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Pfeifer, Christian

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Base Salaries, Bonus Payments, and Work Absence among Managers in a German Company

Christian Pfeifer [a) b)]

a) Leuphana University Lüneburg, Institute of Economics, Scharnhorststr. 1, 21335 Lüneburg, Germany; phone: +49-4131-6772301; e-mail: pfeifer@leuphana.de.

b) IZA, Bonn, Germany.

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Abstract

Questions about compensation structures and incentive effects of pay-for-performance components are important for firms' Human Resource Management as well as for economics in general and labor economics in particular. This paper provides scarce insider econometric evidence on the structure and the incentive effects of fixed base salaries, paid bonuses, and agreed bonuses under a Management-by-Objectives (MBO) incentive scheme. Six years of personnel data of 177 managers in a German company are analyzed. The main findings are: (1) base salaries increase significantly with age, whereas bonuses decrease with age; (2) larger agreed bonuses are correlated with fewer absent working days.

Keywords: Absenteeism; Bonus; Effort; Incentives; Insider econometrics; Wages

JEL Classification: J22; J24; J31; J33; M12; M52

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1. Introduction

"Incentives are the essence of economics. Despite many wide-ranging claims about their supposed importance, there has been little empirical assessment of incentive provision for workers."

(Prendergast, 1999, Journal of Economic Literature 37(1), p. 7)

Incentive pay, i.e., monetary rewards to increase work effort, has received increasing attention in recent decades (for reviews see among others Gibbons, 1998; Lazear, 1999; Prendergast, 1999; Lazear and Oyer, 2007; Lazear and Shaw, 2007; Bloom and van Reenen, 2010; Oyer and Schaefer, 2010; Rebitzer and Taylor, 2010). The general idea of incentive pay, which has been formalized in principal-agency models, is that better job performance or higher work effort can be expected if a worker's pay is more strongly attached to his performance. One stream of the literature on incentive pay is primarily theoretical and concerned with efficient contract design. Another stream is empirical and tries to identify the effects of incentive pay. However, most empirical research use data that allow rather indirect statistical inference. The majority of empirical studies use household, administrative, or aggregated firm survey data. Only few studies use more appropriate personnel data of single firms which are not easy to obtain as a researcher (Bartel et al., 2004). Such econometric case studies with personnel data ("insider econometrics") are of course not representative, but they are still suitable to test economic theories and their underlying assumptions. Furthermore, results of econometric case studies can often be generalized. For example, the relationship between incentive pay and performance is also important for other firms than the analyzed one and a main assumption in economics is that agents react to

incentives. Moreover, personnel data of single firms have several advantages. First, personnel data are not subject to unobserved firm heterogeneity. Second, different incentive schemes and outcome variables are not aggregated across firms and industries. Third, personnel data often contain information about pay (e.g., fixed base salary, bonus), productivity (e.g., output, work absence), and job levels, which are not included in many other data sets. Fourth, information is usually unbiased because the data are used for payrolls, taxes, and social security contributions.

This paper adds to the few insider econometric studies on incentive pay by analyzing the pay structure (total income, fixed base salary, paid bonus, and maximum bonus agreed under a Management-by-Objectives scheme) and the incentive effects of agreed Management-by-Objectives (MBO) bonuses on individual work absence in a sample of 177 managers, who were employed in a large German company from 2000 until 2005. In order to evaluate and reward the performance of managers, the analyzed company has implemented a MBO incentive scheme. All managers are paid a yearly bonus based on points of an individual performance rating how far the set goals have been accomplished in several dimensions. The use of work absence as a proxy for performance is driven by the fact that a better variable is not available. But work absence also has the advantage that it is not subject to a subjectivity bias such as supervisor ratings. Moreover, Flabbi and Ichino (2001) find, in an analysis of personnel records, that absenteeism is strongly correlated with employees' performance ratings by supervisors. Work absence has been used previously as a proxy for provision of work effort, shirking behavior, and work attachment (e.g., Barmby et al., 1994; Brown and Sessions, 1996; Audas et al., 2004; Engellandt and Riphahn, 2004; Ichino and Riphahn, 2004; Engellandt and Riphahn, 2005; Bradley et al., 2007; Hassink and Koning, 2009;

Ichino and Moretti, 2009; Pfeifer, 2010), which are especially important in management jobs because of the supervisor function. It has to be noted, however, that work absence in the data is officially sickness-related. But reported sickness and extended recovery periods need of course not to be true or necessary. Even if a manager is really sick, his work absence is still costly for the company.

Previous studies mostly report positive incentive effects of direct performance pay such as piece rates on easily measured output in production, agricultural, sales, and recruiting jobs (e.g., Asch, 1990; Banker et al., 1996; Banker et al., 2000; Lazear, 2000; Paarsch and Shearer, 2000; Oettinger, 2001; Shearer, 2004; Bandiera et al., 2007; Bandiera et al., 2009; Franceschelli et al., 2010). Although a stream of the literature has specialized in executive compensation (Murphy, 1999), few studies look at the effects of bonus payments in regular management positions. This is due to a lack in data availability on individual manager bonuses and because complex managerial tasks cannot be easily measured. Thus, performance ratings, overtime hours, or – as in this paper – work absence are used to evaluate incentive effects among managers.

An earlier study, which is close to this paper, is Kahn and Sherer (1990) who have analyzed bonus payments and performance evaluations of 92 middle-level to upper-level managers in a U.S. firm from the production sector. The firm also uses MBO. Their main finding is that individual performance is better rated by supervisors, if bonus payments are larger. A recent study by Engellandt and Riphahn (2011) uses personnel data on blue- and white-collar workers and managers in a Swiss unit of an international company. They find that employees in company divisions, which have paid on average higher bonuses in the previous period, work significantly more overtime hours in the current period. The effect on work absence is, however, only significantly negative in a

specification without control variables (Engellandt and Riphahn, 2004). Although both studies apply sophisticated econometric research designs, they have some limitations. First, both studies use rather short panels of personnel data in their estimations. Second, both studies analyze the effects of actually paid bonuses. This might be in general problematic since the paid bonus also contains information about actual performance, even if the lagged bonus is considered. Kahn and Sherer (1990) apply a structural approach to overcome this problem, which might however suffer from identification problems of the instruments and sensitivity in small samples. Engellandt and Riphahn (2011) do not use individual bonuses but average bonus payments in single divisions so that statistical inference on the incentive effect is not unambiguously obtained (e.g., peer effects).

Compared to Kahn and Sherer (1990) and Engelland and Riphahn (2011), the advantage of the personnel data used in my analysis is the information about the agreed maximum bonus payment a manager can obtain in a given year if all set goals are accomplished (MBO). This information is valuable because it does not simultaneously contain information about an employee's performance in that year, which would be contained in the actually paid bonus. From a pure incentive perspective, the effort decision of a rational utility maximizing agent, who benefits from monetary gains and has to cover effort costs, should be affected by the size of the bonus, which can potentially be earned in the current period, and not by the size of the bonus already earned in the last period. Consequently, statistical inference on incentive effects is more likely detected if the agreed maximum bonus instead of the actually paid bonus is used as an explanatory variable.

One main finding of my empirical analysis is a positive and concave relationship between fixed base salaries and age, whereas bonuses decrease with age. This finding highlights the question about incentives for older employees, because larger base salaries and lower bonus payments are usually associated with lower incentives to supply effort. There are however several reasons why this relationship might be weaker for older employees than for younger employees so that the company might reduce bonuses and increase base salaries for older managers (e.g., preferences for stable income, deferred compensation, selection). The results on work absence reveal that managers with a larger agreed maximum MBO bonus are indeed significantly fewer days absent from work, whereas no significant effects of the base salary is found. These findings support the incentive effect of bonus payments but are not in line with ideas from efficiency wage models that higher wage levels increase effort levels (e.g., gift-exchange, non-shirking).

The paper is structured as follows. The next section describes the analyzed company and manager sample. Section 3 presents and discusses the regression results for the determinants of total income, base salary, paid bonus, and agreed MBO bonus as well as the effects on work absence. The paper concludes with a short summary of the results in Section 4.

2. Company and Manager Sample Information

The manager sample was directly extracted from computerized personnel records of a West German limited liability company that develops and produces innovative products

for the world market and is in good economic condition.[1] The company employs on average about 1500 workers, has a works council, and is subject to an industry-wide collective contract. The manager sample contains information about all employees in managerial positions ("außertariflich": above pay-scale of the collective contract) at the company's headquarter, except executive board members. The nature of the research topic and the data make some restrictions necessary. First, information about base salaries, paid bonuses[2], and agreed maximum MBO bonuses are available on a yearly basis and work absence is volatile over a year. Therefore, the monthly personnel records are transformed into yearly data and the sample is restricted to managers who are employed with the company over an entire calendar year. Second, although bonuses and MBO already exist prior to the year 2000, information about the agreed maximum MBO bonus is only reliable in the data since 2000 so that only the years from 2000 to 2005 can be used. The sample for the subsequent analysis comprises 722 yearly observations without missing values of 177 different managers in an unbalanced panel design.[3]

The uniqueness of the data is the precise information about the yearly total income (fixed base salary plus bonus component), the agreed maximum MBO bonus in each

[1] The personnel records of all blue-collar and white-collar workers have been previously used to analyze, for example, wages and the effects of probation periods on work absence (Pfeifer, 2008; Pfeifer and Sohr, 2009; Pfeifer, 2010).

[2] The term "paid bonus" is used, although it aggregates all kind of payments which are not included in the fixed base salary (e.g., vacation pay). The majority of these additional payments are bonus components stemming from the MBO incentive scheme. Nevertheless, the aggregation of additional payments can result in a larger paid bonus than agreed bonus.

[3] Note that the sample reduction is about 16 percent as the total sample contains 210 managers.

year, and the number of absent days from work. Socio-demographic and job characteristics are rather sparse in the data. In this study only gender, age, and tenure are included, which are measured at the end of each year. Furthermore, the management positions are divided in three levels (1: low, 2: middle, 3: high). Table 1 presents variable definitions and descriptive statistics for the complete estimation sample and Table 2 presents variable means separately for the three management levels. More than half of the managers work at the lowest level, about 40 percent at the middle level, and less than 10 percent at the highest level. The share of female managers is about 10 percent at the lowest level, 5 percent at the middle level, and no women are employed at the highest management level. The managers are on average 49 years old and have 17 years of tenure.

- insert Table 1 about here

- insert Table 2 about here

Wages and bonus size are largely attached to the three management levels. Mean yearly total gross income (*W_TOTAL*) is about €75000 for managers at the lowest level, about €90000 for middle managers, and about €150000 for upper managers. Although the fixed base salary (*W_FIXED*) accounts for most of total income, bonus payments (*W_BONUS*) are quite sizeable. These paid bonuses have a mean of more than €14000 and range from €3658 to €74300 per year. The share of bonus payments in total income is about 15 percent for managers at the lowest and the middle management level, whereas the 23 percent for top managers is significantly larger. Most of the paid bonuses are based on MBO agreements, which are mandatory for all employees in management positions and explicitly used as an incentive tool. The objectives are

categorized by goals in different domains and are formally agreed in an employee-supervisor dialog. Typically, individual goals are weighted lower and business unit and company goals are weighted higher, if the managerial position is higher. Bonus payments for reached objectives are then based on formal performance evaluations by supervisors and a further employee-supervisor dialog. The agreed maximum MBO bonus (*MBO_MAX*) ranges from about €2000 to €60000 per year.

The number of absent working days in a given calendar year (*ABSENTDAYS*) serves as an effort proxy in order to analyze the incentive effects of manger remuneration. This count variable ranges from zero to 48 days per year for the managers in the sample. The mean number of absent working days per year is 3.9 for all managers and 7.7 conditional on being absent. Differences between the three management levels are rather small and unsystematic.

In the next section, the determinants of total income, base salary, paid bonus, and agreed maximum MBO bonus are estimated with a special focus on age profiles. Afterwards, the effects of agreed MBO bonus and base salary on work absence are estimated.

3. Regression Results

3.1. Determinants of Total Income, Base Salaries, and Bonuses

In order to estimate the determinants of total income, fixed base salary, paid bonus, and agreed maximum MBO bonus and to predict their age profiles, I use log-linear specifications and random effects generalized least squares (GLS) regressions. Lagrange multiplier tests reject the null hypothesis that the variance of the random effects is zero

for all regressions (Breusch and Pagan, 1980). Hence, the random effects model is preferable to pooled cross-section least squares. Random effects models also have the advantage of exploiting the between and the within variance, whereas fixed effects models are problematic to estimate in this application. First, the used panel is rather short and within variance is relatively low. Second, age, tenure, and time fixed effects are perfectly collinear in fixed effects models.

The basic regression function is specified as in equation (1). The dependent variable Y is either the log of total income (*log_W_TOTAL*), the log of fixed base salary (*log_W_FIXED*), the log of paid bonus (*log_W_BONUS*), or the log of agreed maximum MBO bonus (*log_MBO_MAX*). The explanatory variables are age, tenure, gender, and management levels. The parameters to be estimated are denoted with α, ν are manager-specific random effects, and ε is the usual remaining error term. The regressions further include time fixed effects λ (year dummies) to control for aggregated effects such as the inflation rate and overall changes in the pay structure. The year index is t and the manager index is i.

$$\begin{aligned} Y_{it} &= \alpha_0 + \alpha_1 AGE_{it} + \alpha_2 AGE_{it}^2 + \alpha_3 AGE_{it}^3 + \alpha_4 TENURE_{it} \\ &\quad + \alpha_5 FEMALE_{it} + \alpha_6 LEVEL2_{it} + \alpha_7 LEVEL3_{it} + \lambda_t + \nu_i + \varepsilon_{it} \end{aligned} \tag{1}$$

The regression results for specifications with linear age and tenure terms are presented in Table 3. Since the dependent variables are logs of nominal values in Euros, let us first take a look at the estimated year effects to assess if they take account of the inflation rate properly. The results in specification (1) show that total income increases on average by about 5 percent per year, which exceeds the inflation rate and regular pay increases in collective contracts. But total income contains a fixed base as well as a

bonus component. The yearly pay increase is lower for fixed base salaries in specification (2) than for paid bonuses in specification (3), which indicates that base salaries increase by about the inflation rate and bonuses increase by much more. As can be seen from specification (4) much of the increase in paid bonuses can be attributed to an increase in the size of agreed maximum MBO bonus, i.e., the company uses bonus payments more intensively.

- insert Table 3 about here

The estimated coefficients of management levels show that base salaries and especially bonus payments are significantly larger at higher levels. Moreover, the estimates reveal interesting gender differences, which have however to be interpreted with caution because the sample contains only 15 female managers and no information about effective working hours is available. Women earn on average significantly lower total income, which can be attributed to significant lower fixed base salaries and not to significant lower bonus payments. Especially noteworthy is that the agreed maximum MBO bonus is not lower for women than for men. This finding is consistent with previous results about lower gender wage gaps in performance-based than in time-based remuneration schemes, which might be attributed to lower discrimination possibilities against women (Jirjahn and Stephan, 2004).

The results for age and tenure are of special interest as they shed some light into a possible incentive problem among older employees. Let us first consider briefly specifications (1) to (4) with linear age and tenure variables. Age seems to have no significant effect and tenure has only a modest negative effect on total income. For fixed base salaries, the effect of tenure is even less significant, but age has a significant

positive effect of on average 0.5 percent per year. Paid bonuses are also not significantly affected by tenure but decrease on average by 0.9 percent for every additional year of age. The effects of age and tenure on the agreed maximum MBO bonus are both significantly negative. One additional year of age or tenure decreases the agreed bonus by about 1.3 percent. The overall results from these linear specifications indicate that fixed base salaries increase with age, whereas bonus payments decrease with age. As age is likely to have nonlinear effects, further specifications have been estimated that include additional squared and cubed age terms. The results are then used to predict age profiles for an average manager in Figure 1.

- insert Figure 1 about here

Figure 1 plots the predicted age profiles of total income, fixed base salary, paid bonus, and agreed maximum MBO bonus. Total income increases with age until the age of 50, after which it slightly decreases again. The predicted base salary-age profile is concave. Base salaries increase from about €60000 at the age of 30 to more than €70000 in the mid 50s, at which level base salaries remain until managers reach retirement at the age of 65. The paid bonus increases slightly with age until it reaches its maximum of about €14000 at the age of 40. Afterwards, bonus payments decrease with age. The picture is even more striking when looking at the agreed maximum MBO bonus. The agreed bonuses stay quite constant at about €11000 for managers in their 30s and early 40s but decrease for older managers to less than €8000.

Although the predicted nonlinear age profiles are more precise than the specifications with only linear age terms, the overall results hold: base salaries are larger and bonuses are smaller for older managers. From an incentive-based principal-agent perspective,

this finding implies less motivation to supply work effort for older managers, which would make their employment less likely. There are, however, several theoretical arguments against such a conclusion. First, older employees might have higher preferences for a stable income than younger employees and interpret a larger base salary as a gift for which they exchange higher effort levels (Akerlof, 1982). Second, increasing base salary-age profiles are an indicator of deferred compensation schemes (Lazear, 1979), which uphold incentives especially for older employees with longer tenure and make bonus payments a less necessary incentive device. Third, older managers might have already accumulated more signals and reputation during their longer work experience than younger managers. The company can consequently select and employ older managers, who are more likely to show high work morale or intrinsic motivation so that extrinsic incentives are not needed as much as for lazy and "greedy" managers.

Several robustness checks have been performed. All specifications were re-estimated without the tenure variable and the estimates were also repeated for a balanced panel of 69 managers. Since the main results hold, these robustness checks are not included in the paper but can be requested from the author.

3.2. Effects of Base Salaries and Bonuses on Work Absence

The effects of fixed base salaries and agreed maximum MBO bonuses on managers' work absence are estimated to evaluate potential incentive effects. In efficiency wage models, a larger fixed base salary is associated with higher work effort for two potential reasons. First, the value of the current job is higher independent of uncertain variable

payments and, ceteris paribus, outside options are less attractive. Consequently, the threat of getting fired when caught shirking and its incentive effect is larger (Shapiro and Stiglitz, 1984). Second, an unconditional larger base salary might be interpreted as a gift by the company, for which the manager exchanges higher effort levels (Akerlof, 1982). Larger agreed maximum MBO bonuses should have a direct incentive effect, because a manager can earn more income if his performance is better rated. Although we might expect a larger incentive effect from bonuses than base salaries, it can be expected that both are correlated with less work absence.

The basic regression function is specified as in equation (2), in which the dependent variable is the number of absent working days in a calendar year (*ABSENTDAYS*). The explanatory variables of interest are the log of fixed base salary (*log_W_FIXED*) and the log of agreed maximum MBO bonus (*log_MBO_MAX*). The regressions further control for differences in age, tenure, gender, and management levels. The parameters to be estimated are denoted with β and ε is the usual remaining error term. The regressions also include time fixed effects λ (year dummies) to control for aggregated effects such as infectious diseases and the inflation rate. The year index is t and the manager index is i.

$$\begin{aligned} ABSENTDAYS_{it} = \beta_0 &+ \beta_1 log_W_FIXED_{it} + \beta_2 log_MBO_MAX_{it} \\ &+ \beta_3 AGE_{it} + \beta_4 TENURE_{it} + \beta_5 FEMALE_{it} \\ &+ \beta_6 LEVEL2_{it} + \beta_7 LEVEL3_{it} + \lambda_t + \varepsilon_{it} \end{aligned} \tag{2}$$

The number of absent working days per year, which is the dependent variable, is characterized by counts of non-negative values. Thus, count data estimation techniques are appropriate and usually applied in the econometric analyses of work absence (Winkelmann, 1999; Barmby et al., 2001; Winkelmann, 2008). Due to the panel nature

of the data, random effects and conditional fixed effects negative binomial (overdispersion) models are estimated, which allow the dispersion parameters to vary between managers in the sample.[4] The negative binomial models outperform the Poisson models and the random and fixed effects models outperform the pooled models with respect to Akaike and Bayesian information criteria in my application.

Table 4 presents the results of the random and fixed effects negative binomial regressions for the unbalanced panel (complete sample) as well as for a balanced panel of managers, who are employed in the firm over the entire 6 year observation period. The estimation results indicate a significant incentive effect of the agreed MBO bonus (*log_MBO_MAX*) but not of the fixed base salary (*log_W_FIXED*) throughout all regressions. Overall, the agreed MBO bonus seems to be the only variable that significantly affects the number absent working days. The random effects model for the unbalanced panel shows that a one log point larger agreed MBO bonus is on average correlated with about 29 percent fewer absent working days ($e^{-0.3407} - 1 = -29\%$). The estimated effect is slightly larger in the fixed effects model for the unbalanced panel ($e^{-0.3903} - 1 = -32\%$). The last two columns contain the results for the balanced panel, in which a one log point larger agreed MBO bonus reduces absent working days even by about 45 percent (random effects: $e^{-0.5905} - 1 = -45\%$; fixed effects: $e^{-0.6056} - 1 = -45\%$).

[4] Note that the terms random effects and fixed effects refer to the dispersion parameter and not to the person-specific error term in conventional panel regression techniques. Thus, the fixed effects negative binomial regressions still contain time invariant variables such as gender. Because the fixed effects binomial regression uses a conditional likelihood so that the manager-specific dispersion parameters cancels out, at least two yearly observations and within variance of the dependent variable (*ABSENTDAYS*) are necessary for a manager to remain in the estimation sample.

- insert Table 4 about here

In sum, the results for equation (2) in Table 4 support the idea of incentive effects from agreed MBO bonuses. The incentive effect (β_2<0) in equation (2) might, however, suffer from an endogeneity problem in terms of reverse causality, if the current agreed MBO bonus is negatively affected by a manager's past work absence and if work absence is path dependent. Although an upward bias due to this endogeneity problem seems unlikely from a theoretical perspective, because a rational firm should rather react with more than less variable payment components (agreed maximum bonus) to less work effort (more work absence), several empirical checks have been performed.[5] At first, I have re-estimated equation (1) from Section 3.1 for the current log of agreed maximum MBO bonus with the lagged number of absent working days as additional explanatory variable. The estimates show that work absence in the past year does not significantly affect the agreed bonus in the current year, neither in random nor fixed effects estimates for the unbalanced and balanced panels. Furthermore, I have re-estimated equation (2) for the number of current absent working days with the lagged agreed MBO bonus as additional explanatory variable. The findings indicate that managers' current work absence is not significantly affected by past year's agreed bonus but significantly lower if current year's agreed bonus is larger. Overall, the estimated incentive effects of the agreed maximum MBO bonus are unlikely to be upward biased by an endogeneity problem.

[5] The results of the robustness checks can be requested from the author.

4. Conclusion

In the last two decades, an emerging number of econometric case studies with personnel data (large-scale or field-experiments) analyzed incentive effects of piece rates on easily observed productivity variables such as output or sales. This paper contributes new empirical findings about the compensation structure of managers and the incentive effects of fixed base salaries and agreed maximum MBO bonuses in a German company. Bonus payments account on average for more than 15 percent of total income and most parts of these bonuses are paid under a MBO incentive scheme. Fixed base salaries increase with age, whereas bonuses decrease with age, which points to the issue of employability of older workers due to lower incentives, because larger base salaries and lower bonus payments are usually associated with lower incentives to supply effort. Due to preferences for stable income, deferred compensation schemes, and selection of less "greedy" managers, the company might reduce bonus payments and increase base salaries for older managers. The results, moreover, strongly support an incentive effect of bonus payments because the number of absent working days is significantly lower for managers with larger agreed MBO bonuses.

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Figures and Tables Included in Text

Table 1: Definitions and pooled summary statistics of variables

Variable name	Definition	Mean	Std. dev.	Min.	Max.
W_TOTAL	Yearly total income (Euros, nominal gross)	85719.5200	23368.4800	24801.2800	237031.5000
log_W_TOTAL	log of *W_TOTAL*	11.3300	0.2295	10.1187	12.3760
W_FIXED	Yearly fixed base salary (Euros, nominal gross)	71606.7600	16570.4400	18697.8000	170563.5000
log_W_FIXED	log of *W_FIXED*	11.1560	0.2096	9.8362	12.0469
W_BONUS	Yearly bonus payments (Euros, nominal gross)	14112.7700	8501.6460	3658.0400	74299.7000
log_W_BONUS	log of *W_BONUS*	9.4330	0.4641	8.2047	11.2159
MBO_MAX	Yearly agreed max. MBO bonus (Euros, nominal gross)	12017.6400	8973.4070	2045.1700	60000.0000
log_MBO_MAX	Log of *MBO_MAX*	9.1603	0.6861	7.6232	11.0021
ABSENTDAYS	Absent days from work in calendar year	3.9137	7.0295	0	48
AGE	Age in years	48.8499	7.1859	28.8548	64.1753
TENURE	Tenure in years	16.9844	9.8100	1.0000	42.7808
FEMALE	Female (dummy)	0.0762	0.2655	0	1
LEVEL1	Lowest management level (dummy, reference group)	0.5416	0.4986	0	1
LEVEL2	Middle management level (dummy)	0.3961	0.4894	0	1
LEVEL3	Highest management level (dummy)	0.0623	0.2419	0	1
YEAR2000	Year 2000 (dummy, reference group)	0.1524	0.3596	0	1
YEAR2001	Year 2001 (dummy)	0.1593	0.3662	0	1
YEAR2002	Year 2002 (dummy)	0.1676	0.3738	0	1
YEAR2003	Year 2003 (dummy)	0.1731	0.3786	0	1
YEAR2004	Year 2004 (dummy)	0.1717	0.3774	0	1
YEAR2005	Year 2005 (dummy)	0.1759	0.3810	0	1

Notes: 722 yearly observations of 177 managers in unbalanced panel.

Table 2: Means by management levels

	LEVEL1	*LEVEL2*	*LEVEL3*	Complete sample
W_TOTAL	75188.68	90113.96	149291.77	85719.52
W_FIXED	63797.98	75599.24	114081.87	71606.76
W_BONUS	11390.70	14514.72	35209.90	14112.77
W_BONUS / W_TOTAL	0.15	0.16	0.23	0.16
MBO_MAX	9075.26	12527.89	34340.82	12017.64
MBO_MAX / W_TOTAL	0.12	0.14	0.23	0.13
ABSENTDAYS	3.76	4.22	3.34	3.91
AGE	47.38	50.73	49.61	48.85
TENURE	15.32	19.57	15.03	16.98
FEMALE	0.10	0.05	0.00	0.08

Table 3: Determinants of total income, fixed base salary, paid bonus, and agreed MBO bonus

	(1) *log_W_TOTAL*	(2) *log_W_FIXED*	(3) *log_W_BONUS*	(4) *log_MBO_MAX*
AGE	0.0026	0.0051**	-0.0090**	-0.0132**
	(0.0020)	(0.0020)	(0.0041)	(0.0067)
TENURE	-0.0025*	-0.0024	-0.0035	-0.0136***
	(0.0015)	(0.0015)	(0.0030)	(0.0049)
FEMALE	-0.1754***	-0.1816***	-0.1181	-0.0226
	(0.0422)	(0.0426)	(0.0831)	(0.1383)
LEVEL2	0.1323***	0.0944***	0.3291***	0.3720***
	(0.0165)	(0.0154)	(0.0413)	(0.0522)
LEVEL3	0.4852***	0.3870***	0.9655***	0.9635***
	(0.0345)	(0.0326)	(0.0818)	(0.1098)
YEAR2001	0.0726***	0.0479***	0.2039***	0.1366***
	(0.0089)	(0.0080)	(0.0288)	(0.0277)
YEAR2002	0.0586***	0.0558***	0.0629**	0.3019***
	(0.0093)	(0.0084)	(0.0293)	(0.0290)
YEAR2003	0.0902***	0.0693***	0.1882***	0.3569***
	(0.0100)	(0.0092)	(0.0304)	(0.0314)
YEAR2004	0.1436***	0.0983***	0.3791***	0.4584***
	(0.0108)	(0.0100)	(0.0315)	(0.0342)
YEAR2005	0.1948***	0.1229***	0.5422***	0.5358***
	(0.0117)	(0.0110)	(0.0326)	(0.0371)
CONSTANT	11.0845***	10.8315***	9.5323***	9.5786***
	(0.0819)	(0.0823)	(0.1639)	(0.2677)
R^2 (overall)	0.5988	0.5267	0.5063	0.4289
Number of observations	722	722	722	722
Number of managers	177	177	177	177

Notes: Coefficients of random effects GLS estimates. Standard errors in parentheses. Significant at * 10%, ** 5%, and *** 1%.

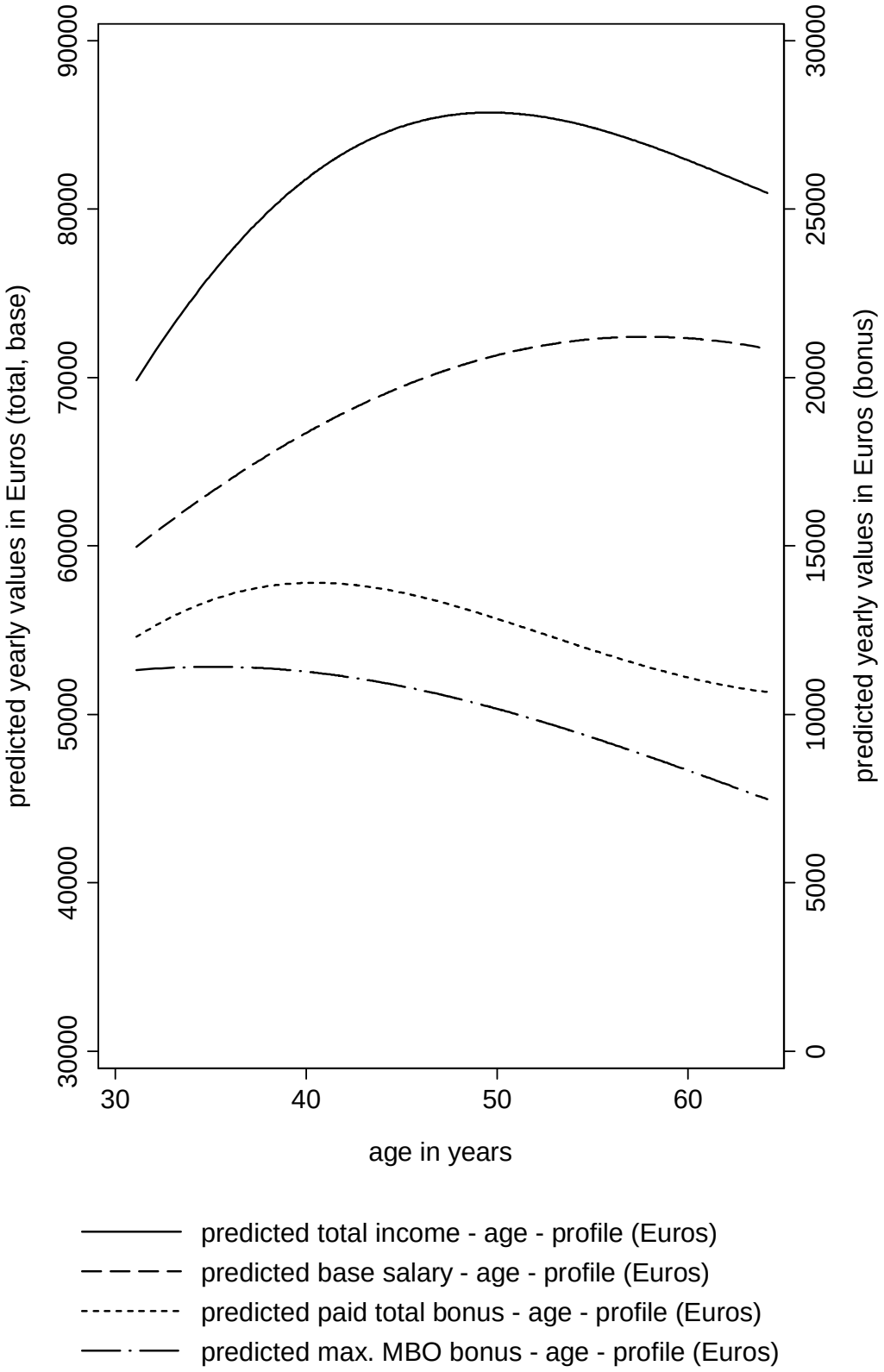

Figure 1: Predicted nonlinear age profiles for an average manager

Table 4: Effects of fixed base salary and agreed MBO bonus on number of absent working days

	(1) RE for unbalanced panel	(2) FE for unbalanced panel	(3) RE for balanced panel	(4) FE for balanced panel
log_W_FIXED	0.3534	0.2896	0.8661	0.8586
	(0.4562)	(0.6616)	(0.7497)	(1.0386)
log_MBO_MAX	-0.3407***	-0.3903**	-0.5905***	-0.6056***
	(0.1192)	(0.1650)	(0.1748)	(0.2148)
AGE	0.0138	0.0057	0.0401**	0.0096
	(0.0120)	(0.0190)	(0.0187)	(0.0272)
TENURE	0.0023	-0.0062	-0.0373***	-0.0452**
	(0.0084)	(0.0137)	(0.0130)	(0.0190)
FEMALE	0.0005	0.2093	0.8080*	0.5563
	(0.2489)	(0.3958)	(0.4123)	(0.5313)
LEVEL2	-0.1486	-0.0990	0.5082**	0.3609
	(0.1649)	(0.2413)	(0.2431)	(0.3139)
LEVEL3	0.1601	0.4972	1.0693	1.2608
	(0.3841)	(0.6122)	(0.7118)	(1.0267)
YEAR2001	0.1626	0.1192	0.0844	0.1648
	(0.1811)	(0.1877)	(0.2130)	(0.2174)
YEAR2002	0.0894	0.1123	0.0707	0.1398
	(0.1846)	(0.1947)	(0.2266)	(0.2354)
YEAR2003	0.2235	0.2876	0.0731	0.2187
	(0.1844)	(0.2033)	(0.2398)	(0.2571)
YEAR2004	-0.0128	0.0454	-0.0746	0.1079
	(0.1957)	(0.2156)	(0.2511)	(0.2758)
YEAR2005	0.2494	0.3724	0.4040	0.6040**
	(0.2001)	(0.2278)	(0.2508)	(0.2851)
CONSTANT	-2.5719	-0.7883	-6.8513	-4.8741
	(4.9795)	(7.0995)	(7.9102)	(10.7573)
Log likelihood	-1571.6722	-940.9076	-909.8404	-620.8626
AIC	3173.3445	1907.8151	1849.6808	1267.7252
BIC	3242.0748	1964.9969	1910.0688	1319.0835
Number of observations	722	601	414	384
Number of managers	177	126	69	64

Notes: Coefficients of random effects and conditional fixed effects negative binomial (overdispersion) models for *ABSENTDAYS*. Standard errors in parentheses. Significant at * 10%, ** 5%, and *** 1%.

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