

Employment Protection and Effort Among German Employees

Regina T. Riphahn¹

University of Basel
(CEPR, IZA, DIW)

3 November 2003

Abstract

Using a difference-in-difference approach and cross-sectional data from the German Socioeconomic Panel it is shown that high levels of employment protection increase absenteeism by up to 35 percent or about 3 days per year.

Keywords: absenteeism, public sector, shirking, effort, employment protection

JEL Code: J28, J41, J88, M50

¹ Correspondence to: Regina T. Riphahn, WWZ - Univ. Basel, Petersgraben 51, CH - 4003 Basel, Phone: 0041-61-267 3367, Fax: 0041-61-267 3351, email: regina.riphahn@unibas.ch

1. Introduction

The literature discusses employment protection predominantly with respect to its effect on employment flows (cf. e.g. Lazear 1990, Garibaldi 1998). Only few studies investigate possible behavioral responses of employees to the level of employment protection (e.g. Ichino and Riphahn 2001, or Engellandt and Riphahn 2003). In a Shapiro-Stiglitz framework it is straightforward to derive that workers on contracts with more employment protection may provide less effort compared to those who can be dismissed easily (for a formal model see Ichino and Riphahn 2001). This study takes advantage of a discrete jump in the level of employment protection for German public sector employees to assess its behavioral implications.

By international comparison German workers enjoy a high level of employment protection (cf. OECD 1999). Layoffs are allowed for reasons related to the individual employee (e.g. ability or health), in case of worker misconduct, or for important business requirements (e.g. business cycle related lack of orders or down-sizing).

Employment protection differs in two respects for workers in the private and the public sector: First, dismissals for important business requirements are not relevant in the public sector. Second, workers who have been employed in the public sector for at least 15 years and who are at least 40 years of age cannot be dismissed except in cases of severe misconduct. Thus the degree of employment protection for public sector employees after 15 years of tenure and age 40 reaches the almost “un-dismissable” level enjoyed by civil servants.

Based on these institutional rules the theoretical framework mentioned above suggests that public sector employees who meet the tenure-age condition provide less effort than other public and private sector employees.

2. Data and Empirical Approach

To compare the effort level of public and private sector workers we utilize data from the 2001 wave of the German Socioeconomic Panel (GSOEP). The GSOEP is a panel household survey and the 2001 survey covered approximately 22,000 individuals. The sample is restricted to full-time employed workers between ages 25 and 60. Self-employed workers and civil servants are not considered because these groups are subject to different regulations and incentive mechanisms. After dropping observations with missing values on key variables our sample contains 6,311 observations of which 1,272 are employed in the public and 5,039 in the private sector. Of those employed in the public sector 362 meet the conditions for extended employment protection.

Following a broad literature we use absenteeism as an indicator of worker effort: The dependent variable describes the number of days at which an individual missed work due to illness in the past calendar year. For the full sample we observe a mean value of 10.4 absence days and a median of 3 days indicating the skewed distribution of absence days. 43 percent of all observations had no absence and another 33 percent did not exceed ten days of absence. In the aggregate absenteeism of private and public sector workers differ significantly with a mean of 10.1 absence days per year for the former and 11.8 for the latter. Among public sector workers, those with extended employment protection took on average 16.1 days of absence compared to 10.1 days among those without this protection. The difference is significant at the 1 percent level. Figure 1 depicts absence days for workers in the private sector, in the public sector with high protection, and in the public sector without high protection for the relevant age groups. The difference is apparent.

In order to test whether employment protection causes these differences, and whether they are significant and robust we apply a difference in differences estimation approach: As absences in the public sector may differ from those in the private sector independent of employment

protection rules, the estimator compares the *difference* in behavior before and after reaching the age-tenure condition across the two sectors. The estimation is based on the assumption that once the effects of age and tenure are controlled for any difference in absences between the public and the private sector is the result of different employment protection rules, as other mechanisms are controlled for.

3. Results and Discussion

The results of the empirical analyses are presented in Table 1. The model in column 1 includes an indicator for whether the employee enjoys the high level of employment protection (i.e. is employed in the public sector, at least age 40 and at least 15 years of tenure), controls for whether an individual reached the age-tenure condition and for whether the individual works in the public sector. The coefficient of the employment protection indicator provides the difference-in-differences estimate of the absence effect of high employment protection. The results suggest that reaching the almost "un-dismissable" position causes an increase in annual absence days of about 3.3 days. Relative to the sample average of 10.4 days of absence higher employment protection yields an increase by 32 percent. In the first model the effect is not precisely estimated and significant only at the 10 percent level when uncorrected standard errors are used.

The models in columns 2 and 3 control more carefully for the effects of age and tenure profiles, first adding linear then quadratic polynomials. The employment protection effect in the top row is robust to these refinements and its standard error declines with the added controls.

As the literature on absenteeism discusses other determinants of absence behavior, we test the robustness of our estimate by controlling for three groups of covariates in columns 4 through 6: In column 4 a vector of personal variables is added, among them human capital indicators and an indicator of whether there is a child under age 16 in the worker's household. These variables are jointly and mostly individually statistically significant, but do not affect the estimated employment protection effect.

In column 5 objective and subjective health indicators are added. Again, they are highly significant but apparently orthogonal to the employment protection effect. The controls for blue vs. white collar employment, firm size and industry in column 6 confirm the evidence in the literature showing e.g. higher absences in larger firms. However, the estimate of the overall employment protection effect remains unaffected; the association between high employment protection and annual absences is robust and statistically significant, with an increase in annual absence days by more than three days due to the onset of employment protection.

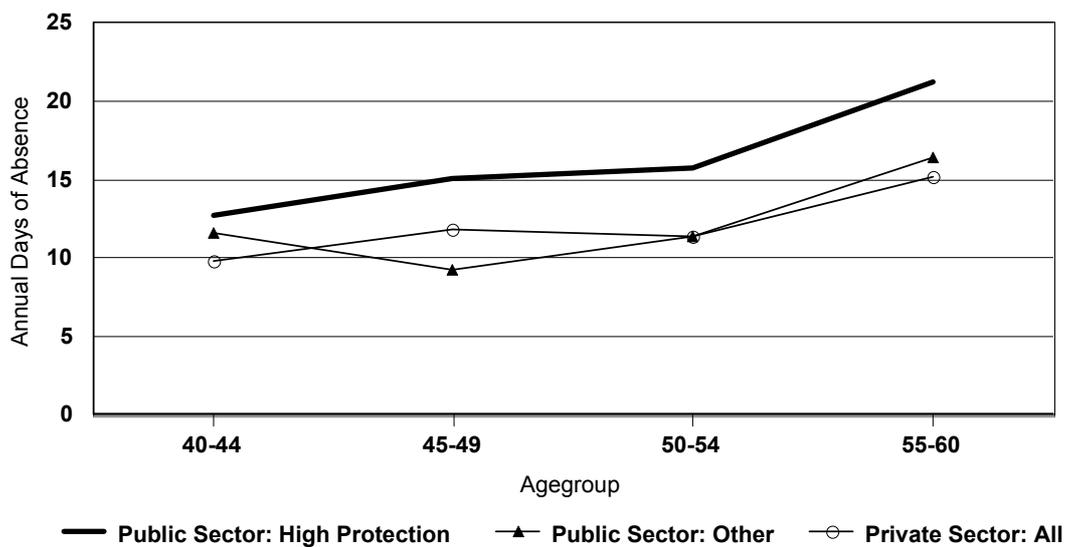
One might argue that those working in the public sector are not a random sample of workers. This problem is addressed by the difference-in-difference estimation approach. The results in Table 1 and regressions by sector of employment that we do not present to save space indicate that even within the group of public sector employees those with secure employment amass significantly more days of absence than those who are less well protected. Therefore the relationship between employment protection and absence behavior is robust and not determined by endogenous selection.

This finding corresponds well with other evidence on behavioral effects of employment protection regulations (see e.g. Ichino and Riphahn 2001, Engelland and Riphahn 2003) and corroborates the predictions of economic theory. Before policy consequences can be derived a number of additional issues, such as the true productivity effect of absences, welfare aspects, and general equilibrium issues must be considered as well.

Literature

- Engellandt, A. and R.T. Riphahn (2003), Temporary contracts and employee effort, IZA Discussion Paper No. 780, Bonn.
- Garibaldi P., 1998, Job Flow Dynamics and Firing Restrictions, European Economic Review 42(2), 245-75.
- Ichino, A. and R.T. Riphahn (2001), The effect of employment protection on worker effort. A comparison of absenteeism during and after probation, IZA Discussion Paper No. 385 , Bonn.
- Lazear, E. P., 1990, Job Security Provisions and Unemployment, Quarterly Journal of Economics 105(3), 699-726.
- OECD (1999), OECD Employment Outlook, June 1999, Paris.

Figure 1 Days of absence by type of employment and agegroup



Source: Own calculations using data from the German Socioeconomic Panel

Table 1: Difference in difference estimates: Linear regression of annual days of absence

	1	2	3	4	5	6
High employment protection (0/1)	3.303	3.499	3.633	3.636	3.611	3.584
(Standard error OLS)	(1.835) *	(1.834) *	(1.831) **	(1.821) **	(1.723) **	(1.738) **
(Standard error robust)	(2.211)	(2.218)	(2.210) *	(2.187) *	(2.066) *	(2.084) *
Age at least 40 and tenure at least 15 years (0/1)	2.711	0.423	1.008	1.189	1.003	0.681
(Standard error OLS)	(0.898) ***	(1.464)	(1.472)	(1.466)	(1.387)	(1.410)
(Standard error robust)	(1.027) ***	(1.669)	(1.704)	(1.690)	(1.574)	(1.575)
Public sector employment (0/1)	0.497	0.256	-0.045	0.544	-0.148	-0.063
(Standard error OLS)	(0.949)	(0.947)	(0.949)	(0.963)	(0.912)	(0.953)
(Standard error robust)	(0.752)	(0.762)	(0.769)	(0.774)	(0.767)	(0.792)
Age	-	linear ***	quadratic ***	quadratic ***	quadratic	quadratic
Tenure	-	linear	quadratic ***	quadratic ***	quadratic ***	quadratic ***
Individual and household controls	-	-	-	yes ***	yes ***	yes ***
Health controls	-	-	-	-	yes ***	yes ***
Job and industry controls	-	-	-	-	-	yes ***
Constant	9.558 ***	1.110	16.990 ***	20.206 ***	18.844 ***	20.19 **

Note: ***, **, and * indicate statistical significance at the 1, 5, and 10 percent level. The regressions use 6,311 observations. Individual and household controls consider indicators for sex, 6 indicators of highest schooling degree obtained, 4 indicators for type of vocational training, a measure of whether children under age 16 are in the worker's household and an interaction of this variable with a worker's sex. The set of health controls includes a measure of the administratively measured degree of a worker's handicap, a categorical measure of health satisfaction on an 11-point scale, and a 5-point scale indicator of the quality of an individual's health status. Job and industry controls contain an indicator of blue vs. white collar job, 6 firm size indicators, and 17 industry indicators. The asterisks behind the grouped measures indicate the joint significance of the controls.

Source: Own calculations using data from the German Socioeconomic Panel