



## **WORKS COUNCILS: AN AGENCY PERSPECTIVE**

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# Works Councils: An Agency Perspective\*

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## Abstract

This paper investigates the role of works councils in a simple agency framework in which works councils are supposed to monitor manager's information on behalf of the workforce, but they are independent agents who might pursue their private interest. First, we consider that workers can incentivize works councils through contingent monetary payments. In order to deter collusion, workers must pay higher compensations in states of nature where they can be expropriated by potential coalitions among works councils and management. Collusion makes contingent payments costly and reduces workers' payoffs. Second, when elections are the exclusive mechanisms to align works councils' interest, only well compensated representatives would face an intertemporal tradeoff between accepting management's transfers at first period and losing rents at the second period. Elections increase the cost of entering on collusive behavior with management and works councils will try to behave on the employees' interest.

**JEL classification:** J50, J53, J83

**Keywords:** Workplace Representation, Works Councils, Collusion, Elections

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# 1 Introduction

Works councils are an important component of the industrial relations in Germany [Addison, Schnalbe, and Wagner (2004)]. Recently, the European Commission has implemented mandatory laws to foster European Works Councils within multinational firms based in States Members [European-Commission (2002)]. Moreover, the fall in private sector unionism in the United States and United Kingdom have renewed the interest on workplace representation, where works councils are the most salient institutions [Weil (2003) and Black and Lynch (2004)]. However, a series of corporate scandals involving works councils in Germany have generated some skepticism about the role of these institutions within organizations.<sup>1</sup> In spite of the relevance of works councils on the firm performance and workers' welfare, our understanding of the strategic behavior of elected works councils is not complete.

This paper investigates the role of works councils in a simple agency framework in which works councils are supposed to monitor manager's information on behalf of the workforce. Managers may have an interest to make workers believe that the firm is facing low performance in order to extract additional effort which is ex-ante non contractible [Hart (1983) and Hart (1995)]. In this situation works councils are supposed to provide workers with audited information about the real state of the firm [Freeman and Lazear (1995)]. However, works councils are independent agents who might pursue their private interest. As economic theory recognizes different levels of firm's hierarchy may use private information opportunistically, possibly through coalitions against other levels of the hierarchy [Tirole (1986)]. Particularly, works councils and management (i.e. the most informed parties) may form coalitions to misreport the real situation of the firm. So, if collusion is an issue on workplace representation workers must find a way to incentivize their representatives in order to align works councils' interest with workforce's interest.

First, we consider that employees can incentivize works councils through contingent monetary payments. Workers can give monetary transfers to the works councils to deter potential collusive behavior with other members of the firm (management). In states of nature where workers can be expropriated by potential coalitions, they should pay higher compensations to councilors [Tirole (1986)]. Collusion makes contingent payments costly and reduces workers' payoff. It generates a negative effect on the workers' willingness to implement workplace representation in firms where deter collusion is very costly. In other words, works councils as a representative

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<sup>1</sup>For instance Klaus Volkert, one of the Germany's most powerful labour organiser and chairman of Volkswagen's works councils from the early 1990s until resigning in 2005, was sent to prison for accepting almost \$3m in illegal bonuses, which damaged confidence in the corporation and its cooperative labour practice (**The financial times, march 2008**). However, scandals occurred not only at Volkswagen but also other car manufacturers like BMW and DaimlerChrysler. Also they affected Commerzbank and Europe's largest chip-producer, Infineon. "It's normal that the cases only come to light by accident and the 'dark' numbers are very high, but only 5% to 10% of cases become known, (...) We are speaking of the tip of an iceberg, but the problem is that we don't know how big the iceberg is", says Peter von Blomberg, deputy chairman of the German chapter of Transparency International [**The Guardian, 2005**].

institution with valuable private information should be compensated with salaries that take into account their auditing tasks and which should not be necessary setting at the same level of wages for a regular worker.

The second part of the paper considers a more realistic view of works councils, in which explicit monetary incentives for works councils are often unfeasible. Then, elections are the only mechanisms that constituents have to influence councilors, in which they re-elect their worker representatives contingent on first period outcomes and councilor's reported information. Additionally, if works councils are heterogeneous in their preferences for management's monetary transfers the election process should take into account the likelihood to have non-congruent works councils within the potential candidates. Particularly, workers face representatives that may or may not have congruent interests with them, in the sense that a congruent councilor dislikes management's monetary transfers (i.e. bribes). When only congruent councilors are elected a fixed wage equal to the wage of the employees is enough to recommend the worker's preferred action. However, when there are non-congruent councilors they should receive a compensation that takes into account potential bribes from management.

When councilors are well compensated for their representative activities they would face an inter-temporal tradeoff between accepting management's transfers at first period and losing rents at the second period. Elections as the only mechanism to discipline works councils increase costs of entering on collusive behavior with management. When benefits of being in office are large enough representatives will try to behave on the employees' interest. The employees' capacity to deter collusion with an election mechanism hinges on two conditions: first, at least the benefits of being in office (salary) should be public information (transparency); second, monitoring tasks that have been delegated to works councils should not have big gap on effort, thus means works councils should not be involved on personnel reforms in which effort has large impact on firm performance. The last condition implies that under costly employment reforms employees' welfare would be higher with other mechanism that representative participation (i.e direct participation or referendum).

Finally, since councilors' compensation should increase with how much they weight management's transfers, we can compare monetary incentives with election mechanism. Since workers cannot set up councilor's compensation contingent on the state of nature, it reduces the workers' capacity to punish councilors by hidden information in some states of nature. This implies that the negative effect of non-congruent councilors under election on the workers willingness to implement works councils is larger than the same effect under contingent monetary transfers case.

The paper proceeds as follows. Section 2 discusses the background of the problem and the related literature. Section 3 states the model and the benchmark of a firm without workplace representation. Section 4 studies the case where workers can give contingent monetary transfer and studies the effect of potential collusion on the implementation of works councils. Section 4 studies the case of elected works

councils, in which workers can incentivize their representatives through elections. Section 5 discuss results in the context of european industrial relations. Section 6 concludes.

## 2 Background and Previous Literature

Several European countries have laws and institutions concerning with employees' involvement and participation at workplace. In addition, the European Commission has implemented mandatory laws to foster European Works Councils through multinational firms. These laws give information and codetermination rights about financial and personnel issues like employment decisions, new production process and investment projects that affect the workforce. Legislation across countries differs with respect to works councils' objectives and rights, but a common element is that those committees possess rights to be informed about firm's financial situation, which is relevant on personnel policies at workplace. Works Council's objective, often specified in legislation, is to foster labor and management cooperation with the goal of increasing the performance of the firm and protecting the interest of the labor workforce. Summing up, councilors should monitor manager's financial information, communicate the gathered information, and recommend or not new personnel practices to workforce contingent on this information (annex A.3 presents a comparative table about laws on workplace representation for a group of European countries).

In continental Europe, particularly in German where works councils have been viewed as essential part on the corporate governance and industrial relations, governments and firms consider that works councils should reduce conflicts on employment policies between management and employees by improving communication and cooperation among parties. Although works councils are bounded by employees through elections, they are called to create peace and cooperation within organization [Roger and Streeck (1995)]. However, recent scandals involving the German corporate culture have generated skepticism on the role of those institutions. Recently, works councils' leaders and personnel management on big German companies have been involved on allegations of bribes and corruption in the implementation of employment policies. The most well documented case with effects not only on the corporation but also on German politics has happened at the largest European car-maker Volkswagen, where the leader of works councils was found guilty of accepting management 'bribes' to support certain aspects of corporate employment policies (see note 1).

In spite of the fact that works councils play a relevant role on corporate governance and the European Commission has encouraged state members to implement European Works Councils, our understanding of the strategic behavior of representatives is not complete. In this paper, we offer a new perspective in which employees' representatives are independent and informed agents who might pursue their private goals and are constrained by their concerns to be re-elected. The paper tries to answer important questions concerning industrial and labor relations: What are the

consequences of workplace representation on the welfare of the workforce?

Both theory and empirical literature assume that works councils behave in the workers' interest. However, works councils have valuable information that they might use in their own goals. Then, given the widespread use of worker representatives and the recent directives of the European Community it is relevant to have a better understanding of the incentives of these agents within organizations. Works Councils may be tempted to form coalitions with management and audit unpopular employment policies against employees' interest, as recent scandal in Volkswagen corporation has shown. The potential coalitions between management and employees' representatives reduce the employees' willingness to implement Works Councils when it is very costly to deter coalition formation. Moreover, when employees incentivize their representative only through elections and flexible monetary transfers are unfeasible it stresses the lack employees' willingness to implement Works Councils.

This paper can be related to three different existing literatures. First, literature on industrial relations studies the benefits and the pitfalls of worker representatives with rights to be informed about the workplace issues. On the side of the benefits, representatives, as supervisors of the manager activities, might create truthful relationship between labor force and management [Weil (2003), Black and Lynch (2004) and Zwick (2004)]. This truthful cooperation may improve the performance of the firm and rise its long-run value. The social benefit of a worker representative comes from the fact that it eliminates the risk that workers could choose wrong effort when the firm faces financial troubles. "Councils are a very good communication channel, specially with regard to bad news...". [Freeman and Lazear (1995)]. On the side of drawbacks, workers with information rights could delay the daily decision-making and increase their bargaining power. From the perspective of shareholders, a higher bargaining power could destroy value in the long-run because workers could claim a higher profit shares [Hart (1983) and FitzRoy and Kraft (1987)]. Then the main implication of worker representatives' pitfalls is that the firm would discourage the implementation of any voluntary worker involvement in decision-making [Freeman and Lazear (1995)].

The analysis of benefits and pitfalls suggests that the comprehensive information rights of the Works Council make the impact of these institutions on firm's performance ambiguous [Addisson, et. al. 2003]. On the one hand, councilors foster the trust that is necessary to establish productivity-enhancing work practices. On the other hand, they may use their bargaining power to negotiate less productive practices that require less effort. However, this cost can be reduced if the industrial labor regulation introduces instruments that decouple both production and distribution processes within the firm. For instance, Freeman and Lazear (1995) claim that if a firm could set up its wages under a collective or industrial agreement the Works Council could improve the firm's performance. Our paper differs on the existing literature about worker representative on labor relations by considering that representatives might pursue own goals and they are bound only by elections. By differentiating representative's objectives from employees goals, we can introduce the

potential effect of collusion with management and its effects on employees' welfare and indirectly its effect on firm's performance.

Second, literature of collusion on organizations analyzes how a collusion-free equilibrium might arise [Tirole (1986) and Tirole (1992)] and under which conditions allowing a collusion equilibrium is an optimal decision [Kofman and Lawarée (1996)]. With either hard or soft information a Principal may deter collusive behavior between an informed agent and supervisor by paying monetary transfers contingent to reported information [Tirole (1992) and Baliga (1999)], but if monetary compensations are fixed a collusive equilibrium always arise when the supervisor weights positively entering on side transfers with the agent. In our model, with hard information and fixed payment to the supervisor (works council) a re-election mechanism might generate collusion-free equilibrium if works councils' benefits of being in office are large enough to compensate any gains of coalition formation with management (bribes). In other words, elections increase the costs on the side of works council by entering on collusion with management.

Finally, our paper relates with literature on accountability of representatives through elections. Literature on political agency presents the basic result on how electorate might discipline politicians through elections. However, under some circumstances accountability generates wrong consequences to voters' welfare [Maskin and Tirole (2004) and Besley (2006)]. Both papers present a basic model of accountability where an better informed politician has incentives to choose the wrong action in order to please the electorate. In a setting of delegation in bargaining, Cai (2000) shows that an accountable union leader might extent an industrial conflict (strikes) in order to signalling his congruency with his constituency (industrial employees). This paper borrows the idea of accountability on the political agency literature to show how employees discipline works councils through elections and applies it to the problem of right effort allocation within organizations.

### 3 The model

We study an organization governed by industrial collective agreements on wages, in which employees and management should agree on personnel reforms concerning workforce within the organization. There are three parties: employees (they), worker representatives (councilor or he) and management (she). We assume that a personnel reform improves organization's performance above a threshold that allows the firm to pay its collective wages. However, the personnel reform demands extra effort on the part of employees, but it can not be contracted ex-ante, particularly, at the timing of collective agreements on wages were signed (ex-post inefficiency).

### 3.1 Production

We consider a firm in which output is determined by both a random variable, which measures productivity per worker, and a decision variable at workplace, which measures the extra effort of each worker

$$x = \theta + e$$

after labor contracts have been signed at the industrial level (collective agreements), firm faces productivity shocks that can affect its production. Nature determines whether firm faces a high productivity shock ( $\theta = \bar{\theta}$ ) or a low shock ( $\theta = \underline{\theta}$ ), with  $\Delta\theta = \bar{\theta} - \underline{\theta} > 0$ . Workers might overcome with negative effects of low productivity when they exert additional effort (with  $\bar{e}$ ), which has a cost equal to  $\psi_{\bar{e}} = \psi$ . They cannot exert additional effort (with  $\underline{e}$ ) at zero cost  $\psi_{\underline{e}} = 0$ , but it increases the risk that the firm goes to low performance with negative consequences for the workforce. The difference between high and low effort is higher than the cost of additional effort ( $\Delta e = \bar{e} - \underline{e} > \psi$ ). Firm's technology implies that output's level may take four possible values:

$$H \equiv \bar{\theta} + \bar{e} > \underline{\theta} + \bar{e} > \bar{\theta} + \underline{e} > \underline{\theta} + \underline{e} \equiv L$$

under the lowest level of output  $L$ , the firm cannot pay the total wage-bill required by collective labor contracts. However, workers always can avoid this situation by exert high effort regardless the realization of productivity parameter.<sup>2</sup>

### 3.2 Players

There are “ $N$ ” homogeneous employees each of whom may exert extra-effort and receive fixed wages. The workforce may elect one worker representative. After electing their representative they want to maximizes their utility that is given by wages net of effort less the councilor's fees  $s$

$$U = (N - 1)[w - \psi_e] - s$$

firm's labor contracts are governed by collective industrial agreements where each worker should receive a fixed wage ( $w = \bar{w}$ ). However, a firm with low performance ( $x \equiv L$ ) can only pay an small part of its collective wage-bill (with  $w = \underline{w} < \bar{w}$ ). The employees' payoffs depend on effort through the output's level. Exerting high effort always eliminates the economic problems of the firm. However, exerting low effort, in some circumstances, pushes the firm on its lowest output. We assume that  $\bar{w} - \underline{w} > \psi$ , which implies that employees prefer to exert high effort only in bad times in order to avoid the lowest output  $x \equiv L$ .

A risk-neutral manager maximizes firm's value, which is given by output of  $N - 1$  workers less wages

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<sup>2</sup>The rank of the production assumes that  $\Delta e \geq \Delta\theta$ , this assumption is not relevant for the results, but it implies that extract effort adds more to the production than the productivity parameter.



$$U^m = (N - 1)[x - w]$$

given the fixed wages and the firm technology, she always prefers to implement a high level of effort independent of the realization of productivity.

Finally, a councilor may be elected from the workforce and he does not play a productivity role. He should acquire information about the productivity parameter and recommend the allocation of effort contingent on his observed information. He receives a wage from his representative activities equal to  $s$ . But also, he might receive additional “rents” from potential coalitions with management  $b$ . Councilors can differ in how much they weight management’s transfers. We assume that there are two types of councilors, congruent and non-congruent with the workforce. A congruent councilor dislikes manager’s transfer and non-congruent councilors weights it positively. We characterize congruent councilors with a parameter  $\alpha = 0$  and non-congruent councilors with a parameter ( $\alpha > 0$ ). The utility of the Councilor is  $v(\cdot)$ , with  $v(\cdot)$  strictly concave. The councilor’s outside opportunity is the wage for a regular employee  $s_o = \bar{w}$ .

### 3.3 Information

There are two types of asymmetric information in the model. First, after a collective agreement has been signed the firm faces a productivity shock and the manager has perfect information about this realization. Workers are uninformed about this parameter, which is relevant for the effort decision at workplace. Workers believe that firm faces a high productivity shock ( $\bar{\theta}$ ) with probability  $\rho$  and a low productivity shock ( $\underline{\theta}$ ) with probability  $(1 - \rho)$ . Parameter  $\rho$  is a measure of how much workers believe that the firm is under good situation and additional effort should not be necessary.<sup>3</sup> The information problem arises because the realized parameter  $\theta$  is management’s private information and her dominant strategy is always hiding the realization of high productivity parameters. However, they can improve their information by electing a councilor, who receives an informative signal  $r$  about the realization of productivity. We assume that there are four states of nature, indexed by  $i$ , and each state of nature  $i$  has probability  $p_i$  (with  $\sum_{i=1}^4 p_i = 1$ ): i) at state of nature 1, the manager observes  $\theta = \bar{\theta}$  and the councilor observes  $r = \bar{\theta}$ . ii) at state of nature 2, the manager observes  $\theta = \bar{\theta}$  and the councilor observes nothing  $r = \phi$ . iii) at state of nature 3, the manager observes  $\theta = \underline{\theta}$  and the councilor observes nothing  $r = \phi$ . iv) at the state of nature 4, the manager observes  $\theta = \underline{\theta}$  and the councilor observes  $r = \underline{\theta}$ . We consider hard information, in which councilor’s information is verifiable.<sup>4</sup>

Second, employees are uninformed about councilor’s preferences for management’s transfers. They face a pool of potential representatives that may be either

<sup>3</sup>Another interpretation of  $\rho$  is the measure on how much workers are informed about the firm’s productivity, which can be affected by the performance of other firms in the same industry or the economic conditions in general.

<sup>4</sup>This information structure follows Tirole (1986). Hard information implies that councilor can not create information, he can only hide observed information.

congruent with probability  $\gamma$  or non-congruent with probability  $1 - \gamma$ . We assume that at the time when the manager bargains with councilor on effort allocation she has perfect information about the councilor's type.<sup>5</sup>

### 3.4 Timing of the game

The organization lives for two periods and workers can elect a new representative or re-elect the incumbent councilor at the end of the second period contingent to the councilor's reported information and the first period outcome. We use a simplified version of a two period model, and we model the game at the second period as perfect information case, in which everyone at the organization knows the productivity parameter.

**Period 1:** *At stage 0* a collective agreement determines the level of wages  $\bar{w}$ . Employees elect from a pool of candidates (congruent or non-congruent) a worker representative and determine his compensation ( $s$ ). *At stage 1* productivity parameter,  $\theta$ , is realized. Managers observes perfectly it and an elected councilor receives an informative signal  $r$ . Councilor and manager learn councilor's type. Workers are uninformed, but they have some beliefs about the productivity parameter ( $\rho$ ) and they have some beliefs about the councilor's type ( $\gamma$ ). *At stage 2* manager and councilor can form coalitions to hide information and recommend effort. Workers exert the level of effort contingent with the disclosed information. If they are uninformed, they update their beliefs about productivity parameter. The output is realized and the firm might or might not pay its fixed wages ( $\bar{w}$ ) contingent on the value of  $x$ . *At stage 4* reelection process takes place. If the councilor is fired he receives the first period payments  $s$  and private rents if a coalition had been formed. If he is reelected receives first and second period rents and potential rents from coalition.

**Period 2:** Individuals do not discount the time. At the beginning of period 2,  $\theta$  is realized and it is observed by everyone. Workers exert their preferred effort and councilor receives his compensation  $s$ .

### 3.5 A firm without workplace representation

We analyze the potential coordination failures in a firm where employees are uncompensated by additional effort and this extra-effort is a workplace decision, which is chosen by workers. Employees know that management always prefers to extract additional effort of workers by misinforming about the real situation of the firm. Employees disregard what management says and take decisions contingent on their beliefs about productivity. For instance, when employees exert extra-effort their expected payoffs are  $N[\bar{w} - \psi]$ . Their expected payoffs are  $N[\rho\bar{w} + (1 - \rho)\underline{w}]$  if there is not additional effort. The following proposition states the traditional result on

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<sup>5</sup>By considering an informed management about councilor's type we avoid any signalling game among them. This assumption implies that both parties know the technology of the side payments, which is standard assumption on collusion theory [see Tirole, 1992].

industrial relations about potential coordination failures on the allocation of extra-effort without workplace representation.

**Proposition 1:** *In firms without workplace representation, if wages are fixed by collective agreements at the level  $\bar{w}$  and employees are not compensated by the disutility of extra-effort  $\psi$ , employees exert high effort ( $e = \bar{e}$ ) if and only if  $\rho \leq \tilde{\rho}$ , otherwise they exert low effort ( $e = \underline{e}$ ). Where:*

$$\tilde{\rho} \equiv 1 - \frac{\psi}{\bar{w} - \underline{w}} < 1 \quad (1)$$

**Proof:** the proof of this proposition is straightforward, which is the result of comparing the expected payoffs of employees under both high effort ( $N[\bar{w} - \psi]$ ) and low effort  $N[\rho\bar{w} + (1 - \rho)\underline{w}]$  and reorganizing for  $\rho$  ■

Note that employees always prefers exert effort in bad times ( $\bar{w} - \underline{w} > \psi$ ), so  $\tilde{\rho} \in (0, 1)$ . In a situation where workers can be compensated by the cost of additional effort the optimal threshold is  $\rho^* = 1$  and extra-effort is always the optimal solution ( $e = \bar{e}$ ). Result in proposition 1 shows the lack of flexibility about firm specificities on labor contracts governed by collective agreements, which cannot internalize the positive effect of additional effort on firm's output and under some situations optimistic workers can push firm under critical situation. An empirical implication of result in (1) is that coordination failures on effort allocation should be more likely in firms where personnel reforms have high costs for employees (i.e. high  $\psi$ ) or wages loss under low performance is low (i.e. small wage's gap  $\bar{w} - \underline{w}$ ). The traditional literature on works councils says that elected councilors can overcome with these coordination problems, so we should observe more Councilors in firms where potential coordination failures are important.

## 4 Workplace representation with contingent monetary transfers

The positive view of workplace representation states that this institution allows employees to be informed about workplace decisions through indirect participation, and increase employees' welfare by auditing real situation of the firm and avoid either the implementation of costly effort or coordination failures on decisions at the workplace. Moreover, works councils who has information on good performance of the corporation might bargain for employment policies in favor of workforce [Freeman and Lazear (1995)]. In this sense works councils seems an important institution under industries with high level of uncertainty about productivity because they can increase firm's value by reducing the risks of coordination failures. However, councilor might be tempted to collude with management against employees by misrepresenting realized productivity parameter. Potential collusion between representatives and management might reduce the positive aspects of councilors' activities and decreases the employees' willingness to use them. In this section, we consider that employees

may deter collusion by paying monetary transfers contingent to reported information<sup>6</sup>. Since councilor's election does not play any role in this section we consider the stage 0 to stage 3 at period 1 (see timing in section 3.4).

*The side transfers:* worker representative and management may form coalitions against employees to hide evidence on the realization of productivity. Given the information structure, the councilor might reveal or hide a signal of a realized productivity. In case of collusion a management should compensate councilor by hiding it and gives side transfer at level  $b$ . A congruent councilor puts zero weights on management bribes ( $\alpha = 0$ ). A non-congruent councilor weights positively side contracts with management ( $\alpha > 0$ ).<sup>7</sup> Given  $\alpha$ , an uninformed councilor ( $r = \phi$ ) does not have discretion to form coalitions with management and collusion does not arise. However, with a signal  $\sigma = \bar{\theta}$  councilor may hide it by entering on side contracts. Management can pay until  $b \equiv (N-1)\pi\Delta e$ .<sup>8</sup> The level of  $b$  is determined by the fact that when councilor observes  $\bar{\theta}$  and discloses it, employees implement their preferred action and management's payoff is  $(N-1)[\bar{\theta} + \underline{e} - \bar{w}]$ , but by hiding information councilor increases management's expected payoff in  $(N-1)[\bar{\theta} + \underline{e} + \pi\Delta e - \bar{w}]$ , where  $\pi(> 0)$  is the probability that workers exert extra-effort in case of being uninformed.

Now we can state the employees problem when councilors are compensated with contingent payments. Employees choose the payment compensation for councilor such that maximizes the expected payoff of the  $(N-1)$  workers subject to the participation of the councilor and the incentives constraints to collude with management. Formally the employees problem ( $\mathbf{P}^0$ ) states that:

$$\max_{s_i} (N-1)\{p_1\bar{w} + p_2(\bar{w} - \pi\psi) + p_3[\pi(\bar{w} - \psi) + (1-\pi)\underline{w}] + \quad (2)$$

$$p_4(\bar{w} - \psi)\} - \sum_{i=1}^4 p_i s_i$$

$$(\mathbf{P}^0) \quad s.t.$$

$$\sum_{i=1}^4 p_i v(s_i) \geq v(s_o) \quad (3)$$

$$s_1 \geq s_2 + \alpha\pi(N-1)\Delta e \quad (4)$$

The objective function in (2) shows that at state 1 and state 4 worker representative should report his observed information and workers know perfectly the realization of parameter  $\theta$ , but at state 2 and 3 the worker representative does not

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<sup>6</sup>In this section representative's compensation is not determined at the collective industrial agreements.

<sup>7</sup>Another interpretation of  $\alpha$  is that councilor might be constrained by institutional arrangements like union membership.

<sup>8</sup>It is important to note that in bad times all agents within organization prefers to exert high effort to avoid the risk of low performance, which implies that there is not hidden information when both manager and councilor have observed low productivity parameter  $\theta = \underline{\theta}$ . By simplicity we assume that the councilor has all the bargaining power on the side transfers with management.

have additional information and they choose between exert high effort with probability  $\pi$  or low effort with probability  $1 - \pi$ . The participation constraint in (3) express the individual rationality of the councilor, he should gains at least the same as regular employee otherwise there is not incentives to become a representative. Finally, constraint in (4) express the incentive constraint of the councilor, which is obtained after consider the gains on coalition formation with management. Employees should be sure that councilor is better compensated by disclosure the real value in state 1 that the rents obtained by hiding it. In the next sections we consider the case of congruent and non-congruent cases.

#### 4.1 Congruent councilors:

A congruent councilor discloses his observed information in state 1 and state 4. Formally, with congruent councilors employees do not care about the potential coalitions with management and the constraint in (4) does not appear in the problem in the general problem ( $\mathbf{P}^0$ ). The following proposition states the optimal councilor's compensation, and optimal allocation of effort after contracting with a congruent councilor.

**Proposition 2:** *In firms with a worker representative incetivized through contingent payments, when employees' wages are fixed by collective agreements at the level  $\bar{w}$  and employees are not compensated by the disutility of extra-effort  $\psi$ . i) employees would contract with a congruent councilor and compensate him with fixed monetary transfers  $s_i = s_o \forall i = 1, 2, 3, 4$ . ii) the allocation of effort is equal to low effort in state 1 ( $e = \underline{e}$ ), high effort in state 4 ( $e = \bar{e}$ ), and they exert high effort in state 2 and 3 if*

$$pr(\theta = \underline{\theta} | r = \phi) = \frac{p_3(1 - \rho)}{p_2\rho + p_3(1 - \rho)} \geq 1 - \rho \quad (5)$$

**Proof:** in the annex A.1.

Part i) from proposition 2 states that if workers can sign contingent monetary transfers with councilor and the latter reports honestly his observed information, councilor receives the same payment at each state of nature (full insurance). This fixed payment is equal to councilor's outside opportunity (i.e.  $s_i = s_o \forall i$ ), which is equal to the employees compensation at the collective agreements  $s_o \equiv \bar{w}$ . In other words employees can improve information about productivity parameter at the lowest councilor's compensation. The part ii) states that better informed employees allocate their preferred level of effort in state 1 and state 4. It implies that the risk of coordination failures decreases in state 4, when councilor's report is  $r = \underline{\theta}$ . In state 2 and 3, when councilor is uniformed about productivity, employees update their beliefs about low productivity parameter using Bayes' rule. Given priori beliefs about productivity  $\rho$ , employees exert extra effort if the updated beliefs about low productivity are larger that the priori beliefs.<sup>9</sup>

<sup>9</sup>The only requiriment for this result is that the uncertainty in state 3 is larger than uncertainty in state 2. In other words that the councilor should be more efficient in reporting high productivity

Condition (5) in proposition 2 differs from condition (1) in proposition 1 on the fact that the condition (5) is a function of the councilor's information structure, who acts as an expert for the employees. This implies that even if employees are optimists about the realization of productivity parameter of the firm, works councils help to audit the bad performance of the firm and increases the information structure of the employees. This result is a more general representation of the traditional view of monitoring tasks from works councils to audit bad situations of the firm in the sense that we allow for some levels of uncertainty on councilor's information Freeman and Lazear (1995). The next corollary gives the employees' expected payoff under congruent councilors.

**Corollary 2.1:** *In firms with a congruent worker representative incetivized through contingent payments and assuming that condition (5) is satisfied, the expected payoff per employee ( $\frac{EW^c}{N-1}$ ) is equal to:*

$$\frac{EW^c}{N-1} = \bar{w} - \psi + p_1\psi - \frac{s_o}{N-1} \quad (6)$$

This shows that the employees expected payoff increases with the information technology of the councilor to audit high productivity levels ( $p_1$ ) and decreases with the fees per employee, which is decreasing function of the firm's size. This result support the empirical figures in Germany where works councils are common in large firms, where the cost of implementation should be lower than in small and medium-size firms [Hübler and Jirjahn (2003) and Addison, Bellmann, Schnalbe, and Wagner (2004)]. However, this result is valid only when councilors are congruent with employees' interest.

## 4.2 Non-congruent councilors

In this section we analyze the case where employees know that the councilor would weight positively the potential rents from coalitions with management. In this case employees should care about potential coalition formation which are represented by the incentive constraint (4) in problem ( $\mathbf{P}^0$ ). The proposition 3 states the optimal councilor's compensation, and optimal allocation of effort after contracting with a non-congruent councilor.

**Proposition 3:** *In firms with a worker representative incetivized through contingent payments, when employees' wages are fixed by collective agreements at the level  $\bar{w}$  and employees are not compensated by the disutility of extra-effort  $\psi$ . i) employees would contract with a non-congruent councilor and compensate him with fixed monetary transfers such that  $s_1 > s_3 = s_4 > s_2$ . ii) the allocation of effort is equal to low effort in state 1 ( $e = \underline{e}$ ), high effort in state 4 ( $e = \bar{e}$ ), and they exert high effort in state 2 and 3 if*

$$pr(\theta = \underline{\theta} | r = \phi) = \frac{p_3(1 - \rho)}{p_2\rho + p_3(1 - \rho)} \geq 1 - \rho \quad (7)$$

---

than reporting low productivity (see annex A.1.).

**Proof:** in the annex A.2.

When employees exert extra-effort in state 2 and state 3 they must care about councilor's misreporting on state 1. Under this situation, if workers exert high effort in state 2 and 3 councilor's compensations should be equal to  $s_1 > s_3 = s_4 > s_2$ . With  $s_1 = s_2 + \alpha(N - 1)\Delta e$  given by the coalition constraint. Since with this compensation scheme employees deter any potential coalition formation, councilor reports his observed information and management does not have incentives to bribe him. This solution follows the theory of collusion in organization, when employees exert high effort in state 2 and state 3, councilor's compensation at state 1 should be higher than that for state 2 because employees should compensate him by reporting his observed information. Since there are not coalition formation at state 3 and state 4, the compensation on both states should be the same and equal to the outside opportunity  $s_0$ . More important, in order to decrease incentives to misreporting at state 1, employees should penalize councilor with lower payment at state 2, but this punishment is limited because councilor cannot receive negative payments. The next corollary gives the employees' expected payoff under congruent councilors.

**Corollary 3.1:** *In firms with a non-congruent worker representative incentivized through contingent payments and assuming that condition (7) is satisfied, the expected payoff per employee ( $\frac{EW^{nc}}{N-1}$ ) is equal to:*

$$\frac{EW^{nc}}{N-1} = \bar{w} - \psi + p_1\psi - \left[ \frac{(p_1 + p_2)s_2 + (p_3 + p_4)s_0}{N-1} + p_1\alpha\Delta e \right] \quad (8)$$

equation (8) shows the effect of potential coalitions between management and councilor on the employees' payoff, which is captured by the term  $p_1\alpha\Delta e$ . Note that employees can overcome with this effect by decreasing the monetary transfers in state of nature 2  $s_2$ . However, councilor cannot be penalized with negative payments in any state, which limits the employees' capacity to use contingent compensation to deter potential coalitions.

The next proposition states the cost of contracting with non-congruent councilors, which determines the employees' incentives to contract with councilor that could form coalitions with management against the interest of the workforce.

**Proposition 4:** *A collusion-free compensation scheme as in proposition 3 would give the same expected payoff to employees than the case of congruent councilor if and only if the level of non-congruency  $\alpha$  is lower than a threshold  $\alpha^*$ , otherwise the employees payoffs would be lower than the case of congruent councilors. Where  $\alpha^*$  is equal to:*

$$\alpha^* \equiv s_0 \frac{1}{(N-1)\Delta e \frac{p_1}{(p_2+p_1)}} \quad (9)$$

**Proof:** when employees deter collusion they can reduce the payment of councilor in state 2 in order to decrease councilor's incentives to report state 2 instead of state 1. With this scheme of payments employees can get the same information structure that the case of congruent councilors. However, it is possible only with positive values of  $s_2$ . We use corollary 2.1 and 3.1. to compare the employees' payoffs with congruent and non-congruent councilors, such that

$$\begin{aligned} \frac{EW^c}{N-1} - \frac{EW^{nc}}{N-1} &= \bar{w} - \psi + p_1\psi - \frac{s_0}{N-1} - \\ &[\bar{w} - \psi + p_1\psi - \frac{(p_1 + p_2)s_2 + (p_3 + p_4)s_0}{N-1} - p_1\alpha\Delta e] \\ &= [\frac{1}{N-1}](p_1 + p_2)(s_2 - s_0) + p_1\alpha\Delta e \end{aligned} \quad (10)$$

employees can achieve the same expected utility under congruent and non-congruent situation if  $EW^c = EW^{nc}$ , which implies from equation (9) that

$$[\frac{1}{N-1}](p_1 + p_2)(s_0 - s_2) = p_1\alpha\Delta e \quad (11)$$

if  $\alpha = 0$ , the payoff in both cases is the same and  $s_2 = s_0$  and  $s_1 = s_0$ , which is the case under congruent councilors. However, if  $\alpha > 0$ , the compensation in state 2 should be lower than the outside opportunity  $s_2 < s_0$ , and from equation (10) we can rewrite the expression of  $s_2$  as a function of  $\alpha$ ,

$$s_2 = s_0 - [\frac{p_1}{p_1 + p_2}](N-1)\alpha\Delta e \quad (12)$$

however, councilor cannot be punished with negative payments (i.e.  $s_2 \geq 0$ ). In order to deter councilor's incentives to hide information in state 1 and claims that he observes state 2 (nothing), employees may set up the contingent payment in state 2 until its lowest possible value, such that  $s_2 = 0$ . Including this value in (11) and reorganizing for  $\alpha$ , we can get the expression (9) in proposition 4:

$$\alpha^* \equiv s_0 \frac{1}{(N-1)\Delta e \frac{p_1}{(p_2+p_1)}} \quad (13)$$

■

Workforce can contract with non-congruent councilors and obtain the same level of utility and the same information structure than the case of congruent councilors when the preference for manager's transfers of non-congruent councilors are less than  $\alpha^*$ . Otherwise the workforce should compensate councilors with negative payments in state of nature 2, which is not possible. Ant contracting with a councilor implies reduction on the employees' payoff comparing with the case of congruent councilors.



Note that a higher threshold  $\alpha^*$  implies larger possibility to achieve the employees' payoffs with under congruent councilors. The threshold  $\alpha^*$  is a positive function of the level of compensation  $s_0$ . This observation has large policy implications because in order to incentivize the councilor and compensate them for his monitoring and acquiring information they should be compensated in a different way than a regular employee. Otherwise the potential capacity of employees to deter potential collusions between management and representatives are limited to those that the threshold is determined by equation (9).

## 5 Elected Worker Representatives

In the last section we assume that employees can sign contingent contracts with their representatives, which does not fit with the real situation of European Industrial Relation about Workplace Representation. In general, being representative bodies, works councils are influenced by their constituents mainly through elections process. In this section, workers can not give contingent monetary transfers to incentivize their representative and they use a reelection process to incentivize him. We consider the complete timing in section 3.4.

From the last section we know that a fixed compensation without elections might discipline only congruent representatives, but non-congruent representative always collude with management. We consider that employees choose a representative from a pool of congruent and non-congruent candidates. Instead of employees offer a compensation to councilor in stage 2 of first period they offer a probability to be re-elected contingent on reported information. So, at the beginning of second period incumbent councilors are re-elected or displaced by a new representative. Lemma 1 specifies the re-election rule that will take place at the state 4 of period 1.

**Lemma 1:** *when worker representatives are bound to their constituents only through elections and their compensations are fixed. Employees always re-elect a representative who reports additional information, thus means  $r = \theta$  and they never re-elect a representative who reports nothing  $r = \phi$ .*

**Proof:** with fixed councilor's compensation at level  $s = \bar{w}$ , a congruent councilor always reports his information, but a non-congruent one has incentives to hide it. When employees receive a report without additional information, employees update their priors about councilor's type. Using Bayes' rule, the probability to face a congruent councilor ( $\alpha = 0$ ) contingent on uninformative report at period one ( $r = \phi$ ) is

$$pr(\alpha = 0|r = \phi) \equiv \hat{\gamma} = \frac{\gamma[\rho p_2 + (1 - \rho)p_3]}{\gamma[\rho p_2 + (1 - \rho)p_3] + (1 - \gamma)\rho p_1} < \gamma \quad (14)$$

so, employees do not re-elect an incumbent who reports nothing at first period, because it was a signal of non-congruency with their interest and they are going to choose a new representative who will be congruent with probability  $\gamma(> \hat{\gamma})$  ■

The reelection condition in lemma 1 gives a trade-off between first period and second period rents for a non-congruent councilor. A councilor who hides information in state 1 receives the following expected payment:

$$\bar{s} + p_1\alpha(N-1)\Delta e + p_4\bar{s} \quad (15)$$

the term  $\bar{s} + p_1\alpha(N-1)\Delta e$  is the first period payment, where councilor receives a fixed payment  $\bar{s}$  under and he can receive some rent from the manager by recommending a high effort in state of nature 1 and 2. The term  $p_4\bar{s}$  is the second period payoff. If he hides information in state 1 and reports nothing in stead of high productivity he will be fired for the next period with probability  $(p_1 + p_2 + p_3)$  and he will lose the level of fixed payments in the second period (the second period everyone observes the realization of the parameter  $\theta$  and there is not assymetric information). When a non-congruent councilor does not hide information, he receives:

$$\bar{s} + (p_1 + p_4)\bar{s} \quad (16)$$

he is reelected with probability  $p_1 + p_4$ . Then the election mechanism incentivize councilor to reveal his observed information if the expected payment in (16) is higher or equal than the expected payment in (15), which gives the trade-off between present and future rents:

$$\bar{s} \geq \alpha(N-1)\Delta e \quad (17)$$

Proposition 5 states who will be re-elect and the allocation of effort under lemma 1 and condition (17).

**Proposition 5:** *Part 1: given lemma 1 and if  $\bar{s} \geq \alpha(N-1)\Delta e$ : **i)** both congruent and non-congruent councilors report their observed information. **ii)** An incumbent councilor is re-elected with probability  $p_1 + p_4$  **iii)** If  $r = \theta$ , employees allocate their preferred effort, but if  $r = \phi$ , employees allocate a high effort  $e = \bar{e}$  if*

$$pr(\theta = \underline{\theta} | r = \phi) = \frac{p_3(1-\rho)}{p_2\rho + p_3(1-\rho)} \geq 1 - \rho \quad (18)$$

*Part 2: given lemma 1 and if  $\bar{s} < \alpha(N-1)\Delta e$ : **i)** Only congruent councilor reports his observed information in state 1 **ii)** The incumbent congruent councilor is re-elected with probability  $p_1 + p_4$ . An incumbent non-congruent councilor always hides information in state 1 and is re-elected with probability  $p_4$ . **iii)** If  $r = \theta$ , employees allocate their preferred effort, but if  $r = \phi$ , employees allocate update their beliefs and allocate effort if*

$$pr(\theta = \underline{\theta} | r = \phi) = \frac{p_3(1-\rho)}{p_2\rho + p_3(1-\rho) + (1-\gamma)\rho p_1} \geq 1 - \rho \quad (19)$$

**Proof:** Part 1: the proof follows lemma 1 and condition (17)  $\bar{s} \geq \alpha(N-1)\Delta e$ . If this condition holds any councilor reports his observed information. Given the

information structure in section 3.3, councilor receives an informative signal with probability  $p_1 + p_4$  and given lemma 1, employees re-elect him with the same probability. Given that councilor reports his observed information, employees improve their information in state 1 and state 4 and allocate their preferred effort. In case of non additional information they update their beliefs about productivity parameter using Bayes' rule in equation (18).

Part 2: if condition (17) does not hold  $\bar{s} < \alpha(N - 1)\Delta e$ , only congruent councilor reports his observed information. Given the information structure, councilor receives an informative signal  $r$  and given lemma 1, employees elect a representative who report  $r = \theta$ . Then because congruent councilor always hides information in state 1 only a congruent incumbent is re-elected with probability  $p_1 + p_4$  and non-congruent councilor is re-elected with probability  $p_4$ . As before, if employees receive an informative report  $r = \theta$ , they exert their preferred effort, but given the fact that non-congruent councilor hides information in state 1, they update their beliefs about low productivity with the updating rule in equation (19)■

**Proposition 6:** *Given lemma 1, when a councilor receives the same wage that regular employees ( $\bar{w}$ ), the workforce cannot discipline all of type of councilors. Only councilors with preferences for manager's transfers  $\alpha$  lower than  $\alpha^{**} = \frac{\bar{w}}{(N-1)\Delta e}$  will report his observed information.*

The proof: The lemma 1 implies the trade-off between hide or report information given by condition (17). In addition, if councilor's compensation is equal to the wages for regular employees (i.e.  $\bar{s} = \bar{w}$ ), then we can use condition (17) with equality and making  $\alpha$  function of wages and other parameters in the condition we have

$$\alpha^{**} = \frac{\bar{w}}{(N - 1)\Delta e} \quad (20)$$

and a councilor with a parameter  $\alpha \geq \alpha^{**}$  does not report his observed information in state of nature 1■.

We can compare the case of collusion with contingent monetary transfers and election mechanism. When workforce can give contingent monetary payment to the councilors, employees can give more incentives to the councilors to report the truth than the case of re-elections. Under contingent monetary transfers workers can incentivize councilors with a parameter  $\alpha$  lower or equal than  $\alpha^*$ , which is always higher than  $\alpha^{**}$ .

$$\alpha^{**} \equiv \frac{\bar{w}}{(N - 1)\Delta e} < \bar{w} \frac{1}{(N - 1)\Delta e \frac{p_1}{(p_2 + p_1)}} \equiv \alpha^*$$

Summing up, councilors always should act in the worker's interest if they have a professional compensation for his task and the employees capacity to incentivize

councilors (non-congruent councilors) would increase with the level of compensation. Councilors as monitors of many aspects of organization's life have valuable information that any collective agreement must take into account if the objective is to implement the representativeness at the workplace.

## 5.1 Discussion

Recently, economists have begun to consider employee participation as business strategy to increase firm's performance. In a narrower sense employee participation and codetermination at a single workplace or firm is used as equivalent to industrial democracy. Employee participation may be direct or indirect. Direct participation involves the employees themselves, whereas indirect participation takes place through an intermediary of employee representative committee, such as works council. In this paper we have studied the effects of representative industrial democracy on employees' welfare. Specifically, we consider the European version of workplace representation- works councils, which is an elected body bounded to its constituents only through elections but is committed to functions set by law, including a duty to consider the business's interests.

Works councils may be heterogeneous about congruency with its constituency. For instance, the industrial dialog between representatives and management in Europe has lived important periods of conflicts resolution at workplace<sup>10</sup>. But councilors may also be self-interested. We have formalized this fact by considering that works councils are heterogeneous in their preferences for management's monetary transfers. Hence, employees face representatives that may or may not have congruent interests with them. Note that better informed worker representative can use information opportunistically, possibly through coalitions against other levels of the hierarchy (i.e. management, the most informed party) to misreport the real value of reform's costs.

Conversely with the positive view of workplace representation supported by the Pacts for employment and competitiveness, in large companies like Volkswagen, works councils seem to pursue their own objectives regardless the workforce welfare. From our main results, workplace representation should be a useful employee-voice (communication channel) if two conditions are taken into account at the election process: i) transparency on the works councils' benefits, or at least legislation should regulate office facilities for representatives. ii) works councils should have information rights and participation on reform that don't have large uncertainty in costs (i.e. reforms with large consequences on costly effort for employees). In this case, a referendum (direct employee participation) or human resource management-HRM should give a larger employees' welfare and avoid coordination failures within organization.

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<sup>10</sup>The European Foundation for the improvement of living and working conditions has documented several cases of Pacts for employment and competitiveness signed between representatives and employers that have had a well acceptance for workforce (see <http://www.eurofound.europa.eu/areas/industrialrelations/pecs.htm>).

## 6 Conclusions

This paper tries to explain why in some times of the industrial conflict resolutions councilors seem closer to management policies than workers' interest. The paper underline the effect of potential coalitions among management and self-interested workers representatives. Under assumption than workers can pay contingent monetary transfers to the councilors if the Councilor's interest is very different from the workforce's interest (i.e.  $\alpha > \alpha^{**}$ ) a worker representative would be not implemented even if the workforce is large enough to compensate the Councilors' representative activities. It happens because workers perceives the lack of congruence as a cost of contracting with a Councilor.

A potential explanation for the recent scandals in the European industrial relations is the lack of incentives for Councilors. Councilor with a professional compensation, which should be different than employees, for his task acts in the interest of their constituency. Since councilors have relevant information for the efficiency within the firm and they are an important component for the industrial relations any collective agreement should consider this fact in the councilor's compensation. Well payed Councilors are more important in large firms, firms with large uncertainty on its productivity and where the effect of additional effort is relevant for the production.

When councilors are well compensated for their representative activities they would face an inter-temporal tradeoff between accepting management's transfers at first period and losing rents at the second period. Councilors' compensation should increase with how much they weight management's transfers. Also, it should increase in firms where additional effort has a large effect on output, which depends on the size of workforce and the effect of high effort per worker on output. It occurs because the effect of additional effort on output is the source of potential management's bribes. Formally, the effect on Works Councils presence is higher than the case with monetary transfers. Since employees cannot set up councilor's compensation contingent on the state of nature reduces the possibilities on punish councilors by hidden information.

The future research should consider further consequences of a wrong councilor compensation schemes. For instance, bad compensated non-congruent councilor cannot only act against the workers' interest, but also congruent councilors may take very extreme positions against management policies. Extreme positions like the recommendation of low effort even under high levels of uncertainty can be generate large inefficiencies for the firm and workforce. When councilor is compensated as an employees the accountability process may screen incumbents with high preference for manager's rents but it generates inefficient behavior for congruent representatives. Since congruent councilor want to be in office he signal his type to the workforce to

reject any additional effort under uncertainty. Then under low productivity shocks the low effort generates a bad performance and the firm cannot pay its industrial negotiated wages. Accountability process, under a pool of heterogeneous candidates, may press to congruent councilors to take extreme positions. This can be the additional wrong side of industrial democracy with bad compensation schemes for workers representatives.

Finally, another research agenda should consider that a councilor has multiples constituencies. For example, many members of the Works Councils in Germany have union membership and they have the support of their union. Councilors should take into account not only the workforce interest but also the union interest. When the pool of candidates for Works Councils board is chosen by the main union on the workplace the workforce faces a set of more homogeneous councilor and the accountability mechanism can help to discipline them. The effect of screening of the right candidates can be reduced by the union membership.

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## Annexes

**A.1. Proof of proposition 2:** The Lagrangian for program ( $P^0$ ) with congruent councilor is equal to:

$$\begin{aligned} L_{s_i} = (N - 1) \{ & p_1 \bar{w} + p_2 (\bar{w} - \pi \psi) + p_3 [\pi (\bar{w} - \psi) + (1 - \pi) \underline{w}] + p_4 (\bar{w} - \psi) \} \\ & - (p_1 s_1 + p_2 s_2 + p_3 s_3 + p_4 s_4) \\ & + \mu_1 \{ p_1 v(s_1) + p_2 v(s_2) + p_3 v(s_3) + p_4 v(s_4) - v(s_o) \} \end{aligned}$$

where  $\mu_1$  is the lagrangian multiplier. The *part i)* of proposition 2 results from the first order condition with respect to councilor's payment  $s_i$ , which are:

$$v'(s_i) = \frac{1}{\mu_1} \quad \forall i = 1, 2, 3, 4$$

because employees want to pay as less as it is possible to the councilor the participation constraint is binding ( $\mu_1 > 0$ ). With  $\mu_1 > 0$  the councilor receives same payment in each state of nature  $s_1 = s_2 = s_3 = s_4$ . And the participation constraint in the problem implies that this payment is equal to the councilor's outside opportunity  $s_o$ . The *part ii)* in proposition 2 results from the disclosed information by the councilor: in state 1, when councilor observes high productivity parameter ( $r = \bar{\theta}$ ), employees exert low effort ( $e = \underline{e}$ ). When a low productivity parameter is observed ( $r = \underline{\theta}$ ), employees exert high effort ( $e = \bar{e}$ ). In state 2 and state 3 workers update their beliefs and exert high effort if

$$pr(\theta = \underline{\theta} | r = \phi) = \frac{p_3(1 - \rho)}{p_2\rho + p_3(1 - \rho)} \geq 1 - \rho$$

employees without worker representative implements high effort given  $1 - \rho$ , so they will either implement high effort if  $pr(\theta = \underline{\theta} | r = \phi) \geq 1 - \rho$ . Note that the only condition to satisfy this inequality states that the probability of state 2 should be at least as larger as probabioity o state 3  $p_3 \geq p_2$ .

**A.2. Proof of proposition 3:** The Lagrangian for program ( $P^0$ ) with non-congruent councilor is equal to:

$$\begin{aligned} L_{s_i} = (N - 1) \{ & p_1 \bar{w} + p_2 (\bar{w} - \pi \psi) + p_3 [\pi (\bar{w} - \psi) + (1 - \pi) \underline{w}] + p_4 (\bar{w} - \psi) \} \\ & - (p_1 s_1 + p_2 s_2 + p_3 s_3 + p_4 s_4) \\ & + \mu_1 \{ p_1 v(s_1) + p_2 v(s_2) + p_3 v(s_3) + p_4 v(s_4) - v(s_o) \} \\ & + \mu_2 \{ s_1 - s_2 - \alpha \pi (N - 1) \Delta e \} \end{aligned}$$

where  $\mu_1$  and  $\mu_2$  are the lagrangian multiplier. The part i) of proposition 3 can be obtained from the first order condition with respect to supervisor's payment  $s_i$ ,

$$\begin{aligned} v'(s_1) &= \frac{1}{\mu_1} \left[ 1 - \frac{\mu_2}{p_1} \right]; \\ v'(s_2) &= \frac{1}{\mu_1} \left[ 1 + \frac{\mu_2}{p_2} \right]; \end{aligned}$$



$$v'(s_3) = \frac{1}{\mu_1} = v'(s_4)$$

when low effort is exerted the incentive constraint does not matter and the problem is the same than the case of congruent councilors. However if high effort is exerted we should consider the effect of potential collusion. As before, participation constraint is binding, which implies that  $\mu_1 > 0$ . When  $\mu_2 > 0$  the first order condition implies that  $v'(s_1) < v'(s_3) < v'(s_2)$ . Then  $s_1 > s_3 = s_4 > s_2$ . Moreover, whit  $\mu_2 > 0$ , the incentive constraint is binding and  $s_1 = s_2 + \alpha\pi(N-1)\Delta e$ . If  $s_1 > s_2$  then it is necessary that  $\pi = 1$ , otherwise it is impossible. Then  $s_1 = s_2 + \alpha(N-1)\Delta e$ . In state 3 and state 4 there is not informational problems, so the payment are fixed at the level of outside opportunity such that  $s_3 = s_4 = s_0$ .

As before, *part ii*) in proposition 3 results from the information revealed by the councilor: in state 1, when councilor observes high productivity the allocation of effort is equal to  $e = \underline{e}$ , and  $e = \bar{e}$  at state 4. In state 2 and state 3 workers update their beliefs and exert high effort if

$$pr(\theta = \underline{\theta} | r = \phi) = \frac{p_3(1 - \rho)}{p_2\rho + p_3(1 - \rho)} \geq 1 - \rho$$

as before, employees without worker representative implements high effort given  $1 - \rho$ , so they will either implement high effort if  $pr(\theta = \underline{\theta} | r = \phi) \geq 1 - \rho$ . Note that the only condition to satisfy this inequality states that the probability of state 2 should be at least as larger as probabioity o state 3  $p_3 \geq p_2$ .

**Annex A.3: Table 1. Works councils in European countries**

| <b>Country</b>       | <b>Objective</b>   | <b>Composition</b>  | <b>Representation</b>                                   |
|----------------------|--|---|---|
| Austria              | 1 <sup>th</sup> : Worker representation<br>2 <sup>th</sup> : Co-operation with the managers                        | Body of only workers in firms with more than 5 employees. Members are elected by a period of 4 years by secret ballot.                        | All the workforce within the firm                       |
| Belgium              | 1 <sup>th</sup> : Worker representation<br>2 <sup>th</sup> : Co-operation with the managers                        | Joint body with employees and employer's representatives in firm with more than 100 workers. Employer is free to choose its representatives.  | All the workforce within the firm                       |
| Denamark and Finland | 1 <sup>th</sup> : Worker representation<br>2 <sup>th</sup> : Co-operation<br>No w.c. in traditional definition.    | Co-operation commit. Joint body with manager / employees' representatives.  | All the workforce within the firm                       |
| France               | 1 <sup>th</sup> : Worker representation<br>2 <sup>th</sup> : Co-operation with the employers                       | Joint body of elected workers and manager (with voting right) Members are elected by a period of 4 years in firms with more than 50 employees | All the workforce within the firm                       |
| Germany              | 1 <sup>th</sup> : Worker representation<br>2 <sup>th</sup> : Co-operation with unions and employer's associations. | Only workers in firms with more than 5 employees. Members are elected by a period of 4 years  | All the workforce (unionized and non-unionized workers) |
| Greece               | 1 <sup>th</sup> : Worker representation  | Only workers in firms with more than 50 employees. More than 20 employees in firms without unions Members elected by ballot.                  | All the workforce                                       |

| Country     | Objective  | Composition   | Representation                                      |
|-------------|--|---|---|
| Ireland     | No w.c., only European w.c. employee involvement through unions.<br>Direct: team work<br>Indirect: representatives are consulted by the manager.         |   |   |
| Italy       | 1 <sup>th</sup> :Worker involvement  | Elected body in private firms with more than 50 employees.  | All the workforce (unions and non-unions employees) |
| Luxembourg  | There is no single institution of w.c. However employee representation occurs through two committees: employee committee EC and joint work committee-JWC | EC is a body in firms with more than 15 employees. Members are elected from a list nominated by the unions or more than 100 worker JWC is a body in firms with more than 150 employees. Members are elected as in EC. | All the workforce within the firm                   |
| Netherlands | 1 <sup>th</sup> :Worker involvement<br>2 <sup>th</sup> :Co-operation   | Members are elected by a secret ballot in firms with more than 100 employees.<br>The candidates list is nominated by the employees under consultation or not of the unions.   | All the workforce within the firm                   |
| Portugal    | 1 <sup>th</sup> :Worker involvement<br>2 <sup>th</sup> :Monitoring   | Worker commission is not associative. Representatives are elected in firms with more than 100 employees.<br>Employees nominated a list of candidates, who are elected in a secret ballot.                             | All the workforce within the firm                   |

| Country        | Objective   | Composition   | Representation                    |
|----------------|---|---|-----------------------------------|
| Spain          | 1 <sup>th</sup> : Worker participation and representation.<br>2 <sup>th</sup> : co-operation  | Joint body of employer and worker representatives.<br>In firms with more than 50 employees. | All the workforce within the firm |
| Sweden         | No w.c., only European w.c. employee involvement through unions.  |   |                                   |
| United Kingdom | Not w.c., only European w.c. employee involvement through unions.<br>Direct: team work<br>Indirect: representatives are consulted by the manager. |   |                                   |

| <b>Country</b>      | <b>Rights</b>  | <b>Compensation-Prot.</b>   | <b>Unions relationship</b>   |
|---------------------|--|---|--|
| Austria             | Information, consultation, co-determination<br>Information on:<br>economics, business strategy, financial situation.<br>Co-determination on:<br>hiring, promotion and lay-offs | Not extra compensation. Same career opportunities, training and education as regular workers. Protection against dismissal        | At most 25% members are non-unionized<br>Currently 88% are unionized.<br>Trade unions use w.c. as a channel to recruit candidates and keep informed about employee's preferen. |
| Belgium             | Information and consultation on:<br>economic and financial situation and business strategy.  | Not extra compensation. Same career opportunities, training and education as regular workers. Protection against dismissal        | Only traditional trade unions can submit a list with candidates.<br>Monopoly for trade unions and use w.c. as a channel to recruit candidates                                  |
| Denmark and Finland | Information and cooperation on :<br>technical and employment relations. Employees' welfare. Financial information.   |   |  |
| France              | Information, consultation. Not explicit in co-determination but some collective agreements are taken in the meeting of w.c.  | Not extra compensation. Protection against dismissal  | Strong relation<br>candidates are elected from a list of unions members.<br>The information is used by trade union in the negotiation of collective agreement.                 |
| Germany             | Information, consultation, co-determination  | Not extra compensation. Same career opportunities, training and education as regular workers. Protection against unfair dismissal | Some studies have found that w.c. are more likely in firms with unions and collective agreements   |
| Greece              | Information, consultation. No collective agreements rights   | Not extra compensation. Same career opportunities, training and education as regular workers. Protection against unfair dismissal | The relationship with unions is competitively rather than complementary.   |

| <b>Country</b> | <b>Rights</b>  | <b>Compensation-Prot.</b>   | <b>Unions relationship</b>   |
|----------------|--|---|--|
| Ireland        | The rights of the employee involvement is consultation. Also Collective agreements   |   | Unions can implement both direct and - indirect participation.   |
| Italy          | Because the relation with the unions, manager provides to the unions and council member with information: investment and production process.         | Not extra compensation. Same career opportunities, training and education as regular workers. Protection against unfair dismissal | The relationship with unions is very close. Candidates are appointed by the unions.  |
| Luxembourg     | EC has rights on information and consultation. JWC has rights on co-determination.   | Not extra compensation. Same career opportunities, training and education as regular workers. Protection against unfair dismissal | The relationship with unions is very close. Candidates are appointed by the unions in the both committees.                       |
| Netherlands    | Information and consultation on economic and financial matters. Right to nominate representatives to the supervisory board                           | Not extra compensation. Same career opportunities, training and education as regular workers. Protection against unfair dismissal | In legal terms there is not strong relationship. But the percentage of unionized is close to 75%.                                |
| Portugal       | By constitutional law workers have the right to monitor the manager<br>Right to information<br>Right to co-manage the company on welfare facilities. | Not extra compensation. Protection against unfair dismissal   | Competitive relation with unions. WC have decreased in the last days and unions have been taking the role of worker involvement. |
| Spain          | Information rights to protect the worker interest.<br>Right to bargaining on collective agreements.  | Not extra compensation. Protection against unfair dismissal   | Strong relation with trade unions. Unions utilized w.c. to extend their own presence   |
| United Kingdom | Rights on information and consultation on production process   |   | Unions can implement both direct and - indirect participation.   |

Source: *European Foundation for the improvement of living and working condition.*