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Abstract

Work effort varies greatly across employees, as evidenced by substantial differences in absence rates. Moreover, absenteeism causes sizeable output losses. Using data from the European Community Household Panel (ECHP), this paper investigates absence behavior of family employees, i.e. workers who are employed in enterprises owned by a relative. Our estimates indicate that being a family employee instead of a regular employee in the private sector significantly reduces both the probability and duration of absence to a substantial degree.

JEL code: I10, J22, M50

Keywords: absenteeism; family employees; European Community Household Panel; work effort

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1. Introduction

Family firms are important, not only quantitatively but also as engines of innovation and growth and because of their pronounced long-term perspective (Bertrand and Schoar, 2006; Block, 2010). Recently, also policy-makers have increasingly paid attention to them. The European Commission, for example, has launched several initiatives promoting family firms (e.g., European Commission, 2009). Despite their economic significance, little is known about employment relations in family firms, with two studies for France focusing on wages, dismissal rates and hirings as important exceptions (Sraer and Thesmar, 2007; Bassanini et al., 2013). This lack of knowledge is particularly pronounced with respect to one important subgroup of employees, namely family employees, that is, relatives of a firm's owner, which constitute a large share of employees especially in smaller family firms. There is, for example, no systematic knowledge about the work performance of family employees.

Theoretically, the effect of being a family employee on work effort is ambiguous. On the one hand, the principal, i.e. the firm's owner, will be able to monitor the agent, that is, the relative working in the firm, more closely. Furthermore, it may be possible that family employees will inherit the business and benefit from the future development of the firm. These arguments suggest that family employees will provide higher effort than regular private sector employees. On the other hand, it may be more difficult for the principal to impose sanctions if the agent is a relative (Morck et al., 2005; Schulze et al., 2006). This implies that family employees exhibit lower work effort. Accordingly, the net effect of being a family employee is an empirical issue.

In the present paper, we follow the lead by, for example, Riphahn (2004), Ichino and Riphahn (2005), and Cornelissen et al. (2011), and view absence from work as an indicator of work effort. We enquire whether absence behavior of family employees differs from that of comparable employees who work in firms not owned by relatives. Using data from the European Community Household Panel (ECHP), we find that family employees are absent less often and for shorter durations than comparable regular private sector employees. In particular, the probability of being absent (average number of absence days) within a four-week period amounts to 13% (0.9 days) for the entire sample, while family employees exhibit 40% - 50% less absenteeism. These descriptive findings are confirmed when accounting for observable differences in characteristics both in a pooled sample and employing the panel structure of our data. Therefore, principal-agent, or more generally, incentive problems within an employment relationship among family members appear to be less pronounced than in the context of a regular private sector contract.

In the remainder of the paper, we describe the data in Section 2, present our results in Section 3, and discuss the findings in Section 4.

2. Data and Variables

The European Community Household Panel (ECHP) dataset (Peracchi, 2002) is a standardised, representative annual household survey which has been conducted in the 15 countries belonging to the European Union in 1995.¹ It covers the years 1994 to 2001. To construct our estimation sample, we select 18- to 65-year-old private sector employees who work full time, that is, more than 30 hours per week in their primary job. After excluding observations with missing data for any of the variables included in our regressions we are left with an estimation sample comprising 113,051 observations from 36,583 individuals.

The information with respect to absenteeism is derived from the following question (PE038): "Please think of the last 4 working weeks, not counting holiday weeks. How many days were you absent from work because of illness or other reasons?" From this we can construct two dependent variables. The variable *incidence of absence* equals one if the employee reports to have been absent for at least one day during the last four working weeks, and zero otherwise. The variable *duration of absence* counts the number of days the employee has been absent during that period and ranges from 0 to 28. The underlying question is particularly suitable for an analysis of work effort because it is not restricted to illness-related absence periods.

Our focal independent variable *family employee* equals one if an employee works in the firm of her own family. The variable is constructed from a survey question (PE013) about the way how the respective employee has entered her present job: (I) applied to the employer directly; (II) posted or replied to advertisements in newspapers, TV, or radio; (III) used an employment or vocational guidance agency; (IV) used family, friends, or other contacts; or (V) joined a family business. From this list of five alternatives offered to respondents, it is obvious that an individual who chooses option (V) and has not changed the job, works in a firm owned by a relative. We refer to such individuals as *family employees* and to people who selected options (I) to (IV) as regular employees.

Our regressions include control variables that have been used in prior research about the determinants of absenteeism (Frick and Malo, 2008; Livanos and Zangelides, 2013; Ziebarth and Karlsson, 2010), such as gender, age, health status, education, income, information about working time, job tenure, firm-size dummies, sector information, and country dummies. For a complete list of covariates and descriptive statistics, see Table 1. Table A1 in the appendix shows our variable definitions.

¹ The ECHP data are used with the permission of Eurostat (contract ECHP/2006/09, held with the Universidad de Huelva). Because of missing variables, Sweden was excluded from our analysis.

Table 1: Descriptive statistics

	Regular employees (N= 110,848)				Family employees (N= 2,203)			
	Mean	Std. Dev.	Min.	Max.	Mean	Std. Dev.	Min.	Max.
<i>Demographic characteristics</i>								
Female	0.32		0	1	0.27		0	1
Age	37.8	10.64	18	65	35.2	9.74	18	65
Cohabiting	0.73		0	1	0.71		0	1
Number of children under 14	0.60	0.88	0	10	0.76	0.98	0	5
Health status	4.08	0.74	1	5	4.22	0.69	1	5
Capital and property incomes	290	1,761	1	222,017	869	3,943	0	70,476
<i>Education</i>								
Basic education	0.40		0	1	0.33		0	1
Secondary education	0.42		0	1	0.45		0	1
Tertiary education	0.18		0	1	0.22		0	1
<i>Job related aspects</i>								
Job satisfaction index	4.30	0.83	1	6	4.56	0.87	1.28	6
Monthly wage	1,162	684	6	28,628	1,165	734	14	7283
Weekly working hours	41.7	6.54	30	96	46.5	10.76	30	96
Job tenure	9.76	6.70	1	24	7.47	4.47	1	20
No supervisory status	0.71		0	1	0.55		0	1
Medium-level supervisory role	0.16		0	1	0.10		0	1
High-level supervisory role	0.12		0	1	0.35		0	1
Small-sized firm (1 – 4 employees)	0.39		0	1	0.84		0	1
Medium-sized firm (5 – 19 employees)	0.28		0	1	0.13		0	1
Large-sized firm (> 20 employees)	0.34		0	1	0.03		0	1
Fringe benefits index	0.92	1.12	0	5	0.54	0.84	0	5
<i>Business sector dummies</i>								
Agricultural sector	0.02		0	1	0.09		0	1
Construction sector	0.10		0	1	0.16		0	1
Industrial sector	0.37		0	1	0.19		0	1
Services sector	0.51		0	1	0.56		0	1
<i>Country dummies</i>								
Austria	0.08		0	1	0.07		0	1
Belgium	0.07		0	1	0.02		0	1
Denmark	0.07		0	1	0.08		0	1
Finland	0.05		0	1	0.09		0	1
France	0.02		0	1	0.01		0	1
Germany	0.05		0	1	0.03		0	1
Greece	0.05		0	1	0.05		0	1
Ireland	0.06		0	1	0.12		0	1
Italy	0.15		0	1	0.14		0	1
Luxembourg	0.01		0	1	0.01		0	1
Netherlands	0.10		0	1	0.09		0	1
Portugal	0.15		0	1	0.12		0	1
Spain	0.12		0	1	0.16		0	1
United Kingdom	0.02		0	1	0.01		0	1

Notes: Data source: ECHP 1994-2001.

3. Results

About 2% of the individuals in our dataset are family employees. Table 1 indicates, *inter alia*, that they are more often male, have more children and a higher non-labor income than regular private sector employees. Moreover, they are somewhat healthier, better educated, work longer hours, and have shorter tenure. Finally, family employees are less likely to work in the industrial sector and in large firms.

Table 2 contains descriptive information with respect to absenteeism. The mean (unconditional) duration of absence is lower for family employees than for regular employees (0.44 vs. 0.92 days, $p < 0.01$). The incidence rate is also lower (8% vs. 13%, $p < 0.01$). Since 0.92 days translate into an absence rate of about 4.5%, assuming a five-day work week, and because the data includes absence due to reasons other than illness, our measure is somewhat higher than numbers reported in other cross-country studies. They focus either on illness-related absence (Barmby et al., 2002; Livanos and Zangelides, 2013) or on health problems which are unrelated to work (Frick and Malo, 2008).

Table 2: Univariate analysis

	Duration of absence					Incidence of absence			
	Mean	Std. dev.	Percentiles			Mean	Percentiles		
			75 th	90 th	95 th		75 th	90 th	95 th
Regular employees (N=110,848)	0.92	3.80	0	1	5	0.13	0	1	1
Family employees (N=2,203)	0.44	2.42	0	0	2	0.08	0	0	1

Notes: N=113,051; Data source: ECHP 1994-2001.

Table 3 contains the results from various multivariate regressions. Model I estimates an OLS regression with duration of absence as dependent variable. We find that family employees have a lower duration of absence compared to regular employees (estimated coefficient effect is almost -0.3, $p < 0.01$). Since the raw difference in the duration of absence observed between family and regular employees is 0.48 days (see Table 2), more than 60% of this difference (0.3/0.48) is actually associated with being a family employee or not.

Model II estimates a logistic regression using incidence of absence as dependent variable. The regression shows a negative effect of the variable *family employee* (odds ratio 0.715, $p < 0.01$). Therefore, being a family employee also reduces the probability of being absent by a sizeable amount. The effect is, for example, greater than the impact due to having tertiary education (odds ratio 0.871).

Table 3: Regressions

Model											V: ZINB	
											Duration equation	Inflate equation
Predicted duration of absence	0.913				0.913				0.711			
Predicted incidence of absence			0.109				0.008					
Independent variables	Coeff.	t-stat.	O.R.	t-stat.	Coeff.	t-stat.	O.R.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
<i>Focal variable</i>												
Family employee	-0.295	-4.90 ***	0.715	-3.76 ***	-0.597	-1.90 *	0.541	-1.79 *	-0.222	-1.77 *	0.509	4.71 ***
<i>Demographic characteristics</i>												
Female	0.421	13.4 ***	1.395	13.0 ***					0.312	9.83 ***	-0.266	-9.78 ***
Age	-0.111	-11.0 ***	0.927	-9.60 ***	-0.141	-4.69 ***	0.890	-3.94 ***	-0.061	-6.30 ***	0.063	6.88 ***
Age squared	0.001	9.87 ***	1.001	7.25 ***	0.002	5.83 ***	1.002	4.18 ***	0.001	7.06 ***	-0.000	-4.05 ***
Cohabiting	0.259	8.21 ***	1.190	6.16 ***	0.396	5.18 ***	1.300	3.63 ***	0.213	6.21 ***	-0.137	-4.04 ***
Number of children under 14	0.126	7.79 ***	1.092	7.15 ***	0.324	9.60 ***	1.147	4.32 ***	0.081	4.87 ***	-0.071	-4.47 ***
Health status	-0.968	-32.2 ***	0.522	-42.8 ***	-0.827	-33.2 ***	0.587	-23.8 ***	-0.271	-19.3 ***	0.683	39.4 ***
Log (capital and property incomes)	-0.010	-2.13 **	0.995	-1.28	0.006	0.84	1.005	0.76	-0.013	-2.51 **	-0.001	-0.16
<i>Education</i>												
Basic education (ref.)												
Secondary education	-0.084	-2.77 ***	0.904	-3.98 ***	0.063	0.80	1.091	1.15	-0.006	-0.17	0.103	3.38 ***
Tertiary education	-0.159	-4.08 ***	0.871	-3.99 ***	0.041	0.33	0.886	-1.03	-0.169	-3.63 ***	0.032	0.80
<i>Job related aspects</i>												
Job satisfaction index	-0.100	-5.98 ***	0.855	-11.8 ***	-0.067	-2.83 ***	0.909	-4.26 ***	-0.091	-5.81 ***		
Log (monthly wage)	-0.140	-3.44 ***	0.981	-0.55	-0.337	-4.24 ***	0.914	-1.20	-0.117	-2.57 **		
Weekly working hours	-0.059	-4.25 ***	0.977	-2.36 **	-0.031	-1.82 *	0.994	-0.35	-0.057	-4.99 ***		
Weekly working hours squared	0.001	3.96 ***	1.000	1.58	0.000	2.00 **	1.000	0.10	0.001	4.96 ***		
Job tenure	0.041	5.35 ***	1.011	1.66 *	0.072	5.34 ***	1.056	4.10 ***	0.046	5.42 ***		
Job tenure squared	-0.002	-5.58 ***	0.999	-2.79 ***	-0.002	-3.58 ***	0.999	-2.38 **	-0.002	-5.46 ***		
No supervisory status (ref.)												
Medium-level supervisory role	-0.029	-0.88	1.031	1.11	-0.009	-0.18	1.062	1.35	-0.030	-0.92		
High-level supervisory role	-0.063	-1.77 *	0.951	-1.41	0.055	0.85	1.125	1.86 *	-0.066	-1.49		
Small-sized firm (ref.)												
Medium-sized firm	0.089	2.94 ***	1.134	4.67 ***	0.035	0.64	1.075	1.35	0.009	0.26		
Large-sized firm	0.207	5.99 ***	1.258	7.97 ***	0.130	1.96 **	1.159	2.31 **	0.057	1.65 *		
Fringe benefits index	0.040	3.10 ***	1.076	7.01 ***	0.002	0.11	1.013	0.68	0.025	2.00 **		
Business sector dummies (18 categories; ref. Agriculture, hunting and forestry , fishing)	p<0.001		p<0.001		p<0.001		---		p<0.001		---	
Country dummies (14 categories; ref. Spain)	p<0.001		p<0.001		p<0.001		p<0.001		p<0.001		p<0.001	
Year dummies (8 categories; ref. 1994)	p<0.001		p<0.001		p<0.001		p<0.001		p<0.001		p<0.001	
No. of observations (individuals)	113,051 (36,583)		113,051 (36,583)		113,051 (36,583)		38,616 (8,402) ^a		113,051 (36,583)			

Notes: ^a All observations without within-group variance of the dependent variable are dropped, by definition, in fixed effects models.

O.R.= odds ratio; * 0.1 > p ≥ 0.05; ** 0.05 > p ≥ 0.01; *** p < 0.01; data source: ECHP 1994-2001.

Since family and regular employees may differ in time-invariant, unobservable characteristics which affect absence behavior, we next present the findings from fixed-effects estimations. The coefficient of interest is identified by those individuals who change their employment status at least once from being a family employee to having a regular, full-time private sector job, or vice versa. In Models III and IV the estimated coefficients of the variable *family employee* are significant (at the 10% level). Comparing the magnitudes of the estimated coefficients in Models I and III, on the one hand, and the odds ratios in Models II and IV, on the other hand, clarifies that controlling for time-invariant characteristics does not take away but rather increases the effect of being a family employee on absenteeism.

Finally, to cater for the fact that the incidence of absence is about 13%, we also use a zero inflated negative binomial (ZINB) regression (Model V). The estimated coefficients of the variable *family employee* are negative and statistically significant both in the inflate equation (coefficient is 0.51, $p < 0.01$) and in the duration equation (coefficient is -0.22, $p < 0.10$). These findings confirm the impression derived from Table 2, namely that being a family employee reduces both the incidence and duration of absence.

There is evidence that the remuneration structure of family employees differs from that of regular employees. Our data, for example, indicates that family employees have higher capital and property incomes (see Table 1) and Block et al. (in press) show that wages of family employees are lower. A resulting mediation effect could bias the estimated coefficient of the variable *family employee*. Therefore, we re-estimated the models depicted in Table 3, excluding the variable *log (monthly wage)*. This alters neither the magnitudes nor the significance levels of the estimated coefficients of the variable *family employee*.² Therefore, we are confident that differences in the pay structure of family versus regular employees do not affect our conclusions.

4. Conclusions

Our results show that family employees have a substantially lower likelihood of absenteeism and a lower duration of absence than regular employees in the private sector. The quantitative impact is substantial and our fixed-effects estimates support a causal interpretation of the impact of being a family employee.

² To consider the impact of non-wage income, we dropped all observations with positive capital and property income from the estimation sample, decreasing its size by about 40%. The coefficients for the variables of interest are virtually the same as those depicted in Table 3, although they are estimated somewhat less precisely. We are grateful to the anonymous referee for suggesting the robustness checks.

Hence, our study contributes to research about family employees (Block et al., *in press*) and family firms (Bertrand and Schoar, 2006). In particular, family employees do not seem to be able to exploit the situation of working in their own family's firm to their personal advantage. Accordingly, the feature that it is easier to monitor behavior of family members appears to dominate the aspect that there may be less pronounced possibilities to sanction insufficient work effort by relatives. Our results are also consistent with the view that family employees have a more pronounced interest in the profitability of the business they work in, relative to regular private sector workers, because they may eventually inherit the firm.

In addition, our work contributes to the research on absenteeism. While previous studies have documented systematic differences, for example, between public and private sector employees and blue- and white-collar workers (Frick and Malo, 2008; Livanos and Zangelides, 2013), we have uncovered a further distinction. The differential absence behavior of family and regular employees suggests that family employees may also respond differently to policy reforms, such as variations in sick pay (Ziebarth and Karlsson, 2010), or to changes in macroeconomic circumstances as, for example, in unemployment (Livanos and Zangelides, 2013).

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Appendix

Table A1: Variable descriptions

Variable	Description
Dependent variables	
Duration of absence	Number of days the individual was absent from work because of illness or other reasons during the last 4 working weeks, not counting holiday weeks.
Independent variables	
<i>Focal variable</i>	
Family employee	Dummy equals 1 for family employees.
<i>Demographic characteristics</i>	
Gender	Dummy equals 1 for females. This variable is omitted in our fixed-effects regressions but is included within our robustness checks when estimating clustered OLS regressions.
Age	Age of the individual, ranging from 18 to 65.
Cohabiting	Dummy equals 1 for cohabiting individuals.
Number of children under 14	Number of children aged under 14 living in the household.
Health status	Variable ranging from 1 to 5; the scale refers to the level of health and equals 1 for individuals whose health is very good and 5 for individuals whose health is very bad.
Log (capital and property incomes)	Capital and property incomes or private transfers received during period $t-1$, converted to average euros of 1996, being corrected by purchasing power parity (across countries) and harmonised consumer price index (across time). Variable expressed in natural logarithms.
<i>Education</i>	
Basic education	Dummy equals 1 for individuals with less than second stage of secondary level education (ISCED 0-2).
Secondary education	Dummy equals 1 for individuals with second stage of secondary level education (ISCED 3).
Tertiary education	Dummy equals 1 for individuals with recognized third level education (ISCED 5-7).
<i>Job related aspects</i>	
Job satisfaction index	Variable ranging from 1 (not satisfied) to 6 (fully satisfied); the variable is calculated as a mean of 7 different categorical variables capturing job satisfaction: satisfaction with present job in terms of (i) earnings; (ii) job security; (iii) type of work; (iv) number of working hours; (v) working times: day time, night time, shifts, etc.; (vi) working conditions and environment; and (vii) distance to work and commuting. The Cronbach alpha of this 7-item variable is 0.81.
Log (monthly wage)	Work incomes earned during the previous month of the interview, converted to average € of 1996, being corrected by purchasing power parity (across countries) and harmonised consumer price index (across time). Variable expressed in natural logarithms.
Weekly working hours	Hours of work per week, ranging from 30 to 96.
Job tenure	Number of years in present job.
No supervisory status	Dummy equals 1 for individuals who do not have a supervisory role.
Medium-level supervisory role	Dummy equals 1 for individuals who have a medium-level supervisory role.
High-level supervisory role	Dummy equals 1 for individuals who have a high-level supervisory role.
Small-sized firm	Dummy equals 1 for individuals working in firms with 1-19 paid employees.
Medium-sized firm	Dummy equals 1 for individuals working in firms with 20-99 paid employees.
Large-sized firm	Dummy equals 1 for individuals working in firms more than 99 paid employees.
Fringe benefits index	Variable ranging from 0 to 5; the scale reports the number of fringe benefits provided by the employer (free or subsidized): (i) child care or day nursery (ii) health care or medical insurance; (iii) education or training; (iv) sports and leisure, holiday centre; and (v) housing.

Business sector dummies	18 dummies equalling 1 for individuals whose codes of main activity of the local unit of the business, by means of the Nomenclature of Economic Activities (NACE-93), are the following: A+B Agriculture, hunting and forestry, fishing. C+E Mining and quarrying + Electricity, gas and water supply. DA Manufacture of food products, beverages and tobacco. DB+DC Manufacture of textiles, clothing and leather products. DD+DE Manufacture off wood and paper products; publishing and printing. DF-DI Manufacture of coke, refined petroleum/chemicals/rubber/plastic and other non-metallic mineral products. DJ+DK Manufacture of metal products, machinery and equipment. DL-DN Other manufacturing. F Construction G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal/household goods. H Hotels and restaurants. I Transport, storage and communication. J Financial intermediation. K Real estate, renting and business activities. L Public administration and defence; compulsory social security. M Education. N Health and social work. O-Q Other community, social and personal service activities; private households with employed persons; extra-territorial organizations and bodies.
Country dummies	14 dummies equalling 1 for individuals living in the named country: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and the United Kingdom.
Year dummies	8 dummies equalling 1 for observations referring to each year covered by the sample: 1994, 1995, 1996, 1997, 1998, 1999, 2000, and 2001.

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