Separating Introduction- from Selectivity-Effects: The Differences in Employment Patterns of Co-Determined Firms

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Abstract:

This study examines differences in employment growth between firms with and without works councils by separating introduction- from potential selectivity-effects. Using several methods of treatment evaluation, we show that firms with works councils have higher employment growth before establishing a works council. However, employment growth declines after introduction. We identify the reason for lower employment growth in reduced hiring-rates but constant dismissal-rates.

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1 Introduction

The German Works Constitution Act and its therein fixed power of works councils defines the German way of co-determination rights on establishment level. These rights determine how the employment side may intervene in human resource management but also embrace certain influence on overall management decisions. Especially decisions on hirings and dismissals are strongly affected by Works Councils. Works Councils have the legal power to oppose in some cases hirings as well as dismissals. However, as a response to co-determination rights the management of an establishment can adjust its staffing policy. The effect of works council on firms' behavior has been examined since the mid-1980s (FitzRoy and Kraft 1985, 1987, 1990, Kraft 1986). These and subsequent studies analyze to what extent firms with and without works councils differ with respect to their profitability, R&D, productivity, quits and personnel policy. Especially in the latter field recent studies show conflicting results. Addison and Teixeira (2006) find that the existence of works councils reduces employment growth. However, using a different panel and methods of modeling size Jirjahn (2008a, 2008b) finds no effects. Studies on hirings and dismissals conclude that both are reduced by works councils (Frick and Sadowski (1995), Backes-Gellner, Frick and Sadowski (1997), Addison, Schnabel and Wagner (2001), Dilger (2002)).

A common feature of studies on works councils is that they ignore potential selectivity-effects. Differences between firms have so far been explained by the existence of works councils, although it might be possible that some of these differences are not caused by works councils. They may exist before a works council has been introduced and also favor the introduction of works councils. Hence, the possibility of a selection bias exists if particular characteristics of firms increase the probability of works council introduction. The aim of this study is to identify differences in employment growth, hirings and dismissals keeping selectivity-effects in mind. We estimate differences in employment given that heterogeneity between firms with and without works councils might exist.

This paper is organized as follows: We firstly summarize the theoretical background and the results of previous empirical studies on the impact of works councils. Then, we discuss the results of our estimates. At this, we use a

difference-in-differences approach in order to analyze the relation between the introduction of works councils and employment growth. In addition we use matching and estimate a difference-in-differences model with the matched data. In the next step, we estimate the relation between hirings, respectively dismissals and the introduction of a works council using the same estimation procedure. We find that firms which introduce a works council have higher employment growth rates before the introduction actually takes place. However, after introduction, firms with works councils have lower employment growth which in turn is the result of lower hiring-rates. However, we find no significant influence of the introduction of works councils on dismissals. Firms in which a works council is introduced have already lower dismissal-rates before.

2 Theoretical background

The German Works Constitution Act increases workers' power by conceding co-determination in hirings as well as dismissals. Works councils have to be informed about every dismissal. Furthermore, every dismissal has to be annulled if a works council criticizes that social aspects have been disregarded or further employment might be feasible as well as reasonable. Additionally, works councils are able to avoid hirings. They are able to refuse a hiring if, for example, the hiring is disadvantageous to the permanent staff. In case of large scale redundancies managers negotiate with works councils about a so-called social plan (Sozialplan), which determines redundancy payments.

The theoretical effects of works councils are very controversially discussed. On the one hand participation theorists argue that works councils improve the relationship between employer and employee due to better communication. This is basically an application of the exit-voice theory of Freeman and Medoff. Better communication helps to avoid misunderstandings and to solve problems at the workplace. This in turn has a positive influence on job-satisfaction and productivity which also affects dismissals (Backes-Gellner, Frick and Sadowski, 1997). Additionally, works councils improve communication concerning work practices, i.e. works councils simplify problem solving, for example on potential

technical or organizational improvements (Backes-Gellner, Jirjahn and Mohrenweiser, 2009).

On the other hand from a neoclassical point of view bargaining power and codetermination rights of works councils constrain profit-maximizing behavior of the management. Information, consultation and codetermination rights of works councils are assumed to prevent or at least delay necessary decisions if these decisions are not in workers' interest. One obvious example are dismissals.

The power of works councils to affect decisions on redundancy payments and the selection among the employees to be dismissed will increase employment costs. Therefore, profits may be negatively affected by the existence of works councils (Frege, 2002) at least as long as no counteracting efficiency effects are connected with the introduction of works councils.

There exists an alternative explanation for the parallel observation of the introduction of a works council and lower employment growth rate: As stated above, works councils are of particular help for employees if redundancies take place. If - for exogenous reasons - the economic conditions become worse, the workforce might decide to adopt a works council in order to be better prepared for possible negotiations about the conditions of dismissals or about the avoidance of them at all. Thus, works council may be the result of expectations about economic problems, and if these concerns become real, we observe simultaneously the adoption of a works council and an increase in dismissals. However, in this case works councils would not cause the dismissals.

These direct interventions into establishment's employment policy give power to works councils to increase firm's costs of lay-offs and also act as insiders with the aim to increase the power of their voters. Insider-outsider theory predicts that workers use their power to influence hirings and dismissals to secure the position of the present workforce. Although works councils are not authorized to negotiate about wages, their co-determination rights permit an indirect influence on workers' compensations. For example, works councils can bargain about wage bonuses, overtime-compensations, redundancy payments as well as classification of employees into wage brackets. Recent studies confirm the hypothesis that works councils affect wages. For example, Addison, Teixeira

and Zwick (2006) find a positive effect of works councils on wages using linked employee-employer data.

In a nutshell, works councils use higher adjustment costs to increase labor costs. Both costs influence dismissals contrary. However, higher costs reduce hirings as well as employment growth because the management of a firm might adjust employment toward an efficient employment path.

3 Related Literature

The effects of works councils on firm behavior and performance have been examined in several studies. Main focus of this field of research is the impact of works councils on factors like productivity, innovations, profitability and labor turnover. Frege (2002) as well as Addison, Schnabel and Wagner (2004) survey previous studies.

Our study confines to employment growth, hires and dismissals. In an early work, Gold (1999) compares employment volatility in firms with and without works councils. He finds that firms with a works council have a lower volatility and that the majority of these firms reduce their employment. Addison and Teixeira (2006) show that works councils reduce employment growth. Relating to these result, Jirjahn (2008a) argues that the estimated effects of works councils on employment growth strongly depend on the modeling of firm size. He claims that works councils do not influence employment growth. He proves his hypothesis by showing that the effects of works councils indeed vary if different methods of specifying firm size are used.

Compared to employment growth, results in estimating influence of works councils on hirings and dismissals are less conflicting. In an early work, Frick and Sadowski (1995) show that the existence of a works council reduces dismissals significantly. They also find a negative effect on hirings, although not a significant one. Addison, Schnabel and Wagner (2001) find that works councils significantly reduce hires, separations and and labor turnover in general, although this result does not apply for firms with 21 to 100 employees. Dilger (2002) shows that works councils reduce hires and separations. He also shows that the size of reduction depends on the characteristics of works councils. Cooperative works councils induce the highest reductions. Works

councils which do not intervene in day-to-day business do not have a significant effect at all. Backes-Gellner, Frick and Sadowski (1997) compare the dismissal rates of firms conditional on the existence of works councils. They show that the dismissal rate in firms with works councils is 2.9 percentages lower than in firms without such an institution. They also find some evidence that works councils account for adjustments in employment due to changes in the economic environment. This means that works councils neither avoid dismissals in bad economic situations nor inhibit hirings in growing firms. Guertzgen (2007) shows that works councils can be associated with lower accession and separation rates. Her definition of the dependent variables and the estimation procedure is quite similar to our study. However, she does not distinguish between quits and dismissals and the relation between works councils and hires/dismissals is not the main purpose of her study.

A common feature of the studies mentioned above is that they ignore the potential endogeneity of the introduction a works council. Jirjahn (2009) as well as Kraft and Lang (2009) find that employees prefer to introduce works councils to secure their rents. Additionally, the latter also finds that employees prefer to introduce a works council if they fear potential job losses and the introduction reduces apprehensions to become unemployed. These studies give evidence that introducing a works council is not a random event and firms with certain characteristics have a higher probability of introducing a works council than others. The intention of our approach is to estimate the effect of works councils on hiring- and dismissal-rates under consideration of heterogeneity between firms.

4 Data & Method

Our data is taken from the IAB Establishment Panel, which is a yearly survey of more than 15,000 German establishments with at least one employee covered by social insurance. This survey is collected by the Institute for Employment Research of the German Federal Employment Agency, Nuremberg. We use survey-waves of the years 1998 to 2008. At first, we drop all observations with less than five employees because the introduction of a works councilis is only relevant for firms with more than four employees. We also drop observations

where a works council has been dissolved and observations from the public service. Overall, our sample contains 60349 observations of 17756 establishments.

4.1 Variables

Our estimates can be divided into two parts. We start with estimating introduction effect of a works council on employment growth. The growth rate is defined as $grEMP_{i,t} = \dfrac{Emp_{i,t} - Emp_{i,t-1}}{(Emp_{i,t} + Emp_{i,t-1})/2}$. We have also tried first differences of the logarithmic values of employment as an alternative measure of employment growth. Our results did not change. In the second part, we estimate the effect of the introduction on hires and dismissals. We define our dependent variables as the ratio of hires respectively dismissals to overall employment. However, the exact recording of dismissals may be complicated. To repeat, the aim of this study is to define the effect of works councils on the decision of the firm whether it wants to dismiss an employee or not. This dismissal can be done in several ways. For example, besides a classical firing, the firm can also renounce extension of a fixed-term contract or reject further employment after a apprenticeship has been completed. Furthermore, management is also able to reduce employment within a firm by establishing so-called transfer organizations. The introduction of transfer organizations is a method of reducing employment which also aims at increasing employee's probability of finding a new job after leaving. In this case employees usually terminate their employment contracts in mutual consent and get a new fixed-term contract from the transfer organization. A transfer organization can be seen as an independent organization within the same company, which has the target to finance and organize application trainings, computer trainings, etc to improve the possibilities to find alternative employment.

Keeping in mind this problems to define adequately what a dismissal is, we decide to specify our dismissal rate of firm i in year t as

$$SHAREdiss_{i,t} = \frac{\Sigma_{i,t}}{(2 \times Employment_{June,i,t} - Accession_{Jan-June,i,t} + Seperation_{Jan-June,i,t})/2} \tag{1}$$

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where $\Sigma_{i,t}$ is defined as the sum of changes in employment through lay-offs, termination of employment-contracts by mutual consent, leaving the firm after apprenticeship and after a fixed-term contracts has run out. The IAB panel records data between January and June in firm i at year t.

We calculate the shares of dismissals by this particular method because the IAB-Establishment Panel only contains the number of employees in June in every year. However, hires and dismissals are asked for the first half-year of every period. Therefore we calculate a share of dismissals for the first six months of a year. The denominator indicates mean employment between January and June in year t.

Similarly, we define the share of hires as

$$SHAREhires_{i,t} = \frac{Hires_{Jan-June,i,t}}{(2 \times Employment_{June,i,t} - Accession_{Jan-June,i,t} + Seperation_{Jan-June,i,t})/2} \qquad (2)$$

4.2 Explanatory Variables

A main influence on employment change can be expected by unions, i.e. the existence of collective bargaining agreements. In Germany, two types of collective bargaining agreements exist. Firms may be covered by collective bargaining agreements at industry or firm level. Therefore, we create a dummy COLLAGR to account for this influence. We add a variable QUALI in our model which measures labor qualification effects. This variable is defined as

$$\frac{\# \, of \, employees \, with \, vocational \deg ree + \# \, of \, employees \, with \, university \, de\mathrm{g} ree}{Employment}$$

which is a broad definition of qualification. It covers 68.5% of the employees of the sample. Unfortunately, we are unable to identify highly qualified employees because the respective question in the survey has been changed during our sample-period.

Furthermore, we add the variables PART to consider the effects of part-time working and FIXTERM to consider the effect of fixed-term contracts. Both variables may be associated with higher labor-turnover in firms. Additionally, we also check for differences between West and East Germany by including a dummy variable WEST which has unit value if the firm is located in Western

Germany. The introduction of a works council is highly correlated with firm size. It may also be possible that large firms have different dismissal- and hiring-rates caused by internal advertisements and a more professional matching procedure. Additionally, large firms might have different employment growth pattern. Therefore, we include several size-dummies to avoid a potential omitted variable bias. To take account of the economic conditions for growth, we use two innovation dummies (PRODimp and PRODnew). PRODimp has unit value if the firm improved an existing product and PRODnew is equal to one if the firm introduced a new product. Unfortunately, in the IAB- Establishment Panel the respective questions are not included regularly, but are only considered in 1998, 2001, 2004, 2007 and 2008. Therefore, we replicate these observations on the missing years. In order to measure effects of profitability, we also insert the variable PROFITS in our model. This variable contains lagged assessments of the profit situation by an establishment measured by a Likert scale[1]. Moreover, we add a dummy for the age of a firm (AGE) which has unit value if the firm has been founded before 1990. The workforce of older firms may be employed since many years, which is not possible for a recently founded establishment[2]. Older firms may have structures that reduce labor turnover and may as well be active in more stable markets. We also create a dummy variable LIMIT to consider possible effects in firms with limited liability. Moreover, we add a dummy variable SINGLE if the establishment is a single-plant company. Finally, we add industry- and time dummies to control for time and industry effects.

4.3 Measuring the effect of works councils

In order to estimate the effect of works councils, we introduce in the first step a dummy variable for their existence (WoCo). This is the common method that has been used in several studies. Of course, this method neither estimates the effect of an introduction of a works council nor does it account for potential endogeneity of the introduction of works councils. It simply estimates the difference between firms which have a works council and firms without. To

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[1] The Likert scale contains a subjective rating of profitability beginning 1 (very good) until 5 (very bad).
[2] The IAB panel does not contain more detailed information on foundation date than the mentioned year 1990.

distinguish between this potential heterogeneity among firms and the effect of works councils, we use a difference in differences (DiD) framework. This specification includes three dummies instead of one as in the previous version. Hence, our estimation equation becomes

$$y_{i,t} = \beta_0 + \beta_1 WoCo\mathrm{int}_{i,t} + \beta_2 WoCotreat_{i,t} + \beta_3 WoCoall_{i,t} + \gamma_0 X_{i,t} + \gamma_2 T_{i,t} + \varepsilon_{i,t} \qquad (3)$$

The first dummy (WoCotreat) identifies the treatment-group and has unit value in every year, if an establishment introduces a works council during the observation period, irrespective whether it is actually introduced or not. The aim of this dummy is to characterize the heterogeneity between our treatment-group and firms without works councils. The second dummy (WoCoint) is equal to one if (WoCotreat) has unit value and a works council actually exists (i.e $\mathrm{WoCoint} = \mathrm{WoCotreat} \times \mathrm{WoCo}$). This dummy variable identifies the effect of the introduction of a works council. In our sample 404 firms introduce a works council during the time periods we observe. Finally, there exists a group of firms that have a works council during the whole observation period. We account for this group by inserting a dummy (WoCoall), which has unit value if the firm has introduced a works council before our observation period (i.e. $\mathrm{WoCoall} = \mathrm{WoCo\text{-}WoCoint}$). This variable captures the impact of pre-existent works councils and its coefficient can be interpreted as the sum of heterogeneity-, introduction- and long-run-effect. Hence, ignoring WoCoall would underestimate the effects of WoCoint and WoCotreat. Altogether, we have three groups of firms: Firms without a works council (our control-group), firms that introduced a works council (the treatment-group) and firms that have a works council during all observation periods. By this approach we are able to estimate different employment policies of firms with and without works councils and to check whether observed differences are caused by the actual introduction of a works council or due to the heterogeneous characteristics of the firm. Table 1 displays the descriptive statistics of our data.

	Mean	Std. Dev.
grEmp	0.005	0.126
SHAREhires	0.049	0.076
SHAREdismiss	0.022	0.049
WoCo	0.356	0.479
WoCoint	0.013	0.114
WoCotreat	0.029	0.168
WoCoall	0.343	0.475
PRODimp	0.475	0.499
PRODnew	0.118	0.323
PROFIT	2.966	1.076
COLLAGR	0.535	0.489
LIMITED	0.703	0.457
SINGLE	0.734	0.442
WEST	0.610	0.488
QUALI	0.685	0.256
PART	0.160	0.217
FIXTERM	0.042	0.097
AGE	0.567	0.495
No. of obs.	60349	

Table 1: Descriptive statistics

5 Works councils and employment growth

Table 2 shows the results of OLS estimates of employment growth. The standard errors are robust and clustered. In the first column the results of a simple regression are presented, where a dummy variable WoCo stands for the existence of a works council. In line with the results of Addison and Teixeira (2006) the existence of a works council reduces employment growth. Jirjahn (2008a) criticized that a wrong modeling of firm size leads to biased estimates of effects of works councils on employment growth. Therefore, we use size dummies to measure size effects. Dummies have the advantage that they are able to detect nonlinearities as well as kinks in size effects. We also experimented with alternative measures of firm ize[3]. None of our results were affected.

The second column shows the results of the DiD-approach. In this case firms which introduce a works council can be described by a unique pattern. These

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[3] That is, we used ln(EMP), EMP and EMP^2 as well as solely EMP as a measurement of size.

firms have a higher employment growth rate before introduction. However, after introduction employment growth is reduced and the initially higher rate disappears. In principle the sum of the coefficients of WoCoint and WoCotreat should be equal to the coefficient of WoCoall, as the latter variable estimates both effects. Our sum is however smaller than the coefficient of WoCoall. Backes-Gellner, Jirjahn and Mohrenweiser (2009) show that the power of a works council increases over time, what they explain by a learning effect. Hence, the long-run effect of a works council is stronger than the short-run impact, and this is probably reflected by the difference between WoCoall and the sum of WoCoint and WoCotreat.

In our view, these results are in accordance with two rivaling explanations. One possibility is that employees who prefer to establish a works council try to increase or at least to protect their rents. This is realized by impeding dismissals and by raising redundancy payments.

On the other hand, employees may opt for the introduction of a works council, if they expect a worsening of the economic situation of the firm. Employees associate this situation with a high probability of dismissals. Therefore they adopt a works council in order to have a say in upcoming employment decisions of the management. Hence, the works council may be the cause for reduced employment or the response of the employees to the expected (and then realized) employment reduction. However, we will discuss this topic in the next section.

Variable	Simple grEmp Coeff.	DiD grEmp Coeff.
WoCo	-0.023***	
WoCoint		-0.019***
WoCotreat		0.009**
WoCoall		-0.024***
PRODimp	0.007***	0.007***
PRODnew	0.005***	0.005***
PROFIT	-0.020***	-0.020***
COLLAGR	-0.007***	-0.007***
LIMITED	-0.007***	-0.008***
SINGLE	0.006***	0.006***
WEST	0.012***	0.012***
QUALI	-0.007***	-0.007***
PART	0.012***	0.012***
FIXTERM	0.080***	0.080***
AGE	-0.020***	-0.020***
DSIZE50	0.006***	0.006***
DSIZE100	0.013***	0.013***
DSIZE500	0.013***	0.013***
DSIZEMAX	0.009***	0.010***
T/I	yes	yes
No. of obs.	60349	
R-squared	0.07	0.07

Table 2: OLS with employment growth as dependent variable, * statistically significant at 0.10 level; ** at 0.05 level; *** at 0.01 level. T/I describes time- and industry-dummies.

In a next step, we examine whether our result are still consistent if we take into account observable heterogeneity of firms. Therefore, we first drop all firms which have a works council during the whole time period. We consider only the effect of the adoption of a works council. Next, we match the treatment group of our sample and repeat the DiD estimation with a matched panel. We use nearest neighbor propensity score matching (Rosenbaum and Rubin, 1983, Becker and Ichnio, 2002, Caliendo and Kopeining, 2005). In doing so, we first estimate a Logit model and predict the propensity score of all observations. Afterward, we generate "neighbors" of firms by matching the first observation of a treatment-group-firm with a control-group-firm whose propensity score comes

close to the treatment observation. That is, we generate couples of establishments whereas each couple consists of establishments with almost identical probabilities of an introduction of a works council. However, only one establishment of each couple will indeed adopt a works council. Finally, we generate a new panel which only contains the observations of the treatment establishments and all observations of the control establishments. The resulting panel contains less heterogeneity between firms in the sense that treatment firms and control firms have almost identical probabilities to introduce a works council. The results of the Logit-regression which has been used to calculate propensity scores can be found in the appendix. Finally, table 3 shows the results of our DiD-estimation using the matched samples. The estimate still supports our first DiD results. That is, even after controlling for observable heterogeneity, firms which introduce a works council have a higher employment growth rate before introduction which can be explained by unobservable heterogeneity. However, after introduction employment growth shrinks.

Variable	DiD grEmp Coeff.
WoCoint	-0.018***
WoCotreat	0.011*
No. of obs.	3882
R-squared	0.08

Table 3: OLS with employment growth as dependent variable, * statistically significant at 0.10 level; ** at 0.05 level; *** at 0.01 level. Estimated model also contains all other covariates that are described in section 4.2.

6 What explains changes in employment growth?

In a last step, we try to find the link between changes in employment growth and the employer's decisions on hirings and dismissals after the introduction of a works council. In doing so, we estimate the impact of the introduction of a works council within our DiD-frameworks explained above. Of course, many firms do not hire or dismiss employees in a period, i.e. a large part of our dependent variables are zero. Therefore, we apply a heteroscedasticity adjusted Tobit Model to take account of this censored data structure. Table 4 shows the results of an estimation of the determinants of hirings.

The first column contains results of the conventional approach with a works council dummy for existence. The second columns show the results of the DiD approach.

The first column of table 4 reports the well-known result: Firms with works councils hire less employees. The last column of table 4 including the DiD-results suggests that the introduction (WoCoint) reduces the share of hirings.

These results show that firms have a lower hiring-rate before introduction. In addition, the actual introduction of a works council reduces hirings even more strongly. It might be difficult to define the potential source of this reduction. Of course, a works council might inhibit hires, but apparently they oppose hires rather rarely in practice. Generally, works councils are able to increase dismissal costs by claiming high redundancy payments or just avoiding or at least delaying dismissals. One possible explanation is that the co-determination rights of works councils lead employers to reduce hiring rates because of extended dismissal protection rights and more efficient bargaining if a works council exists. However, we also repeat our alternative explanation that the workforce introduces a works council, if it is worried about the economic perspectives of the firm. If these concerns are justified, less hirings will take place in the next period. The aforementioned link between bad economic situations and the probability to adopt a works council can explain our result. If a firm or an establishment realizes economic problems the first thing to be done is reducing hirings and to reduce the works force in "a natural way" by quits and retirements. Only if the economic crisis gets large, dismissals will take place, but clearly this way to reduce employment is associated with higher costs.

Variable	Simple SHAREhires Coeff.	DiD SHAREhires Coeff.
WoCo	-0.028***	
WoCoint		-0.013***
WoCotreat		-0.007**
WoCoall		-0.029***
PRODimp	0.006***	0.006***
PRODnew	0.05***	0.005***
PROFIT	-0.05***	-0.05***
COLLAGR	-0.007***	-0.007***
LIMITED	0.004***	0.004***
SINGLE	0.001	0.001
WEST	0.012***	0.012***
QUALI	-0.002	-0.002
PART	0.005*	0.005*
FIXTERM	0.303***	0.303***
AGE	-0.011***	-0.011***
T/I/S	yes	yes
No. of obs.	**60349**	

Table 4: heteroscedastic Tobit model with share of hirings as dependent variable, * statistically significant at 0.10 level; ** at 0.05 level; *** at 0.01 level. T/I/S describes time-, industry- and size-dummies.

Table 5 illustrates the results of the dismissals estimations. The first column shows a reduced share of dismissals in firms with works councils. However, using the DiD-approach, it turns out that WoCoint is not the driving force of reduced dismissals anymore. In this case, firms which introduce works councils during the sample period have generally lower dismissal rates, i.e. WoCoint is not significantly different from zero and WoCotreat is negative and significant.

The results of the impact of works councils on hirings and dismissals lead to the impression that firms which introduce a works council can be characterized by heterogeneity in hirings and dismissals. They have a lower hiring rate and a lower dismissal rate before introduction. The introduction itself does not change dismissals but has a negative impact on hiring behavior.

As in the previous section, we estimate the impact on hirings and dismissals by using our matched sample in order to reduce effects of observable heterogeneity. Table 6 shows the results of these estimates.

Variable	Simple SHAREdismiss Coeff.	DiD SHAREdismiss Coeff.
WoCo	-0.006***	
WoCoint		0.004
WoCotreat		-0.011***
WoCoall		-0.007***
PRODimp	0.002**	0.002**
PRODnew	0.001	0.001
PROFIT	0.004***	0.004***
COLLAGR	-0.002***	-0.002***
LIMITED	0.003***	0.003***
SINGLE	-0.002***	-0.002***
WEST	-0.001	-0.001
QUALI	-0.009***	-0.009***
PART	0.000	0.000
FIXTERM	0.099***	0.099***
AGE	-0.001	-0.001
T/I/S	yes	yes
No. of obs.	**60349**	

Table 5: heteroscedastic Tobit model with share of dismissals as dependent variable, * statistically significant at 0.10 level; ** at 0.05 level; *** at 0.01 level. T/I/S describes time-, industry- and size-dummies.

We still find support for our previous results. Table 6 shows that the introduction of a works council still reduces the share of hirings significantly. However, we find do not find evidence of an impact of the adoption of a works council on dismissals. Our results suggest that the introduction of a works council is connected with lower hiring rates what in turn negatively affects employment growth. On the one hand these results would be in accordance with potential insider-behavior. In this case employees would adopt works councils in order to fortify claims on rents. They possibly use their legal power to avoid dismissals given a rent protecting or seeking behavior.

	DiD SHAREhires	DiD SHAREdismiss
Variable	Coeff.	Coeff
WoCoint	-0.012**	0.006
WoCotreat	0.006	-0.014***
No. of obs.		3882

Table 6: heteroscedastic Tobit with share of hirings respectively dismissals as dependent variable, * statistically significant at 0.10 level; ** at 0.05 level; *** at 0.01 level. Estimated model also contains all other covariates that are described in section 4.2.

On the other hand the alternative explanation would be that employees ask for a works council if they suspect dismissals. The works council would then be able to avoid dismissals, but the firm responds to the weaker economic situation by reducing the hiring rate. At present we are unfortunately not able to discriminate between the two explanations. The results are however in contradiction to the hypothesis of the participation theory, that efficiency is improved by the introduction of a works council. We estimate lower employment growth after adoption of a works council, what is inconsistent with efficiency enhancements, at least if labour costs do not rise by more than productivity does.

7 Conclusion

We show that differences between firms with and without works councils regarding their employment growth, hiring- and dismissal-behavior are not only caused by the existence of works councils. In general firms with works councils hire and dismiss less and also have a lower employment growth than firms without works councils. Separating potential heterogeneity of firms and estimating the effect of an introduction of works councils by a conventional as well as a difference-in-differences approach with matched data, we show that works councils reduce hirings. However, works councils do not reduce the share of dismissals. Consistently, we also find a reduced employment growth after introduction.

We discuss two tow possible explanations: Such a pattern can be explained by insider behavior of works councils. German co-determination rights strengthen the influence of employees on hirings and dismissals. Hence, adjustment costs

increase, which in turn are the main reason for existence of insider power. Our results could be interpreted as evidence that employees use these rights to fortify or even increase claims on firms' rents without fearing additional dismissals. However, the management reacts to the impact of works council introduction by lower hiring rates as the less costly method to reduce employment.

The alternative explanation is that the adoption of a works council is caused by skeptical expectations of the employees with respect to the economic situation of the company. If these suspicions become real, we may observe the simultaneous occurrence of the introduction of a works council and lower employment growth. However, the one thing is not causing the other, but both would be caused by a third (unobserved) factor.

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Appendix

Variable	BRtreat Coeff.
PRODimp	-0.037
PRODnew	-0.061
PROFIT	-0.022
COLLAGR	0.726***
LIMITED	0.856***
SINGLE	-0.872***
WEST	-0.145**
QUALI	0.669***
PART	-0.289**
FIXTERM	-0.314
AGE	0.119*
ln(Emp)	0.584***
T/I	***
No. of obs.	39643
Pseudo R2	0.16

Table A1: Logit-estimates, * statistically significant at 0.10 level; ** at 0.05 level; *** at 0.01 level. T/I describes the respective significance of time- and industry-dummies.