_i}$$

where m_i is the marginal effect of the independent variable x_i and $F(X, \beta)$ is the cumulative distribution function.

5. EMPIRICAL RESULTS

In this section the relationship between individual separations and profit sharing is analyzed. A first indication of a negative relationship can be detected by comparing mean values. Table 1 displays descriptive statistics. It can be observed that those individuals who receive some kind of incentive pay are on average older individuals with higher mean salary. They hold longer tenure within firm and lower separation from employer. Separation from employer ranges from 14% in the case of profit sharing individuals to 18% in the non profit sharing case. Profit sharing individuals stay 13.12 years on average within the same employer, while non profit sharing individuals stay 11.10. This alone is not conclusive evidence of more employment stability in the profit sharing group, as outside opportunities are lower for higher income individuals and costs of separation increase with age and tenure. More evidence is found plotting the cumulative sum of separations against some representative variables like income or tenure.

Non parametric tests of departure from randomness of separation rates with respect to key explanatory variables such as income or tenure have been performed. Results are given in Table 2B. The cumulative sum of separation rates with respect to tenure shows evidence of a negative quadratic relationship between those two. The cumulative sum shows the proportion of individuals that change job or disappear from our sample, at every different level of tenure. An inverted U-shaped cumulative sum indicates a negative trend of separations with tenure. The sinusoidal shape is evidence of a quadratic trend. The more flat profile of the non profit sharing group gives support to the hypothesis of more employment stability among profit sharing workers than among those who are not in the profit sharing schemes. The cumulative sum shows a defined inverted u-pattern until 16 years of tenure approximately. The sinusoidal shape after the 16^{th} year indicates heterogeneity in the separation decisions (after so long tenure retirements, illness, even decease might explain part of those separations). The negative relationship between tenure and separation is accentuated in the non profit sharing

group. This is non parametric evidence of a different relationship between the non profit sharing and the profit sharing groups. The differentiated trend is not so clear in the case of income. Although I also find evidence of a negative relationship, the trends are not so clearly differentiated between both groups. Non parametric tests are not conclusive, but can be useful if they differ from their expected outcome. In our case, we find a very differentiated shape between the profit sharing and non profit sharing group in the case of the tenure – separation profile, but profiles do not differ much in the wage-separation case. This supports the hypothesis that profit sharing prevents inefficient separations only when it results in a change of total compensation (and not when it substitutes wage payments).

The regression results are given in Tables 3 and 4. Columns 1 and 2 in each table display the coefficients of the models when profit sharing is included (a) as a percentage of total income and (b) as a dummy variable[7].

Overall in the regressions I find evidence that incentive pay reduces workers separations. In all cases I find negative coefficient values, whether incentive pay is included as a dummy explanatory variable or as continuous variable (proportion). Results present similar sign and significance in the bivariate and the single equation cases, but are numerically milder once simultaneity is controlled for.

Numerically the strongest effects appear to be in all cases the monetary ones. The level of compensation seems to be the strongest determinant of workers separations from employers. How this compensation is paid (in wages or profit sharing) is irrelevant. A one unit increase of the log of yearly wage would reduce the probability of separation by 0.020, whereas a one unit increase on the proportion of incentive pay in total income would reduce the probability of separation by 0.169 in the single equation case (see Table 4). The second marginal effect is so big because the increase in one point in this proportion is big in reality. When incentive pay is included as a dummy marginal effects where –0.019 for income and -0.014 for profit sharing variable, that is the probability of separation from employer is reduced by 0.014 when a worker changes from only time salary to salary combined with some kind of incentive pay (Table 4). The marginal effects are measured at mean values for the variables.

[7] Results do not vary significantly when incentive pay is introduced as a level or a dummy variable.

The bivariate probit models show evidence of correlation between the disturbances of the separation and profit sharing equations. This might be due to common omitted variables as well as to simultaneity in determining firm employment stability policies and profit sharing plans.

Because separations and incentive pay might be caused by the same underlying factors, the sign and significance of the disturbance correlation – rho – is of great importance in our analysis. Rho measures (roughly) the correlation between the outcomes after the influence of the included factors have been accounted for. The rho parameter is negative in the first specification and positive in the second (when incentive pay is included as a dummy and not as proportion of income). This might be due to the fact that incentive pay is more commonly applied for job groups where employment is more variable. But when it comes to analyze the specification (a), the negative rho shows evidence of more employment stability the higher proportion the proportion of income received in the flexible part.

The log likelihood or the full bivariate probit model is very high in absolute terms in both specifications. The high Wald Test values gives an indication of a multiple equation system with correlation of disturbances in both specifications.

The main drawback of the probit and bivariate probit models is that they assume common coefficients accross different units, leaving the question of unobserved heterogeneity unobserved. Panel data accounts for unoberved heterogeneity. One could solve the problem of unboserved heterogeneity constructing a panel data and running a fixed effect logit model (as it is commonly used in recent papers). Two main drawbacks from this approach have prevented me to do so: first strong assumptions have to be made about the individual coefficients, and second the construction of panel data structure would wipe out essential information about individuals who change job within a year. I have preferred the pooled structure at the cost of indulging individual heterogeneity to be present, and I have tried to minimize it including as much individual information as possible.

Results for the first specification are omitted for simplicity of exposition, but are available upon request.

6. SUMMARY AND CONCLUSIONS

The effects of profit sharing in employment stability and firm growth are analyzed. I test the hypothesis that workers whose pay is partially variable face lower risk of separation and work for firms with greater employment stability. I have found evidence of individual employment stability among profit sharing workers. The introduction of some kind of incentive pay in workers compensation decreases the probability of separation by 0.14 points.

Although there is strong evidence that profit sharing individuals face more stable employments, the effect of profit sharing on employment stability is strongly attenuated once we control for the level of compensation. Profit sharing has a positive effect on employment stability because it makes the total compensation more variable. Once total compensation is accounted for, whether compensation is paid in profit sharing or time rates is irrelevant to employment stability. The marginal effects of composition of pay on separation rates are –0.00167 in the single equation case and –0.0006 in the bivariate case. They are both significant but very close to zero.

The introduction of profit sharing might generate a better adjustment of labor cost and indirectly better productivity, making total compensation more flexible. I find no evidence of profit sharing alone inducing employment stability, as many authors argue. Profit sharing has been loathed to align the interest of workers and firms, and to motivate or attach workers to their workplace. I cannot conclude that firms can attain more employment stability varying the composition of pay. Efficiency wage arguments seem to be more relevant to employment stability.

I cannot reject the hypothesis that some "unobservable" variable is driving our results. For example, that firms more committed to long term employment stability offer incentive plans to their workers. Or that profit sharing is introduced in troubled firms to avoid involuntary layoffs. However the direction of this firm level omitted variable bias is unclear: profit sharing might be introduced in troubled firms (where you expect high turnover), or during economic recoveries to enhance workers commitment.

This evidence found alone is inonclusive, as studies of the distribution of risk among

various employees characteristics (to capture heterogeneity by risk), computation of individual employment stability among profit sharing workers or studies about the rate of substitution between labor and capital are required.

Table 1. Summary Statistics: White Collar Workers in the Finnish Industry

	All individuals N=434 224	Non Profit- Sharing N= 251 651	Profit Sharing N=182 573
Variable	Mean (Std. Dev.)	Mean (Std. Dev.)	Mean (Std. Dev.)
Dummy for Incentive Pay	0.420 (0.494)	-	-
Yearly Wage	27 222.7 (13 367.32)	24 425.74 (13 396.73)	31 077.75 (12 327.1)
Incentive Payments	740.329 (1 869.747)	-	1 760.767 (2 553)
Percentage of Incentive Pay	0.020 (0.037)	-	0.047 (0.044)
Hours Made	648.689 (818.417)	612.478 (800.681)	698.601 (839.699)
Extra Hours	23.326 (82.043)	18.674 (89.833)	29.74 (69.39)
Age	40.842 (9.820)	40.373 (9.973)	41.489 (9.570)
Women	0.385 (0.487)	0.423 (0.494)	0.333 (0.471)
Average Firm Size	2 245.706 (3 757.273)	2 092.798 (3 830.615)	2 456.467 (3 643.27)
South Finland	0.550 (0.497)	0.568 (0.495)	0.525 (0.499)
Separation rate	0.166 (0.372)	0.183 (0.386)	0.142 (0.349)
Seniority	11.950 (10.401)	11.097 (10.396)	13.124 (10.292)
Basic education	0.248 (0.432)	0.27 (0.444)	0.219 (0.413)
Intermediate education	0.612 (0.487)	0.601 (0.490)	0.627 (0.483)
Higher education	0.140 (0.347)	0.13 (0.336)	0.154 (0.361)
Research	0.286 (0.452)	0.289 (0.453)	0.282 (0.450)
Production	0.340 (0.474)	0.317 (0.465)	0.372 (0.483)
Sales	0.162 (0.368)	0.166 (0.372)	0.156 (0.362)
Administration	0.211 (0.408)	0.227 (0.419)	0.189 (0.392)
Manufacturing	0.675 (0.468)	0.674 (0.469)	0.676 (0.468)
Construction	0.043 (0.203)	0.049 (0.215)	0.034 (0.182)
Transport and Telecommunications	0.212 (0.409)	0.194 (0.395)	0.238 (0.426)
Services	0.059 (0.236)	0.072 (0.259)	0.041 (0.199)
Others	0.109 (0.104)	0.012 (0.107)	0.010 (0.099)

Table 2A. Pearson correlation matrix (n=434 209).

	Separation	Wage	Profit Sharing	PS dummy	PS Perc.	Age	Seniority	Women	Firm Size
Separation	1								
Wage	-0.071*	1							
Profit Sharing	-0.028	0.360*	1						
PS Dummy	-0.054*	0.246*	0.465*	1					
PS percentage	-0.032*	0.217*	0.841*	0.634*	1				
Age	-0.057*	0.302*	0.035*	0.056*	-0.001	1			
Seniority	-0.086*	0.221*	0.017*	0.096*	0.003	0.687*	1		
Women	0.016*	-0.363*	-0.129*	-0.091*	-0.089*	-0.012*	0.043*	1	
Firm Size	-0.02*	-0.062*	-0.023*	-0.023*	-0.000	-0.145*	-0.070*	0.055*	1

* Significant at less than 5 % level of significance.
Note: Full correlation matrix available on request

Table 2B. Non Parametric Test of Departure from Randomness

	All individuals	Non Profit- Sharing	Profit Sharing
	N=434 224	N= 251 651	N=182 573
Variable	Cusum L (zL)	Cusum L (zL)	Cusum L (zL)
Tenure			
Year 1997	1 200.3 (9.545)	916.84 (9.150)	331.05 (7.332)
Year 1998	1 128.37 (8.840)	831.55 (8.900)	393.63 (6.692)
Year 1999	944.25 (7.769)	759.95 (8.174)	201.46 (3.945)
Income			
Year 1997	597.67 (7.133)	502.43 (7.150)	59.92 (1.625)
Year 1998	375.74 (5.190)	374.66 (6.253)	149.61 (3.481)
Year 1999	406.08 (4.981)	379.78 (5.882)	165.31 (3.291)

Note: Statistics are significant is all cases (Pr>zL)

Table 3. Estimates of bivariate probit models of individual separations

Variable	Bivariate Probit			
	Estimate (a)	Marginal Effects	Estimate (b)	Marginal Effects (b)
Separation				
Log of year wage	-0.0848**	-0.008	-0.069**	-0.012
Incentive Payment	-0.612**	-0.060	-1.02**	-0.166
Age	-0.086**	-0.008	-0.080**	-0.014
Age squared	0.001**	0.000	0.001**	0.000
Seniority	-0.036**	-0.003	-0.030**	-0.005
Seniority squared	0.001**	0.000	0.001**	0.000
Women	0.028**	0.003	0.008*	0.002
Interm. Education	-0.077**	-0.013	-0.014**	-0.006
High Education	0.37**	0.004	0.120**	0.022
Constant	1.864**		2.115**	
Incentive Payment				
Log size	0.118**	0.007	0.120**	0.008
Location	-0.130**	-0.001	-0.141	-0.009
Research	-0.008	-0.000	0.006	0.001
Sales	0.040**	0.002	0.009	0.001
Production	0.207**	0.012	0.201**	0.012
Basic Education	-0.217**	-0.013	-0.210**	-0.016
Intermediate Education	-0.079**	--	-0.074**	--
Constant	-0.750**	--	-0.0669**	--
No. of Observations	434 209		434 209	
Rho	-0.022		0.608	
Log likelihood	-472 652.96		-471 608.44	
Wald Chi2	32 800.47		53 566.45	

Note 1: In the bivariate model, the dependent variable in the separation equation is a dummy variable that takes the value 1 if the individual has changed job or disappear from our sample during that year, else 0.

The dependent variable for the second equation is a dummy that takes values one if the individual received profit sharing during the current period.

Note 2: Profit sharing appears as explanatory variable in the first equation as (a) percentage of incentive payment with respect to total income and (b) dummy variable for incentive payment.

Note 3: Significant at more than 95%(*), 99% (**) significance levels.

Note 4: Five industry dummies and two year dummies included. A multiplicative variable (tenure* profit sharing is also included)

Table 4. Estimates of single equation probit models of individual separations

	Single Equation Probit			
	Estimate (a)	Marginal Effects	Estimate (b)	Marginal Effects
Separation				
Log of year wage	-0.085**	-0.020**	-0.081**	-0.019**
Incentive Payment	-0.708**	-0.167**	-0.060**	-0.014**
Age	-0.095**	-0.023**	-0.095**	-0.023**
Age squared	0.001**	0.000**	.001**	0.000**
Seniority	-0.34**	-0.008**	-0.034**	-0.008**
Seniority squared	0.001**	0.000**	0.001**	0.000**
Women	-0.011*	-0.003*	-0.011*	-0.003*
Interm. Education	-0.072**	-0.017**	-0.070**	-0.017**
High Education	0.65**	0.016**	0.066**	0.016**
Log size	-0.060**	-0.014**	-0.059**	-0.014**
South Finland	0.094**	0.022**	0.091**	0.022**
Research	-0.055**	-0.013**	-0.056**	-0.013**
Sales	0.086**	0.021**	0.081**	0.020**
Production	-0.76**	-0.018**	-0.074**	-0.018**
Constant	2.456**		2.418**	
No. of Observations	434 209	434 209	434 209	434 209
Log likelihood	-186 382.04	-186 382.04	-186 359.54	-186 359.54
Wald Chi2	16 798.46	16 798.46	16 806.38	16 806.38

Note 1: The dependent variable is a dummy variable that takes the value 1 if the individual has changed job or disappear from our sample during that year, else 0.

Note 2: Profit sharing appears as explanatory variable as (a) percentage of incentive payment with respect to total income and (b) dummy variable for incentive payment.

Note 3: Significant at more than 95%(*), 99% (**) significance levels.

Note 4: Five industry dummies and two year dummies included. A multiplicative variable (tenure* profit sharing is also included)

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