IZA Institute of Labor Economics

Initiated by Deutsche Post Foundation

Employee Representation and Flexible Working Time

Gabriel Burdín
Virginie Pérotin

DISCUSSION PAPER SERIES

Employee Representation and Flexible Working Time

Gabriel Burdín
University of Leeds and IZA

Virginie Pérotin
University of Leeds

ABSTRACT

Employee Representation and Flexible Working Time[1]

This paper provides evidence on the effect of employee representation on working time flexibility in private-sector European establishments. A 2002 European Union directive granted information, consultation and representation rights to employees on a range of key business, employment and work organization issues beyond a certain firm size. We exploit the quasi-experimental variation in employee representation introduced by the implementation of the Directive in four countries (Cyprus, Ireland, Poland and the UK) with no previous legislation on the subject. The empirical analysis is based on repeated cross-section establishment-level data from the last three rounds of the European Company Survey. Difference-in-difference estimates suggest that the Directive had a positive and significant effect on both employee representation and the utilisation of flexible working-time arrangements for eligible establishments. The greater use of flexible working-time schemes is driven by establishments in which no local wage-negotiations take place and those with a high proportion of female workers. Our results are consistent with the idea that employee representation provides an endogenous rule-enforcement mechanism in second-best scenarios in which incomplete contracting problems are pervasive and third-party arbitration is unfeasible. Quite paradoxically, the relaxation of shareholders' property rights and the limits imposed on managerial discretion as a result of the operation of employee representation seem necessary to achieve certain valuable forms of organizational flexibility in market economies.

JEL Classification:	employment, flexible working time, employee representation
Keywords:	D23, J22, J50

Corresponding author:
Gabriel Burdín
Leeds University Business School
The University of Leeds
Maurice Keyworth Building
Leeds, LS2 9JT
United Kingdom
Email: g.burdin@leeds.ac.uk

I. INTRODUCTION

The ability of organizations to adapt rapidly to a changing environment is a critical success factor in competitive markets (see for instance, Stigler, 1939; Hannan and Freeman, 1984; Volberda, 1996). More precisely, an apparent lack of microeconomic flexibility has been a pressing concern for European countries, particularly in the recent recessionary context. European labour market institutions are often in the dock as many blame them for restricting the ability of firms, and of the economy, to respond to shocks smoothly. Recent survey evidence shows that the bulk of firms' adjustments to cope with shocks has primarily rested on employment rather than along other margins, such as wages and hours (Bertola, et al, 2012; Fabiani et al, 2015). While wage-setting institutions have captured most of the attention in this debate, the role of shop-floor employee representation has been largely overlooked. Yet employee representation at the workplace level may allow more efficient contractual arrangements by allowing firm adjustments to take into account employee preferences over hours, wage and employment trade-offs.

Employee representation, such as trade union representation or works councils, affects the distribution of decision rights and information between managers and workers, and therefore work organization, at the establishment level.[2] The presence of employee representation structures may oblige firms to disclose financial information and may impose specific procedures on how to implement certain decisions and major organizational changes.

It may be thought that employee representation erodes organizational flexibility by imposing time-consuming consultation and decision-making processes, thus limiting the ability of firms to respond to market signals quickly. In this paper, we study whether or not this presumption is empirically grounded by focusing on the effect of employee representation on an important operational dimension of organizational flexibility--working-time flexibility. By allowing firms to smooth working hours according to workload variations, flexible working-time arrangements, such as flexitime and working-time accounts, may provide an alternative adjustment mechanism to cope with shocks. Flexitime allows employees to vary workday start and finish times and working-time accounts compensate overtime with days off. Employers

---

[2] We use the term "employee representation" to mean a formal mechanism that allows workers to have a voice in managerial decisions at the workplace level. This may take different forms, including not only works councils and union representatives, but also joint consultative committees and other "institutionalized bodies for representative communication" between a single employer and employees of a single establishment or enterprise (Rogers and Streeck 1995)

may benefit from implementing such arrangements in different ways. For example, working-time accounts can provide a cost-effective adaptation of employment to demand changes, by reducing overtime bonuses and the costs of recruiting and training temporary workers. From the employee's perspective, flexible working-time arrangements may provide greater job security and promote a better work-life balance, by allowing employees to vary their working times according to personal needs (Seifert, 2001; Herzog-Stein and Zapf, 2014).[3] We examine whether European legal provisions establishing employee representation rights and requiring firms to inform and consult employees have resulted in increased employee representation, and whether this is associated with a greater use of flexitime and working-time accounts. We also explore the extent to which the changes observed are associated with differences in firms' employment responses and employee motivation problems, and whether effects vary with the level at which pay bargaining takes place and with workforce composition.

Identifying the causal effect of employee representation, and more generally, of work organization, is methodologically troublesome (DiNardo and Lee, 2004; Bloom and van Reenen, 2011). Ideally, one would require exogenous variations in the presence of employee representation at the workplace level. In this paper, we exploit the quasi-experimental variation introduced by the implementation of a 2002 European Union (EU) Directive granting employees information and consultation rights beyond a certain firm size. The Directive 2002/14/EC on the Information and Consultation of Employees provides employees with minimum statutory rights to be informed and consulted by their employers on a range of key business, employment and work organization and restructuring issues (Directive 2002/14/EC; Hall, 2005). We focus on four countries (Cyprus, Ireland, Poland and the UK) in which the implementation ("transposition") of the Directive implied major changes in national legislation[4]. The size-contingent nature of the Directive, which applies to establishments employing 50 employees or more, creates quasi-experimental conditions. This setting allows us to use a difference-in-difference approach to compare the responses of eligible and non-eligible establishments. To conduct our empirical analysis, we rely on repeated-cross sectional establishment-level data from the European Company Survey. One major advantage of this

---

[3] Adapting working hours to workload variations and reconciling work obligations with workers' personal life appear to be the main reasons given by both managers and employee representatives for implementing such schemes (Riedmann, 2006). Interestingly, the fact that Germany did not experience a sharp increase in unemployment as other developed countries did during the Great Recession--the so-called German labour market miracle--has been partly attributed to the widespread use of flexible working-time schemes (Burda and Hunt, 2011).

[4] The implementation of a European Directive involves ensuring its provisions are transposed into national legislation.

survey is that it provides harmonized information on employee representation and working-time arrangements before and after the transposition of the Directive.

Our results suggest that the Directive had a positive and significant effect on both the presence of employee representation and the utilisation of flexible working-time arrangements in eligible establishments. More precisely, the proportion of establishments with employee representation among those establishments affected by the Directive increases by 7 percentage points compared to the control group over the reform period. Furthermore, the utilisation of working-time accounts in the establishments affected by the Directive (the treatment establishments) increases by 5 percentage points compared to control establishments in the same period. In relation to the pre-reform situation, the magnitude of these effects is sizeable, representing increases of 33% and 21% respectively. We also find a significant reduction in the incidence of staff motivation problems as perceived by managers. Interestingly, the effect of employee representation on flexible working-time schemes is driven by establishments where no local wage bargaining takes place and those with a high proportion of female workers. Employee representation appears to play an important role in aggregating and communicating preferences for temporal flexibility, which are often thought to be stronger in the case of female employees (Goldin, 2014). The validity of our identification strategy is robust to a series of placebo tests in which we arbitrarily manipulate the size threshold, the pre-policy and post-policy periods, and the countries affected by the Directive. The results are not confounded with compositional changes of treatment and control groups over time. We also show that our findings do not reflect long-run differential trends in the utilisation of flexible working-time arrangements between affected and unaffected firms.

The rationale for our investigation comes from the incomplete contracting problem surrounding the implementation of flexible working-time schemes. While working-time on a fixed basis is easily contractible, working-time flexibility may not be. Two separate issues arise in this context. At the negotiation stage, it might be costly to write and agree on individual contracts specifying very detailed rules about how and when working time can be varied and rights over time credits/debits can be exercised by the parties.[5] After the contract has been agreed upon, the specialized knowledge required to enforce highly idiosyncratic workplace-level contractual provisions may not be available to third parties.[6] As a consequence, employers

---

[5] Flexible working time can be understood as a state-contingent contract (see for instance, Malcomson, 1983).
[6] The application of third party arbitration procedures to managerial policy issues, such as the administration of flexible working time schedules, might be prohibitively costly or unfeasible. This is exemplified by the so-called

may behave in an opportunistic manner ex post and renege on their promise to compensate overtime with time-off. Employees may end up performing unpaid overtime hours, as the employer can always argue that employees' claims are not compatible with current company operational needs. In this context, employee representation may facilitate the introduction of flexible working-time arrangements by improving communication and information flows between the parties and protecting workers against the potential opportunistic manipulation of working time schedules. Employee representation provides an endogenous enforcement device for flexible working-time schemes, making more credible the employers' intertemporal commitment implicit in such schemes.[7] Our results are consistent with the idea that employee voice may foster flexibility along other margins of adjustment (hours) than employment in second-best scenarios in which incomplete contracting problems are pervasive (see for instance, Freeman and Medoff, 1984; Hogan, 2001; Jacobsen and Skillman, 2004; Addison, 2015) and allow for more efficient contracting.[8] Employee representation implements a change in property relations by transferring partial control rights to employees or at least precluding shareholders (and managers) from making decisions in relation to certain matters without informing employees. Quite paradoxically, the relaxation of shareholders' property rights and the limitation of managerial discretion seem necessary to achieve certain valuable forms of organizational flexibility.

The paper adds to the literature on shop-floor employee representation and works councils. Previous research has mainly focused on the German case, exploring the effects of representation on productivity (Addison et al, 2004), investment (Addison et al, 2007), employment (Addison and Teixeira, 2006; Jirjahn, 2010), and wages (Addison et al, 2007).[9] Our paper relates to the literature on the economic effects of unionization (DiNardo and Lee, 2004), including a relatively smaller literature on the effects of employee representation on nonwage aspects of work (Buchmueller, DiNardo, and Valletta, 2004). Evidence about the

---

Business Judgment Rules in common law countries which have usually made courts reluctant to enforce contracts between parties within the same firm (Aoki, 1984; Bolton and Dewatripont, 2011; Aghion et al, 2014).

[7] Incomplete contracting may be especially problematic with provisions permitting employees to make up for overtime work by taking time off. While flexitime has been used for at least a century, working-time accounts are relatively recent, so that practices may still be evolving.

[8] Flexible working-time arrangements may thus improve the efficiency of workplace-level equilibria (McDonald and Solow, 1981). It is well-known that bargaining fails to achieve first-best outcomes when information is not symmetric and contracts are difficult to enforce (Farrell, 1987; Pencavel, 1984). While the efficient bargaining literature emphasizes the rent-seeking/bargaining role of employee representation (particularly through unions), our argument highlights its informational/agreement enforcement role.

[9] Other studies have analysed the effects of board-level employee representation on employment (Gregorič et al, 2014), innovation (Kraft et al, 2011; Belloc, 2015), productivity (FitzRoy and Kraft, 2005) and corporate market value (Gorton & Schmid, 2004).

relationship between employee representation and working-time flexibility is scant and mostly based on case studies (Berg et al, 2014; Herzog-Stein and Zapf, 2014).[10] In a study more closely related to ours, Heywood and Jirjahn (2009) analyse the relationship (also restricted to the German context) between works councils and family-friendly workplace practices, finding that the presence of works councils positively affects the use of flexible work schedules. Due to the lack of exogenous variation in employee representation structures, the proper identification of causal effects has been a major concern about these studies.[11] By taking advantage of the quasi-experimental setting created by the implementation of the Directive, we provide for the first time causal evidence on the effect of employee representation on working-time flexibility. Based on a representative sample of European establishments, our approach represents a better balance between external and internal validity than econometric case studies based on single plants or firms. Often lacking an appropriate comparison group, those studies are limited to conducting a first-difference analysis and are therefore unable to control for unobservable time shocks (Bloom and van Reenen, 2011). In addition, restriction to one organization may impair the generalizability of the results if treatment success is correlated with organizational culture.

The paper also contributes to the literature on working-time flexibility. While previous research has mainly focused on technology as a key driver of flexible working time utilisation, we highlight the role played by an important labour market institution--employee representation--in mitigating the kind of commitment problems that may undermine the implementation of such practices. Recent studies have suggested that working-time flexibility has a positive effect on firm productivity (Bloom et al, 2015; Beckmann, 2016) and promotes convergence in pay between genders (Goldin, 2014; Goldin and Katz, 2016). If this is correct, our results would suggest that employee representation may affect the gender pay gap through this interesting yet underexplored institutional channel.

The paper is organised as follows. Section II gives background information on employee representation in Europe and describes the data. Section III explains the identification strategy based on the size-contingent implementation of the EU Directive on Employee Information and Consultation. Section IV presents the main results. Section V provides evidence on heterogeneous effects depending on establishments' workforce composition (in terms of gender and skills) and on whether or not wages are negotiated locally.

---

10 The use and impacts of flexible working time practices have received attention in sociological research (see for instance, Chung and Tijdens, 2013).
[11] Addison et al (2004) discuss major identification challenges in the empirical literature on works councils.

Section VI discusses our main identification assumptions and provides some robustness checks. Section VII concludes.

II. INSTITUTIONS AND DATA

II.1 Employee representation structures in Europe

Formal employee representation has a long tradition in European countries. While wage negotiations are carried out by trade unions at the national, sectoral or firm levels, employee representatives at the workplace level are involved in employment-related matters such as major organizational changes, training, working time schedules, and working conditions. As shown in Figure 1, there is a considerable and persistent degree of heterogeneity in the incidence of employee representation structures in EU21 countries. [12]

Notes: % of private-sector establishments (10 or more employees) with employee representation
All sectors and size classes. Year: 2013. Source: based on European Company Survey (2013)
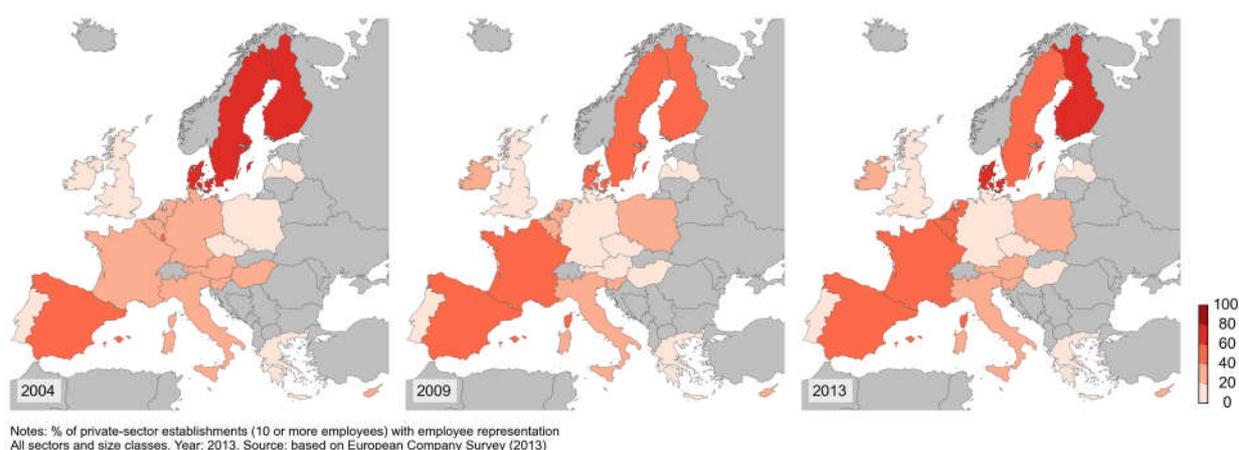
FIGURE 1

SHARE OF ESTABLISHMENTS HAVING AN EMPLOYEE REPRESENTATION STRUCTURE

Rules governing the adoption and operation of such shop-floor structures markedly vary across countries, for example regarding size thresholds and trigger procedures. In some countries, a single channel of representation predominates (either trade union representatives or works councils). Other countries are characterized by dual-channel representation in which

---

[12] This includes the former 15 "old" member states (*Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom*) plus six of the 10 new Member States which joined the European Union in 2004 (Czech Republic, Cyprus, Latvia, Hungary, Poland and Slovenia). As we explain below, we restrict the analysis to this group of countries due to data availability.

both institutions are present.[13] Employee representatives of both types usually negotiate at the establishment level on issues delegated from the sectoral level, and have rights to information and consultation (e.g., on mass redundancies and major restructuring plans, financial information, etc.). European countries also differ in the extent of shop-floor employee representation rights. In some cases, the legislation just confers information and consultation rights to employees or their representatives. In other cases, employee representatives also have codetermination rights, in the sense that management cannot make decisions over certain matters without their agreement. An important issue is whether or not workplace-level employee representatives are allowed to bargain over wages. In some countries, such as Germany, there are legal limits on the authority of works councils. For example, they cannot call strikes and cannot formally engage in wage negotiations unless expressly authorised to do so by the relevant industry-level collective bargaining agreement. This has been seen as a positive feature of the German institutional design as it allows to decouple the factors that affect the division of the organizational surplus from those that affect the surplus itself, avoiding perverse effects associated with two-tier bargaining systems (Freeman and Lazear, 1995; Boeri, 2015).

In recent years, the European Directive 2002/14/EC on the Information and Consultation of Employees has been an important legislative innovation in relation to employee representation. The Directive provides a minimum common statutory framework for informing and consulting employees' representatives in three specific areas: i) the current economic situation and probable development of the firm/establishment, ii) the current situation and future employment prospects (including any anticipatory measures envisaged when there is a threat to employment), iii) substantial changes in work organization or in contractual relations (Directive 2002/14/EU). The Directive sets up a broad framework and allows member states an important degree of flexibility regarding concrete arrangements. Implementation has varied across EU member states, depending on pre-existing national legislation on the subject. As we explain below, we exploit the differential impact of the Directive across establishments of different sizes as an exogenous source of variation in the presence of employee representation.

---

[13] Employee members of works councils may be elected from candidates nominated by trade unions, but are in principle distinct from trade union representatives.

II.2 Data

We test our hypothesis using repeated cross-section data from the last three waves of the European Company Survey (ECS 2004, 2009, 2013).[14] The ECS is a representative sample of non-agricultural European establishments employing at least 10 employees. A crucial advantage of this survey is that it provides harmonized cross-country information on employee representation and working time arrangements at the workplace level.

The survey is conducted in two steps. The first step involves a telephone interview with a manager, who is asked about establishment characteristics, organizational practices (e.g. compensation policies, working time arrangements, etc), and industrial relations, including the existence of employee representation structures. The second stage comprises an interview with an employee representative in those establishments in which an employee representation structure is present. As information obtained in the second stage is conditional on having an employee representation structure, our analysis is exclusively based on the information gathered in the management questionnaire.

In this paper, we focus on institutionalized forms of employee representation, either through trade unions or works councils. Following Bryson et al (2012), this definition excludes health and safety representatives and ad-hoc forms of representation.[15] We rely on two different measures of the utilisation of flexible working time arrangements. The first measure (Flexitime) is a dummy variable equal to 1 if (according to managers) *"employees have the possibility to adapt the time when they begin or finish their daily work according to their personal needs or wishes"*. The second measure indicates whether it is *"possible for employees to use accumulated overtime for days off"*. We use the latter as a proxy for the utilisation of working time accounts at the workplace-level.

We restrict the analysis to private sector establishments in EU21 countries for which there is consistent information across the three waves. The final sample comprises 16,595 and 20,031 workplaces in 2009 and 2013 respectively. Descriptive statistics of the pooled 2009-2013 private sector sample are reported in Appendix Table A.1.[16] As we explain below, further sample restrictions are introduced in order to perform our main empirical exercise.

---

[14] In 2004, the survey was called European Survey on Working Time and work-life balance (ESWT).
[15] Measures of board-level employee representation are not available from the survey.
[16] Figures A.1 and A.2 in the Appendix show the incidence of employee representation is generally higher in large establishments and differs markedly across industries. Further details about the survey methodology and sampling procedure can be found in: http://www.eurofound.europa.eu/surveys/european-company-surveys.

III. IDENTIFICATION

An obvious concern in terms of identification is that the presence of an employee representation structure at the workplace level may be influenced by many observed and unobserved factors which may also affect the outcome of interest. For example, management quality (usually unobserved) may be positively correlated with both flexible working schemes and employee representation.[17] Good managers may be prone to implementing working-time flexibility and opening up regular information and consultation channels with the workforce through employee representatives. By failing to control for management quality, an OLS estimate of the effect of employee representation on working time flexibility will be biased upward.

To deal with the potential endogeneity of employee representation, we exploit the variation in the implementation of the Directive 2002/14/EU across establishments of different sizes in four European countries (Cyprus, Ireland, Poland and the UK). Two areas in which the Directive requires employee information and consultation clearly include working time flexibility: employment-related issues and major changes in work organization.[18] It is worth emphasizing that the Directive obliges firms to implement formal information and consultation procedures via employee representatives and does not refer to individual ad-hoc mechanisms. Either the workforce or management has to take an initiative for negotiations to start on an information and consultation agreement. From the point of view of our identification strategy, a crucial feature of the Directive is that it is size-contingent, i.e., it applies to establishments or firms ("undertakings") above certain employment threshold. The directive leaves it to national authorities to specify the appropriate level of application (firm or establishment).

In some member states, the Directive was redundant or only required minor legal adaptations. We focus on four countries (the UK, Poland, Ireland and Cyprus) that experienced major legislative changes as a result of the transposition of the Directive according to industrial relations experts (see for example Carley and Hall, 2008). For this group of countries, the implementation of the Directive implied establishing for the first time a general, statutory employee information and consultation system and a statutory system for employee representation (Hall, 2005; Carley and Hall, 2009). In all four of the countries we look at, the

---

[17] Bloom et al (2010) document a positive correlation between family-friendly workplace practices, including flexitime, and their measures of management quality.
[18] Further details can be found in Van Gyes (2006) and Aumayr et al (2011).

Directive was implemented between 2005 and 2008. Implementation thus took place between two rounds of the European Company Survey (2004 and 2009) so that the survey provides information on firms observed before and after the policy change.[19] In the case of these four countries, the Directive applies to firms employing 50 employees or more.

This quasi-experimental setting enables us to compare what happened to working time flexibility (and related outcomes) before and after the implementation of the Directive in treatment firms, as compared to what happened over the same period in a comparison group of firms that were not affected as much (or at all) by the Directive. The latter group is assumed to capture the counterfactual trend that would have been observed in the absence of the policy change. We estimate a difference-in-difference model by pooling the three ECS waves:

$$Y_{jsct} = \alpha + \delta I(Size_{jsct} \geq 50_t) + \beta I(Size_{jsct} \geq 50_t) \times Post_t + X'_{jsct}\gamma + \theta_t + \lambda_s + \eta_c + \varepsilon_{jsct} \qquad (1)$$

where Y is the outcome of interest in establishment j, sector s, country c, and at time t. $I(Size_{jsct} \geq 50_t)$ is an indicator function that takes the value one for establishments employing 50-99 employees (treatment group)[20] and zero for establishments with 10-49 employees, $Post_t$ is a dummy variable equal to 1 for periods in which the directive was in place (2009 and 2013) and 0 for pre-policy periods (2004), θ, λ, η denote a set of year, sector and country fixed effects[21], X is a set of control variables (whether the establishment belongs to a multi-plant firm; the economic situation of the establishment as perceived by the manager[22], and the shares of female, part-time and skilled workers) and α, δ, β and γ are parameters to be estimated.[23] Our coefficient of interest is β, which can be interpreted as the intention-to-treat effect, that is, the effect for an establishment of being offered treatment.

---

[19] In the UK, the Directive came into force in April 2005 and was implemented gradually, reaching establishments with 50 employees or more in April 2008. In Poland and Ireland, the Directive was transposed in April and July 2006 respectively. In Cyprus, the Directive came into force from April 2005 (for further details see Carley and Hall, 2009). Major legislative changes also occurred in Bulgaria, Estonia, Malta, and Romania during 2006 but unfortunately the 2004 ECS wave, .i.e., before the implementation of the Directive, does not provide information on these countries. In Italy, the Directive just gave legal force to an existing information and consultation system based on collective agreements and did not create new employee representation structures (Carley and Hall, 2009).

[20] The definition of the treatment group is constrained by data restrictions. The narrowest group we can define above the threshold is 50-99 employees.

[21] It is worth noting that country fixed effects capture differences in collective bargaining and codetermination institutions that remain constant over the period.

[22] The survey question is phrased as: *"How would you rate the economic situation of this establishment? Is it very good, quite good, quite bad or very bad?"*

[23] Note that no linear term in $Post_t$ enters equation (1) since it is included in the time dummies.

This strategy relies on two critical assumptions. First, in the absence of the Directive, the underlying trends in working-time flexibility outcomes (conditional on characteristics *X*) would have been similar for treatment and control establishments. Second, there are no significant group compositional changes (see for example Blundell and Costa-Diaz, 2009).[24] We discuss in detail whether these two assumptions are met and provide an extensive series of robustness checks in Section 6. First, we show that the results are not confounded with compositional changes (in terms of observable characteristics) in the treatment and control groups over time. Then, using employee-level data from the European Working Conditions Survey (EWCS), we show that the results do not seem to reflect long-run differential trends in the utilisation of flexible working-time schemes between affected and unaffected establishments. In addition, we demonstrate that the identification strategy is robust to a series of placebo tests in which we arbitrarily manipulate the size threshold, the pre-policy and post-policy periods, and the countries affected by the Directive. Finally, by analysing pre-reform employment trends in treatment and control establishments, we show that endogenous sorting into the treatment status does not seem to be a concern in our setting, reinforcing the validity of our identification strategy.

IV. MAIN RESULTS: THE DIRECTIVE, EMPLOYEE REPRESENTATION AND FLEXIBLE WORKING TIME

IV.1 Exploratory analysis: correlation between employee representation and flexible working-time arrangements

Before moving to the main empirical exercise, we explore the correlation between employee representation and flexible working schemes based on both the entire EU21 countries sample and the restricted four-countries sample (CIPUK) on which we will later conduct the difference-in-difference analysis. Table 1 reports OLS estimates of the effect of employee representation on the utilisation of flexitime and working-time accounts (as defined in section 2.2) in the workplace, from a series of Linear Probability Models. Establishment-level controls include a dummy variable equal to 1 for establishments with a very good or good economic situation as perceived by the manager, plant size dummies, industry dummies, and country dummies, as well as controls for workforce composition (shares of female, skilled, and part-

---

[24] Table A.2 in Appendix reports descriptive statistics calculated for the four-country sample, distinguishing control and treatment establishments in the pre and post-policy period.

time employees).[25] The presence of a workplace-level employee representation structure is associated with greater utilisation of both types of flexible working schemes when estimates are performed on the EU21 sample.[26] In the restricted CIPUK sample of four countries, the correlation between employee representation and flexible working-time arrangements is positive and significant in the case of working-time accounts but not in the case of flexitime.[27]

TABLE 1

CORRELATION BETWEEN EMPLOYEE REPRESENTATION AND FLEXIBLE WORKING TIME ARRANGEMENTS.

	Flexitime			Working-time Accounts		
	(1)	(2)	(3)	(4)	(5)	(6)
	EU21	EU21	CIPUK	EU21	EU21	CIPUK
Employee Representation	0.143***	0.050***	0.023	0.134***	0.060***	0.056***
	(0.006)	(0.008)	(0.020)	(0.006)	(0.008)	(0.019)
Establishment-level controls	No	Yes	Yes	No	Yes	Yes
Country fixed effects	No	Yes	Yes	No	Yes	Yes
Industry fixed effects	No	Yes	Yes	No	Yes	Yes
Observations	19,207	17,529	2,895	19,200	17,510	2,896

Notes: All columns report OLS estimates based on the ECS 2013 cross-section sample. In Columns (3) and (6) estimates are restricted to Cyprus, Ireland, Poland and the UK. Establishment level controls include: economic situation of the establishment as perceived by the manager, 3 plant size dummies (10-49, 50-249 and 250 or more employees), 6 industry dummies (Manufacturing, Construction, Commerce & Hospitality, Transport, Financial Services and Services), 21 country dummies, share of female employees, share of skilled employees and share of part-time employees. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

---

[25] We rely on a quite parsimonious specification of the model in which few control variables are added in order to avoid further endogeneity concerns.

[26] We get similar results when using the 2009 ECS wave instead of the 2013 ECS wave (in the case of the EU21 sample). This is interesting as it shows that employee representation was also correlated with flexible working-time utilisation at the time of the Great Recession (2008-2009).

[27] We performed additional IV and biprobit estimates to take into account (at least in a preliminary manner) the endogeneity of employee representation. We instrument the presence of employee representation at the workplace level in 2013 by the four (2009) and nine-year (2004) lagged average incidences of employee representation at the corresponding size-industry-country cell of each establishment. These instruments are also used as exclusion restrictions in the estimation of the bivariate probit model. IV and bivariate probit estimates also suggest a positive and significant effect of employee representation on working-time accounts when estimates are restricted to the four-countries CIPUK sample. Unfortunately, due to data restrictions, instruments can only be constructed at the one-digit industry level. This may explain the implausibly large IV estimates compared to OLS estimates. All these estimates are available from the authors upon request.

4.2 Difference-in- difference estimates

Our OLS estimates suggest a positive correlation between employee representation and the presence of flexible working-time arrangements at the workplace level. However, establishing a convincing causal link requires some exogenous variation in employee representation structures. In this section, we present the results from difference-in-difference estimates, considering the four countries (UK, Poland, Ireland and Cyprus) in which the Directive 2002/14/EU had a major impact on national legislation. Since the Directive applied only to establishments with at least 50 employees, we take an interval around that size threshold to define treatment and control establishments. We define establishments employing 50 to 99 employees as our treatment group and establishments employing 10 to 49 employees as the control group. Unfortunately, the use of narrower size bands is precluded by data restrictions.

The validity of this strategy rests on establishing that the Directive had the expected differential impact on employee representation in eligible establishments[28]. Results from difference-in-difference estimates of changes in employee representation reported in Columns (1) of Table 2 show that this is actually the case: there is a significant increase in employee representation after the reform in treatment establishments relative to control establishments. In column (2), we show that this is robust to the inclusion of establishment-level controls, industry, country and time fixed effects. In columns (3) and (4), we report results from additional estimates including both country and industry-specific time trends in order to account for the potential confounding effect of country and sectoral shocks over the period. Estimates from our preferred specification, reported in Column (4), indicate a statistically significant increase in the presence of employee representation structures in treatment establishments in relation to control firms of roughly 7.4 percentage points. Compared to the pre-reform incidence of employee representation, the magnitude of the effect is sizeable in the treatment group, representing an increase of 32%.[29] Furthermore, the magnitude of the effect is remarkably stable across specifications. Overall, the results reported in Table 2 support our

---

[28] Previous attempts to quantify the effectiveness of the directive in promoting employee representation have been mainly descriptive. For example, Adam et al (2014) show an increase in the presence of Joint Consultative Committees in the UK between 2004 and 2011 for establishments in the size band affected by the Directive.

[29] We performed the following additional robustness checks. First, we estimated the model using sample weights. Second, in the four countries we focus on, the Directive was applied at the firm-level. The survey collects the information at the establishment-level, so that it does not provide employment figures at the firm-level in the case of muti-plant firms. We therefore performed additional estimations restricting the sample to single-plant firms in which eligibility can be unambiguously identified. Third, in order to focus on short-run effects, we estimated the model on 2004-2009 only. None of these modifications alter the basic results.

use of the Directive as a source of exogenous variation in the presence of employee representation at the workplace level. As expected, the Directive seems to have an effect around the legal threshold of 50 employees. In Section 6, we provide further support for the use of the Directive by relying on a series of falsification tests in which we arbitrarily change the size threshold, the pre-post policy period and the countries affected by the Directive.

TABLE 2

DIFFERENCE-IN-DIFFERENCE ESTIMATES. PRESENCE OF EMPLOYEE REPRESENTATION STRUCTURE

	Treatment: 50≤L<100			
	Control: 10≤L<50			
	(1)	(2)	(3)	(4)
Treatment*Post-reform	0.076***	0.073***	0.076***	0.074***
	(0.029)	(0.028)	(0.028)	(0.028)
Treatment	0.118***	0.119***	0.117***	0.119***
	(0.023)	(0.023)	(0.023)	(0.023)
Year fixed effects	No	Yes	Yes	Yes
Establishment level controls	No	Yes	Yes	Yes
Industry fixed effects	No	Yes	Yes	Yes
Country fixed effects	No	Yes	Yes	Yes
Country-specific time trends	No	No	Yes	Yes
Industry-specific time trends	No	No	No	Yes
Observations	6,330	6,300	6,300	6,300
R-squared	0.047	0.084	0.088	0.090

Notes: Difference-in-differences regressions comparing treatment (50-99 employees) and control (10-49 employees) establishments. Estimates based on repeated cross-section establishment data from the European Company Survey 2004, 2009, 2013 (Cyprus, Ireland, Poland, and the UK). The Post-reform variable equals 1 for years 2009 and 2013 and 0 otherwise. The coefficients correspond to the regression in Equation 1 estimated as a Linear Probability Model. Establishment-level controls include: economic situation of the establishment as perceived by the manager, 6 industry dummies (Manufacturing, Construction, Commerce & Hospitality, Transport, Financial Services and Services), 4 country dummies, share of female employees, share of part-time and skilled workers. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Having documented that the Directive exerts an exogenous influence on the presence of employee representation, we now turn to our outcome of interest, working-time flexibility. We look at whether establishments affected by the reform use more working-time flexibility schemes than before and in comparison with other establishments. In column (1) of Table 3, we report the main results for flexitime, i.e., the possibility for employees of adapting the time

when they begin or finish their working day. Consistently with our OLS estimates on the CIPUK sample, we do not find the reform had any significant effect on the utilisation of flexitime. However, the effect is positive and significant for working-time accounts, i.e., the possibility of compensating accumulated overtime with days off as reported in column (2). Estimates indicate a statistically significant increase of 5.4 percentage points in the utilisation of working-time accounts in treatment establishments compared with the comparison group. In terms of the pre-reform incidence of this practice, the effect represents an increase of 22%.

As we mentioned earlier, the implementation of flexible working-time arrangements should be associated with benefits for both workers and firms in terms of job stability and employee motivation. For example, working-time flexibility may allow firms to smooth hours worked (hence also labour costs) over the business cycle and facilitate a better work-life balance. For these reasons, we also investigate whether the presence of employee representation is also associated with differences in firms' employment adjustments and human resource management problems as perceived by managers, such as absenteeism and employee motivation.[30]

In Column (3) of Table 3, we report no significant effect on the probability of reducing employment in the last three years. In column (4) and (5), we report estimates for absenteeism and low staff motivation as perceived by managers. While no significant differences in absenteeism are observed, there is a statically significant reduction in managers' perception of low employee motivation in treatment establishments compared to control establishments of 4.9 percentage points (28% in terms of the pre-intervention incidence). Overall, the evidence is consistent with the hypothesis that employee representation facilitates the implementation of flexible working-time schemes which, in turn, increase employee motivation, possibly by allowing a better work-life balance.[31]

---

[30] The survey asks managers whether or not they encounter problems of low staff motivation and high absenteeism at their establishments. Managers are also asked whether the establishment reduced, increased or kept employment stable in the last three years.

[31] The reduction in low employee motivation is consistent with the positive effect of flexible working time on worker performance and firm productivity found in previous studies (Bloom et al, 2015; Beckmann, 2016).

TABLE 3

DIFFERENCE-IN-DIFFERENCE ESTIMATES. UTILISATION OF FLEXIBLE WORKING-TIME
ARRANGEMENTS AND OTHER RESPONSES

	Treatment: 50≤L<100				
	Control: 10≤L<50				
	(1)	(2)	(3)	(4)	(5)
	Flexitime	Working-time accounts	Decreased employment 2010-2013	Absenteeism Problems	Low staff motivation Problems
Treatment*Post-reform	0.012	0.054**	0.044	-0.031	-0.049**
	(0.033)	(0.026)	(0.027)	(0.024)	(0.025)
Treatment	-0.032	-0.042*	-0.035	0.065***	0.067***
	(0.028)	(0.021)	(0.022)	(0.021)	(0.021)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Establishment level controls	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Country-specific time trends	Yes	Yes	Yes	Yes	Yes
Industry-specific time trends	Yes	Yes	Yes	Yes	Yes
Observations	6,300	6,300	6,300	6,300	6,300
R-squared	0.084	0.217	0.093	0.035	0.046

Notes: Difference-in-differences regressions comparing treatment (50-99 employees) and control (10-49 employees) establishments. Estimates based on repeated cross-section establishment data from the European Company Survey 2004, 2009, 2013 (Cyprus, Ireland, Poland, and the UK). The Post-reform variable equals 1 for years 2009 and 2013 and 0 otherwise. The coefficients correspond to the regression in Equation 1 estimated as a Linear Probability Model. Establishment level controls include: economic situation of the establishment as perceived by the manager, 6 industry dummies (Manufacturing, Construction, Commerce & Hospitality, Transport, Financial Services and Services), 4 country dummies, share of female employees, share of part-time and skilled workers. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

V. HETEROGENEOUS EFFECTS: LOCAL WAGE-BARGAINING AND WORKFORCE COMPOSITION

The analysis presented above suggests that the Directive significantly boosted the presence of employee representation structures and working time flexibility schemes in affected establishments. In this section, we focus on the arrangements clearly associated with the reform—working-time accounts, and allow for potential heterogeneous effects of the

reform across establishments with different characteristics. We perform additional difference-in-difference estimates, but restricting the sample in convenient ways as explained below.

First, we consider the interplay between shop-floor representation and wage-setting institutions. It has been argued that by giving workers more power in enterprises employee voice would affect both the size and the distribution of the joint organizational surplus. In addition, employee representation structures may work better in situations where pay is determined outside the enterprise, as for example with industry-level collective bargaining. This separation decouples the factors that affect the division of the surplus from those that affect its size, which limits the scope for rent-seeking activities in negotiations over surplus distribution (Freeman and Lazear, 1995). Based on a compensating differentials framework, one may argue that the wage rate determined at the establishment level implicitly takes into account workers' preferences for different workplace amenities, including flexible working time. By contrast, when wages are negotiated at the industry-level, one would expect a shift in the local bargaining agenda towards issues such as fringe benefits and working conditions. Local management may also be keen on negotiating some local arrangements if pay is determined at a different level. Therefore, we hypothesise that employee representation at the enterprise level promotes working-time flexibility arrangements, particularly in settings in which wages are negotiated at the sectoral rather than at the company level. In columns 1-2 of Table 4, we present difference-in-difference estimates of the effects of the reform separately for establishments with and without local pay bargaining. As expected, the greater utilisation of working-time accounts found for the establishments covered by the reform is driven by those in which no local wage negotiations take place.

Next, we investigate the potential heterogeneous effects of the presence of employee representation on the adoption of working-time accounts depending on the gender and skills composition of the workforce.[32] As women still disproportionally face the double burden of market and household work, they may demand working time flexibility more strongly, or may be thought to do so by the local unions and management. It is then natural to think that employee representation structures may serve to aggregate and communicate such preferences to management more effectively if the proportion of women among employees is sufficiently high (Heywood and Jirjahn, 2009).

---

[32] As the workforce composition might be endogenous, one should interpret these results cautiously.

TABLE 4

HETEROGENEOUS TREATMENT EFFECTS. UTILISATION OF WORKING TIME ACCOUNTS

	(1)	(2)	(3)	(4)	(5)	(6)
	Local wage-bargaining		% Female		% Skilled	
	Yes	No	Low	High	Low	High
Treatment*Post-reform	-0.048	0.060*	0.005	0.094*	0.059*	0.020
	(0.059)	(0.035)	(0.037)	(0.051)	(0.033)	(0.054)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Establishment level controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific time trends	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific time trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	830	3,061	3,538	1,641	4,182	1,569
R-squared	0.133	0.062	0.237	0.210	0.232	0.182

Notes: Difference-in-differences regressions comparing treatment (50-99 employees) and control (10-49 employees) establishments. Estimates based on repeated cross-section establishment data from the European Company Survey 2004, 2009, 2013 (Cyprus, Ireland, Poland, and the UK). The Post-reform variable equals 1 for years 2009 and 2013 and 0 otherwise. High % female: the establishment's workforce comprises more than 60% of women. Low % female: the establishment's workforce comprises less than 40% of women. High % skilled: more than 60% of the establishment's employees have a university degree. Low % skilled: less than 40% of the establishment's employees have a university degree. The coefficients correspond to the regression in Equation 1 estimated as a Linear Probability Model. Establishment-level controls include: economic situation of the establishment as perceived by the manager, 6 industry dummies (Manufacturing, Construction, Commerce & Hospitality, Transport, Financial Services and Services), 4 country dummies, share of female employees, share of part-time and skilled workers. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

It has also been argued that the role of employee representation would be particularly relevant in firms that need to rely heavily on human capital investments (Aoki, 1984; Gregoric et al, 2014).[33] Such investments can be highly firm-specific, making employees vulnerable to ex-post expropriation. We conjecture that the presence of employee representation fosters the provision of working-time flexibility schemes particularly in firms with a high share of skilled workers.

---

[33] Bloom et al (2010) find that the shares of both female and skilled workers are positively correlated with the adoption of family-friendly workplace practices.

In order to examine these issues, we split the sample between establishments with high and low proportions of women and with high and low shares of skilled employees. [34] Results from these additional exercises are reported in Columns 3-6 of Table 4. The greater use of flexible working-time accounts found for eligible establishments seems to be driven by establishments with a high proportion of female workers. When the sample is split according to the incidence of skilled workers, we find a positive and significant effect of employee representation on the use of working-time accounts only for establishments with a low fraction of skilled workers. A possible interpretation is that the need to respond to fluctuations in demand is stronger in operations relying on less skilled workers. Incomplete contracting problems associated with the utilisation of flexible working time arrangements might also be less severe in the case of skilled workers executing non-routine tasks. It has been argued that flexible working time might be difficult to implement in the case of production workers and in teamwork environments (Beckmann, 2016). We find that employee representation seems to facilitate the use of working-time accounts in such contexts.

VI. IDENTIFICATION ASSUMPTIONS AND FURTHER ROBUSTNESS CHECKS

As shown in Table 2 above, the Directive provides quasi-experimental variation in the presence of employee representation around the threshold of 50 employees stipulated in the Directive. This feature is at the heart of our identification strategy. In this section, we further investigate the validity of our identification strategy.

A. Placebo tests: false employment thresholds and pre-post policy period. In Table 5 we report the results from a series of placebo tests in which we change the definition of both treatment and control groups and pre-post intervention periods. For instance, in column (3) we report the results from a falsification test in which we arbitrarily place the employment threshold at 250 employees. In this case, treatment establishments are those employing 250-399 employees and control establishments those with 150-249 employees. In principle, one would not expect to see the Directive to have any effect on employee representation in this part of the establishment size distribution. As we can see, the estimate of β, the coefficient of the

---

[34] Skilled workers are measured as those having a university degree. Establishments with a low incidence of women are defined as those in which female workers represent less than 40% of the workforce. Establishments with high female incidence are defined as those in which female workers represent more than 60% of the workforce. We classify establishments according to the share of skilled workers in a similar manner.

Treatment*Post-reform variable, is not statistically significant in this case. Using alternative false employment thresholds (100 and 150 employees respectively for results reported in columns (1) and (2) of Table 5) leads to similar conclusions. Finally, in column (4) we assume 2009 and 2013 as the pre- and post-intervention periods respectively. The estimate for coefficient β is also not significant in this case.

TABLE 5

PLACEBO TESTS. PRESENCE OF EMPLOYEE REPRESENTATION STRUCTURE

	Placebo tests			
	(False groups/ False pre-post policy period)			
	(1)	(2)	(3)	(4)
	T:100≤L<150	T: 150≤L<250	T: 250≤L<400	Pre-policy:2009
	C: 50≤L<100	C: 50≤L<150	C: 150≤L<250	Post-policy:2013
Treatment*Post-reform	-0.060	-0.064	-0.041	-0.044
	(0.052)	(0.049)	(0.064)	(0.033)
Year fixed effects	Yes	Yes	Yes	Yes
Establishment level controls	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Country-specific time trends	Yes	Yes	Yes	Yes
Industry-specific time trends	Yes	Yes	Yes	Yes
Observations	2,008	2,670	1,241	4,538
R-squared	0.108	0.115	0.093	0.095

Notes: Placebo tests: difference-in-differences regressions comparing false treatment and control establishments. Estimates based on repeated cross-section establishment data from the European Company Survey 2004, 2009, 2013 (Cyprus, Ireland, Poland, and the UK). The Post-reform variable equals 1 for years 2009 and 2013 and 0 otherwise. In column (4), post-reform equals1 for 2013 and 0 for 2009. The coefficients correspond to the regression in Equation 1 estimated as a Linear Probability Model. Establishment level controls include: economic situation of the establishment as perceived by the manager, 6 industry dummies (Manufacturing, Construction, Commerce & Hospitality, Transport, Financial Services and Services), 4 country dummies, share of female employees, share of part-time and skilled workers. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

B. *Countries not affected by the Directive.* We report the results from an additional placebo test in which we repeat our previous estimations but restrict the sample to the group of countries (Austria, France, Netherlands, Germany, Portugal, and Slovenia) in which the Directive has not had any effect on national legislation and practices (see, for instance, Carley and Hall, 2009). The reliability of our identification strategy would be called into question if

we found a positive treatment effect on employee representation and the use of working-time accounts for this group of countries. However, this is not the case. When the analysis is restricted to non-affected countries, we observe a statistically significant decrease in the presence of employee representation structures (column 1 of Table 6) in treatment establishments in relation to the control group (i.e., just the opposite to the effect we obtained for countries affected by the Directive) and no effect on working-time accounts (column 2). This reinforces the validity of our initial choice of countries truly affected by the Directive.

       C. Group compositional changes. Our third set of robustness checks concern the assumption that treatment and control groups do not change their composition before and after the transposition of the Directive. Some compositional changes affect our subsamples (see Table A2 in the Appendix, last column). Those changes are not substantial but could be a concern. For example, there are some minor but significant changes in the industry composition and perceived economic situation in the two groups of establishments. To provide evidence that the results are not confounded with such compositional changes, we re-estimate equation (1) including interaction terms between the treatment indicator and the full set of covariates in order to allow control variables to enter the equation separately for treatment and control establishments. The results presented in columns 3 and 4 of Table 6 indicate that the main estimates are robust to this modification. We run another specification test in which we include interactions of all covariates with the post-reform indicator to investigate if other control variables could explain the differences in responses regarding working-time accounts between treatment and control establishments after the transposition of the Directive. The results appearing in columns 5 and 6 of Table 6 indicate that our main findings are also robust to the inclusion of these additional controls.

       D. Exclusion of small establishments from the control group. Unfortunately, data restrictions forced us to define treatment and control establishments using broad size intervals (50-99 vs. 10-49 employees). One could argue that such size bands are not narrow enough to rule out the effect of differences in the size of establishments between the two groups independently of the reform. It is possible, however, to restrict the presence of small firms in the control group by excluding establishment employing 10-19 employees from the estimation. These additional estimates are reported in columns 7 and 8 of Table 6 and confirm our results once again: our main findings are also robust to this modification.

TABLE 6

ROBUSTNESS CHECKS: PRESENCE OF EMPLOYEE REPRESENTATION STRUCTURE AND
UTILISATION OF WORKING TIME ACCOUNTS

	Treatment: 50≤L<100						Treatment: 50≤L<100	
	Control: 10≤L<50						Control: 20≤L<50	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Employee representation	Working-time accounts	Employee representation	Working-time accounts	Employee representation	Working-time accounts	Employee representation	Working-time accounts
Treatment*Post-reform	-0.075***	-0.009	0.085***	0.072***	0.069**	0.055**	0.062**	0.054*
	(0.021)	(0.021)	(0.029)	(0.028)	(0.028)	(0.026)	(0.031)	(0.029)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Establishment level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific time trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-specific time trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,184	11,184	6,300	6,300	6,300	6,300	3837	3837
R-squared	0.233	0.308	0.089	0.214	0.090	0.216	0.082	0.236

Notes: The sample is restricted to establishments employing between 10 and 99 employees. The data corresponds to the European Company Survey 2004, 2009, 2013. Estimates reported in Column (1) and (2) are restricted to countries not affected by the directive (Austria, France, Netherlands, Germany, Portugal, and Slovenia). Estimates reported in Column (3) and (4) are restricted to affected countries and include a full set of interactions between the treatment indicator and the covariates. Estimates reported in Column (5) and (6) are restricted to affected countries and include a full set of interactions between the post-policy indicator and the covariates. Estimates reported in Column (7) and (8) exclude establishments employing 10-19 employees from the control group. The Treatment variable equals 1 if the establishment has between 50 and 100 employees and 0 otherwise. The Post-reform variable equals 1 for years 2009 and 2013 and 0 otherwise. The coefficients correspond to the regression in Equation 1 estimated as a Linear Probability Model. Establishment level controls include: economic situation of the establishment as perceived by the manager, 6 industry dummies (Manufacturing, Construction, Commerce & Hospitality, Transport, Financial Services and Services), 4 country dummies, share of female employees, share of part-time. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

E. Contemporary reforms. During the period covered in this study, policy activity in most areas of labour market reform was intense in many European countries, particularly after the 2008 crisis. Reforms were more frequent in countries with a poor labour market performance (Turrini et al, 2014). This raises the concern that other reforms implemented contemporaneously with the Directive may have had a confounding effect. To address this problem, our preferred estimates control for country and industry-specific time trends, which should capture the effects of other changes in public policy, including changes in institutions

23

and regulations. In addition, we use the European Commisssion's LABREF descriptive database that records labour market and welfare policy measures introduced in EU member states (EU-27) over the 2000-2013 period.[35] The database comprises information on enacted legislation (approved by Parliament), as well as executive or administrative acts, court rulings or agreements, including changes in the implementation of a previously adopted reform. Policy measures are organised into 49 policy fields and further grouped in 9 broad policy domains (Turrini et al, 2014). For the four countries affected by the directive, we track all the policy measures adopted in the domain "Working time-working time management" (8.40) over the 2004-2013 period. We do not identify any relevant policy change related to flexible working time.

F. Pre-intervention trends in the utilisation of flexible working-time schemes. Our difference-in-difference estimates would be biased if treatment and control establishments experienced different underlying trends in the utilisation of flexible working-time arrangements. In such a case, our results might simply reflect long-run differential trends between both groups. Unfortunately, we cannot rely on the ECS to study pre-reform trends as the survey was conducted for the first time in 2004. Instead, we exploit individual-level data from the European Working Conditions Survey (EWCS). We compute three indicators of flexible working-time schemes in a consistent manner for the four countries affected using two waves of that survey before the transposition of the directive (EWCS 2000 and 2005). Our indicators include the incidence of flexible workday start and finish times (flexitime), working hours that vary on a daily basis, and variable working hours on a weekly basis.[36] We also consider the proportion of individuals not satisfied with their current job as a crude proxy for the staff motivation indicator available in the ECS. We run a series of pseudo-experiments where we fictitiously assume that the transposition of the Directive took place in 2005 (post-reform period), taking 2000 as the pre-reform period. According to estimates reported in Table 7, there are no significant differences in the utilisation of flexible working schemes or job satisfaction between individuals employed in treatment (50-99 employees) and control establishments (10-49 employees) in a period in which the Directive was not in place.[37] This

---

[35] LABREF database, DG EMPL, European Commission, accessible at: https://webgate.ec.europa.eu/labref/public/
[36] These indicators intend to mimic those computed using the ECS but they are slightly different as the wording of the relevant questions differs between the two surveys.
[37] In Cyprus the directive took effect from 8 July 2005, but excluding Cyprus from estimates reported in Table 7 does not alter the conclusion.

is consistent with the transposition of the Directive being the factor that caused the utilisation of flexible working-time schemes to increase in treatment establishments.

TABLE 7

FALSIFICATION TESTS. INDIVIDUAL LEVEL DATA (EWCS 2000-2005).

	Flexitime	Variable working hours per week	Variable working hours per day	Not satisfied	Flexitime	Variable working hours per week	Variable working hours per day	Not satisfied
Treatment*Post-reform	-0.036	-0.040	-0.026	0.019	0.015	-0.002	-0.019	0.006
	(0.070)	(0.057)	(0.070)	(0.049)	(0.070)	(0.058)	(0.071)	(0.051)
Treatment	0.038	0.028	-0.018	-0.001	0.028	0.004	-0.014	-0.005
	(0.049)	(0.042)	(0.051)	(0.030)	(0.050)	(0.042)	(0.051)	(0.033)
Post-reform	0.060*	0.015	0.009	0.032	0.114***	0.028	0.072*	0.022
	(0.033)	(0.028)	(0.035)	(0.023)	(0.039)	(0.033)	(0.041)	(0.029)
Individual controls	No	No	No	No	Yes	Yes	Yes	Yes
Industry/Country effects	No	No	No	No	Yes	Yes	Yes	Yes
Observations	1,351	1,351	1,350	1,362	1,236	1,235	1,233	1,244
R-squared	0.004	0.001	0.001	0.003	0.113	0.054	0.086	0.032

Notes: The sample is restricted to individuals working at establishments employing between 10 and 99 employees (Cyprus, Ireland, Poland, and UK). The data corresponds to the European Working Condition Surveys 2000 and 2005. The Treatment variable equals 1 if the establishment in which the individual works has between 50 and 99 employees and 0 if it has 10-49 employees. The Post-reform variable equals 1 for the year 2005 and 0 for the year 2000. The coefficients correspond to the regression in Equation 1 estimated as a Linear Probability Model. Individual level controls include: female, part-time, age, 11 industry dummies, 4 country dummies. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

G. Endogenous sorting into treatment status. Finally, an important remaining concern is that establishments may endogenously sort themselves into treatment status. For instance, forward-looking managers may reduce establishment employment growth deliberately in order to avoid being covered by the Directive. Indeed, previous evidence on the effect of size-contingent regulations suggests there could be slower employment growth and a kink point in the cross-sectional firm size distribution just under the legal size threshold (Schivardi and Torrini, 2008, Garicano et al, 2013). Unfortunately, information on the entire establishment size distribution in the pre-policy period is not available. However, we have information on whether the establishment's employment decreased, stayed stable or increased in the preceding years for each ECS wave. Using the 2004 wave, we look at differences in three-year

employment changes between treatment and control establishments by estimating an ordered probit model. We find no significant differences between the two groups, suggesting that, at first glance, endogenous treatment status is not a concern in our setting.[38] Consistently, aggregate employment trends in establishments below and above the size threshold of 50 employees in the pre-policy period appear to be very similar in the four countries (see Figure A3 in Appendix).

VII. CONCLUSIONS

Using repeated cross-section data on European establishments, this paper studied the effect of employee representation on the utilisation of flexible working time arrangements. We exploited the quasi-experimental variation in the presence of employee representation resulting from the implementation of a size-contingent EU Directive concerning employee information and consultation rights.

We documented that the Directive, as expected, exogenously boosted the presence of employee representation structures in eligible establishments. Then we showed that there was a sizeable increase in the utilisation of flexible working time schemes (working-time accounts) in treatment establishments in relation to the comparison group. We also reported a reduction in the incidence of low employee motivation as perceived by managers. Interestingly, the greater utilisation of flexible working-time schemes found for eligible establishments seems to be driven by establishments with a low proportion of skilled employees, a high proportion of female workers, and in which wages are not negotiated locally.

Our findings are not surprising once the incomplete contracting nature of flexible working time is taken into account. Employee representation may improve communication and information flows between the parties and protect workers against the potential opportunistic manipulation of flexible working time schedules, making the employer's intertemporal commitment implicit in such schemes more credible.

---

[38] Estimates available upon request.

REFERENCES

Adam, Duncan, John Purcell and Mark Hall, "Joint consultative committees under the Information and Consultation of Employees Regulations: A WERS analysis", ACAS Research Paper 04/14 (2014).

Addison, John T., "Collective Bargaining Systems and Macroeconomic and Microeconomic Flexibility: The Quest for Appropriate Institutional Forms in Advanced Economies," IZA Discussion Papers 9587 (2016).

_____, Claus Schnabel and Joachim Wagner, "The Course of Research into the Economic Consequences of German Works Councils," *British Journal of Industrial Relations*, vol. 42(2) (2004), 255-281.

_____, Thorsten Schank, Claus Schnabel and Joachim Wagner, "Do Works Councils Inhibit Investment?" *Industrial and Labour Relations Review*, vol. 60(2) (2007), 187-203.

_____and Paulino Texeira, "The Effect of Works Councils on Employment Change." *Industrial Relations*, vol 45: 1-24 (2006).

_____, Paulino Teixeira and Thomas Zwick, "German Works Councils and the Anatomy of Wages," *Industrial and Labour Relations Review*, vol. 63(2) (2010), 247-270.

Aghion Phillipe, Nicholas Bloom and John Van Reenen, "Incomplete Contracts and the Internal Organization of Firms," *Journal of Law, Economics and Organization*, vol. 30(suppl_1) (2014), i37-i63.

Aoki, Masahiko, "The Cooperative Game Theory of the Firm". Oxford University Press (1984).

Aumayr, C., Demetriades, S., Foden, D., Scepanovic, V. and Wolf, F., "Employee Representative Structures at the Establishment Level", European Foundation for the Improvement of Living and Working Conditions (2011).

Beckmann, Michael, "Working-time autonomy as a management practice", *IZA World of Labor*: 230 doi: 10.15185/izawol.230 (2016).

Belloc, Filippo. "Employee Representation Legislations and Innovation," DEPS 719 (2015).

Berg Peter, Ellen Ernst Kossek, Misra Kaumudi and Dale Belman, "Work-Life Flexibility Policies: Do Unions Affect Employee Access and Use?", *Industrial & Labor Relations Review,* Vol. 67 No. 1 (2014).

Bertola, Giuseppe, Aurelijus Dabusinskas, Marco Hoeberichts, Mario Izquierdo, Claudia Kwapil, Jeremi Montornès and Daniel Radowski. "Price, wage and employment

response to shocks: evidence from the WDN survey," *Labour Economics*, vol. 19(5), 783-791 (2012).

Bloom, Nick, Tobias Kretschmer and John Van Reenen, "Are family-friendly workplace practices a valuable firm resource?," *Strategic Management Journal*, vol. 32(4), 343-367 (2011).

_____and John Van Reenen, "Human Resource Management and Productivity," Handbook of Labour Economics, Elsevier (2011).

_____, James Liang, John Roberts and Zhichun Jenny Ying, 2015. "Does Working from Home Work? Evidence from a Chinese Experiment," *The Quarterly Journal of Economics*, vol. 130(1), 165-218 (2015).

Blundell, Richard and Monica Costa Dias, "Evaluation methods for non-experimental data," *Fiscal Studies*, vol. 21(4), 427-468 (2000).

Boeri, Tito, "Two-Tier Bargaining," IZA Discussion Papers 8358 (2014), Institute for the Study of Labour (IZA).

Bolton Patrick and Mathias Dewatripont, "Authority in Organizations [The Handbook of Organizational Economics]," Introductory Chapters, Princeton University Press (2012).

Bryson, Alex, John Forth and Anitha George, "Workplace Employee Representation in Europe". European Foundation for the Improvement of Living and Working Conditions (2011).

Buchmueller, Thomas C., John DiNardo and Robert Valletta, "A Submerging Labor Market Institution? Unions and the Nonwage Aspects of Work," NBER Chapters, in: Emerging Labor Market Institutions for the Twenty-First Century, 231-264 National Bureau of Economic Research, Inc (2004).

Burda Michael C. and Jennifer Hunt, "What Explains the German Labour Market Miracle in the Great Recession," *Brookings Papers on Economic Activity*, vol. 42, 273-335 (2011).

Carley and Hall, "Impact of the information and consultation directive on industrial relations", European Foundation for the Improvement of Living and Working Conditions (2009).

Chung, H. and Tijdens, K, "Working time flexibility components and working time regimes in Europe: using company-level data across 21 countries". International Journal of Human Resource Management 24:1418-1434 (2013).

Devicienti, Francesco, Paolo Naticchioni and Andrea Ricci, "Temporary Employment, Demand Volatility and Unions: Firm-Level Evidence," IZA Discussion Papers 9410 (2015), Institute for the Study of Labour (IZA).

DiNardo, John and David S. Lee, "Economic impacts of new unionization on private sector employers: 1984–2001, *The Quarterly Journal of Economics*, vol 119 (4): 1383-1441 (2004).

Farrell, Joseph, "Information and the Coase theorem", *The Journal of Economic Perspectives*, Vol. 1, No. 2, 113-129 (1987).

Fabiani, Silvia, Ana Lamo, Julián Messina and Tairi Rõõm, "European firm adjustment during times of economic crisis," *IZA Journal of Labour Policy*, vol. 4(1), 1-28 (2015).

FitzRoy, Felix and Kornelius Kraft, "Codetermination, efficiency and productivity", *British Journal of Industrial Relations*, Vol 43 (2), 233-247 (2005).

Fleurbaey, Marc, "Workplace democracy as a public good", *Revue de Philosophie Economique* 9: 103-124 (2008).

Freeman Richard and James Medoff, "What do unions do?", NY: Basic Books (1984).

_____and Edward Lazear, "An economic analysis of works councils.", in Joel Rogers and Wolfgang Streeck (eds) Works Councils: Consultation, Representation, Cooperation. University of Chicago Press for NBER (1995).

Garicano, Luis & Claire Lelarge, & John Van Reenen, "Firm Size Distortions and the Productivity Distribution: Evidence from France," IZA Discussion Papers 7241 (2013), Institute for the Study of Labour (IZA).

Goldin, Claudia, "A Grand Gender Convergence: Its Last Chapter," *American Economic Review*, vol. 104(4), 1091-1119 (2014).

_____and Lawrence F. Katz, "A Most Egalitarian Profession: Pharmacy and the Evolution of a Family Friendly Occupation", *Journal of Labor Economics*, vol 34:3, 705-74 (2016).

Gorton, G., Schmid, F., "Capital, labour, and the firm: A study of German codetermination." *Journal of the European Economic Association*. 2 (5): 863–905 (2004).

Gregorič, Aleksandra, Rapp M. S. and Sinani, E, "Sharing voice with employees in Scandinavia: employee directors and firm behavior during crisis", unpublished manuscript (2014).

Hall, Mark, "How are employers and unions responding to the Information and Consultation of Employees Regulations?", Warwick Papers in Industrial Relations, 77 (2005).

Hannan and Freeman, Structural inertia and organizational change, *American sociological review*, 149-164 (1984).

Herzog-Stein and Zapf, "Navigating the Great Recession The Impact of Working-Time Accounts in Germany". *Industrial and Labour Relations Review,* vol. 67, 3891-925 (2014).

Heywood, John and Uwe Jirjahn, "Family-Friendly Practices and Worker Representation in Germany". *Industrial Relations: A Journal of Economy and Society*, vol 48, 121–145 (2009).

Hogan, Chad, Enforcement of Implicit Employment Contracts through Unionization. *Journal of Labor Economics*, Vol. 19, No. 1, 177-195 (2001).

Jacobsen, Joyce and Gilbert, Skillman, "Labor Markets and Employment Relationships: A Comprehensive Approach", Backwell Publishing (2004)

Jirjahn, Uwe, "Works councils and employment growth in German establishments," *Cambridge Journal of Economics,* vol. 34(3), 475-500 (2010).

Kraft, K., Stank, J. and Dewenter, R. , Co-determination and innovation. *Cambridge Journal of Economics*, 35(1): 145-172 (2011).

Malcomson, James M. "Trade Unions and Economic Efficiency." *Economic Journal*, Vol 93, suppl: 51–65 (1983).

McDonald, Ian M., and Solow, Robert M, "Wage Bargaining and Employment." *American Economic Review*, vol 71, 896–908 (1981).

Pencavel, John, "The tradeoff between wages and employment in trade union objectives," *The Quarterly Journal of Economics,* vol. 99(2), 215-231 (1984).

Riedmann, A., "Working time and work-life balance in european companies", European Foundation for the Improvement of Living and Working Conditions (2006).

Rogers Joel and Wolfgang Streeck, "Works Councils: Consultation, Representation, Cooperation". University of Chicago Press for NBER (1995).

Seifert, Hartmut, "Flexibility through working time accounts: reconciling economic efficiency and individual time requirements", No 130, WSI Discussion Papers from Hans-Böckler-Stiftung, Wirtschafts- und Sozialwissenschaftliches Institut (WSI) (2001).

Schivardi, Fabiano and Roberto Torrini, "Identifying the effects of firing restrictions through size-contingent differences in regulation," *Labour Economics*, vol. 15(3), 482-511 (2008).

Stigler, George, "Production and distribution in the short run", *Journal of Political Economy* Vol 47, 305–327 (1939).

Van Gyes, G., "Employee representation at the workplace in the Member States", in European Commission (ed.) Industrial Relations in Europe, Office for Official Publications of the European Communities (2006).

Volberda, H.W., "Towards the flexible form: How to remain vital in hypercompetitive environments". *Organization Science*, 7 (4), 359-387 (1996).

APPENDIX

TABLE A1

DESCRIPTIVE STATISTICS. ECS 2009-2013.

	Mean	Sd
Employee representation	0.288	0.453
Flexitime	0.568	0.495
Working-time accounts	0.289	0.453
Decreased employment 2010-2013	0.236	0.425
Absenteeism	0.135	0.342
Staff motivation problems	0.150	0.357
Very good econ. situation	0.546	0.498
Multi-plant	0.311	0.463
10-49 employees	0.843	0.364
50-249 employees	0.137	0.343
>249 employees	0.021	0.142
Manufacturing	0.234	0.423
Construction	0.093	0.291
Commerce & Hospitality	0.274	0.446
Transport	0.052	0.222
Financial services	0.170	0.376
Services	0.177	0.381
Female workers	4.045	1.540
Skilled	2.976	1.798
Part-time	2.649	1.680

Notes: Pooled data from the European Company Survey 2009, 2013. Sample restricted to private-sector establishments in EU21 countries. E21 includes the former 15 "old" member states (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom) plus six of the 10 new Member States which joined the European Union in 2004 (Czech Republic, Cyprus, Latvia, Hungary, Poland and Slovenia)

TABLE A2

DESCRIPTIVE STATISTICS (CYPRUS, IRELAND, POLAND, UK)

| | Control group | | | | Treatment group | | | | |
| | Pre-reform | | Post-reform | | Pre-reform | | Post-reform | | |
	Mean	Sd	mean	Sd	mean	sd	mean	Sd	Dif in Dif
Employee representative	0.11	0.31	0.20	0.40	0.23	0.42	0.39	0.49	0.0763***
Flexitime	0.49	0.50	0.56	0.50	0.47	0.50	0.56	0.50	0.0198
Working-time accounts	0.20	0.40	0.41	0.49	0.16	0.37	0.44	0.50	0.0555**
Absenteeism	0.11	0.31	0.08	0.27	0.17	0.38	0.11	0.31	-0.0325*
Motivation	0.11	0.31	0.16	0.36	0.17	0.38	0.17	0.38	-0.0472**
Multi-plant	0.20	0.40	0.25	0.44	0.35	0.48	0.36	0.48	-0.0440*
Good economic situation	0.22	0.41	0.16	0.37	0.29	0.46	0.15	0.35	-0.0944***
Ireland	0.16	0.37	0.14	0.34	0.17	0.38	0.15	0.36	0.0005
Cyprus	0.17	0.37	0.17	0.38	0.15	0.35	0.14	0.35	-0.0097
Poland	0.21	0.41	0.28	0.45	0.19	0.39	0.26	0.44	0.0032
UK	0.46	0.50	0.41	0.49	0.49	0.50	0.45	0.50	0.006
Manufacturing	0.37	0.48	0.24	0.43	0.39	0.49	0.29	0.45	0.0297*
Construction	0.13	0.34	0.11	0.32	0.12	0.33	0.10	0.30	-0.0005
Commerce and hospitality	0.28	0.45	0.33	0.47	0.23	0.42	0.27	0.44	-0.0237*
Transport and communication	0.02	0.15	0.05	0.22	0.02	0.15	0.06	0.24	0.0090*
Financial services and real estate	0.10	0.30	0.16	0.37	0.12	0.33	0.20	0.40	0.0116
Other services	0.09	0.29	0.10	0.30	0.11	0.31	0.08	0.28	-0.0260*
Female	2.49	1.48	2.36	1.46	2.59	1.42	2.60	1.38	0.1628**
Skilled	2.72	1.67	2.02	1.48	2.63	1.61	2.16	1.51	0.2228**
Part-time	1.41	0.96	1.41	0.95	1.39	0.92	1.39	0.92	0.0056
Num. of establishments	1411	-.-	3503	-.-	367	-.-	1049	-.-	

Notes: The sample is restricted to establishments employing between 10 and 99 employees (Cyprus, Ireland, Poland and the UK). The data corresponds to the European Company Survey 2004, 2009, 2013. The Treatment variable equals 1 if the establishment has between 50 and 99 employees and 0 otherwise. The Post-reform variable equals 1 for years 2009 and 2013 and 0 otherwise.

Notes: % of private-sector establishments (10 or more employees) with employee representation
All sectors. Source: based on European Company Survey (2004, 2009, 2013)
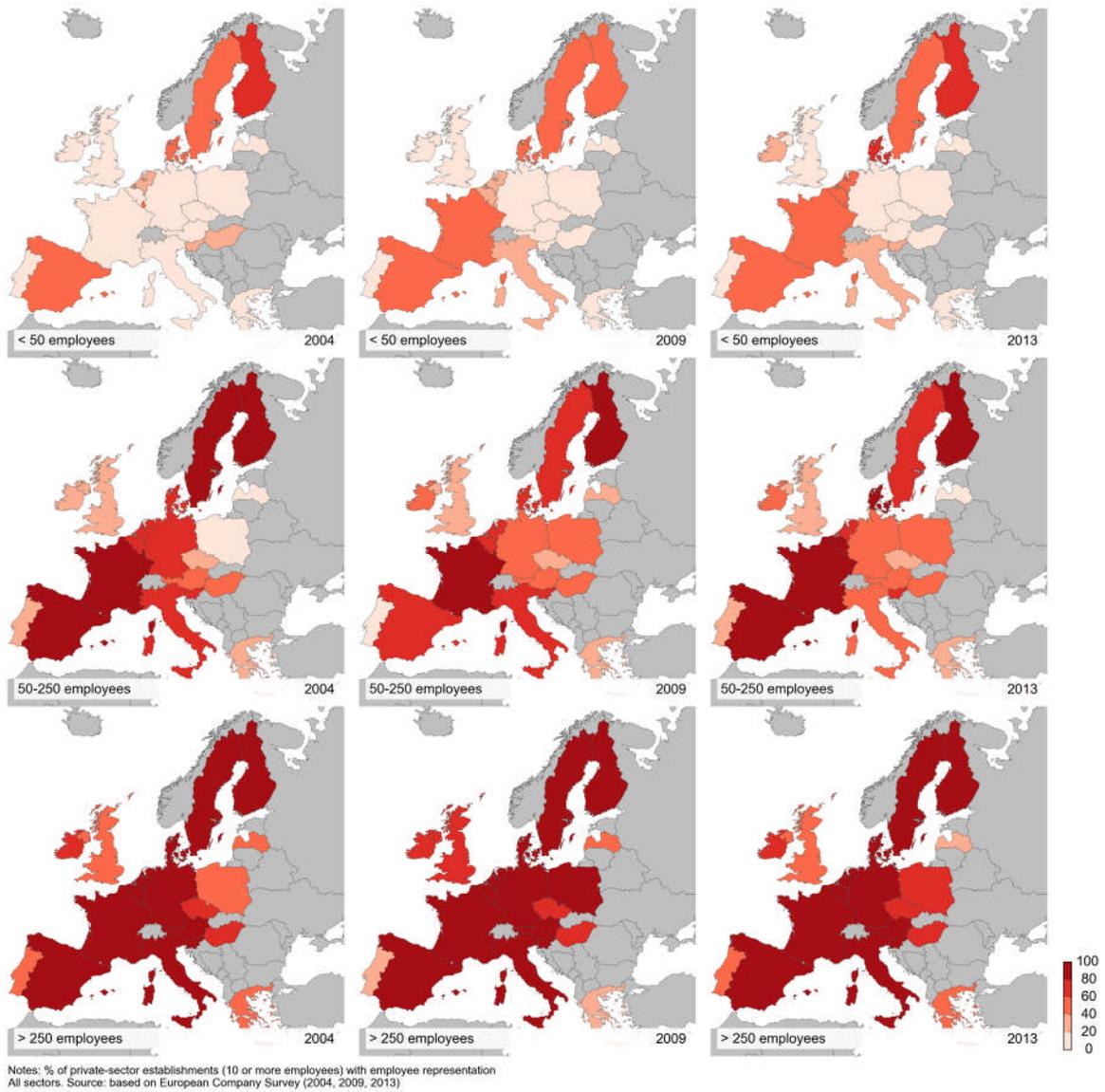
FIGURE A1

SHARE OF ESTABLISHMENTS HAVING AN EMPLOYEE REPRESENTATION STRUCTURE

BY ESTABLISHMENT SIZE

Notes: % of private-sector establishments (10 or more employees) with employee representation
Source: based on European Company Survey (2004, 2009, 2013)
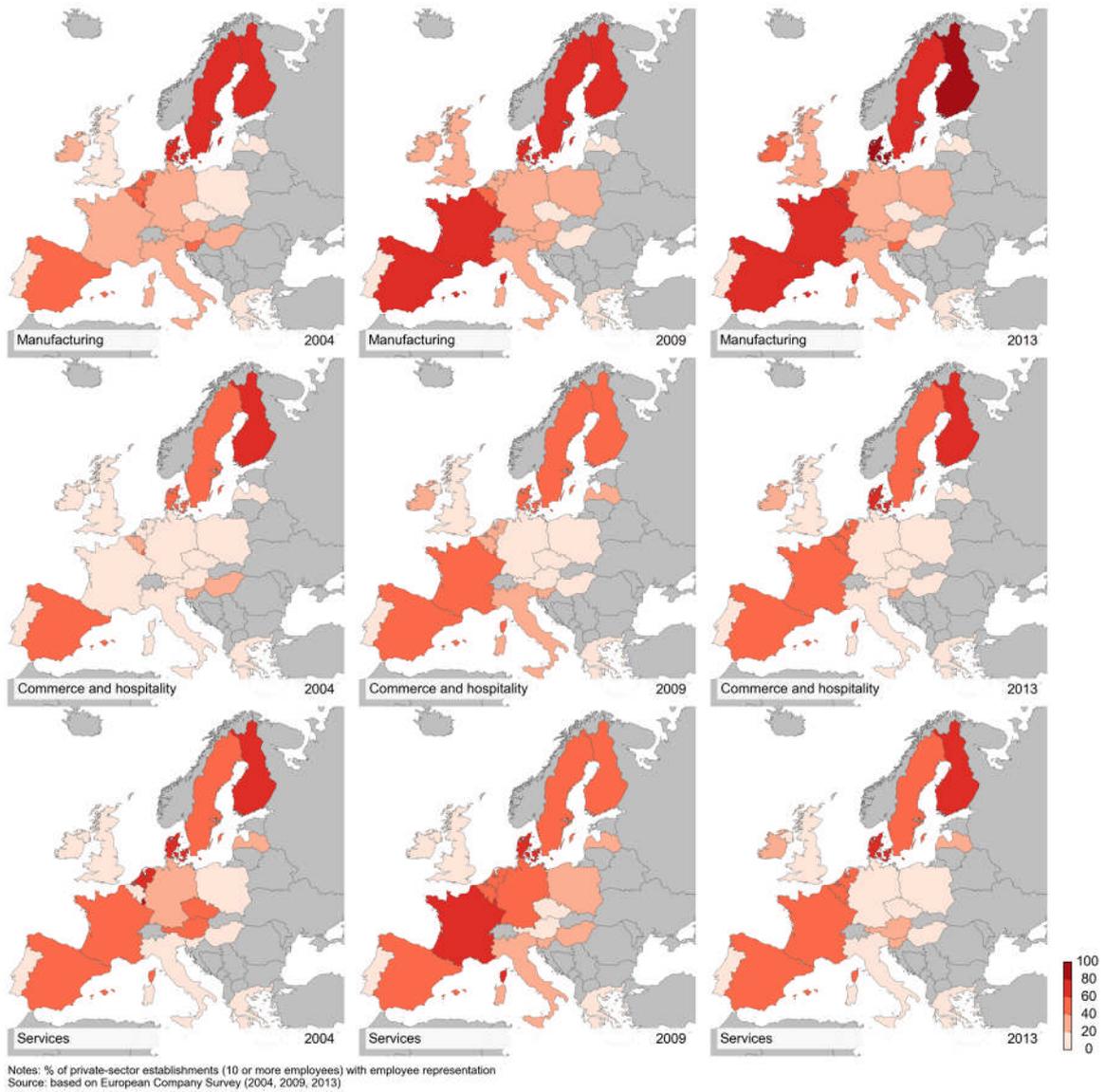
FIGURE A2

SHARE OF ESTABLISHMENTS HAVING AN EMPLOYEE REPRESENTATION STRUCTURE

BY INDUSTRY
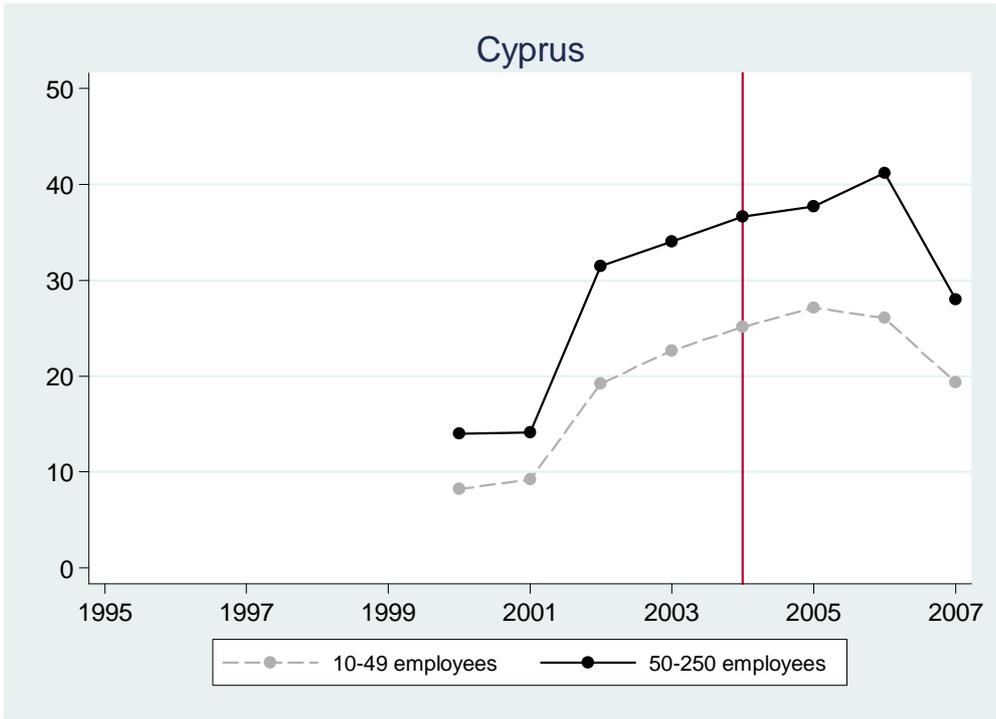
Panel A: Cyprus
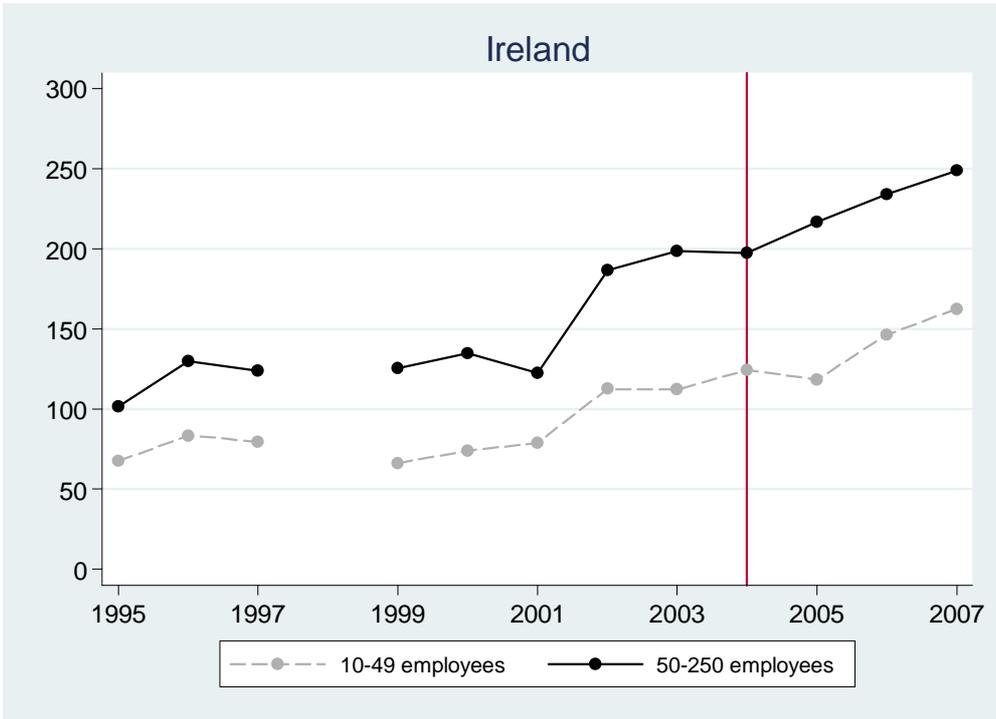
Panel B: Ireland
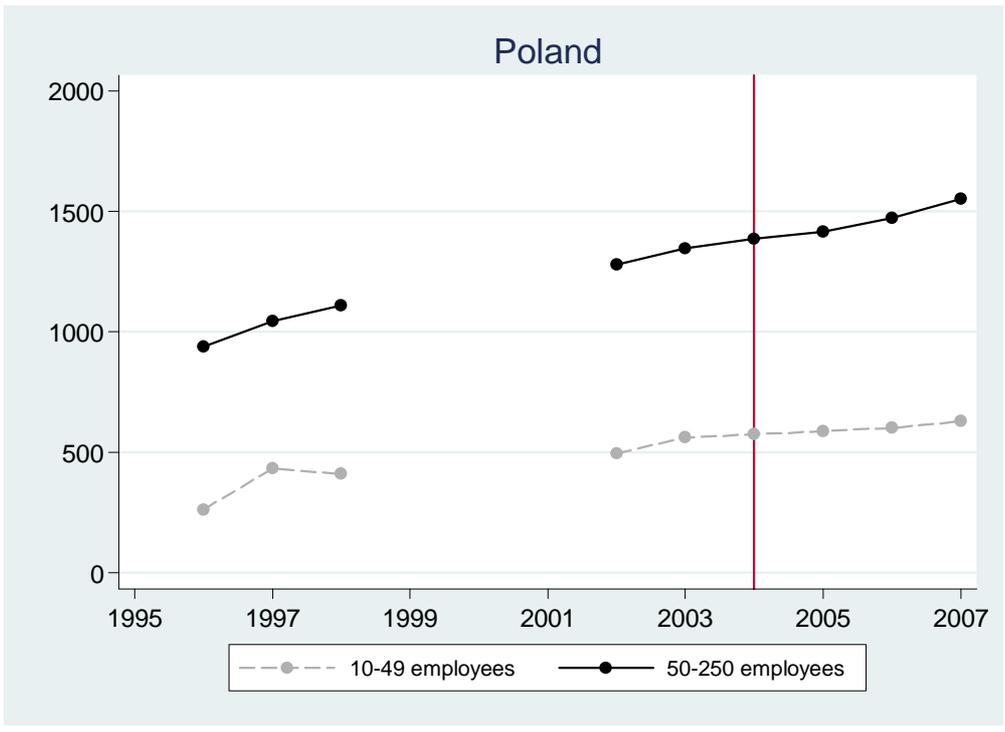
Panel C: Poland
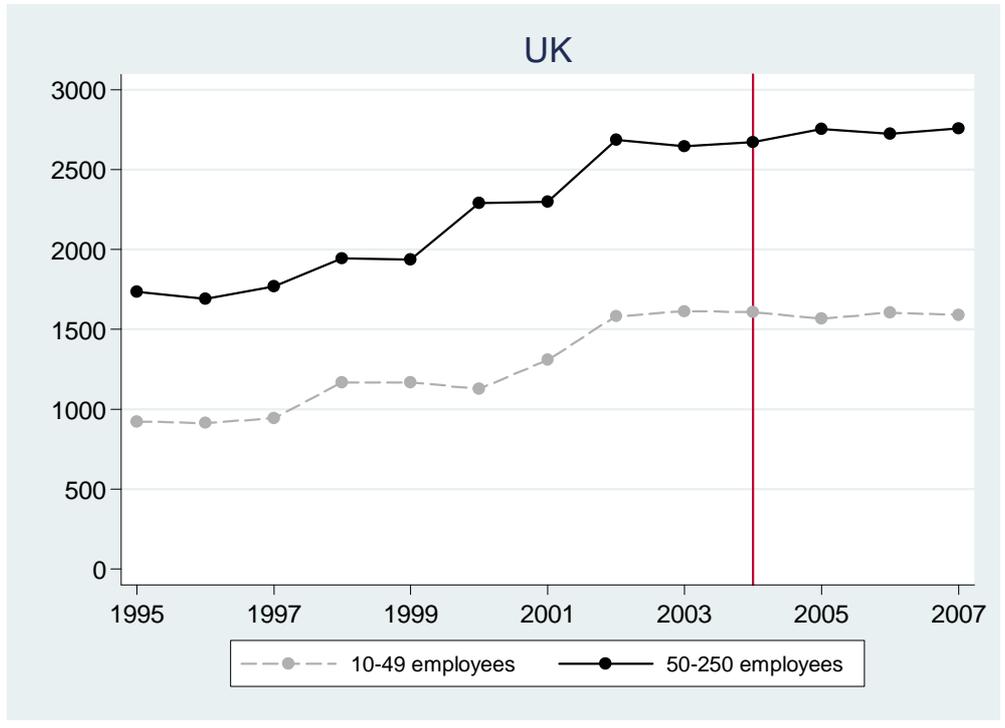
Panel D: UK

FIGURE A3.

EMPLOYMENT BY FIRM SIZE (THOUSANDS OF EMPLOYEES). *Source*: OECD