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Unpaid overtime in the Netherlands: forward- or backward-looking incentives?

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Abstract

Purpose – The purpose of this paper is to test forward-looking incentives against backward-looking incentives.

Design/methodology/approach – Wage growth model to estimate forward-looking effects of unpaid overtime and a probit model of participation in unpaid overtime controlling for excessive pay to estimate backward-looking effects. The authors use data from the OSA labour supply panel (years 1994, 1996 and 1998).

Findings – The importance of backward-looking incentives is demonstrated in an empirical analysis of participation in unpaid overtime. The authors show that employees who have relatively good wages now or who have had relatively good wages in the recent past participate more often in unpaid overtime. The authors also show that participation in unpaid overtime does not lead to extra wage growth.

Research limitations/implications – These results imply that involvement in unpaid overtime is to be explained from backward-looking incentives, not from forward-looking incentives. The paper concludes that backward-looking incentives deserve more attention in the economic literature, especially as they are well-accepted as work motivation devices by employees. Limitations are the length of the panel study (four years) and the fact that the data are restricted to one country (the Netherlands).

Social implications – Personnel policies should focus more on the intrinsic motivation of personnel rather than on extrinsic motivation.

Originality/value – This is the first paper to test both forward- and backward-looking incentives simultaneously.

Keywords Careers, Employee behaviour, Motivation (psychology), Compensation, Human resource management, Hours of work, Financial benefits

Paper type Research paper

Introduction

Two different and partially conflicting approaches to work motivation can be distinguished. The first approach, firmly rooted in neoclassical economics and economic organization theory, presupposes that economic incentives are the best motivators to increase productivity. The underlying argument is that performance-contingent rewards offer the strongest incentives to work hard. The problem that output is not always easy to measure has in recent decades been solved by the development of reward systems which make maximum use of information about performance. In these systems, performance is evaluated over a longer period, usually

in comparison to that of other workers. The usual rewards are bonuses and promotions. Since these rewards are delayed and uncertain, we will call these systems of forward-looking incentives, following Bell and Freeman (2001).

The other approach elaborates on the employee's motivation to do a good job. The assumption is that employees are willing to work extra hours if they are intrinsically motivated by their job, or if they are committed to their employer because they feel that they are treated fairly. These motives were emphasized in the human relations movement in the 1950s and 1960s (e.g. Roethlisberger and Dickson, 1939; Roy, 1953), but subsequently almost disappeared from the literature, only to re-emerge in the economic literature in side-stream models of reciprocal employment relationships (Akerlof, 1982; Fehr and Falk, 2002) and intrinsic work motivation (Frey, 1997). Workers who have a good job and are well-paid feel obliged to their employer and are therefore more inclined to perform better. Since these motives are based on the qualities of an established relationship, we call them backward-looking incentives[1].

The present policy and the scientific debates about the supply of work hours are dominated by the forward-looking model and tend to neglect the backward-looking model. The dominance of the forward-looking model gives reason for concern. Research shows that an over-emphasis on rewards has detrimental effects on health and well-being (Ryan and Deci, 2000). Extrinsically motivated employees working long hours are more likely to develop health problems, such as burnout, and experience a stronger work-family conflict than intrinsically motivated workers (Van Beek *et al.*, 2012). In addition, motivation affects the quality of the output. Whereas intrinsically motivated workers focus upon doing a good job, extrinsically motivated workers focus on maximizing measured output, even if it harms the quality of the work. These effects are even more worrisome as external motivators tend to crowd out intrinsic motivation. The research literature shows fierce debate on the condition in which intrinsic motivation is driven out (Ryan and Deci, 2000; Cameron and Pierce, 2002), but there is consensus that strengthening external motivators often leads to a loss of intrinsic motivation (Sansone and Harackiewicz, 2000).

In the following, we question the efficiency of forward-looking incentives on employees' decisions about their work hours. We will show that many employees working unpaid extra hours are motivated by backward-looking incentives. By showing that unpaid overtime is motivated by backward-looking incentives, we challenge the argument that the supply of unpaid labour should be understood as the result of forward-looking incentives.

Starting point of our analysis is the literature on unpaid overtime and the thesis that forward-looking incentives are the main explanation for differences in work hours between countries. We will argue that the theory underlying forward-looking incentive systems tends to neglect the serious efficiency costs that are absent when backward-looking incentives are applied. We then show that unpaid labour supply can only be explained by backward-looking, and not by forward-looking incentives. We conclude by discussing the implications of our results for research and policies.

Unpaid overtime

Unpaid overtime is referred to as the unpaid extra-contractual hours performed by the employee. These hours are added to the number of hours per week explicitly stated in the contract. They are referred to as unpaid overtime, since this extra-contractual effort is not remunerated. In the Netherlands, as in other western countries, unpaid overtime is the residual category for extra-contractual work hours that do not fall into any

category of paid overtime. When maximum work hours legislation was introduced, it was agreed between trade unions and employers that some categories of workers, mainly blue collar workers, would get paid for overtime hours, if such hours were demanded by their employer. All other workers were not entitled to payments. The implicit agreement was that workers in intrinsically motivating, well-paid jobs should, if necessary, be willing and able to make an extra effort without compensation. Employers were denied the legal and moral right to intervene in this decision. In Dutch literature on unpaid overtime, no indications are found that employers have attempted to intervene in these decisions. This residual category of unpaid overtime has been a marginal phenomenon in the economic literature for a long time. OECD statistics did not record the number of hours, because figures are deemed unreliable. Different surveys do indeed yield different numbers of hours, yet these surveys also show that many workers work unpaid overtime hours.

In more recent economic literature, unpaid overtime is drawing attention as a phenomenon in need of explanation. Three different explanations have been put forward: the development of human capital (Booth *et al.*, 2003), the signalling behaviour of the employer and the employee (Anger, 2008; Sousa-Poza and Ziegler, 2003) and the response to forward-looking incentives (Pannenberg, 2005). Researchers try to disentangle these different motives empirically, which is a difficult job as each of the explanations predicts future wage growth. Nevertheless, empirical research has accumulated, adding to our knowledge about the phenomenon of unpaid overtime, although, as yet, the issue of forward- and backward-looking decisions remains undecided. Even though most researchers claim to have found indications of wage growth, the established effects are ambiguous.

In several articles and papers, often inspired by the signalling model (Sousa-Poza and Ziegler, 2003; Anger, 2008), the model is tested by relating unpaid overtime to the present wage rate. These analyses do not provide empirical information about the effect of forward-looking incentives. It is impossible to tell from these tests whether employees who perform unpaid overtime gain future wage growth. However, this research does reveal that according to all available reports, employees involved in unpaid overtime have a relatively high wage rate.

In a number of other reports, the effect of unpaid overtime on promotion chances and future wage growth is explicitly tested. Especially the British Household Panel Survey from the 1990s has been used to test these effects. Campbell and Green (2002) report a positive effect of unpaid overtime during the period 1991-1995 on the wage rate in 1996. Part of the effect, however, comes from employees in job categories such as managers, who are expected to work overtime if necessary, and the effect is just as strong for workers who changed employers. Booth *et al.* (2003) report a positive effect of overtime on promotion chances, but do not find a difference between the effects of paid and unpaid overtime. Bratti and Staffolani (2007) report a positive effect of paid and unpaid overtime on promotion chances in Great-Britain in the period 1991-2000, but do not find an extra effect of unpaid overtime. Using Swedish data, Meyer and Wallete (2005, p. 15) establish "a very limited effect" of unpaid overtime on the transition from a temporary job into a permanent one.

The best test of the effects of unpaid overtime on wage growth is presented by Pannenberg (2005). Using the German SOEP panel data, he estimates fixed effects models to compute the wage growth effects of unpaid overtime during a ten-year period. His research was restricted to workers who had stayed with their employer. Pannenberg finds that a persistent increase in average unpaid overtime of one hour

per week goes along with an increase in hourly real labour earnings of two log points during the ten-year period. His analyses suffer from two shortcomings. First, Pannenberg does not show that the wage growth of employees involved in unpaid overtime is higher than that of employees not involved in unpaid overtime. Thus, it remains unclear if unpaid overtime affects the advancement of their careers. Second, the effects of the better wage rate for workers involved in unpaid overtime are not tested. As a consequence, the analyses do not provide an answer to the question whether employees work unpaid hours to get promoted, or whether they work unpaid overtime because they are better paid.

We conclude that the question whether employees perform unpaid overtime with forward- or backward-looking incentives in mind is still open to debate. Indications of forward-looking incentives are frequently reported, but even the advanced models of Pannenberg do not provide conclusive evidence that would exclude the explanation of backward-looking incentives. The issue remains unsettled.

The efficiency of forward-looking incentives systems

Bell and Freeman (2001) have made a strong case for the argument that differences in work hours between the USA and Germany are a response to differences in income inequality. According to their inequality-hours thesis, it is the effectiveness of forward-looking incentives that determines the differences in work hours. These incentives are effective in both countries, but their impact is much greater in the USA, because of the greater wage inequality. Bell and Freeman present the forward-looking incentives system as the most efficient motivation system, and therefore set the USA as an example to Europe.

Following their argument, Campbell and Green (2002) and Pannenberg (2005) emphasize the role of forward-looking incentives in the explanation of long work hours. The indications that involvement in unpaid overtime is determined by forward-looking incentives offer strong support for those who advocate the superiority of forward-looking incentives. The institution of unpaid overtime was designed around the assumption that workers are intrinsically motivated, but the actual motivation for the worker to perform the unpaid hours appears to be the drive to gain future wage growth.

In the economic literature on unpaid overtime, the superiority claim of the forward-looking incentives system is uncontested. Empirical evidence, however, does not only show strengths, but also weaknesses of forward-looking incentives as a worker motivation device. In the forward-looking incentives model, the unpaid work hours are seen as career investments. The theoretical framework explaining unpaid overtime as a career investment is that of the tournament, in which several workers compete for a promotion (Lazear and Rosen, 1981). In the literature on tournaments, the relationship between the tournament structure and the number of work hours is well-recognized. According to Holmstrom (1999) the tournament structure explains why young managers and professionals work such long hours. The higher the wage increases that can be attained in the tournament, the more extra hours workers will perform. In the following, we question the efficiency of tournaments as an incentive device by focusing upon its effects, not on productivity, but on labour supply. Our argument is that forward-looking incentive systems have two sources of efficiency losses. The first source is oversupply, the second source is undersupply. We discuss these sources subsequently.

Oversupply as a possible consequence of labour market tournament structures is well-recognized in the literature. The oversupply argument is that employees who are engaged in a “rat race”, perform more work hours than their efficient number

(Akerlof, 1976). The tournament is designed to select talent, but workers use hours on the job to improve their relative position. A prominent example is the model developed by Holmstrom (1999). Young managers do not know their true ability, but make long work hours to compete in the tournament. Early promotions are wanted, because they increase life-time incomes and keep the workers in the race for the top positions. But the number of better positions is restricted, and only the ablest workers get the promotion. Since the worker's true ability is only revealed in the process, a rat race develops, lengthening the work hours. Long work hours, meant to be a competitive advantage, turn into a necessary prerequisite to get the promotion. The managers work longer hours than they would have done, had they known their true ability earlier. Several authors have emphasized and illustrated the rat race character of long work hours (Landers *et al.*, 1996; Bowles and Park, 2005; Bratti and Staffolani, 2007).

It may, nevertheless, still be argued that tournaments are excellent performance systems because of the long work hours. Empirical evidence, however, is ambiguous. That a large number of work hours can be a competitive advantage is shown by American consultancy and accountancy firms. By organizing work in tournament structures, they forced their traditional European counterparts out of the market. During a large part of the last century, however, reductions in work hours have led to a growth of productivity (Leveson, 1967), and it is a textbook example that work hour reductions may decrease employment because of productivity gains (Elliott, 1991, pp. 267-270). Perlow's (1999) analysis of a computer engineering firm shows that a culture of long work hours may even have a negative effect on output.

A further argument contesting the efficiency of long work hours are their hidden costs in terms of health and happiness. Hamermesh and Lee (2007) have shown that there is a strong, positive relationship between the time spent at the workplace and stress. Long work hours have a negative impact on relationships that generate health and happiness, especially on the marriage and the father-child relationships (Crouter *et al.*, 2001; Layard, 2005). Spence and Robins (1992) attribute a variety of health problems, ranging from exhaustion to high blood pressure, to workaholism. Van Beek *et al.* (2012) show that workers who are driven by extrinsic motivation to work long hours, experience more interpersonal conflict at work, more work-home interference and lower job satisfaction. They are also more likely to suffer from burnout.

There is undersupply in tournaments when losers or potential losers back out of the tournament, because the extra effort brings them no gain (Lindquist, 2010). Greater wage differentials incite strong competition for a relatively small number of attractive positions (Lazear and Rosen, 1981). The undersupply argument implies that in a labour market with large wage differentials especially vulnerable workers that can rely on other resources will withdraw from the market. Losers of the tournament will reduce their effort to an acceptable minimum, or withdraw from the labour market.

The process of undersupply can be illustrated by focusing upon the labour supply of women. As women, especially women with children, experience greater time demands from home (Van der Lippe, 2007), a prevailing culture of time competition has strong gender implications. The argument is that the culture of long work hours promotes work patterns that support traditional male provider families as it excludes substantial involvement in family care activities. Women tend to withdraw from time greedy jobs and careers (Epstein, 1999).

We conclude that forward-looking incentive systems may entail substantial efficiency losses, such as lower labour participation of women, greater time scarcity and costs in terms of health and happiness, whereas they are not necessarily more

productive. This implies that there is not an a priori reason to proclaim the superiority of the forward-looking incentive systems. We will now shift our focus to an alternative system, that of backward-looking incentives.

Backward-looking incentives

The economic orthodoxy that workers are primarily motivated by forward-looking incentives is often challenged by psychologists, sociologists, and, increasingly, economists (Akerlof, 1982; Frey, 1997; Bewley, 1999; Fehr and Falk, 2002). Motivations other than forward-looking material incentives can also be the main reason for making an extra effort. Such motivations are job satisfaction, pleasure in the work itself, the relationships with co-workers, the relationship with the employer or a relatively good wage rate.

A prominent argument is the reciprocity in the employment relationship. In models of reciprocity, workers are willing to make the extra effort because their employer has been relatively generous towards them. In reciprocity models, the worker responds to a good wage rate by performing extra-contractual effort. An elaboration of the reciprocity argument is Akerlof's (1982) model of partial gift exchange. This model presents the wage residual as a gift from the employer, that subsequently motivates the employee to do a good job in return. Fehr has shown in a number of experiments that workers perceive employment relationships primarily as reciprocity relationships and that workers are indeed motivated by the level of reciprocity (Fehr and Falk, 2002).

The reciprocity argument is a backward-looking motivation device, as the worker reacts to his employer's past actions. The literature shows many indications that the dynamics of the employment relationship are to a large extent determined by backward-looking incentives. Well-known examples are the new employees showing high levels of effort in response to the employer's decision to recruit them (e.g. Williamson, 1985), and the detrimental effects on productivity of breaches of the psychological contract (Robinson, 1996). Recently, psychologists have shown that long work hours do not necessarily have detrimental effects on health and well-being if the worker is engaged. Engaged workers are dedicated to their work and committed to the needs of their employer. In comparison to the extrinsically motivated long hour workers, they are more satisfied with their jobs, and therefore do not suffer from the long work hours (Van Beek *et al.*, 2012).

The literature indicates that backward-looking incentives are not simply additional to forward-looking incentives, because backward-looking incentives may be crowded out by forward-looking incentives (Frey, 1997). Forward-looking incentives create a mental frame in which intrinsic, relational and normative considerations are subordinated to the strategic considerations of maximizing gains (Frey, 1997). Empirical support for the crowding-out effects of backward-looking incentives has been found in experimental research. It has been shown that especially performance-contingent rewards have negative effects on intrinsic motivation (i.e. Ryan and Deci, 2007). The implication is that strong forward-looking incentives are detrimental to backward-looking incentives.

Backward-looking incentives offer a plausible explanation for "unpaid overtime", since research shows that work organization and work conditions have a stronger effect than performance pay and career perspectives (Van Echtelt *et al.*, 2007). This raises the question whether unpaid overtime is indeed motivated by backward-looking incentives. An observation, stemming from the literature, leads us to believe that this is plausible. Survey research shows that it is the older, better educated, well-paid tenured

professionals and managers who are involved in unpaid overtime (Anger, 2008; Bell and Hart, 1999; Meyer and Wallette, 2005; Kuhn and Lozano, 2008). These workers already have a settled position in the organization, and their profile differs from that predicted by the forward-looking incentives approach. Forward-looking models predict that especially the younger employees will work long hours (e.g. Holmstrom, 1999), whereas the settled workers, whose talents are recognized and rewarded, do not need to do so anymore.

In the following, we focus on the effects of the wage rate as a backward-looking incentive. Strong indications of a backward-looking incentive on the workers' involvement in unpaid overtime are established, when it is shown that employees who receive a better wage than their market rate are more often involved in unpaid overtime. This wage premium motivates the employee to do a good job, leading to a greater involvement in unpaid overtime.

Data and method

In our analyses we use the OSA[2] labour supply data (Fouarge *et al.*, 1999). OSA is a series of panel data sets, based on two-yearly surveys among a representative sample of the Dutch population. Attrition of the panel data are countered by additional sampling. We use data sets from the years 1994, 1996 and 1998. These waves contain all the necessary information. Earlier waves miss the crucial variable that measures current job and thereby job characteristics, whereas newer waves suffer from a decline in quality of the panel. In 2000 the number of missing respondents on the combined questions about job, industry and income had increased too much, and in later waves the attrition rates were too high.

The sample consists of about 4,500 respondents of 15 years or older. In our analyses only the respondents with a paid job that had answered all questions necessary for the analyses are included. There were 2,292 respondents in 1994, 2,447 in 1996 and 2,323 in 1998. In the actual analyses the numbers are somewhat lower because we only use respondents who are present in at least two waves. All questionnaires asked the same questions about overtime. The respondents indicated how many hours of paid and unpaid overtime they worked on average per week. For our analyses, it is sufficient to know whether overtime is paid or unpaid.

Because of the panel character of the survey, we tested for selective attrition. Employees present in two or more waves of the panel may form a selective sample of all respondents. We performed two tests to establish whether there was a selectivity problem. First, we estimated the 1996 wage equation and included in the equation a dummy variable indicating respondents that were present in both the 1996 and 1998 sample. An insignificant effect of the dummy variable indicated the absence of selectivity bias (Baltagi, 1995, p. 190). The *p*-value of the dummy variable was 0.232. Second, we estimated a logistic regression with the probability of being in both waves as the dependent variable. Included in the analysis were the same variables as in the wage equation. This analysis showed significant effects of age and marital status. Older respondents and singles had left the sample, probably because of retirement and marriage. The results of these analyses did not show that the attrition of the sample was selective.

To distinguish between forward- and backward-looking effects, we start with a simple correlation between unpaid overtime and wages and their leads and lags. Changes in the strength of the correlation can suggest which explanation appears to be more appropriate.

Then, we estimate several models. These models are designed to capture the effects of forward- and backward-looking incentives. As we chose the estimation model, we had to decide how to deal with the effect, often reported in the literature, that employees who receive a better wage are more often involved in unpaid overtime. The group of employees performing unpaid overtime is not a random group. In the analyses, we deal with this endogeneity problem.

In the model of forward-looking incentives, the critical test is whether involvement in unpaid overtime in one period leads to a higher wage growth in the next period. In the backward-looking model, the wage premium is the possible gift of the employer to the employee, and thus the incentive to work the unpaid hours. The critical test is whether the wage premium is indeed a gift, and not a reward for more human capital.

To see how strong the forward looking effects of unpaid overtime are, and simultaneously controlling for endogeneity, we estimate a treatment effect model. In this model, performing unpaid overtime is the treatment and we estimate its effect on wage growth. So we estimate first who is performing unpaid overtime by a probit model and use these results to correct for the treatment effect of unpaid overtime on wage growth:

$$\text{Probit (OT}_{96}) = \gamma_0 + \gamma_j X_{j96} + \delta \quad (1)$$

and:

$$\ln(\text{real wage } 1998) - \ln(\text{real wage } 1996) = \beta_0 + \beta_1 \text{OT}_{96} + \lambda \text{IMR} + \beta_j X_{j96} + \varepsilon \quad (2)$$

where real wage is the hourly real wage rate; OT, the performing unpaid overtime; X_{j96} , the explanatory variables; IMR, the Inverse Mill's ratio; $\gamma_0, \gamma_j, \beta_0, \beta_1, \beta_j, \lambda$, the parameters to be estimated; δ, ε , the random disturbances.

In both equations we use the same variables X_j , because we did not find an exogenous variable which only affects overtime. The model is estimated by the non-linearity introduced by the probit model in the first stage.

The forward-looking hypothesis is supported when we find a positive effect of unpaid overtime on the wage growth. Because we have three waves we can perform this test three times; once for the wage growth between 1996 and 1998; a second time for the wage growth between 1994 and 1996, and a third time for the wage growth between 1994 and 1998.

To test the backward-looking hypothesis we estimate the effect of the wage premium given by the employer to the employee on performing overtime in the pooled sample. To deal with the problem of unobserved ability we use a fixed effect panel estimate of the wage, and included the fixed effect in calculating the wage premium:

$$\ln(\text{real wage})_{it} = \beta_i + \beta_j X_{jit} + \varepsilon_{it}$$

and:

$$\text{WP}_{it} = \ln(\text{real wage})_{it} - \beta_j X_{jit} - \beta_i \quad (3)$$

and:

$$\text{Probit (OT)} = \gamma_0 + \gamma_1 \text{WP} + \gamma_j X_j + \delta \quad (4)$$

where WP is the wage premium.

A positive effect of the wage premium supports the backward-looking hypothesis. We use a large number of variables to control for the effect of overtime on wages. We are aware that possibly significant effects of many of these variables such as job characteristics and age can be interpreted as support for either the forward- or backward-looking models, but, since such interpretations are often dubious, we decided to focus exclusively on the relationship between unpaid overtime and wages. By using all other variables as control variables, we perform the strongest possible tests of the hypotheses.

We use three different variables to indicate the jobs. The first is a dummy variable that indicates whether a respondent has supervision responsibilities. The second is an elementary classification of occupational categories. We collapsed the classification of occupations of the Netherlands Statistics (CBS) into four categories: managers, professionals, support workers and production workers. Professionals are employees whose productivity is knowledge based. Managers are employees whose main task is to organize the production process. Production workers are the operatives in the production process, whereas support workers provide services to the other categories.

A third indicator for job characteristics is job level. We followed the so-called Huijgen classification that distinguishes between seven levels (Huijgen *et al.*, 1983). Every occupational code is recoded into one of the seven levels. Level seven indicates a job that consists of highly complex tasks, has a high level of autonomy, and for which much on-the-job training and education is needed. Level one indicates a simple job for which no education and hardly any on-the-job training is needed and in which the employee has no discretion over the tasks.

We control for economic sectors. We use the coding scheme developed by Stinchcombe (1979) and updated by Glebbeek (1993) for the Netherlands. Stinchcombe distinguishes between seven sectors: traditional primary industries; classical capitalist industries; small trades and services; skilled competitive industries; large-scale industry; bureaucratic services and professional services.

We follow the categorization of part-time work proposed by Hakim (1997). Contracts are classified as full-time if the number of work hours is greater than 32 hours per week. Half-time jobs have at least 13 and at most 32 work hours per week. Contracts of less than 13 hours are classified as marginal.

The variable that distinguishes the contractual basis of the employment relations consists of four categories. We differentiate between employment contracts of indeterminate duration, with the employees having retrenchment protection; workers on probation for such contracts; and fixed-term contracts. The fourth category comprises all non-standard employment contracts, such as agency staff, workers in government subsidized employment programmes, apprentices and so on.

Gender and marital status are coded as interaction variables to account for the possible effects of the traditional division of labour in households. We include age and age squared too.

Educational level is coded following the first digit of the five categories of the Standard Educational Category System of Netherlands Statistics. Every next category represents three years of further education. Appendix contains an overview of these variables for persons present in all three waves.

Results

Table I presents the correlations between unpaid overtime and wages including leads and lags. The table enables us to do a first test of the hypotheses. The forward-looking hypothesis predicts wage growth, that is increasing correlations through time. The

backward-looking hypothesis, on the other hand, predicts weakening correlations through time. The table shows that the correlation is approximately 0.30 and there is not a clear trend. The first test is inconclusive.

Forward- or
backward-
looking
incentives

Forward-looking incentives

Table II presents the results of the test of the forward-looking effect of unpaid overtime on wage growth. The effect of unpaid overtime is estimated as a treatment effect.

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Table I.
Correlations unpaid
overtime and wages,
including leads
and lags

	Unpaid overtime 1994	Unpaid overtime 1996	Unpaid overtime 1998
ln (wage 1994)	0.35	0.27	0.30
ln (wage 1996)	0.34	0.30	0.32
ln (wage 1998)	0.30	0.27	0.32

Note: $n = 852$, everyone present in three waves
Source: OSA labour supply panel survey, our calculations

Table II.
Treatment effect of
unpaid overtime
on wage growth

	1998 – 1996		1996 – 1994		1998 – 1994	
	Coeff.	SE	Coeff.	SE	Coeff.	SE
Constant	0.62	0.14	0.43	0.15	0.55	0.20
Supervisor	–0.03	0.02	–0.01	0.01	–0.01	0.02
Professionals	–0.05	0.02	0.01	0.02	0.00	0.02
Managers	–0.07	0.05	0.02	0.03	–0.02	0.04
Production workers			Reference category			
Support workers	0.00	0.02	0.01	0.02	0.00	0.03
Job level	0.01	0.01	–0.01	0.01	–0.01	0.01
Agriculture	–0.04	0.05	0.06	0.04	–0.01	0.06
Classical capitalist industry			Reference category			
Skilled competitive industry	0.02	0.03	–0.01	0.03	0.07	0.04
Large-scale industry	–0.01	0.04	0.00	0.03	–0.02	0.04
Small trade and services	–0.01	0.03	–0.01	0.02	0.00	0.04
Professional services	0.03	0.03	0.00	0.03	0.02	0.04
Bureaucratic services	0.01	0.04	0.02	0.03	0.03	0.05
Working hours	0.00	0.03	0.05	0.02	–0.05	0.03
Fixed position	–0.12	0.03	–0.03	0.03	–0.03	0.04
Probation	–0.09	0.04	0.05	0.04	–0.01	0.06
Temporary contracts			Reference category			
Other contracts	–0.18	0.06	0.05	0.06	0.03	0.08
Married men			Reference category			
Non-married men	0.02	0.02	–0.02	0.02	0.03	0.02
Non-married women	0.00	0.02	–0.01	0.02	0.01	0.03
Married women	0.01	0.02	0.04	0.02	0.00	0.02
Age	–0.02	0.00	–0.03	0.00	–0.01	0.01
Age squared	0.00	0.00	0.00	0.00	0.00	0.00
Education	0.00	0.00	0.00	0.00	0.00	0.00
Unpaid overtime	0.07	0.13	0.09	0.10	0.11	0.14
λ	–0.05	0.08	–0.05	0.06	–0.08	0.08
χ^2	150.21		123.38		67.36	
df	23		23		23	
n	1,385		1,479		852	

Source: OSA labour supply panel survey, our calculations

The three models do not show a significant effect of unpaid overtime on wage growth. Unpaid overtime performed in 1994 does not have an effect on the wage growth between 1994 and 1996, and unpaid overtime in 1996 does not have an effect on wage growth between 1996 and 1998. Performing unpaid overtime in 1994 does not have an effect on wage growth between 1994 and 1998 either[3]. We do not find support for the forward-looking hypothesis in our data.

Backward-looking incentives

Table III shows a significant and strong effect of the wage premium on the involvement in unpaid overtime. The table also shows that the better educated, full-time workers, managers in supervisory positions and higher job levels are more often involved in unpaid overtime. This profile is consistent with the profile of the settled worker (e.g. Bell and Hart, 1999).

These results support the thesis that backward-looking incentives determine the participation in unpaid overtime. Workers with a relatively good wage rate are more involved in unpaid overtime than those with a relatively low wage rate.

	Coeff.	SE
Constant	-0.887	0.134
Supervisor	0.121	0.017
Professionals	-0.027	0.021
Managers	0.089	0.039
Production workers		
Support workers	-0.136	0.018
Job level	0.050	0.007
Agriculture	-0.083	0.061
Classical capitalist industry		
Skilled competitive industry	-0.032	0.037
Large-scale industry	-0.077	0.035
Small trade and services	0.014	0.038
Professional services	-0.028	0.038
Bureaucratic services	-0.081	0.035
Small part-time		
Large part-time	0.018	0.050
Full-time	0.140	0.043
Fixed position	0.008	0.042
Probation	0.049	0.060
Temporary contracts		
Other contracts	0.030	0.095
Married men		
Non-married men	0.013	0.024
Non-married women	-0.008	0.027
Married women	-0.019	0.021
Age	0.004	0.006
Age squared	0.000	0.000
Education	0.023	0.003
Wage premium	0.143	0.067
χ^2	844.1165	
df	23	
n	4,765	

Table III.
The marginal effect
of the wage premium
on doing unpaid
overtime, pooled
estimates

Source: OSA labour supply panel survey, our calculations

Conclusion

We have established that unpaid overtime depends on the relative wage rate. Workers who receive high wages are relatively often involved in unpaid overtime. We did not establish a relationship between unpaid overtime and wage growth. The evidence therefore is clearly in favour of the thesis of backward-looking incentives and does not support the thesis of forward-looking incentives.

Discussion

In this paper we studied work motivations to explain participation in unpaid overtime. The reason to do so was that the institution of unpaid overtime was created in a context that emphasized backward-looking motivations, such as intrinsic motivation and reciprocity towards the employer. However, according to recent economic analyses, participation in unpaid overtime is motivated by forward-looking incentives of future wage growth. Focusing on the relationship between unpaid overtime, wages and wage growth, we showed that participation in unpaid overtime does not lead to additional wage growth, but, instead, is determined by the wage level that was agreed upon in the past. We therefore conclude that backward-looking incentives determine participation in unpaid overtime.

There are reasons to emphasize the importance of backward-looking incentives for participation in unpaid overtime and for labour supply. Research on economic behaviour shows that intrinsic motivation and reciprocity are not only powerful work motivations, but also produce happier, more engaged, and more productive workers.

Intrinsically motivated workers experience higher levels of well-being than extrinsically motivated workers, because of the greater autonomy in their jobs (Ryan and Deci, 2000). Autonomy is the basis for the development of competences and for connectedness. For that reason, intrinsically motivated workers have a greater urge to do a good job, and thus feel a stronger sense of responsibility towards their work and their employer. These effects are reflected in the literature, when it is reported that engaged workers, that is employees who are driven by intrinsic motivation to work long hours, are not only more satisfied with their jobs, but are also more committed to their employers than more extrinsically motivated workers.

In the Netherlands, as in other western countries, during the last decades employee compensation systems have been redirected from backward- to forward-looking incentives (Poutsma *et al.*, 2006). The compensation system became the main instrument to direct effort and to bolster motivation. In the compensation systems, emphasis shifted from membership and loyalty to the organization to bonuses and promotion perspectives. As a consequence, reciprocity and intrinsic motivation have lost their role as motivational mechanisms in the policies of most organizations.

Moving the pendulum backwards implies a twofold shift. Firstly, there should be a shift within the compensation system. Reciprocity and intrinsic motivation require good and fair wages, but are not stimulated by strong performance incentives. The focus in the compensation system should shift from performance-based pay to pay for competences and responsibilities. This also implies that top executives should not receive bonuses for market performance, but for quality and responsibility. The incomes of top executives and their justification set a standard for the internal wage structure.

The second shift implies that motivation is created not mainly through the compensation system but through the quality of the work and the quality of the

employment relationship. Intrinsic work motivation and reciprocity are determined mainly by the quality of the job, not by strong performance incentives. A balanced motivation structure therefore requires more than good wages. The worker should also have autonomy and learning opportunities, and work pressure should not be too high to do a good job. Organizations that offer good quality jobs can expect intrinsically motivated workers, who are committed to their jobs and their employer. Strong intrinsic motivation does not need strong performance incentives. In fact, the two appear to be mutually exclusive.

In this paper, we have reported the first simultaneous test of forward- and backward-looking explanations of unpaid overtime. Drawing on a longitudinal Dutch data set covering a period of four years, we were able to show that forward-looking interpretations of unpaid overtime work are not as self-evident as economic theory assumes, and that backward-looking interpretations are more plausible. We are well aware that our results may just be seen as evidence that during a time span of four years, employees who worked overtime in the Netherlands were more motivated by a good wage rate than by future earnings or promotion prospects. Although we think that a time span of four years is long enough for the rewards of forward-looking incentives to materialize, we cannot exclude the possibility that workers reap the fruits of overtime later in their careers. The possibility that our results are biased by the Dutch context in which the data were gathered cannot be excluded either. Economic theories generally are culturally neutral, but empirical evidence does show that economic incentives have different effects on performance in different environments. For example, Jansen *et al.* (2009) have established that, unlike their North-American counterparts, Dutch automobile retailers who used incentive compensation were confronted with a negative effect on net profit and pay satisfaction. It would be interesting to find out whether incentive effects are indeed dependent on the social and cultural environment and, if so, under what conditions.

Notes

1. This begs the question whether “backward-looking incentive” should not be considered a contradiction in terms, as use of the word incentive presupposes purposeful behaviour and purposes are by definition in the future.
2. Organisatie voor Strategisch Arbeidsmarktonderzoek (Institute for Labour Studies).
3. Because the Inverse Mill’s ratio is not significant we re-estimated the model without this ratio. Again the effect of unpaid overtime is not significant.

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Further reading

- Van der Meer, P.H. and Wielers, R. (2013), "What makes workers happy?", *Applied Economics*, Vol. 45 No. 3, pp. 357-368.

Appendix

Forward- or
backward-
looking
incentives

	1998		1996		1994	
	Mean	SD	Mean	SD	Mean	SD
In wage	2.72	0.32	2.67	0.32	2.62	0.32
Unpaid overtime	0.31	0.46	0.30	0.46	0.31	0.46
Supervisor	0.35	0.48	0.33	0.47	0.32	0.47
Professionals	0.29	0.46	0.30	0.46	0.29	0.45
Managers	0.05	0.23	0.04	0.21	0.04	0.19
Production workers	0.39	0.49	0.40	0.49	0.40	0.50
Support workers	0.27	0.44	0.26	0.44	0.27	0.44
Job level	4.09	1.58	4.02	1.60	3.96	1.58
Agriculture	0.02	0.12	0.02	0.12	0.02	0.14
Classical capitalist industry	0.05	0.23	0.05	0.22	0.05	0.22
Skilled competitive industry	0.12	0.32	0.12	0.33	0.12	0.33
Large-scale industry	0.10	0.30	0.09	0.28	0.10	0.30
Small trade and services	0.19	0.39	0.20	0.40	0.20	0.40
Professional services	0.36	0.48	0.37	0.48	0.36	0.48
Bureaucratic services	0.16	0.37	0.16	0.36	0.15	0.36
Small part-time	0.03	0.17	0.03	0.16	0.03	0.18
Large part-time	0.28	0.45	0.25	0.43	0.23	0.42
Full-time	0.69	0.46	0.72	0.45	0.74	0.44
Fixed position	0.96	0.21	0.95	0.21	0.95	0.22
Probation	0.02	0.16	0.02	0.14	0.02	0.14
Temporary contracts	0.01	0.12	0.02	0.15	0.02	0.15
Other contracts	0.01	0.08	0.01	0.08	0.01	0.09
Married men	0.55	0.50	0.55	0.50	0.55	0.50
Non-married men	0.09	0.29	0.09	0.29	0.10	0.29
Non-married women	0.06	0.24	0.06	0.24	0.06	0.24
Married women	0.30	0.46	0.29	0.46	0.30	0.46
Age	42.78	9.09	40.66	9.12	38.35	9.10
Age squared	1,912.37	775.58	1,736.05	740.46	1,553.02	698.02
Education	12.39	2.43	11.59	2.84	11.39	2.94
<i>n</i>	852		852		852	

Source: OSA labour supply panel survey, our calculations

Table AI.
Means and standard
deviations of
the variables

Table AII.
Full results of wage
equation

Fixed effects of ln wage, panel estimates 1994-1998			
	Coeff.		SE
Education	0.012		0.002
Job level	0.009		0.004
Married men and women		Reference	
Non-married men	-0.005		0.026
Non-married women	0.023		0.029
Supervisor	0.021		0.009
Working hours	-0.399		0.022
Agriculture	0.020		0.045
Classical capitalist industry		Reference	
Skilled competitive industry	0.005		0.022
Large-scale industry	0.033		0.022
Small trade and services	0.008		0.020
Professional services	0.008		0.024
Bureaucratic services	0.022		0.027
Fixed position	0.118		0.018
Probation	0.033		0.022
Temporary contracts		Reference	
Other contracts	0.043		0.033
Supervisor	0.005		0.014
Professionals	0.005		0.019
Managers		Reference	
Production workers	0.004		0.015
Adj R^2	0.830		
SEE	0.136		
F	12.6		
n	4,765		
Source: OSA labour supply panel survey, our calculations			

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