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Abstract: Using unique survey data from the German Socio-Economic Panel, this study examines the influence of reciprocal inclinations on workers' sorting into codetermined firms. Employees with strong negative reciprocal inclinations are more likely to work in firms with a works council while employees with strong positive reciprocal inclinations are less likely to work in such firms. We argue that these findings conform to hypotheses derived from the experimental literature. Moreover, the results show striking gender differences in the relationship between reciprocity and taste for representation. These differences can be partially explained by gender-specific differences in the average degree of labor force attachment.

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Keywords: Works Council, Negative Reciprocity, Positive Reciprocity, Sorting, Gender.

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1. Introduction

In the last decades, economics has witnessed a tremendous growth of experimental research. A large body of experimental evidence casts substantial doubt on the assumption of self-regarding preferences which underlies traditional microeconomic models. According to this assumption, people are exclusively concerned about their own material payoffs. By contrast, experimental studies show that reciprocal motivations often play a role in individual decision-making. Individuals with reciprocal inclinations place direct utility on rewarding or punishing others' behavior. Hence, they respond to others' behavior even if responding is not in their material self-interest. This has an important consequence. The increased willingness to reward or punish others' behavior may help sustain cooperation when contracts are incomplete.

While experimental studies have provided substantial insight into the functioning of reciprocity in stylized laboratory settings, research on the relationship between reciprocity and real world institutions remains in its infancy. Behavioral economists emphasize that reciprocity is one of the most important social motivations with potentially far reaching effects (e.g., Bowles and Gintis 2003, Dohmen et al. 2009, Fehr and Gaechter 2000a). This calls for real world investigations on the economic implications of reciprocity, specifically for labor relations and labor market institutions. As suggested by Altmann et al. (2008), it appears to be particularly interesting to investigate the sorting of individuals with heterogeneous reciprocal inclinations into institutional settings that differ in their contract enforcement mechanisms.

Using unique survey data from the German Socio-Economic Panel (SOEP), we respond to this call by examining the influence of reciprocal inclinations on workers'

sorting into firms with and without works councils. Works councils provide a highly developed mechanism for establishment-level codetermination. They have legally defined functions that are distinct from those of unions. Works councils are designed to play an information sharing and contract enforcement role (Freeman and Lazear 1995). They foster cooperative employer-employee relations by reducing the risk that the employer reneges on promises made to the employees. Examining the relationship between reciprocity and works councils is also important from a practical viewpoint. Works councils play a role in corporate governance and industrial relations in many West European countries (Rogers and Streeck 1995). Specifically German works councils have acquired extensive powers compared to councils in other countries. Moreover, nonunion worker representation has also received considerable attention outside Europe. In South Korea, mandated works councils deal with productivity concerns, employee training, and health and safety issues (Kleiner and Lee 1997). In Canada, mandatory health and safety committees have been introduced in several provinces. Further, committees must be set up in case of layoffs. The committees are similar to European works councils. In the U.S., the interest in nonunion representation has been spurred by a sharp decline in union density and the growth of a 'representation gap' (Freeman and Rogers 1999). Much of the discussion has centered on the idea of mandating German-style works councils.

Our estimates show that negative reciprocity (punishing those who hurt) and positive reciprocity (rewarding those who help) play different roles in the taste for representation. Employees with strong negative reciprocal inclinations are more likely to work in firms with a works council. This finding conforms to our theoretical expectations. A works council monitors the employer's behavior and increases workers'

power to punish opportunistic defections by the employer. Hence, it attracts negative reciprocal workers who place high value on punishing employer opportunism. By contrast, employees with strong positive reciprocal inclinations are less likely to work in firms with a works council. That finding supports expectations derived from the experimental literature. Employees with strong positive reciprocal inclinations prefer a work environment where social distance is low and cooperative behavior by others is not forced by a third party. Worker representation does not appear to meet these preferences. If a works council speaks for the workforce, direct communication between employees and management is likely to be reduced. This results in increased social distance between management and employees. Moreover, workers may perceive the employer's behavior as forced by the council. Hence, employees with strong positive reciprocal inclinations sort into alternative work environments without works councils to live out their reciprocal preferences.

The SOEP also provides information on whether or not an employee him- or herself is a works councilor. This appears to be important as it helps avoid confusing the determinants of two different sorting processes. On the one hand, employees may sort into codetermined firms in order to be protected from employer opportunism. On the other hand, employees in firms with works councils may themselves become works councilors. Taking both selection processes into account corroborates our key finding that negative and positive reciprocity play a role in the first sorting process. We find no evidence that reciprocity plays a role in the second sorting process.

Furthermore, we examine if gender plays a moderating role in the relationship between reciprocity and taste for representation. While an increasing number of

econometric studies documents that men and women often differ in their psychological attributes (Bertrand 2011, Croson and Gneezy 2009), our analysis provides evidence that men and women also differ in the way psychological attributes translate into labor market behavior. Separate estimates by gender show that the reciprocity variables take statistically significant coefficients in the male subsample, but not in the female subsample. In order to examine if these gender differences are driven by women's lower average degree of labor force attachment, we further split the female subsample into full-time and part-time employees. While positive reciprocity remains insignificant, the effects of negative reciprocity turn out to be different for both types of female employees. Negative reciprocity is a significant determinant in the subsample of female full-time employees, but not in the subsample of female part-time employees. Hence, gender-specific differences in the association between reciprocity and taste for representation can be at least partially explained by gender-specific differences in the average degree of labor force attachment.

The rest of the paper is organized as follows. Section 2 provides the background discussion. Section 3 describes data, variables and methodology. Section 4 presents the results. Section 5 concludes.

2. Background Discussion

2.1 Reciprocity

Contractual incompleteness imposes limits on the set of explicit labor contracts that can be enforced by a neutral third party outside the firm. Therefore, informal agreements and unwritten codes of conduct play an important role in employment relationships. For example, the employer may promise to pay higher wages if workers exert higher effort

(Baker et al. 1994, Bull 1987). Or she may promise to insure risk-averse workers against cyclical wage fluctuations in the labor market to obtain an implicit insurance premium from the workers (Bertrand 2004). Under specific circumstances, such implicit contracts can be self-enforcing. One fundamental requirement for self-enforcement is that workers are willing to reward cooperative employer behavior and to punish employer opportunism. The employer will keep her promise if workers respond to generous employer behavior with high effort and punish employer opportunism by refusing effort and cooperation.

A purely self-interested homo economicus rewards or punishes the employer's behavior only to the extent that rewarding and punishing involve personal material gains. By contrast, homo reciprocans gains direct utility from responding in kind (Cox et al. 2007, Falk and Fischbacher 2006, Rabin 1993). Hence, homo reciprocans may reward or punish employer behavior even if this involves a personal material cost. Experimental research suggests that reciprocal behavior can indeed play a role in many situations (Fehr and Gaechter 2000a). Positive reciprocity has been documented in trust or gift exchange experiments (Berg et al. 1995, Fehr et al. 1998). Negative reciprocity has been found in public goods and bargaining experiments (Camerer and Thaler 1995, Fehr and Gaechter 2000b, Gueth et al. 1982). Finally, experimental studies provide evidence that reciprocity can make implicit contracts self-enforcing (Brown et al. 2004, Fehr et al. 1997, Gaechter and Falk 2002). As reciprocal workers are more willing to reward or punish employer behavior, the employer has a stronger incentive to behave cooperatively.

Altogether, experimental research suggests that reciprocity is an important motivation driving the behavior of people.[1] However, Dohmen et al. (2008, 2009)

provide survey evidence showing that there is substantial heterogeneity in reciprocal traits. This applies to both negative and positive reciprocity. The existence of heterogeneous reciprocal traits raises the question of whether workers with different reciprocal inclinations sort themselves into different types of firms. Firms may differ in the circumstances that allow workers to live out their reciprocal preferences. Hence, workers with strong reciprocal inclinations should prefer to work in firms where they face increased opportunities to respond to the employer's behavior. This brings us to the role of worker representation.

2.2 Works Councils

In Germany, works councils provide a highly developed mechanism for establishment-level codetermination. Their rights are defined in the Works Constitution Act (WCA). Workers in any establishment with five or more employees may elect council members but the creation of the council depends on the initiative of the establishment's employees. Hence, councils are not present in all eligible establishments. Works councils negotiate over a bundle of interrelated establishment policies. On some issues they have the right to information and consultation, on others a veto power over management initiatives and on still others the right to coequal participation in the design and implementation of policy. Works councils are institutionalized bodies of worker representation that have functions that are distinct from those of unions. They do not have the right to strike. If council and management fail to reach an agreement, they may appeal to an internal arbitration board. The aim is to limit rent-seeking activities on the establishment level. Works councils are rather designed to foster and sustain cooperative employer-employee relationships.

The institutional design suggests that establishment-level codetermination may

provide opportunities for employees to live out their reciprocal preferences. The responses of reciprocal people depend on how they perceive the underlying intentions of others' behavior (Charness 2004, Charness and Levine 2007, Falk et al. 2003, 2008). People tend to reciprocate others' actions if they view those actions as intentional. Reciprocity is weak where intentions play no role. To provide an example, reciprocal workers are likely to respond negatively to a wage reduction voluntarily chosen by an opportunistic employer whereas they may accept a wage cut mandated by poor economic conditions. Distinguishing between these two situations requires that workers have sufficient information about decision processes and economic circumstances.[2] The information rights of the works council reduce information asymmetries so that workers can better evaluate the employer's behavior and intention. Moreover, a council increases workers' power to respond to the employer's behavior. The council may not only make workers' responses more effective by coordinating their actions. The council has also substantial influence on the speed and quality of decision processes within the establishment.

However, this does not necessarily imply that codetermination attracts all types of reciprocal workers. Several reasons suggest that specifically workers with negative reciprocal inclinations should be interested in worker representation. Theoretical models stress that organizations of worker representation protect workers' interest by monitoring the employer (Askildsen et al. 2006, Freeman and Lazear 1995, Smith 1991) and punishing employer opportunism (Hogan 2001). Empirical research confirms that works councils are more likely to be introduced by the workforce if the employer has a strong incentive to behave opportunistically (Jirjahn 2009, 2010, Kraft and Lang 2008,

Mohrenweiser et al. 2011). There is also evidence that works councils play a specific role in sustaining cooperation and performance in such a situation (Jirjahn 2011, Stettes 2010). Altogether, both theoretical and empirical research suggests that works councils can enforce implicit contracts by threatening to punish opportunistic employers. Thus, establishment-level codetermination may specifically provide opportunities for negative reciprocal workers to live out their preferences.

Furthermore, codetermination may attract negative reciprocal workers because of increased employment protection. Workers who are willing to punish employer opportunism are likely to face a higher probability of dismissal. An opportunistic employer may avoid to be punished by replacing current workers with new hires. Hence, increased employment protection may be particularly important for negative reciprocal workers. Establishment-level codetermination provides such protection as several rights of the works council are directly related to employment decisions. The consent rights of work councils cover the engagement of workers. Moreover, councils can bargain over social compensation plans. They have the right to demand compensation for the dislocation caused by plant closings and major changes in organization. Finally, councils have consultation rights with respect to individual dismissals.

While our theoretical considerations predict that codetermination attracts negative reciprocal employees, there is no clear prediction that codetermination also attracts employees with positive reciprocal inclinations. On the one hand, the works council as a voice institution may help positive reciprocal workers in responding to generous employer behavior.[3] If, for example, employees have information about potentially performance-enhancing innovations, the works council may aggregate and communicate

this information to management as a reciprocal gift. On the other hand, experimental evidence shows that positive reciprocity motivates behavior only when social distance between people is low but not when social distance is high (Cox and Deck 2005). Worker representation means that the works council speaks for the employees. This is likely to reduce direct communication between employees and management and, hence, contributes to increased social distance between workforce and employer. Moreover, experimental studies provide evidence of a responsibility-alleviation effect (Charness 2000). People are less likely to reciprocate others' generosity if they perceive this generosity as being forced by a third party. This has immediate implications for codetermination. One important function of a works council is to monitor the employer. To the extent employees perceive generous employer behavior as being determined by the works council, their internal impulses toward loyalty and reciprocity may be dampened.

If the latter effects dominate, employees with positive reciprocal inclinations may view codetermination as a social context in which they cannot fully live out their reciprocal preferences. Instead of working in codetermined establishments they may prefer to work in establishments where management is solely responsible for decisions and opportunities for more direct communication with management are available. Findings by Jirjahn and Smith (2006) suggest that those establishments are more likely to use forms of direct worker participation in order to build cooperative industrial relations.

2.3 The Moderating Role of Gender and Labor Force Attachment

In what follows, we will also examine if gender plays a role in the relationship between reciprocity and taste for representation. There is an overwhelming body of studies

showing that male and female workers often differ in their labor market behavior. One reason may be that, on average, there appear to be differences in psychological attributes between men and women (Bertrand 2011). This also holds true for reciprocity. Dohmen et al. (2008) show that, on average, women are less reciprocal than men.[4]

However, even those male and female workers who share the same psychological attributes may behave differently. Women are typically disproportionately responsible for household production. Evidence from the German time use survey shows that working mothers spend substantially more time on child care than working fathers (Statistisches Bundesamt 2003). Ross and Mirowski (1988) find for the U.S. that difficulty in arranging child care dramatically reduces the psychological well-being of working mothers but has no effect on husbands. The disproportionate responsibility for family implies that women on average have a lower force attachment than men (Heywood and Jirjahn 2002). They have substantially lower tenure and sort into jobs that allow flexibility between work and family. This suggests that labor force attachment may influence the way in which psychological attributes such as reciprocal traits translate into labor market behavior. Due to their disproportionate responsibility for household production women place a higher value on family than on work. Hence, they may be less inclined to live out their reciprocal preferences in the workplace. As a consequence, we should observe that the link between reciprocity and taste for representation is weaker for female employees.

Of course, even though women's labor force attachment is on average relatively low, there is variation in the labor force attachment of female employees. To take this variation into account, we will distinguish between full-time and part-time employees. Specifically women working part-time should have a low labor force attachment. Part-

time jobs are preferred by female employees who need to balance work and family (Higgins et al. 2000). Those jobs are rather repetitive and peripheral jobs that are not part of the core internal labor market of a firm (Heywood et al. 2011). Thus, the link between reciprocity and the taste for representation should be specifically weak for women working part-time.

3. Data, Variables and Methodology

Our empirical analysis uses data from the SOEP (Wagner et al. 1993, 2007). The SOEP is a large representative longitudinal survey of private households in Germany. Based on face-to-face interviews, a nucleus of socio-economic and demographic questions is asked annually. Different 'special' topics are sampled in specific waves. The 2005 wave of the survey includes a unique set of questions designed to identify each worker's extent of reciprocity (Dohmen et al. 2008, 2009).[5] The information on reciprocity follows from a series of six statements to which workers are put the question "To what degree do the following statements apply to you personally?" Respondents choose on a one to seven point Likert scale ranging from "does not apply to me at all" to "applies to me perfectly." There are three statements on positive reciprocity and three statements on negative reciprocity. As an example of positive reciprocity, the statements include "If someone does me a favor, I am prepared to return it." As an example of negative reciprocity, they include "If somebody puts me in a difficult position, I will do the same to him/her." All six statements and the distributions of the responses are provided in Table 1. Note that the reciprocal inclinations identified by the survey are general personality traits. This useful as it reduces the likelihood that workers' responses are influenced by a particular work setting. As emphasized by Dohmen et al. (2009), this, in turn, increases the chance that

the reciprocal inclinations reflect exogenous variation in individuals. We construct scores of positive and negative reciprocity by adding up the underlying variables associated with each type of reciprocity. As each item is coded from 0 to 6, the scores for positive and negative reciprocity can range from 0 to 18.

The dependent variable is taken from the 2006 wave. In this wave, employees were asked if a works council is present in the firm they work for. Table 2 shows that 51 percent of the employees are covered by works councils. As the dependent variable is a dichotomous variable, our estimates fit the cumulative normal distribution using the probit procedure. We limit our examination to private sector employees and exclude apprentices and managerial employees.[6] The resulting sample consists of 4368 observations for which information is available.

The survey additionally provides information as to whether or not the employee her- or himself is a works councilor. A recent controversy in Germany has centered around the hypothesis that specifically low performing workers are interested in becoming a works councilor as works councilors cannot be easily dismissed (Behrens 2010, Schnabel 2008, Stoermer 2010). Against this background it appears to be important to distinguish between the determinants influencing the taste for representation and the determinants of becoming a works councilor. We address this issue in two ways. First, we provide additional estimates in which works councilors are excluded from the analysis. Analyzing the determinants of working in a codetermined firm for those employees who are no works councilors serves as a robustness check to ensure that we really capture the influences on the taste for representation. Second, we estimate a bivariate probit model with sample selection (Van de Ven and Van Pragg 1981). The basic idea is that we

imagine a two-step sorting process. In the first step, employees sort into firms with or without works councils. In the second step, employees in establishments with a works council may become a works councilor. For these two selection processes, two corresponding probits are jointly estimated. This allows us comparing the determinants of the taste for representation with the determinants of being a works councilor. The sample selection model corrects coefficient estimates for the selection bias introduced by the truncated sample of workers that are employed in firms with a works council (see the Appendix for details).

A rich set of control variables allows isolating the role of reciprocity and examining the role of moderating factors. To examine the moderating role of gender we additionally perform separate estimates for men and women. Moreover, we perform separate analyses for female part-time and full-time employees to investigate if possible differences by gender are driven by the fact that women on average have a lower degree of labor force attachment.[7]

Reciprocal inclinations can be associated with other personality traits, making it necessary to control for those traits. The SOEP provides unique information on a series of personality characteristics. First, we include a variable for the individual's general willingness to trust in other people. Experimental evidence shows that reciprocity and trusting behavior can be correlated (Altmann et al. 2008). The general willingness to trust in other people may also be related to the taste for representation. Trust makes a worker more vulnerable to opportunistic defections by the employer.[8] This may increase the taste for representation as worker representation is one way to decrease the degree of vulnerability. Second, risk tolerance is controlled for. Works councils may also be an

institution that protects workers against the risk associated with economic and organizational change (Mohrenweiser et al. 2011). This suggests that risk averse workers should be more interested in works councils. Third, we include variables for the so-called "Big Five", namely conscientiousness, extraversion, agreeableness, openness to new experiences, and neuroticism. Dohmen et al. (2008) find that these personality traits are associated with reciprocity. The "Big Five" are often viewed as critical dimensions of noncognitive abilities (Heckman et al. 2006). These noncognitive abilities might also influence the sorting of employees into codetermined firms. Fourth, we account for body height. Case and Paxton (2008) show that body height is related to cognitive ability.

In the estimates, we also control for foreigners, age and the number of children living in the worker's household. The employee's human capital is captured by dummy variables for unskilled blue-collar workers (without formal qualification), skilled blue-collar workers (with formal qualification), and university graduates. The reference group consists of white-collar workers without a university degree. We also control for union members. Even though works councils and unions are formally independent, there are important linkages (Hubler and Jirjahn 2003). Unions typically promote a positive view toward codetermination. Hence, union members are likely to be more interested in works councils. Furthermore, we include three firm size dummies. The size dummies define categories of firms with 20–199 employees, with 200–1999 employees, and with 2000 and more employees. Works councils are more likely to be present in larger firms. Hence, controlling for firm size helps disentangle two sorting processes, namely sorting into codetermined firms and sorting into larger firms. Moreover, we include seven industry dummies and a dummy variable for employees working in the former East Germany.

This takes into account that the chance of finding a firm with a works council can differ across industries and regions. Specifically in East Germany, there has been a lower incidence of worker representation (Hyman 1996).

4. Empirical Analysis

4.1 Basic Estimates

Table 3 provides regression results for the combined sample of male and female employees. The initial estimation is shown in column 1. Union members, older workers, foreigners, and workers in larger establishments are more likely to be covered by works councils. Unskilled blue-collar workers and workers in East Germany are less likely to be covered. Female part-time employees are also less likely to work in firms with a works council. This finding fits the notion that workers with low labor force attachment tend to be employed in peripheral sectors where worker representation is more often absent. While risk tolerance does not emerge with a significant coefficient, trusting behavior is a significantly positive determinant. Trust makes a worker more vulnerable to employer opportunism. Protection through worker representation is one way to decrease the degree of vulnerability. Among the variables for the "Big Five", only the variable for agreeableness takes a significant coefficient. Employees with a higher degree of agreeableness are more likely to work in firms with a works council.

Most interestingly, both negative and positive reciprocity are statistically significant determinants. Workers with strong negative reciprocal inclinations are more likely to be employed in firms with a works council. This finding conforms to the hypothesis that worker representation through works councils attracts negative reciprocal employees as it provides specific opportunities for these employees to live out their

preferences. A works council is an institution designed to monitor the employer and to respond to employer opportunism. It increases workers' power to punish opportunistic defections by the employer. By contrast, workers with strong positive reciprocal inclinations are less likely to be employed in firms with a works council. As suggested by experimental studies, positive reciprocal employees prefer a context in which social distance is low and the cooperative behavior by others with whom they interact is not forced by a third party. Worker representation does not appear to meet these preferences. A works council is an institution that speaks for the employees and, hence, reduces direct communication between employees and management. Moreover, because of its strong codetermination rights, the works council has substantial influence on decisions within the firm so that workers may perceive the employer's behavior as forced by the council. Thus, positive reciprocal workers sort into alternative work environments without works councils to live out their reciprocal preferences.

Workers may not only be covered by worker representation. They may be themselves worker representatives. In our data, 3.8 percent of all employees (or 7.5 percent of the employees covered by works councils) are works councilors. This raises the question of whether the determinants influencing the taste for representation differ from the determinants of becoming a works councilor. As a first check of robustness, we exclude works councilors from the analysis to ensure that we estimate the influences on the taste for representation. The new estimation is shown in column 2. It largely reproduces what was shown in column 1. Negative reciprocity increases the likelihood of being covered by works councils while positive reciprocity decreases it.

As a further check of robustness, we return to our initial sample and compare the

determinants of the taste for representation with the determinants of being a works councilor. Only employees working in firms with a works council can be become works councilors. This may entail a sample selection bias. To account for this potential bias we estimate a bivariate probit model with sample selection. Identification is achieved by excluding the dummy variable for East Germany from the works councilor equation. As works councils are less prevalent among East German firms, the location of the firm has a clear effect on the probability of being covered by a works council. Yet, given that a firm has a works council, there is no reason to anticipate that the location of the firm influences the probability of being a works councilor within the firm.[9]

The results are shown in column 3 and 4. The Wald test rejects the null hypothesis of independent equations. The positive correlations between the error terms, suggests that there are unobserved factors influencing both the likelihood of working in a firm with a works council and the likelihood of being a works councilor in the same direction. Most importantly, this robustness check provides further support that reciprocity in fact influences the taste for representation. While positive and negative reciprocity are again significant determinants in the probit on works council coverage, they play no significant role in the probit on being a works councilor. This suggests that reciprocal inclinations influence the sorting into codetermined firms regardless of whether or not employees become works councilors. The likelihood of being a works councilor is influenced by union membership and occupational status. Unskilled blue-collar workers are less likely and union members are more likely to be works councilors.

4.2 Gender and Labor Force Attachment as Moderating Variables

We now examine if gender plays a moderating role in the relationship between

reciprocity and worker representation. Column 1 and 2 of Table 4 provide separate estimates for male and female workers. The results show striking gender differences. Both reciprocity variables take statistically significant coefficients in the male subsample, but not in the female subsample. We can use the marginal effects to assess the magnitudes of the (significant) influences on men's taste for representation. A one standard deviation movement up the categorical ranking of positive reciprocity is associated with a 3.3 percentage point lower likelihood of being covered by a works council (2.586 x (-0.0127) = -0.0328). For a worker who otherwise would have the mean probability of 0.511, this implies a 6.4 percent decrease in the probability of being covered by a council. Furthermore, a one standard deviation increase in negative reciprocity entails a 3.4 percentage point increase in the likelihood of being covered (4.346 x 0.0077 = 0.0335). Given the mean probability of 0.511, this is an increase by 6.6 percent.

At issue is whether the gender differences in the link between reciprocity and worker representation can be explained by the fact that women's labor force attachment is on average lower than that of men. Low labor force attachment may imply that women are less inclined to live out their reciprocal preferences in the workplace. To examine the role of labor attachment in women's labor market behavior in more detail we take into account that there is variation in the labor force attachment of female employees. As emphasized, part-time work typically indicates a lower and full-time work a higher degree of labor force attachment. Thus, we provide separate estimates for female full-time and part-time employees. The results are shown in column 3 and 4. Positive reciprocity remains statistically insignificant in both estimates. By contrast, the separate

estimates reveal that the role of negative reciprocity differs between women working part-time and women working full-time. While negative reciprocity is not statistically significant in the subsample of female part-time employees, it takes a significantly positive coefficient in the subsample of female full-time employees. For female full-time workers, a one standard deviation movement up the categorical ranking of negative reciprocity is associated with a 4.7 percentage point higher likelihood of being covered by a works council. Evaluated at the mean probability of being covered, this is an increase by 9.3 percent. Altogether, our results suggest that the gender differences in the relationship between reciprocity and taste for representation at least can be partially explained by differences in the average degree of labor force attachment.

Finally, we note that the number of children plays opposite roles in the male subsample and in the subsample of female part-time employees. The number of children increases the probability that a male employee works in a firm with a works council. Men are typically the main earners of the family and, hence, are particularly concerned about their jobs. As a consequence, a larger number of children may increase their desire for protection from employer opportunism. By contrast, the number of children decreases the probability that a female part-time employee is covered by a works council. Part-time work is an indicator of low labor force attachment. A large number of children indicates an even lower labor force attachment and, hence, an even more pronounced sorting into peripheral jobs without worker representation.

5. Conclusions

This study combines two previously unrelated strands of literature, namely the literature on reciprocity and the literature on worker representation. While research on reciprocity

has been predominantly conducted in stylized laboratory settings, we use survey data to examine the influence of reciprocal motivations on the sorting of workers into firms with and without works councils. Our results show that negative and positive reciprocity play different roles in the sorting process. Workers with strong negative reciprocal inclinations are attracted to codetermined firms. By contrast, workers with strong positive reciprocal inclinations sort away from codetermined firms.

The findings have a crucial implication. Negative and positive reciprocity are often thought to be important for sustaining cooperation when labor contracts are incomplete. However, the functioning of reciprocity depends on specific institutional frameworks. Our results indicate that the effects of negative and positive reciprocity are reinforced by different institutional settings. Codetermination supports the contract-enforcing role of negative reciprocity as it strengthens the workers' power to punish employer opportunism. Vice versa, workers' willingness to respond to employer opportunism strengthens the bargaining position of the works council and, hence, makes codetermination more effective. Workers with strong positive inclinations sort away from codetermination because they are likely to prefer direct communication with management and cooperative employer-employee relationships that are not forced by a third party. Altogether, a variety of institutional settings across firms appears to be important to meet heterogeneous reciprocal preferences of workers. Codetermination is one important contract enforcement mechanism. But it appears to be not the only one.

Furthermore, our study shows that reciprocal inclinations do not uniformly translate into labor market behavior. Gender and labor force attachment play a moderating role in the relationship between reciprocity and taste for representation. This

indicates that the contract-enforcing role of reciprocity does not only depend on institutional settings within firms but also on the broader societal context. There appears to be no automatism which ensures that reciprocity always takes its contract-enforcing role.

We conclude this paper with suggestions for future research. First, it would be interesting to extend this type of research to other countries. As emphasized, worker representation plays a role in many other countries. Investigating the relationship between reciprocity and worker representation in comparative perspective could yield further insight into role the specific institutional design plays in the taste for representation. Second, future research could fruitfully examine the employer characteristics that attract positive reciprocal workers. If positive reciprocal workers prefer low social distance, they may sort into firms which have implemented forms of direct worker participation. Third, it would be interesting to examine if the economic effects of worker representation depend on the composition of the workforce. A high share of negative reciprocal employees should increase the bargaining power of the works council. This in turn may influence the effects the works council has on productivity and innovativeness.

Appendix: Bivariate Probit Model with Sample Selection

Let us define employee *i*'s decision to work in a codetermined firm by

$$y_{1i} = \begin{cases} 1, \text{if } y_{1i}^* > 0, \\ 0, \text{otherwise} \end{cases} \tag{1}$$

with the latent model

$$y_{1i}^* = \boldsymbol{\beta}_1' \boldsymbol{x}_{1i} + u_{1i}, \tag{2}$$

where $\boldsymbol{x}_{1i}$ is the vector of explanatory variables, $\boldsymbol{\beta}_1$ the vector of coefficients and $u_{1i} \sim N(0,1)$ the error term. Furthermore, let y_{2i} indicate whether or not employee *i* is a works councilor:

$$y_{2i} = \begin{cases} 1, \text{if } y_{2i}^* > 0, \\ 0, \text{otherwise} \end{cases} \tag{3}$$

with the latent model

$$y_{2i}^* = \boldsymbol{\beta}_2' \boldsymbol{x}_{2i} + u_{2i}, \tag{4}$$

where $\boldsymbol{x}_{2i}$ is the vector of explanatory variables, $\boldsymbol{\beta}_2$ the vector of coefficients and $u_{2i} \sim N(0,1)$ the error term. The employee can only become a works councilor if a works council is present. Hence, whether or not the employee is a works councilor can only be observed if he or she works in a codetermined firm. When $\rho \equiv corr(u_1, u_2) \neq 0$, estimating the coefficients in (4) with the standard probit procedure yields biased results. Consistent estimates can be obtained by using a bivariate probit model with sample selection (Van de Ven and Van Pragg 1981). The coefficients in (2) and (4) are jointly estimated by ML. The joint log likelihood is

$$\ln L = \sum_i \{ y_{1i} y_{2i} \ln \Phi_2(\boldsymbol{\beta}_1' \boldsymbol{x}_{1i}, \boldsymbol{\beta}_2' \boldsymbol{x}_{2i}, \rho) + y_{1i}(1 - y_{2i}) \ln[\Phi(\boldsymbol{\beta}_1' \boldsymbol{x}_{1i}) - \Phi_2(\boldsymbol{\beta}_1' \boldsymbol{x}_{1i}, \boldsymbol{\beta}_2' \boldsymbol{x}_{2i}, \rho)] + (1 - y_{1i}) \ln \Phi(-\boldsymbol{\beta}_1' \boldsymbol{x}_{1i}) \} \quad (5)$$

where $\Phi_2()$ is the cumulative bivariate normal distribution function and $\Phi()$ is the standard cumulative normal.

References

Altmann, Steffen, Thomas Dohmen and Matthias Wibral. 2008. "Do the Reciprocal Trust Less?" *Economics Letters* 99: 454 – 57.

Askildsen, Jan Erik, Uwe Jirjahn and Stephen C. Smith. 2006. "Works Councils and Evironmental Investment: Theory and Evidence from German Panel Data," *Journal of Economic Behavior and Organization* 60: 346 – 372.

Baker, G., R. Gibbons and K. J. Murphy. 1994. "Subjective Performance Measures in Optimal Incentive Contracts," *Quarterly Journal of Economics* 109: 1125 – 56.

Behrens, Martin. 2010. "Unterscheiden sich Mitglieder von Betriebs- und Personalräten vom Rest der Belegschaften?" *Industrielle Beziehungen – The German Journal of Industrial Relations* 16: 303 – 26.

Berg, J., J. Dickhaut and K. McCabe. 1995. "Trust, Reciprocity and Social History," *Games and Economic Behavior* 10: 122 – 42.

Bertrand, M. 2004. "From the Invisible Handshake to the Visible Hand? How Import Competition Changes the Employment Relationship," *Journal of Labor Economics* 22: 723 – 65.

Bertrand, M. 2011. "New Perspectives on Gender," in *Handbook of Labor Economics*, Vol. 4B, edited by David Card and Orley Ashenfelter, Amsterdam: Elsevier: 1543 – 1590.

Bohnet, Iris and Richard Zeckhauser. 2004. "Trust, Risk and Betrayl," *Journal of Economic Behavior and Organization* 55: 467 – 84.

Bowles, Samuel and Herbert Gintis. 2003. "Homo Reciprocans," *Nature* 415: 125 – 28.

Brown, Martin, Armin Falk and Ernst Fehr. 2004. "Relational Contracts and the Nature of Market Interactions," *Econometrica* 72: 747 – 780.

Bull, C. 1987. "The Existence of Self-Enforcing Implicit Contracts," *Quarterly Journal of Economics* 102: 147 – 59.

Camerer, C. and R. Thaler. 1995. "Ultimatums, Dictators, and Manners," *Journal of Economic Perspectives* 9: 209 – 19.

Case, Anne and Christina Paxton. 2008. "Stature and Status: Height, Ability and Labor Market Outcomes," *Journal of Political Economy* 116: 499 – 532.

Charness, Gary. 2000. "Responsibility and Effort in an Experimental Labor Market," *Journal of Economic Behavior and Organization* 42: 375 – 84.

Charness, Gary. 2004. "Attribution and Reciprocity in an Experimental Labor Market," *Journal of Labor Economics* 22: 665 – 88.

Charness, Gary and David I. Levine. 2007. "Intention and Stochastic Outcome: An Experimental

Study," *Economic Journal* 117: 1051 – 72.

Cornelissen, Thomas, John S. Heywood and Uwe Jirjahn. 2010. "Profit Sharing and Reciprocity: Survey Evidence of an Inverse U-shaped Relationship," SOEPpapers No. 292, DIW Berlin.

Cox, James C. and Cary A. Deck. 2005. "On the Nature of Reciprocal Motives," *Economic Inquiry* 43: 623 – 35.

Cox, James C., Daniel Friedman and Steven Gjerstad. 2007. "A Tractable Model of Reciprocity and Fairness," *Games and Economic Behavior* 59: 17 – 45.

Croson, Rachel and Uri Gneezy. 2009. "Gender Differences in Preferences," *Journal of Economic Literature* 47: 448 – 74.

Dohmen, Thomas, Armin Falk, David Huffman and Uwe Sunde. 2008. "Representative Trust and Reciprocity: Prevalence and Determinants," *Economic Inquiry* 46: 84 – 90.

Dohmen, Thomas, Armin Falk, David Huffmann and Uwe Sunde. 2009. "Homo Reciprocans: Survey Evidence on Behavioral Outcomes," *Economic Journal* 592 – 612.

Evans, W.N. and R.M. Schwab. 1995. "Finishing High School and Starting College: Do Catholic Schools Make a Difference?" *Quarterly Journal of Economics* 110: 941 – 74.

Falk, Armin, Ernst Fehr and Urs Fischbacher. 2003. "On the Nature of Fair Behavior," *Economic Inquiry* 41: 20 – 26.

Falk, Armin, Ernst Fehr and Urs Fischbacher. 2008. "Testing Theories of Fairness – Intentions Matter," *Games and Economic Behavior* 62: 1347 – 81.

Falk, Armin and Urs Fischbacher. 2006. "A Theory of Reciprocity," *Games and Economic Behavior* 54: 1347 – 81.

Fehr, Ernst, Urs Fischbacher and Michael Kosfeld. 2005. "Neuroeconomic Foundations of Trust and Social Preferences: Initial Evidence," *American Economic Review (Papers and Proceedings)* 95: 346 – 51.

Fehr, Ernst and Simon Gaechter. 2000a. "Fairness and Retaliation: The Economics of Reciprocity," *Journal of Economic Perspectives* 14: 159 – 81.

Fehr, Ernst and Simon Gaechter. 2000b. "Cooperation and Punishment in Public Goods Experiments," *American Economic Review* 90: 980 – 94.

Fehr, Ernst, Simon Gaechter and Georg Kirchsteiger. 1997. "Reciprocity as a Contract Enforcement Device: Experimental Evidence," *Econometrica* 65: 833 – 60.

Fehr, Ernst, Erich Kirchler, Andreas Weichbold and Simon Gaechter. 1998. "When Social Norms Overpower Competition: Gift Exchange in Experimental Labor Markets," *Journal of Labor Economics* 16: 324 – 51.

Freeman, Richard B. and Edward P. Lazear. 1995. "An Economic Analysis of Works Councils," in J. Rogers and W. Streeck, eds., *Works Councils – Consultation, Representation and*

Cooperation in Industrial Relations, Chicago: University of Chicago Press: 27 – 52.

Freeman, Richard B. and James Medoff. 1984. *What Do Unions Do?* New York: Basic Books.

Freeman, R. B. and J. Rogers. 1999. *What Workers Want*. Ithaca, NY, Cornell University Press.

Gaechter, Simon and Armin Falk. 2002. "Reputation and Reciprocity: Consequences for the Labor Relations," *Scandinavian Journal of Economics* 104: 1 – 26.

Gueth, W., R. Schmittberger and B. Schwarze. 1982. "An Experimental Analysis of Ultimatum Bargaining," *Journal of Economic Behavior and Organization* 3: 367 – 88.

Heckman, J., J. Stixrud and S. Urzua. 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior," *Journal of Labor Economics* 24: 411 – 82.

Hennig-Schmidt, H., B. Rockenbach and A. Sadrieh. 2010. "In Search of Workers' Real Effort Reciprocity – A Field and a Laboratory Experiment," *Journal of the European Economic Association* 8: 817 – 37.

Heywood, John S. and Uwe Jirjahn. 2002. "Payment Schemes and Gender in Germany," *Industrial and Labor Relations Review* 56: 44 – 64.

Heywood, John S., Uwe Jirjahn and Georgi Tsertsvadze. 2011. "Part-Time Work and the Hiring of Older Workers," *Applied Economics*, Forthcoming.

Higgins, C., L. Duxbury and K. L. Johnson. 2000. "Part-Time Work for Women: Does It Help Balance Work and Family?" *Human Resource Management* 39: 17 – 32.

Hogan, Chad. 2001. "Enforcement of Implicit Contracts through Unions," *Journal of Labor Economics* 19: 171 – 95.

Hubler, Olaf and Uwe Jirjahn. 2003. "Works Councils and Collective Bargaining in Germany: The Impact on Productivity and Wages," *Scottish Journal of Political Economy* 50: 1 – 21.

Hyman, Richard. 1996. "Institutional Transfer: Industrial Relations in Eastern Germany," *Work, Employment and Society* 10: 601 – 39.

James Jr., Harvey S. 2002. "The Trust Paradox: a Survey of Economic Inquiries into the Nature of Trust and Trustworthiness," *J. of Economic Behavior and Organization* 47: 291 – 307.

Jirjahn, Uwe. 2009. "The Introduction of Works Councils in German Establishments – Rent Seeking or Rent Protection?" *British Journal of Industrial Relations* 47: 521 – 545.

Jirjahn, Uwe. 2010. "Works Councils and Employment Growth in German Establishments," *Cambridge Journal of Economics* 34: 475 – 500.

Jirjahn, Uwe. 2011. "Nonunion Worker Representation and the Closure of Establishments: German Evidence on the Role of Moderating Factors," *Economic and Industrial Democracy*, Forthcoming.

Jirjahn, Uwe and Stephen C. Smith. 2006. "What Factors Lead Management to Support or Oppose Employee Participation – With or Without Works Councils? Hypotheses and Evidence from Germany," *Industrial Relations* 45: 650 – 80.

Kleiner, Morris M. and Young-Myon Lee. 1997. "Works Councils and Unionization: Lessons from South Korea," *Industrial Relations* 36: 1 – 16.

Kraft, Kornelius and Julia Lang. 2008. "The Causes and Consequences of Adopting a Works Council," *Jahrbücher für Nationalökonomie und Statistik – Journal of Economics and Statistics* 228: 512 – 538.

Mitzkewitz, Michael and Rosmarie Nagel. 1993. "Experimental Results on Ultimatum Games with Incomplete Information," *International Journal of Game Theory* 22: 171 – 98.

Mohrenweiser, Jens, Paul Marginson and Uschi Backes-Gellner. 2011. "What Triggers the Establishment of a Works Council?" *Economic and Industrial Democracy*, Forthcoming.

Rabin, M. 1993. "Incorporating Fairness into Game Theory and Economics," *American Economic Review* 83: 1281 – 302.

Rogers, Joel and Wolfgang Streeck. 1995. *Works Councils – Consultation, Representation and Cooperation in Industrial Relations*. Chicago: University of Chicago Press.

Ross, Catherine E. and Jon Mirowsky. 1988. "Child Care and Emotional Adjustment to Wifes' Employment," *Journal of Health and Social Behavior* 29: 127 – 38.

Schnabel, H. 2008. "Zur Diskussion über betriebliche Mitbestimmung," *Industrielle Beziehungen – The German Journal of Industrial Relations* 15: 152 – 63.

Smith, Stephen C. 1991. "On the Economic Rationale for Codetermination Law," *Journal of Economic Behavior and Organization* 12: 261 – 81.

Statistisches Bundesamt. 2003. *Wo bleibt die Zeit? Die Zeitverwendung der Bevölkerung in Deutschland 2001/02*. Wiesbaden.

Stettes, O. 2010. "Verbreitung und ökonomische Effekte von Betriebsräten und alternative Mitbestimmungsformen in der Industrie und deren Verbundbranchen," *Sozialer Fortschritt* 59: 199 – 209.

Stoermer, S. 2010. "Individual Characteristics of Works Council Members – Empirical Evidence," *Management Revue* 21: 244 – 62.

Van de Ven, W. and B. Van Pragg. 1981. "The Demand for Deductibles in Private Health Insurance: A Probit Model with Sample Selection," *Journal of Econometrics* 17: 229 – 52.

Wagner, G., R. Burkhauser and F. Behringer. 1993. "The English Language Public Use File of the German Socio-Economic Panel," *Journal of Human Resources* 28: 429 – 34.

Wagner, G., J. Frick and J. Schupp. 2007. "The German Socio-Economic Panel Study (SOEP) – Scope, Evolution and Enhancements," *Schmollers Jahrbuch – Journal of Applied Social Science Studies* 127: 139 – 69.

Table 1: Components of positive and negative reciprocity (N = 4368)

	Positive reciprocity				Negative Reciprocity		
	P1	*P2*	*P3*		*N1*	*N2*	*N3*
0 (does not apply to me at all)	0.23	0.41	2.01		17.28	21.11	16.16
1	0.18	0.82	3.27		20.05	24.43	21.20
2	0.53	2.13	5.70		19.02	20.54	18.82
3	2.47	7.90	15.84		19.60	16.46	19.96
4	6.71	16.92	23.92		11.81	9.57	11.97
5	26.17	34.87	27.06		6.16	4.46	6.75
6 (applies to me perfectly)	63.71	36.95	22.18		6.07	3.43	5.13
	100.00	100.00	100.00		100.00	100.00	100.00

Relative frequencies (in %) are based on the survey question "To what degree do the following statements apply to you personally?" answered on a seven-level Likert scale as shown in table.

P1: If someone does me a favor, I am prepared to return it.

P2: I go out of my way to help somebody who has been kind to me before.

P3: I am ready to undergo personal costs to help somebody who helped me before.

N1: If I suffer a serious wrong, I will take revenge as soon as possible, no matter what the cost.

N2: If somebody puts me in a difficult position, I will do the same to him/her.

N3: If somebody offends me, I will offend him/her back.

Table 2: Variable definitions and descriptive statistics (N = 4368)

Variables	*Definition (Mean, Std.Dev.)*
Works council incidence	Dummy = 1 if the employee works for a firm that has a works council (.511, .410)
Works councilor	Dummy = 1 if the employee is a works councilor (.038, .192)
Positive reciprocity	Score of adding up the variables P1-P3 shown in table 1 (14.674, 2.586)
Negative reciprocity	Score of adding up the variables N1-N3 shown in table 1 (6.586, 4.346)
Trust in others	Score of trust in others constructed from adding up three survey items measured on a four-point Likert scale ranging from 1 "agree completely" to 4 "disagree completely". The items are "On the whole one can trust people", "Nowadays one can't trust people", "One has to be careful, when dealing with strangers". The first item was recoded in inverse order before adding up. (6.921, 1.574)
Risk tolerance	Score of risk tolerance. Answers from the survey question "How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?" are coded on an 11-point Likert scale (4.933; 2.100)
Conscientiousness	Score of conscientiousness constructed from adding up three survey items measured on a seven-point Likert scale ranging from 0 "does not apply to me at all" to 6 "applies to me perfectly". The items are: I see myself as someone who… "does a thorough job", "does things effectively and efficiently", "tends to be lazy". The last item was recoded in inverse order before adding up. (15.117, 2.460)
Extraversion	Score of extraversion constructed from adding up three survey items measured on a seven-point Likert scale ranging from 0 "does not apply to me at all" to 6 "applies to me perfectly". The items are: I see myself as someone who… "is communicative", "is sociable", "is reserved". The last item was recoded in inverse order before adding up. (11.446, 3.373)
Agreeableness	Score of agreeableness constructed from adding up three survey items measured on a seven-point Likert scale ranging from 0 "does not apply to me at all" to 6 "applies to me perfectly". The items are: I see myself as someone who… "is sometimes somewhat rude to others", "has a forgiving nature", "is considerate and kind to others". The first item was recoded in inverse order before adding up. (13.220, 2.871)
Openness	Score of openness constructed from adding up three survey items measured on a seven-point Likert scale ranging from 0 "does not apply to me at all" to 6 "applies to me perfectly". The items are: I see myself as someone who… "is original ", values artistic experiences", "has an active imagination". (10.269, 3.465)
Neuroticism	Score of neuroticism constructed from adding up three survey items measured on a seven-point Likert scale ranging from 0 "does not apply to me at all" to 6 "applies to me perfectly". The items are: I see myself as someone who… "worries a lot", "gets nervous easily", "deals well with stress". The last item was recoded in inverse order before adding up. (8.518, 3.504)
Body height	Reported body height in cm (173.22, 9.21)
Full-time woman	Dummy = 1 if the employee is a woman with contracted weekly hours of more than 30 hours (.235, .424)
Part-time woman	Dummy = 1 if the employee is a woman with contracted weekly hours of 30 hours or less (.215, .411)
Age	Age of the employee (42.23, 10.10)
Foreigner	Dummy = 1 if the employee is a foreigner (.084, .277)

Children	Number of children living in the employee's household (.875, 1.036)
Unskilled blue-collar	Dummy = 1 if the employee has a blue-collar job that does not require a completed apprenticeship training (.167, 373)
Skilled blue-collar	Dummy = 1 if the employee has a blue-collar job that requires a completed apprenticeship training (.223, 416)
University degree	Dummy = 1 if the employee has a university degree (.188, .391)
Union member	Dummy = 1 if the employee is the member of a trade union (.181, .385)
Firm size 20-199	Dummy = 1 if the worker is employed in a firm with 20 to 199 employees (.296, .456)
Firm size 200-1999	Dummy = 1 if the worker is employed in a firm with 200 to 1999 employees (.215, .411)
Firm size $\geq$ 2000	Dummy=1 if the worker is employed in a firm with more than 1999 employees (.215, 411)
East	Dummy = 1 if the employee works in an Eastern German firm (.205, .404)
Industry dummies	7 broad 1 digit controls for industrial sector

Table 3: Determinants of working in a firm with a works council

	Probit	*Probit*	*Bivariate Probit with Sample Selection*	
Dependent variable	*Works council incidence*	*Works council incidence (works councilors excluded)*	*Works council incidence*	*Works councilor*
Explanatory variable	*(1)*	*(2)*	*(3)*	*(4)*
Positive reciprocity	-.0202 [-.0080] (.0100)**	-.0204 [-.0081 (.0102)**	-.0199 [-.0080] (.0099)**	.0042 [.0003] (.0165)
Negative reciprocity	.0146 [.0058] (.0061)**	.0134 [.0053] (.0062)**	.0145 [.0058] (.0061)**	.0133 [.0012] (.0100)
Trust in others	.0512 [.0204] (.0160)***	.0564 [.0224] (.0163)***	.0520 [.0208] (.0159)***	-.0241 [-.0021] (.0269)
Risk tolerance	-.0120 [-.0048] (.0122)	-.0123 [-.0048] (.0125)	-.0124 [-.0049] (.0122)	-.0001 [-.00002] (.0206)
Conscientiousness	.0001 [.00004] (.0110)	.0001 [.00004] (.0113)	.0012 [.0004] (.0110)	.0145 [.0013] (.0183)
Extraversion	.0018 [.0007] (.0080)	.0024 [.0009] (.0082)	.0028 [.0011] (.0080)	.0115 [.0010] (.0138)
Agreeableness	.0163 [.0065] (.0097)*	.0147 [.0058] (.0099)	.0157 [.0063] (.0097)	.0052 [.0005] (.0157)
Openness	-.0035 [-.0014] (.0077)	-.0046 [-.0018] (.0079)	-.0035 [-.0014] (.0077)	.0199 [.0018] (0131)
Neuroticism	-.0031 [-.0012] (.0074)	-.0028 [-.0011] (.0076)	-.0028 [-.0011] (.0074)	.0051 [.0005] (.0122)
Body height	-.0002 [-.0001] (.0037)	-.0011 [-.0004] (.0038)	-.0006 [-.0002] (.0037)	.0031 [.0003] (.0059)
Full-time woman	-.0688 [-.0275] (.0803)	-.0762 [-.0303] (.0821)	-.0722 [-.0288] (.0801)	-.0085 [-.0009] (.1345)
Part-time woman	-.1508 [-.0601] (.0857)*	-.1453 [-.0575] (.0877)*	-.1538 [-.0613] (.0857)*	-.2005 [-.0160] (.1568)
Age	.0044 [.0018] (.0025)*	.0039 [.0016] (.0026)	.0042 [.0017] (.0025)*	.0042 [.0004] (.0044)
Foreigner	.2857 [.1129] (.0941)***	.2910 [.1156] (.0961)***	.2999 [.1184] (.0940)***	.1877 [.0194] (.1384)
Children	.0185 [.0074] (.0245)	.0176 [.0070] (.0250)	.0169 [.0078] (.0244)	.0510 [.0046] (.0398)*
Unskilled blue-collar	-.1251 [-.0498] (.0725)*	-.1009 [-.0400] (.0737)	-.1264 [-.0504] (.0724)*	-.3419 [-.0241] (.1427)**
Skilled blue-collar	-.0896 [-.0357] (.0725)	-.1089 [-.0432] (.0743)	-.0942 [-.0375] (.0722)	.1073 [.0108] (.1139)
University degree	.0962 [.0384] (.0689)	.1002 [.0399] (.0701)	.0884 [.0352] (.0688)	-.1938 [-.0157] (.1252)
Union member	.6763 [.2594] (.0702)***	.6383 [.2486] (.0725)***	.6886 [.2637] (.0701)***	.6936 [.0825] (.0908)***
Firm size 20 – 199	1.3905 [.3849] (.0736)***	1.3825 [.3627] (.0764)***	1.3882 [.3842] (.0736)***	.4350 [.0338] (.3347)
Firm size 200 – 1999	2.4643 [.7636] (.0832)***	2.4891 [.7602] (.0857)***	2.4652 [.7639] (.0832)***	.4405 [.0378] (.4014)
Firm size ≥ 2000	2.6310 [.8027] (.0859)***	2.6678 [.8038] (.0883)***	2.6334 [.8033] (.0859)***	.3489 [.0297] (.4064)
East	-.1861 [-.0740] (.0612)***	-.1767 [-.0697] (.0626)**	-.1709 [-.0680] (.0611)**	--

Constant	-1.8496 (.7579)**	-1.7197 (.7774)**	-1.8130 (.7581)**	-3.5320 (1.2655)**
Industry controls	Yes	Yes	Yes	Yes
Pseudo R^2	.4240	.4277	--	--
Observations	4368	4201	4368	
Uncensored Observations	--	--	2232	
Rho	--	--	.5529	
χ^2 (Wald test of independent equations)	--	--	2.87*	
Log likelihood	-1743.3	-1666.1	-2282.8	

Standard errors are in parentheses and marginal effects are in square brackets. Marginal effects of dummy variables are evaluated for a discrete change from 0 to 1. Marginal effects of the dummies for firm size (occupational qualification, female working hours) are changes in probability compared to the reference group of firms with less than 20 employees (reference group of white-collar employees without university degree, reference group of male employees). Marginal effects of variables other than the dummy variables are evaluated at the mean values. ***Statistically significant at the one percent level; **at the five percent level; *at the ten percent level.

Table 4: Determinants of working in a firm with a works council; the moderating role of gender

Subsample	*Men*	*Women*		
		All	*Working full-time*	*Working part-time*
Explanatory variable	*(1)*	*(2)*	*(3)*	*(4)*
Positive reciprocity	-.0331 [-.0127] (.0140)**	-.0095 [-.0036] (.0145)	.0064 [.0025] (.0203)	-.0215 [-.0070] (.0217)
Negative reciprocity	.0201 [.0077] (.0084)**	.0097 [.0036] (.0091)	.0275 [.0109] (.0128)**	-.0069 [-.0022] (.0137)
Trust in others	.0381 [.0146] (.0216)*	.0706 [.0264] (.0243)**	.0786 [.0312] (.0334)**	.0775 [.0251] (.0367)**
Risk tolerance	-.0087 [-.0033] (.0169)	-.0146 [-.0055] (.0181)	-.0187 [-.0074] (.0251)	-.0078 [-.0019] (.0271)
Conscientiousness	.0007 [.0003] (.0148)	.0009 [.0004] (.0171)	-.0088 [-.0035] (.0247)	.0096 [.0031] (.0245)
Extraversion	.0029 [.0011] (.0113)	.0008 [.0003] (.0116)	.0007 [.0003] (.0157)	.0071 [.0023] (.0179)
Agreeableness	.0022 [.0009] (.0130)	.0335 [.0125] (.0149)**	.0371 [.0147] (.0201)*	.0281 [.0091] (.0229)
Openness	-.0060 [-.0023] (.0108)	.0024 [.0009] (.0113)	-.0098 [-.0039] (.0155)	.0119 [.0039] (.0171)
Neuroticism	-.0031 [-.0012] (.0105)	-.0053 [-.0020] (.0106)	-.0044 [-.0017] (.0147)	-.0006 [-.0002] (.0160)
Body height	-.0035 [-.0013] (.0049)	.0041 [.0015] (.0058)	.0074 [.0029] (.0081)	.0038 [.0012] (.0088)
Age	.0073 [.0028] (.0035)**	.0007 [.0002] (.0038)	.0058 [.0023] (.0051)	-.0066 [-.0021] (.0062)
Foreigner	.2072 [.0769] (.1290)	.3718 [.1445] (.1401)**	.5025 [.1971] (.2229)**	.2707 [.0934] (.1872)
Children	.0615 [.0235] (.0313)**	-.0674 [-.0252] (.0415)	.0417 [.0165] (.0672)	-.1433 [-.0464] (.0564)**
Unskilled blue-collar	-.0305 [-.0117] (.1090)	-.1431 [-.3190] (.1004)	-.2457 [-.0963] (.1543)	-.0513 [-.0164] (.1366)
Skilled blue-collar	-.0076 [-.0029] (.0894)	-.1222 [-.3265] (.1625)	-.1994 [-.0785] (.2151)	-.0209 [-.0068] (.2681)
University degree	.1979 [.0742] (.0967)**	-.0256 [-.0096] (.1022)	-.0951 [-.0371] (.1311)	.1071 [.0355] (.1721)
Union member	.7427 [.2587] (.0896)***	.5810 [.2266] (.1188)***	.6676 [.2588] (.1634)***	.5289 [.1906] (.1840)***
Full-time woman	--	.0168 [.0063] (.0828)	--	--
Firm size 20 – 199	1.4405 [.4231] (.1083)***	1.3796 [.3454] (.1037)***	1.4618 [.3815] (.1590)***	1.3529 [.3181] (.1428)***
Firm size 200 – 1999	2.4777 [.7711] (.1194)***	2.4931 [.7518] (.1207)***	2.6471 [.7938] (.1792)***	2.3664 [.7016] (.1745)***
Firm size ≥2000	2.8921 [.8518] (.1297)***	2.4279 [.7332] (.1195)***	2.4261 [.7353] (.1802)***	2.4193 [.7183] (.1683)***
East	-.2837 [-.1105] (.0850)***	-.0794 [-.0294] (.0912)	-.0654 [-.1042] (.1228)**	.1018 [.0337] (.1471)
Constant	-1.0167 (1.0042)	-3.2999 (1.1525)***	-3.7543 (1.6244)**	-.3.7492 (1.7520)**
Industry controls	Yes	Yes	Yes	Yes

Pseudo R^2	.4365	.3996	.4050	.3954
Observations	2404	1964	1027	937
Log likelihood	-919.2	-802.2	-423.4	-364.1

Dependent variable: Works council incidence. Method: Probit. Standard errors are in parentheses and marginal effects are in square brackets. Marginal effects of dummy variables are evaluated for a discrete change from 0 to 1. Marginal effects of the dummies for firm size (occupational qualification, female working hours) are changes in probability compared to the reference group of firms with less than 20 employees (reference group of white-collar employees without university degree, reference group of male employees). Marginal effects of variables other than the dummy variables are evaluated at the mean values. ***Statistically significant at the one percent level; **at the five percent level; *at the ten percent level.

Endnotes

[1] See Fehr et al. (2005) for the neuroeconomic foundations of such social preferences.

[2] Mitzkewitz and Nagel (1993) and Hennig-Schmidt et al. (2010) provide evidence that information asymmetry has indeed an influence on reciprocal behavior. Asymmetric information appears to negatively affect cooperation.

[3] See Freeman and Medoff (1984) for the classical voice model of worker representation.

[4]While experimental studies provide mixed evidence on the relationship between gender and reciprocity (Croson and Gneezy 2009), the examination by Dohmen et al. (2008) demonstrates that it can be crucial to control for other personality traits to identify that relationship.

[5] Cornelissen et al. (2010) use this information to examine the selection of workers into firms with profit sharing plans.

[6] Managerial employees are excluded as the WCA does not apply to this group of employees. Apprentices are excluded as this is a group of very young and inexperienced workers with restricted mobility during the period of their apprenticeship training.

[7] We do not distinguish between male full-time and part-time employees as most men in our sample work full-time.

[8] See Bohnet and Zeckhauser (2004) and James Jr. (2002) for a general discussion on trust, vulnerability and the fear of exploitation.

[9] We also estimated a univariate probit of being a works councilor in which we included the dummy variable for East Germany. The dummy variable did not emerge as a significant determinant. While including the identifying variable in a single-equation model provides no formal test of the validity of that variable, it offers a clear sense of the patterns in the data and provides useful indications (Evans and Schwab 1995).