Online Appendix to

"Accounting for employee flows"

We present tables at the end of each appendix.

Contents

Additional insights

Online Appendix A – Arrivals and departures versus growth

Firms do not disclose much standardized human capital information beyond the number of employees. We therefore test whether information about the underlying employee flows, arrivals (gross labor inflows) and departures (gross labor outflows), improves earnings prediction, compared to having information on only employee growth (net labor inflows). Table OA1 presents the results. Panel A presents the regression results. Panel B compares the out-of-sample prediction accuracy of using (1) either Employee Arrivals and Employee Departures or (2) Employee Growth. Column 1 of Panel B predicts operating earnings changes for the subsamples prior-year profit and loss firms while Column 2 predicts operating earnings changes using a pooled sample. The model using *Employee Departures* and *Employee Arrivals* predicts operating earnings changes more accurately than the model using *Employee Growth*. Information on employee departures and arrivals hence add information to the prediction of operating earnings that is incremental to employee information that is conventionally disclosed in firms' annual reports.

Table OA1. Arrivals and departures versus growth

	Prior-year loss firms (Net Earnings$_{t-1}$<0) N=53,767		**Prior-year profit firms (Net Earnings$_{t-1}$≥0) N=189,686**	

Panel A. Regression results (N=243,420)

DV =	ΔOperating Earnings$_{t+1}$			
	(1)	(2)	(3)	(4)
Employee Departures$_t$	0.18***		-0.08***	
	(9.04)		(-10.78)	
Employee Arrivals$_t$	0.01		0.04***	
	(0.87)		(11.49)	
Employee Growth$_t$		-0.03***		0.05***
		(-2.62)		(18.85)
Control variables	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.15	0.14	0.12	0.12
F-test (vs. controls only), *p*-value	<0.01***	<0.01***	<0.01***	<0.01***

Panel B. Out-of-sample ΔOperating Earnings$_{t+1}$ prediction accuracy, rolling prediction windows (N=230,887)

	(1)	(2)
Model 1		
Conditioning by prior-year loss/profit?	Yes	No
Control variables	X	X
Employee Growth	X	X
Model 2		
Conditioning by prior-year loss/profit?	Yes	No
Control variables	X	X
Employee Arrivals	X	X
Employee Departures	X	X
Test statistic	DM	DM
MSPE diff (1 minus 2) × 100	0.0058***	0.0030***
	(7.00)	(4.89)

This table reports the results of estimating modified versions of equation 1. Panel A shows the regression results for subsamples of prior-year loss firms (columns 1 and 2) and prior-year profit firms (columns 3 and 4). Odd (even) columns use *Employee Arrivals* and *Employee Departures* (*Employee Growth*, net change in employees scaled by lagged employees) as the independent variables of interest. Panel B shows the out-of-sample ΔOperating Earnings$_{t+1}$ prediction accuracy measures of different models using rolling prediction windows. The prediction accuracy is measured by the mean squared prediction error (MSPE). Diebold-Mariano, DM, statistics are used to compare out-of-sample predictions for the non-nested models. A positive (negative) test statistic implies that Model 2 (Model 1) is the superior prediction model. Control variables outlined by equation 1 (see also Table 4 of the manuscript) are estimated but not reported. Appendix A of the manuscript defines the variables. All variables are winsorized at the first and 99th percentiles. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors in Panel A are clustered by firm and year. The regressions are estimated with industry and year fixed effects in Panel A and industry fixed effects in Panel B.

Online Appendix B – Nonlinear effects of departures and arrivals

The literature suggests the association between employee flows and firm performance is nonlinear. For example, Hancock et al. (2013) find support of positive curvilinearity between employee departures and firm performance—the marginal effect of departures increases with the level of departures. Li et al. (2022) find that low turnover is not significantly associated with future ROA, however high turnover is.

We first examine whether our results are driven by large employee flows. Specifically, for each year we sort and rank nonzero *Employee Arrivals* and *Employee Departures* observations, generate quartile indicators (1=low employee departures or arrivals and 4=high employee departures or arrivals), and re-estimate equation 1 using the quartile indicators as independent variables of interest.

Table OA2 presents these results. For prior-year loss firms (columns 1 through 3), the effects of *Employee Departures* on Δ*Gross Profit*$_{t+1}$ and Δ*Other Operating Expenses*$_{t+1}$ are increasing in magnitude (coefficients get more negative) with each quartile. However, the resulting associations with Δ*Operating Earnings*$_{t+1}$ depend on the level of employee departures: Low levels of departures are negatively associated with earnings changes (Q1) while high levels of departures are positively associated with earnings changes (Q4). Regarding arrivals we find that the effect on earnings changes is quite stable across quartiles.

For prior-year profit firms (columns 4 through 6) we find, like for loss firms, that the effects of *Employee Departures* on Δ*Gross Profit*$_{t+1}$ and Δ*Other Operating Expenses*$_{t+1}$ are increasing in magnitude (coefficients get more negative) with each quartile. Interestingly, the resulting effects on Δ*Operating Earnings*$_{t+1}$ are also increasing in magnitude with each quartile and are significantly negative for all quartiles. Our results hence do not suggest that low levels of turnover are beneficial or insignificantly related to firm performance, as Li et al. (2022) find. We find similar results regarding *Employee Arrivals* (the effects are increasing with each quartile).

We next examine curvilinearity between employee flows and firm performance by including squared employee flow measures (*Employee Departures*^{2} and *Employee Arrivals*^{2}). Table OA3 shows some evidence of curvilinearity, although it differs across employee flow measures (departures and arrivals) and across firms' economic situations (prior-year loss and profit firms).

We find support of positive curvilinearity between *Employee Departures* and Δ*Gross Profit*$_{t+1}$ and Δ*Other Operating Expenses*$_{t+1}$, for both prior-year loss and profit firms (columns 1, 2, 4, and 5). For prior-year profit firms these effects offset each other, resulting in no curvilinearity between *Employee Departures* and Δ*Operating Earnings*$_{t+1}$ (the coefficient on *Employee Departures*^{2} is insignificantly different from zero, column 6). For prior-year loss firms these effects do not offset each other resulting in curvilinearity between *Employee Departures* and Δ*Operating Earnings*$_{t+1}$.

Regarding *Employee Arrivals* we find that the positive effects on Δ*Gross Profit*$_{t+1}$ and Δ*Other Operating Expenses*$_{t+1}$ are muted at high levels of *Employee Arrivals*.

To ease interpretation of the regression results Panel B of Table OA3 plot the marginal effects of *Employee Departures* and *Employee Arrivals*, at different levels of the variables, on the three dependent variables. Collectively, the results suggest that the effects of employee departures intensify at high levels of departures, while the effects of employee arrivals attenuate at high levels of arrivals.

Table OA2. Quartiles of Employee Departures and Employee Arrivals

	Prior-year loss firms (Net earnings$_{t-1}$<0)			**Prior-year profit firms (Net earnings$_{t-1}$≥0)**		
	N=53,767			N=189,686		
DV =	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Employee Departures$_t$						
Q1 (few departures)	-0.03***	-0.02***	-0.01**	-0.02***	-0.02***	-0.00***
	(-6.22)	(-6.80)	(-2.35)	(-14.84)	(-11.94)	(-4.17)
Q2	-0.04***	-0.04***	-0.00	-0.04***	-0.03***	-0.01***
	(-7.40)	(-8.33)	(-0.39)	(-19.71)	(-17.99)	(-8.28)
Q3	-0.06***	-0.06***	0.00	-0.06***	-0.05***	-0.01***
	(-10.29)	(-13.76)	(1.04)	(-21.65)	(-20.68)	(-8.76)
Q4 (many departures)	-0.11***	-0.15***	0.03***	-0.13***	-0.11***	-0.02***
	(-20.84)	(-26.51)	(5.11)	(-36.40)	(-26.62)	(-10.14)
Employee Arrivals$_t$						
Q1 (few arrivals)	0.03***	0.04***	-0.01***	0.03***	0.03***	0.00***
	(6.96)	(13.65)	(-2.85)	(14.78)	(16.68)	(3.27)
Q2	0.05***	0.07***	-0.01***	0.05***	0.05***	0.01***
	(10.45)	(17.29)	(-3.91)	(19.97)	(23.89)	(4.43)
Q3	0.09***	0.10***	-0.01***	0.09***	0.08***	0.01***
	(15.42)	(21.92)	(-3.16)	(37.50)	(42.03)	(6.89)
Q4 (many arrivals)	0.18***	0.18***	-0.00	0.18***	0.16***	0.02***
	(24.73)	(29.53)	(-0.23)	(36.51)	(34.87)	(14.62)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.07	0.17	0.15	0.10	0.12	0.12
Test for coefficient equality						
Employee Departures, Q4=						
Q1	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***
Q2	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***
Q3	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***
Employee Arrivals, Q4=						
Q1	<0.01***	<0.01***	0.04**	<0.01***	<0.01***	<0.01***
Q2	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***
Q3	<0.01***	<0.01***	0.03**	<0.01***	<0.01***	<0.01***

This table shows results of estimating modified versions of equation 1. Specifically, for each year we sort and rank nonzero *Employee Arrivals* and *Employee Departures* observations and generate quartile indicators. Control variables outlined by equation 1 (reported in Table 4 of the manuscript) are estimated but not reported. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year. The regressions are estimated with industry and year fixed effects.

Table OA3. Curvilinearity

Panel A: Curvilinearity: Regression results

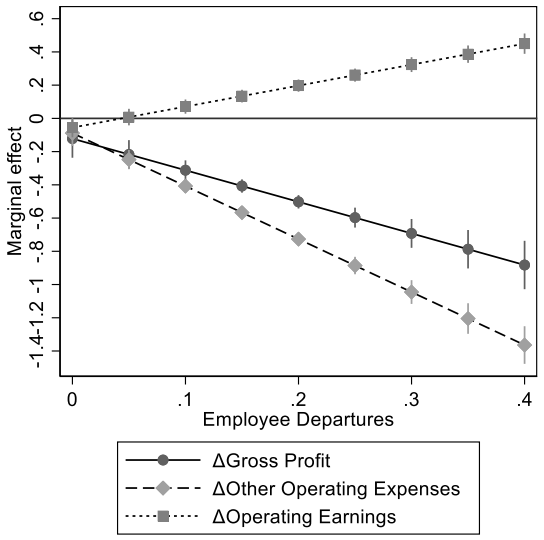
	Prior-year loss firms (Net earnings$_{t-1}$<0)			**Prior-year profit firms (Net earnings$_{t-1}$≥0)**		
	N=53,767			N=189,686		
DV =	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Employee Departures$_t$	-0.12**	-0.09**	-0.06*	-0.10***	-0.02	-0.07***
	(-2.08)	(-2.24)	(-1.86)	(-4.70)	(-1.03)	(-6.55)
Employee Departures$_t^2$	-0.95***	-1.59***	0.63***	-1.42***	-1.46***	-0.03
	(-5.97)	(-13.97)	(10.50)	(-17.49)	(-17.98)	(-0.63)
Employee Arrivals$_t$	0.54***	0.51***	0.02*	0.53***	0.47***	0.06***
	(19.14)	(22.60)	(1.72)	(28.59)	(28.52)	(9.30)
Employee Arrivals$_t^2$	-0.20***	-0.16***	-0.02	-0.16***	-0.13***	-0.03***
	(-6.66)	(-5.99)	(-1.26)	(-11.11)	(-11.07)	(-3.73)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.09	0.21	0.15	0.12	0.15	0.12

(Table continued next page)

Panel B: Marginal effects at different levels of Employee Departures and Employee Arrivals

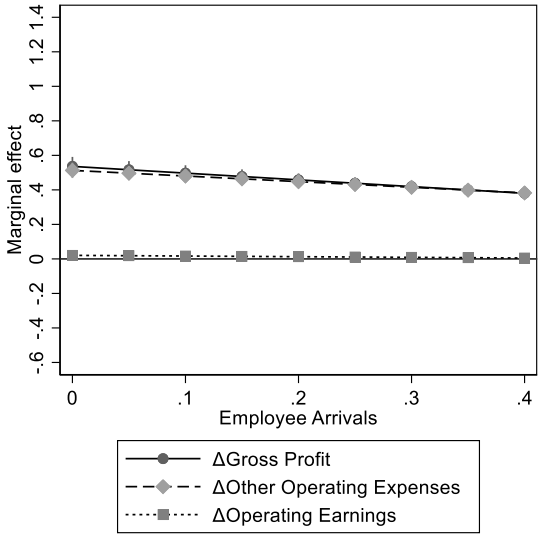
Prior-year loss firms (Net earnings$_{t-1}$<0)	**Prior-year profit firms (Net earnings$_{t-1}$≥0)**

Panel B1.
Marginal effects of Employee **Departures$_t$** on ΔGross Profit$_{t+1}$, ΔOther Operating Expenses$_{t+1}$, and ΔOperating Earnings$_{t+1}$

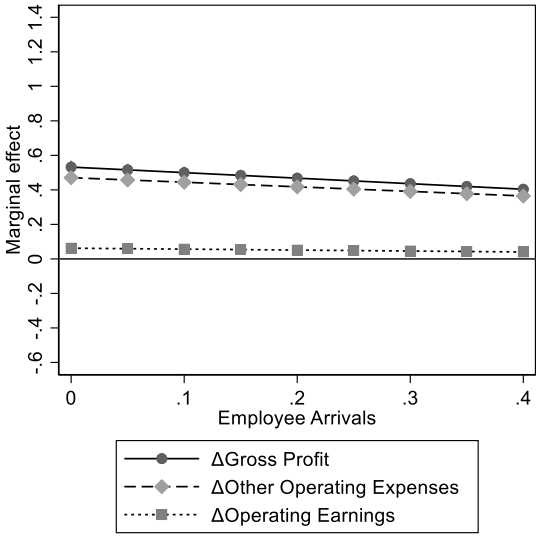


Panel B2.
Marginal effects of Employee **Departures$_t$** on ΔGross Profit$_{t+1}$, ΔOther Operating Expenses$_{t+1}$, and ΔOperating Earnings$_{t+1}$

Panel B3.
Marginal effects of Employee **Arrivals$_t$** on ΔGross Profit$_{t+1}$, ΔOther Operating Expenses$_{t+1}$, and ΔOperating Earnings$_{t+1}$



Panel B4.
Marginal effects of Employee **Arrivals$_t$** on ΔGross Profit$_{t+1}$, ΔOther Operating Expenses$_{t+1}$, and ΔOperating Earnings$_{t+1}$



This table examines curvilinearity in the relation between employee flows and firm performance. Panel A shows the regression results of augmenting equation 1 in the manuscript with squared employee flows (*Employee Departures*^{2} and *Employee Arrivals*^{2}). Panel B plots the marginal effects of employee flows on changes in performance measures at different levels of the *Employee Departures* and *Employee Arrivals*. Control variables outlined by equation 1 (reported in Table 4 of the manuscript) are estimated but not reported. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year. The regressions are estimated with industry and year fixed effects.

Cross-sectional variation

Online Appendix C – Cross-sectional variation

We condition on several factors that could moderate the relation between employee flows and future performance. We describe the splits and the results below. Table OA4 presents the regression tables. To preserve space we discuss our results regarding departures, the measure of interest of most prior research on labor flows.

Labor intensity: On the one hand, employee flows could matter more for firms with high labor intensity, that is, firms that rely more on labor than capital in their production function. For example, Dube and Zhu (2021) find that employers improve their workforce practices following employee reviews on Glassdoor.com, and that this effect is more pronounced for labor intensive firms (as measured by the ratio of employees to assets), because "their business success depends more on human" (p. 1786). Green et al. (2019) examine employer rating changes and stock returns and argue: "employee satisfaction [i.e., employees] may be more critical for productivity in service-oriented firms like healthcare or retail companies than in utility or heavily automated manufacturing firms" (pp. 247-248).

On the other hand, Gutiérrez et al. (2020) and Li et al. (2022) find that the effects of job-postings and turnover, respectively, are more pronounced for *low* labor intensity firms (as measured by the ratio of employees to assets), arguing that the marginal productivity of labor increases with the amount of nonhuman capital.

We split the sample into terciles by the ratio of employees to assets and present the results in Panel A of Table OA4. Our results are consistent with the first set of arguments: The absolute coefficients on *Employee Departures* are larger for firms with high labor intensity, both for prior-year loss and profit firms. This could be because low labor intensity firms are highly automized and hence do not rely as much on labor as high labor intensity firms do.

Firm age: We argue that the effects associated with employee departures could be more pronounced for young firms, because these firms have low levels of task formalization. For example, Davila (2005) find that young firms are less likely to adopt management control systems, defined as "the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities" (p. 225). Li et al. (2022) argue that mature firms have "more experience and more developed procedures, helping them mitigate the loss of organizational knowledge by more effectively transferring this knowledge to new hires" (p. 5668).

For well-performing firms (prior-year profit firms) employee departures could distort operations more for young firms because these employees' tasks are less formalized and hence difficult to replace, than firms with high levels of task formalization.

For poor-performing firms (prior-year loss firms) the moderating role of firm age is less trivial. The positive effect of employee departures could be *larger* for young firms, if low-productive employees are replaced by hires, who have more flexibility in shaping their own tasks. The positive effect of employee departures could also be *smaller* for young firms, if departures distort operations, although these firms' operations do not generate profits.

The results, presented in Panel B of Table OA4, suggest that the effect of employee departures is more pronounced for young firms than for old firms, both for prior-year profit and loss firms.

Growth: Splitting on prior year's earnings being above or below zero, as we do in our main analysis, is one way of conditioning by firms' economic condition. We additionally split by firms' growth rates, as proxied for by the change in gross profits scaled by assets. Our expectations are like those presented in the manuscript: We expect departures to benefit poorly performing firms most (prior-year loss firms with low growth) and harm well performing firms most (prior-year profit firms with high growth). Our results are consistent with these expectations (Panel C of Table OA4).

Pay: We then condition by employees' average salary (total staff expenses scaled by the number of full-time equivalent employees) and present the results in Panel D of Table OA4. For prior-year loss firms we expect the effect of departures to be more pronounced for firms with high average salaries: The cost cutting potential of separating from expensive employees who are not able to generate profits, on average, is large. Our results are consistent with this expectation. For prior-year profit firms, our expectations are less trivial. These firms' employees generate profits, on average, and we are uncertain whether employee departures would harm firm performance depending on the average employee pay. We do not find a monotonic trend in the coefficient on *Employee Departures*, conditional on their average pay, suggesting that average pay does not moderate the association between employee departures and earnings changes for these firms.

Table OA4. Cross-sectional variation

	Dependent variable: ΔOperating Earnings$_{t+1}$					
	Prior-year loss firms (Net earnings$_{t-1}$<0)			Prior-year profit firms (Net earnings$_{t-1}$≥0)		
Split variable tercile =	Low	Medium	High	Low	Medium	High
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Split by Employees / Total assets$_t$						
Employee Departures$_t$	0.12***	0.18***	0.20***	-0.05***	-0.09***	-0.11***
	(5.84)	(7.22)	(6.97)	(-6.78)	(-10.61)	(-11.46)
Employee Arrivals$_t$	-0.03***	-0.01	0.03**	0.02***	0.03***	0.06***
	(-2.92)	(-0.76)	(2.03)	(4.92)	(7.32)	(7.99)
Adjusted R^2	0.13	0.13	0.18	0.07	0.11	0.16
N=	16,861	17,245	19,661	64,291	63,905	61,490
Panel B. Split by Firm Age$_t$						
Employee Departures$_t$	0.21***	0.15***	0.14***	-0.10***	-0.08***	-0.05***
	(7.30)	(10.40)	(6.76)	(-10.27)	(-8.51)	(-7.03)
Employee Arrivals$_t$	-0.00	0.00	0.01	0.04***	0.04***	0.03***
	(-0.15)	(0.06)	(1.40)	(10.29)	(9.51)	(4.04)
Adjusted R^2	0.14	0.16	0.18	0.12	0.12	0.13
N=	20,192	16,106	17,469	66,114	62,870	60,702
Panel C. Split by ΔGross Profit$_t$						
Employee Departures$_t$	0.19***	0.12***	0.09***	-0.06***	-0.06***	-0.13***
	(4.68)	(8.85)	(5.61)	(-4.31)	(-6.99)	(-12.06)
Employee Arrivals$_t$	-0.11***	-0.02*	0.03***	0.03***	0.02***	0.05***
	(-6.99)	(-1.86)	(2.61)	(4.41)	(3.81)	(7.60)
Adjusted R^2	0.23	0.08	0.08	0.15	0.07	0.09
N=	16,457	16,212	21,098	64,694	64,939	60,053
Panel D. Split by AverageSalary$_t$						
Employee Departures$_t$	0.09***	0.18***	0.26***	-0.08***	-0.10***	-0.07***
	(4.81)	(6.83)	(7.63)	(-6.59)	(-8.46)	(-6.36)
Employee Arrivals$_t$	0.05***	0.01	-0.04**	0.04***	0.04***	0.04***
	(4.02)	(0.29)	(-2.38)	(6.72)	(4.95)	(8.10)
Adjusted R^2	0.14	0.17	0.16	0.12	0.14	0.12
N=	16,678	16,586	15,614	58,433	58,525	59,497
For all panels:						
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

This table estimates equation 1 for several subsamples to examine cross-sectional variation. Splits are based on terciles for that variable. Panel A splits by the ratio of employees to assets and measures labor intensity. Panel B splits by firm age and measures task formalization. Panel C splits by changes in gross profits scaled by lagged assets and measures growth. Panel D splits by average salary per full-time equivalent employee and measures labor costs. Control variables outlined by equation 1 (reported in Table 4 of the manuscript), as well as industry and year fixed effects, are estimated but not reported. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year.

Online Appendix D – Tenure

We examine whether the association between employee departures and earnings changes varies by employee tenure. Employees with a long tenure have more firm-specific knowledge than employees with a short tenure (e.g., Grinza & Rycx, 2020; Yanadori & Kato, 2007) and we therefore expect the departure of these employees to have the largest effect on firm performance.

Specifically, we distinguish between employees with a short tenure (2 years or less), medium tenure (more than 2 years and less than 6 years), and long tenure (6 years or more). We count the number of departures for each tenure duration and scale this figure by the number of employees with that tenure last year to consider differences in average tenure across firms.

Table OA5 presents the results. For prior-year loss firms we find the largest (absolute) effect on earnings changes for long-tenured employees' departures (column 3). Our interpretation is that loss-firms benefit most from separating from employees likely responsible for the poor performance because long-tenured employees are likely key personnel with managerial responsibilities.

For prior-year profit firms we also find the departure of long-termed employees to have the largest effect on earnings changes, consistent with our arguments outlined in Section 5.4 of the manuscript that profit firms are harmed when (presumably) well-performing key personnel leave.

Overall, the results using employee tenure are largely consistent with our results using employee salary (Table 6 of the manuscript).

Table OA5. Tenure

	Prior-year loss firms (Net earnings$_{t-1}$<0)			Prior-year profit firms (Net earnings$_{t-1}$≥0)		
	N=40,476			N=154,796		
DV =	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Employee Departures$_t$						
(A) Tenure ≤ 2 years	-0.17***	-0.21***	0.04***	-0.16***	-0.14***	-0.02***
	(-15.08)	(-18.54)	(6.09)	(-22.47)	(-19.06)	(-9.18)
(B) 2 years < Tenure < 6 years	-0.14***	-0.16***	0.03***	-0.12***	-0.11***	-0.01***
	(-16.75)	(-20.98)	(4.62)	(-25.66)	(-21.62)	(-7.28)
(C) 6 years ≤ Tenure	-0.20***	-0.25***	0.05***	-0.22***	-0.19***	-0.03***
	(-13.04)	(-21.76)	(5.44)	(-17.95)	(-21.03)	(-4.97)
Employee Arrivals$_t$	0.36***	0.35***	0.01*	0.37***	0.34***	0.03***
	(26.23)	(30.61)	(1.68)	(20.63)	(20.61)	(10.04)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.08	0.18	0.16	0.11	0.13	0.13
Test for coefficient equality						
Employee Departures						
(A) = (B)	0.03**	<0.01***	0.15	<0.01***	<0.01***	<0.01***
(A) = (C)	0.07*	0.02**	0.08*	<0.01***	<0.01***	0.32
(B) = (C)	<0.01***	<0.01***	<0.01***	<0.01***	<0.01***	0.01**

This table examines whether the tenure of departing employees moderates the association between departures and firm performance. Specifically, we distinguish between employees with a short tenure (2 years or less), medium tenure (more than 2 years and less than 6 years), and long tenure (6 years or more). We count the number of departures for each tenure duration and scale this figure by the number of employees with that tenure last year to consider differences in average tenure across firms. Control variables outlined by equation 1 (reported in Table 4 of the manuscript) are estimated but not reported. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year. The regressions are estimated with industry and year fixed effects.

Online Appendix E – Timing of departures and arrivals

We examine whether the timing of employee departures and arrivals, within a year, alters the association between employee flows and earnings changes. Intuitively, employee flows happening late in a year should have larger effects on *next-year*-earnings than employee flows happing early in a year because early (late) flows should impact current year's (next year's) earnings more than late (early) flows.

Specifically, we count the number of employee departures and arrivals separately for early (i.e., first half of the year) and late (i.e., second half of the year) flows, scale these counts by the number of employees last year, and present the results in Table OA6. Consistent with our expectations we find larger absolute magnitudes on late flows than early flows when examining future changes in gross profits and other operating expenses, both for prior-year loss and profit firms (columns 1, 2, 4, and 5).

However, the changes in gross profits and other operating earnings almost cancel out, leading to less trivial results regarding earnings changes (columns 3 and 6). For prior-year profit firms we find that the absolute coefficients on late flows are larger than early flows, consistent with our expectations (column 6). For prior-year loss firms the coefficient on *Early Employee Departures* is larger than *Late Employee Departures*, although the difference is only marginally statistically significant (p-value = 0.07). We find no difference regarding *Employee Arrivals* for these firms.

Table OA6. Early and late employee departures and arrivals

	Prior-year loss firms (Net earnings$_{t-1}$<0)			**Prior-year profit firms (Net earnings$_{t-1}$≥0)**		
	N=53,767			N=189,686		
DV =	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Employee Departures$_t$						
Late	-0.49***	-0.67***	0.16***	-0.54***	-0.47***	-0.08***
	(-34.10)	(-26.52)	(7.64)	(-26.67)	(-18.51)	(-10.51)
Early	-0.27***	-0.50***	0.20***	-0.34***	-0.30***	-0.06***
	(-13.10)	(-17.99)	(8.45)	(-23.72)	(-19.09)	(-5.75)
Employee Arrivals$_t$						
Late	0.23***	0.23***	0.01	0.32***	0.29***	0.04***
	(5.50)	(5.40)	(1.10)	(10.85)	(10.76)	(6.61)
Early	0.04***	0.05***	-0.00	0.02	0.02*	0.00
	(3.69)	(3.71)	(-0.09)	(1.63)	(1.71)	(0.02)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.07	0.18	0.15	0.10	0.12	0.12
Test for coefficient equality						
Employee Departures						
Late = Early	<0.01***	<0.01***	0.07*	<0.01***	<0.01***	<0.01***
Employee Arrivals						
Late = Early	<0.01***	<0.01***	0.30	<0.01***	<0.01***	<0.01***

This table examines whether departures and arrivals that happen late or early over a year are differentially associated with next-year-changes in performance measures. Late departures and arrivals are expected to have the largest effect on these changes because their impact is more likely to materialize in year $t + 1$ (and less likely to materialize in year t). Late (Early) is departures and arrivals that happen in the last half of the year (in the first half of the year). Control variables outlined by equation 1 (reported in Table 4 of the manuscript) are estimated but not reported. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year. The regressions are estimated with industry and year fixed effects.

Online Appendix F – Substitution of labor for capital or capital for labor

The effects of employee flows could vary for firms that substitute labor for capital or vice versa. We split the sample into three subsamples based on the following conditions and rerun equation 1 for each subsample: (1) Firms that substitute capital for labor (tangible fixed assets increase while the number of employees decreases), (2) firms that substitute labor for capital (tangible fixed assets decrease while the number of employees increases), and (3) other firms (none of the above).

Table OA7 presents the results. For prior-year loss firms, the positive effect of departures on earnings changes is more pronounced when the firm substitutes capital for labor (the coefficient on *Employee Departures* is larger in column 1 than in columns 2 and 3). For prior-year profit firms, the negative effect of departures on earnings changed is muted when the firm substitutes capital for labor (the coefficient on *Employee Departures* is smaller in column 4 than in columns 5 and 6).

These results make sense: Departures are generally more positive for firms' performance when firms shift their production inputs from labor to capital.

Table OA7. Substitution of labor for capital or vice versa

DV =	**ΔOperating Earnings$_{t+1}$**					
	Prior-year loss firms (Net earnings$_{t-1}$<0)			**Prior-year profit firms (Net earnings$_{t-1}$≥0)**		
Condition	From labor to capital	From capital to labor	Other	From labor to capital	From capital to labor	Other
Tangible fixed assets	Increase	Decrease		Increase	Decrease	
Number of employees	Decrease	Increase		Decrease	Increase	
	(1)	(2)	(3)	(4)	(5)	(6)
Employee Departures$_t$	0.29***	0.06**	0.21***	-0.05**	-0.10***	-0.07***
	(9.08)	(2.20)	(11.02)	(-2.02)	(-8.38)	(-6.47)
Employee Arrivals$_t$	-0.09**	0.02	-0.02*	0.04*	0.04***	0.03***
	(-1.96)	(1.55)	(-1.86)	(1.84)	(6.48)	(5.71)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N=	9,560	12,813	31,301	28,632	51,769	109,066
Adjusted R^2	0.24	0.08	0.15	0.18	0.08	0.13

This table examines whether the effects of employee flows vary for firms that substitute capital for labor or vice versa. Columns 1 and 3 show results for subsamples of firms that substitute capital for labor as proxied for by an increase in tangible fixed assets and a decrease in the number of employees. Columns 2 and 4 show results for subsamples of firms that substitute labor for capital as proxied for by a decrease in tangible fixed assets and an increase in the number of employees. Columns 3 and 6 show the results for other firms. Columns 1 through 3 (4 through 6) show the results for prior-year loss (profit) firms. Control variables outlined by equation 1 (reported in Table 4 of the manuscript) are estimated but not reported. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year. The regressions are estimated with industry and year fixed effects.

Online Appendix G – Unemployed or employed arrivals and departures

Involuntary turnover could be associated with lower human and social capital losses than voluntary turnover because poor performers typically constitute most involuntary departures (Hancock et al., 2013). Involuntary turnover is a firm decision whereas voluntary turnover is an employee decision. The literature finds mixed evidence on the differential effects of voluntary versus involuntary turnover on firm performance. On the one hand, in their meta-analysis, Hancock et al. (2013) do not find significant differences between the correlations of firm performance with voluntary versus involuntary turnover. On the other hand, van Linden et al. (2022) find that involuntary auditor turnover is less harmful to audit quality than voluntary auditor turnover is.

Although our data do not provide information whether departures are voluntary or involuntary, we exploit the panel-structure nature of our data to approximate voluntary versus involuntary turnover. Specifically, we re-calculate *Employee Departures* distinguishing between departing employees that do not appear as employed by another firm the next year (likely involuntary, we term them "Unemployment") and departing employees that are employed by another firm the next year (likely voluntary, we term them "Employment"). We likewise distinguish employee arrivals between hires likely from the unemployment pool (Unemployment) versus hires who were employed at another firm last year (Employment). These proxies are subject to several limitations. We cannot observe whether departing employees retire or start working in firms not covered by our sample. (For example, nonlimited liability firms for which we do not have financial information or firms in other countries than Denmark.) We also cannot observe whether hires not employed last year were truly unemployed or employed by firms not in our sample or enrolled in education.

We then examine whether the association between employee flows and firm performance differs for (1) departures that are followed by unemployment the next year (likely involuntary)

versus departures that are followed by employment in a new firm the next year (likely voluntary) and (2) arrivals that were unemployed last year versus arrivals that were employed last year.

Table OA8 presents the results. Regarding employee departures we find some evidence that (likely) voluntary departures (employed at another firm next year) are more negatively associated with changes in gross profits, consistent with the notion that such turnover is associated with larger loss of human and social capital (the coefficients are significantly larger for the pooled sample and prior-year profit firms, but not for prior-year loss firms).

We also find that (likely) voluntary departures are more negatively associated with changes in other operating expenses, suggesting that important (i.e., highly paid) personnel is more likely to leave voluntarily than involuntarily.

These two effects almost cancel each other out, leading to small differences in the effects on changes in operating earnings. For prior-year loss firms, the coefficient on voluntary departures (Employment, coefficient = 0.19) in explaining changes in operating earnings is larger than the coefficient on involuntary departures (Unemployment, coefficient = 0.13) (difference *p*-value = 0.03), mainly driven by the larger coefficient on changes in expenses. For prior-year profit firms, the coefficients are almost identical and only marginally significantly different from each other (*p*-value = 0.06).

Regarding employee arrivals, we find no evidence on differential effects of hiring from the unemployment pool versus hiring employees who were employed at another firm last year, since none of the coefficient estimates are significantly different from each other.

Table OA8. Employment and unemployment

	All firms			Prior-year loss firms (Net earnings$_{t-1}$<0)			Prior-year profit firms (Net earnings$_{t-1}$≥0)		
	N=243,434			N=53,766			N=189,668		
DV =	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Employee Departures$_t$									
Unemployment	-0.46***	-0.49***	0.01	-0.44***	-0.59***	0.13***	-0.50***	-0.42***	-0.10***
	(-18.02)	(-20.32)	(0.65)	(-11.35)	(-16.45)	(5.17)	(-17.26)	(-15.93)	(-10.30)
Employment	-0.51***	-0.58***	0.05***	-0.49***	-0.71***	0.19***	-0.55***	-0.49***	-0.08***
	(-46.57)	(-35.53)	(3.70)	(-24.55)	(-38.13)	(8.57)	(-51.12)	(-32.42)	(-8.78)
Employee Arrivals$_t$									
Unemployment	0.44***	0.39***	0.04***	0.40***	0.41***	-0.01	0.44***	0.39***	0.05***
	(12.47)	(8.84)	(2.92)	(11.60)	(10.63)	(-0.16)	(10.84)	(8.05)	(4.29)
Employment	0.39***	0.36***	0.04***	0.36***	0.36***	0.01	0.40***	0.36***	0.04***
	(35.62)	(40.71)	(7.96)	(27.21)	(34.88)	(1.02)	(33.87)	(36.11)	(10.95)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.11	0.16	0.11	0.09	0.20	0.15	0.12	0.15	0.12
Test for coefficient equality									
Employee Departures									
Unemployment = Employment	0.04**	<0.01***	<0.01***	0.16	<0.01***	0.03**	0.03**	<0.01***	0.06*
Employee Arrivals									
Unemployment = Employment	0.16	0.44	0.66	0.24	0.29	0.63	0.24	0.51	0.48

This table examines whether the association between employee flows and firm performance differs for (1) departures that are followed by unemployment the next year (likely involuntary) versus departures that are followed by employment in a new firm the next year (likely voluntary) and (2) arrivals that were unemployed last year versus arrivals that were employed last year. Control variables outlined by equation 1 (reported in Table 4 of the manuscript) are estimated but not reported. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year. The regressions are estimated with industry and year fixed effects.

Robustness: Subsamples

Online Appendix H – Robustness across size deciles and industries

Table OA9 presents the coefficients for the regressions in Table 4 of the manuscript run for subsamples formed by firm size deciles (Panel A), as well as 10 different industries based on NACE sections (Panel B). A fair amount of consistency of coefficients across the subsamples attests to the robustness of the results of Table 4 of the manuscript by showing that the results are not driven by firms of particular sizes or from particular industries.

Table OA9. Robustness tests across size deciles and industries - Future performance regressed on current employee departures and arrivals

Panel A: Size deciles

Sample:	Size1	Size2	Size3	Size4	Size5	Size6	Size7	Size8	Size9	Size10	Size1	Size2	Size3	Size4	Size5	Size6	Size7	Size8	Size9	Size10
	Prior-year loss firms (Net Earnings$_{t-1}$ < 0)										**Prior-year profit firms (Net Earnings$_{t-1}$ ≥ 0)**									
Panel A1	ΔOperating Earnings $_{t+1}$										ΔOperating Earnings $_{t+1}$									
Employee Departures$_t$	0.15***	0.19***	0.15***	0.22***	0.22***	0.16***	0.25***	0.25***	0.16***	0.17***	-0.06***	-0.04*	-0.09***	-0.09***	-0.09***	-0.09***	-0.10***	-0.10***	-0.08***	-0.09***
	(8.36)	(4.18)	(3.51)	(9.24)	(5.05)	(4.00)	(5.79)	(6.51)	(3.08)	(5.20)	(-4.08)	(-1.73)	(-7.72)	(-4.74)	(-6.20)	(-4.98)	(-4.68)	(-5.97)	(-3.72)	(-7.64)
Employee Arrivals$_t$	0.04*	-0.02	0.02	0.01	0.04	0.01	-0.00	-0.04**	0.02	-0.02	0.03***	0.04***	0.06***	0.04***	0.05***	0.07***	0.04***	0.04***	0.02**	0.02***
	(1.95)	(-0.82)	(0.66)	(0.29)	(1.56)	(0.70)	(-0.03)	(-2.06)	(1.01)	(-1.55)	(3.88)	(3.11)	(5.83)	(4.07)	(4.58)	(7.73)	(3.51)	(4.98)	(2.30)	(3.29)
Panel A2	ΔOther Operating Expenses $_{t+1}$										ΔOther Operating Expenses $_{t+1}$									
Employee Departures$_t$	-0.60***	-0.66***	-0.65***	-0.66***	-0.71***	-0.75***	-0.77***	-0.81***	-0.78***	-0.71***	-0.45***	-0.40***	-0.47***	-0.48***	-0.51***	-0.49***	-0.52***	-0.51***	-0.54***	-0.43***
	(-16.3)	(-12.8)	(-12.5)	(-14.0)	(-18.4)	(-13.2)	(-12.2)	(-13.2)	(-11.2)	(-13.4)	(-25.5)	(-13.7)	(-15.7)	(-24.7)	(-20.8)	(-22.5)	(-15.1)	(-18.7)	(-13.5)	(-15.0)
Employee Arrivals$_t$	0.36***	0.36***	0.35***	0.44***	0.37***	0.37***	0.42***	0.38***	0.34***	0.29***	0.33***	0.36***	0.36***	0.37***	0.38***	0.41***	0.39***	0.43***	0.34***	0.27***
	(16.61)	(13.24)	(17.90)	(19.16)	(14.77)	(19.45)	(11.19)	(13.54)	(8.07)	(8.58)	(17.65)	(21.81)	(16.47)	(21.71)	(17.60)	(15.39)	(15.49)	(19.04)	(17.89)	(10.00)
Panel A3	ΔGross Profit $_{t+1}$										ΔGross Profit $_{t+1}$									
Employee Departures$_t$	-0.41***	-0.44***	-0.46***	-0.42***	-0.46***	-0.60***	-0.50***	-0.53***	-0.62***	-0.51***	-0.50***	-0.42***	-0.55***	-0.56***	-0.59***	-0.59***	-0.59***	-0.60***	-0.59***	-0.51***
	(-14.5)	(-7.0)	(-9.8)	(-7.6)	(-7.7)	(-12.0)	(-6.4)	(-8.0)	(-7.0)	(-9.3)	(-21.5)	(-16.4)	(-20.0)	(-25.6)	(-22.2)	(-20.1)	(-15.0)	(-20.2)	(-13.5)	(-19.5)
Employee Arrivals$_t$	0.38***	0.32***	0.34***	0.40***	0.43***	0.39***	0.43***	0.33***	0.34***	0.28***	0.37***	0.39***	0.42***	0.41***	0.43***	0.47***	0.43***	0.47***	0.35***	0.30***
	(13.23)	(8.45)	(9.24)	(12.10)	(14.61)	(16.06)	(9.98)	(11.45)	(9.43)	(7.20)	(20.62)	(16.53)	(16.18)	(17.78)	(16.45)	(21.10)	(15.33)	(20.93)	(16.74)	(9.88)
N=	8408	3371	5614	5947	5643	4889	4773	4746	5081	5295	27,639	11,165	18,363	20,885	20,233	17,545	18,103	18,162	18,605	18,986

Table continued next page

Panel B: Industries

Sample:	Ind1	Ind2	Ind3	Ind4	Ind5	Ind6	Ind7	Ind8	Ind9	Ind10	Ind1	Ind2	Ind3	Ind4	Ind5	Ind6	Ind7	Ind8	Ind9	Ind10
	Prior-year loss firms (Net Earnings$_{t-1}$ < 0)										**Prior-year profit firms (Net Earnings$_{t-1}$ ≥ 0)**									
Panel B1	ΔOperating Earnings $_{t+1}$										ΔOperating Earnings $_{t+1}$									
Employee Departures$_t$	0.01	0.15***	0.04	0.19***	0.35***	0.13**	0.28***	0.27***	0.44***	0.17*	-0.05	-0.09***	-0.12***	-0.04***	-0.03	-0.05	-0.11**	-0.13***	-0.04	-0.04
	(0.24)	(4.71)	(1.60)	(8.25)	(5.69)	(2.33)	(3.15)	(6.98)	(4.93)	(1.87)	(-1.08)	(-7.38)	(-8.19)	(-4.12)	(-0.90)	(-1.46)	(-2.08)	(-8.58)	(-0.92)	(-0.96)
Employee Arrivals$_t$	0.05*	0.01	0.07***	0.01	-0.10***	0.00	-0.05	0.04**	0.06	-0.03	0.01	0.05***	0.05***	0.03***	0.01	-0.02	0.04	0.06***	0.03	0.00
	(1.66)	(0.64)	(3.63)	(1.04)	(-2.89)	(0.06)	(-1.55)	(1.96)	(0.96)	(-0.53)	(0.57)	(8.84)	(5.31)	(5.26)	(0.79)	(-1.00)	(1.32)	(6.33)	(1.36)	(0.14)
Panel B2	ΔOther Operating Expenses $_{t+1}$										ΔOther Operating Expenses $_{t+1}$									
Employee Departures$_t$	-0.21***	-0.55***	-0.83***	-0.60***	-0.95***	-0.60***	-0.65***	-0.86***	-1.04***	-0.69***	-0.21***	-0.36***	-0.63***	-0.33***	-0.67***	-0.47***	-0.46***	-0.64***	-0.71***	-0.51***
	(-3.0)	(-15.7)	(-17.1)	(-21.8)	(-11.5)	(-5.8)	(-7.8)	(-20.6)	(-9.0)	(-4.9)	(-3.66)	(-18.3)	(-20.6)	(-27.5)	(-16.5)	(-8.2)	(-7.9)	(-13.8)	(-10.8)	(-6.4)
Employee Arrivals$_t$	0.15***	0.30***	0.47***	0.31***	0.43***	0.35***	0.36***	0.43***	0.51***	0.47***	0.18***	0.28***	0.46***	0.27***	0.48***	0.21***	0.26***	0.47***	0.54***	0.36***
	(3.76)	(14.13)	(13.25)	(22.90)	(10.97)	(6.23)	(4.18)	(14.94)	(8.62)	(6.51)	(5.82)	(18.75)	(19.06)	(24.59)	(19.53)	(6.14)	(4.35)	(19.05)	(12.25)	(7.85)
Panel B3	ΔGross Profit $_{t+1}$										ΔGross Profit $_{t+1}$									
Employee Departures$_t$	-0.22***	-0.34***	-0.78***	-0.41***	-0.50***	-0.47***	-0.35***	-0.56***	-0.56***	-0.46***	-0.26***	-0.45***	-0.73***	-0.36***	-0.67***	-0.52***	-0.58***	-0.73***	-0.69***	-0.55***
	(-2.6)	(-8.4)	(-17.6)	(-17.9)	(-5.7)	(-3.7)	(-3.1)	(-9.4)	(-4.5)	(-2.9)	(-3.0)	(-17.2)	(-28.6)	(-36.2)	(-13.7)	(-7.0)	(-6.5)	(-14.7)	(-11.4)	(-6.7)
Employee Arrivals$_t$	0.20***	0.30***	0.53***	0.32***	0.30***	0.34***	0.30***	0.47***	0.59***	0.36***	0.19***	0.33***	0.51***	0.30***	0.49***	0.19***	0.28***	0.53***	0.58***	0.35***
	(3.71)	(12.53)	(13.72)	(20.65)	(6.39)	(4.27)	(3.82)	(10.84)	(6.80)	(3.45)	(4.99)	(21.89)	(17.14)	(25.96)	(22.72)	(6.28)	(3.89)	(18.03)	(12.05)	(6.15)
N=	1063	14,192	7166	19,461	3438	689	625	5172	990	971	2341	45,712	33,277	67,565	9331	2117	1716	21,857	3535	2235

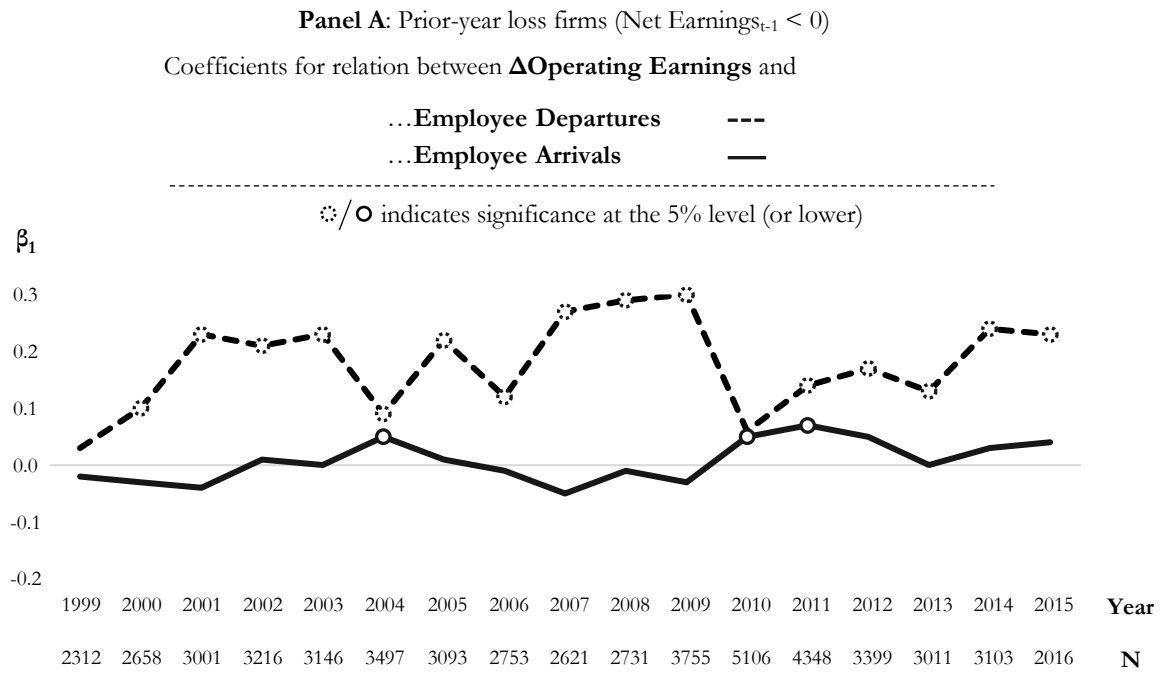
Panel A (B) of this table shows the results of estimating equation 1 for 10 subsamples based on firm size (NACE sections). Firm size in Panel A is measured as deciles of the number of employees. The industries in Panel B are the following: Ind1 = Agriculture, forestry and fishing. Ind2 = Manufacturing, mining and quarrying and other industry. Ind3 = Construction. Ind4 = Whosesale and retail trade, transportation and storage, accommodation and food service activities. Ind5 = Information and communication. Ind6 = Financial and insurance activities. Ind7 = Real estate activities. Ind8 = Professional, scientific, technical, administration and support service activities. Ind9 = Public administration, defense, education, human health and social work activities. Ind10 = Other services. Control variables outlined by equation 1 (see also Table 4 of the manuscript) are estimated but not reported. Appendix A of the manuscript defines all variables. All variables are winsorized at the first and 99th percentiles. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year. The regressions are estimated with industry and year fixed effects.

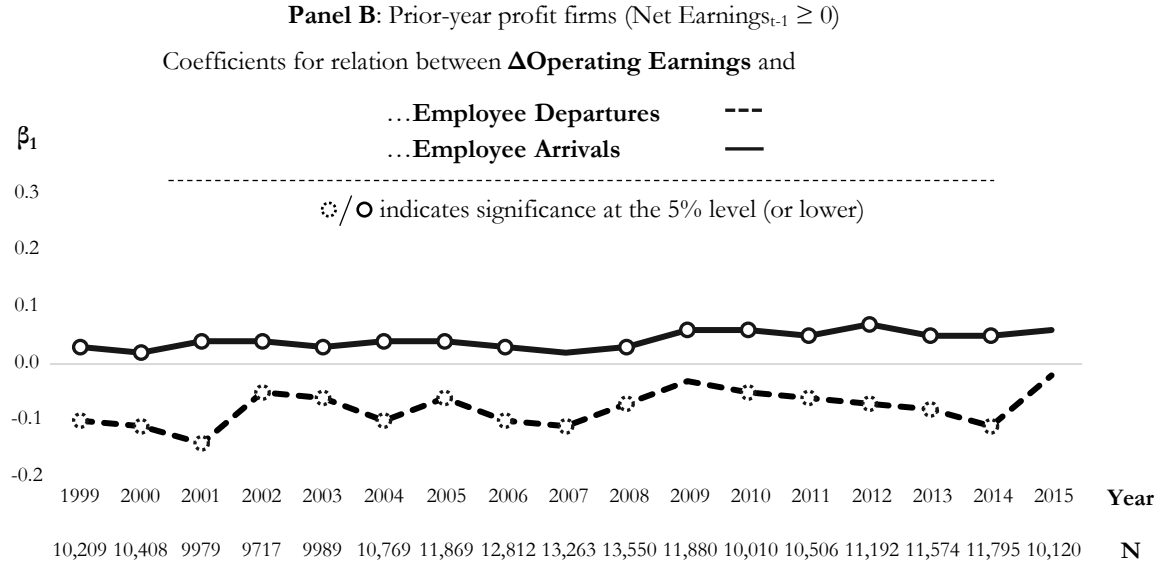
Online Appendix I – Robustness across years

We then rerun our analyses for each year to explore the robustness of the findings over time. For each year, we re-estimate equation 1 for prior-year loss and profit firms. We use only Δ*Operating Earnings*$_{t+1}$ as dependent variable to preserve space. We plot the 68 coefficient estimates (2 independent variables × 17 years × 2 subsamples) in Figure OA1.

We generally find that the results reported Table 4 of the manuscript are robust over time. Panel A, depicting the results for prior-year loss firms, shows that employee departures are positively associated with earnings changes for 15 of 17 years while employee arrivals are insignificantly different from zero for 14 of 17 years. Panel B, depicting the results for prior-year profit firms, shows that employee departures are negatively associated with earnings changes for 15 of 17 years while employee arrivals are positively associated with earnings changes for 16 of 17 years.

Figure OA1. Regression coefficients over time





This figure plots the coefficient estimates from estimating equation 1 for each year in the sample. Panel A (B) shows the results for prior-year loss (profit) firms. Control variables outlined by equation 1 (see also Table 4 of the manuscript) are estimated but not reported. Significance indicators are based on two-tailed tests with standard errors robust to heteroscedasticity. The regressions are estimated with industry fixed effects.

Other robustness

Online Appendix J – Alternative position identifiers

We test whether our results regarding the proportion of departing employees being replaced by new hires of the same position are robust to using alternative identifiers of positions. The alternative identifiers are the following.

- Salary quartile (Panel A of Table OA10). For each industry-year we sort and rank all employees and allocate them to salary quartiles.
- 1-digit disco codes (10 categories) (Panel B of Table OA10). DISCO codes are 6-digit occupation codes describing the nature of the employment. DISCO codes are available from 2008 and are described in Section 4 of the manuscript and at https://www.dst.dk/en/Statistik/dokumentation/nomenklaturer/disco.
- 2-digit disco codes (48 categories) (Panel C of Table OA10).

Table OA10 presents the results. The inferences reported in the manuscript are largely robust to using these alternative position identifiers in the calculation of the proportion of departing employees being replaced by new hires of similar positions, although we find no differential effect between departures and replacements using DISCO codes for prior-year profit firms (column 6 of panels B and C).

Table OA10. Employee departures and departures being replaced by new hires, alternative occupation identifiers

Sample:	Prior-year loss firms (Net earnings$_{t-1}$<0)			Prior-year profit firms (Net earnings$_{t-1}$≥0)		
DV=	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$	ΔGross Profit$_{t+1}$	ΔOther Operating Expenses$_{t+1}$	ΔOperating Earnings$_{t+1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Salary quartiles. N=48,165 (161,706) for prior-year loss (profit) firm sample.						
Employee Departures$_t$	-0.59***	-0.87***	0.25***	-0.74***	-0.67***	-0.09***
	(-26.15)	(-39.55)	(12.89)	(-44.51)	(-33.41)	(-9.62)
Employee Departures$_t$	0.69***	0.79***	-0.09***	0.75***	0.71***	0.05***
× Departures Replaced$_t$	(20.51)	(32.67)	(-7.19)	(22.94)	(22.87)	(4.20)
Adjusted R^2	0.06	0.18	0.16	0.09	0.11	0.13
H0: Employee Departures + Employee Departures × Departures Replaced = 0						
p-value	<0.01***	0.01**	<0.01***	0.73	0.21	<0.01***
Panel B. 1-digit DISCO codes. Years 2008-2016. N=22,663 (68,940) for prior-year loss (profit) firm sample.						
Employee Departures$_t$	-0.56***	-0.86***	0.26***	-0.77***	-0.73***	-0.07***
	(-23.81)	(-27.23)	(7.87)	(-38.30)	(-27.15)	(-4.49)
Employee Departures$_t$	0.64***	0.71***	-0.05**	0.71***	0.66***	0.06***
× Departures Replaced$_t$	(9.72)	(10.03)	(-2.40)	(8.92)	(8.43)	(3.93)
Adjusted R^2	0.06	0.19	0.18	0.09	0.13	0.14
H0: Employee Departures + Employee Departures × Departures Replaced = 0						
p-value	0.16	0.05**	<0.01***	0.45	0.38	0.46
Panel C. 2-digit DISCO codes. Years 2008-2016. N=22,663 (68,940) for prior-year loss (profit) firm sample.						
Employee Departures$_t$	-0.51***	-0.80***	0.26***	-0.71***	-0.67***	-0.07***
	(-25.17)	(-24.92)	(7.33)	(-32.11)	(-23.90)	(-4.19)
Employee Departures$_t$	0.55***	0.63***	-0.06***	0.64***	0.60***	0.06***
× Departures Replaced$_t$	(8.95)	(9.85)	(-2.64)	(8.30)	(7.87)	(3.79)
Adjusted R^2	0.05	0.18	0.18	0.09	0.12	0.14
H0: Employee Departures + Employee Departures × Departures Replaced = 0						
p-value	0.43	0.02**	<0.01***	0.38	0.30	0.48
For all panels:						
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

This table replicate the results presented in Table 6 of the manuscript using alternative occupation identifiers. Grey shading marks the variables of interest. Panel A uses salary quartiles. Panel B uses 1-digit DISCO codes (10 occupation categories). Panel C uses 2-digit DISCO codes (48 occupation categories). Disco codes are available from 2008 and are 6-digit codes that classify occupations and essentially follow the international professional classification system, International Standard Classification of Occupations (ISCO), which is prepared by the International Labor Organization (ILO). The DISCO codes are described here:
https://www.dst.dk/en/Statistik/dokumentation/nomenklaturer/disco.
Control variables outlined by equation 1 (see also Table 4 of the manuscript), as well as industry and year fixed effects, are estimated but not reported. Appendix A of the manuscript defines all variables. All variables are winsorized at the first and 99th percentiles. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year.

Online Appendix K – Scaling by employees

Differences in scaling could blur our results. For example, we scale departures and arrivals by employees while accounting ratios are scaled by assets. We therefore scale all variables by employees and re-estimate equation 1. We use two empirical designs: (1) We maintain the empirical setup of the manuscript but use employees as denominator. That is, the dependent variables are changes in gross profits, changes in other operating expenses, and changes in operating earnings scaled by lagged employees (we calculate the changes and scale the changes by lagged employees). We re-scale all control variables accordingly. This design examines the robustness of the results to scaling. (2) We examine changes in the ratios. That is, the dependent variables are changes in the ratios of gross profits to employees, other operating expenses, and operating earnings (we calculate the ratios and then the change in the ratios). We re-scale all control variables accordingly. This design more directly examines employee productivity because we examine changes in performance (gross profits and earnings) per employee following employee flows.

Panel A of Table OA11 presents the results regarding the former (1) empirical design. Our inferences do not change using employees as denominator. For prior-year loss firms (profit firms), employee departures are associated with larger (lower) future earnings. Panel B of Table OA11 presents the results regarding the latter (2) empirical design and show comparable results.

Table OA11. Scaling by employees

	Prior-year loss firms (Net earnings$_{t-1}$<0)			**Prior-year profit firms (Net earnings$_{t-1}$≥0)**		
	N=53,676			N=189,686		
Panel A. Changes in variables scaled by lagged employees	(GrossProfit$_{t+1}$ -GrossProfit$_t$) / Employees$_{t-1}$	(OtherOperating Expenses$_{t+1}$ -OtherOperating Expenses$_t$) / Employees$_{t-1}$	(OperatingEarnings$_{+1}$ - OperatingEarnings $_t$) / Employees$_{t-1}$	(GrossProfit$_{t+1}$ -GrossProfit$_t$) / Employees$_{t-1}$	(OtherOperating Expenses$_{t+1}$ -OtherOperating Expenses$_t$) / Employees$_{t-1}$	(OperatingEarnings$_{+1}$ - OperatingEarnings $_t$) / Employees$_{t-1}$
	(1)	(2)	(3)	(4)	(5)	(6)
Employee Departures$_t$	-31.80***	-49.78***	19.39***	-39.45***	-33.91***	-5.71***
	(-18.90)	(-22.65)	(8.61)	(-34.39)	(-29.53)	(-5.44)
Employee Arrivals$_t$	21.23***	20.48***	0.35	21.04***	19.44***	2.39***
	(11.32)	(16.64)	(0.24)	(16.64)	(19.08)	(3.45)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.06	0.16	0.08	0.07	0.11	0.05
Panel B. Changes in ratios	GrossProfit$_{t+1}$ / Employees$_{t+1}$ - GrossProfit$_t$ / Employees$_t$	OtherOperating Expenses$_{+1}$ / Employees$_{t+1}$ - OtherOperating Expenses$_t$ / Employees$_t$	OperatingEarnings$_{t+1}$ / Employees$_{t+1}$ - OperatingEarnings$_t$ / Employees$_t$	GrossProfit$_{t+1}$ / Employees$_{t+1}$ - GrossProfit$_t$ / Employees$_t$	OtherOperating Expenses$_{+1}$ / Employees$_{t+1}$ - OtherOperating Expenses$_t$ / Employees$_t$	OperatingEarnings$_{t+1}$ / Employees$_{t+1}$ - OperatingEarnings$_t$ / Employees$_t$
	(1)	(2)	(3)	(4)	(5)	(6)
Employee Departures$_t$	-32.65***	-49.65***	18.23***	-39.69***	-34.38***	-5.35***
	(-23.28)	(-25.29)	(8.97)	(-40.96)	(-32.47)	(-5.19)
Employee Arrivals$_t$	22.15***	20.61***	1.23	22.13***	20.06***	2.70***
	(13.60)	(20.65)	(1.00)	(16.95)	(18.21)	(4.97)

Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R2	0.06	0.17	0.09	0.08	0.12	0.06

This table tests the robustness of the results to scaling all income statement items by employees instead of assets. Panel A uses changes in income statement items scaled by lagged employees. Panel B uses changes in ratios, where ratios are calculated as income statement items scaled by employees. All monetary amounts are in EUR thousand. The control variables in Panel A (Panel B) are generated accordingly, that is, as changes scaled by lagged employees (changes in the ratios where the ratios are scaled by employees) like the dependent variables. Control variables outlined by equation 1 (reported in Table 4 of the manuscript) are modified and estimated but not reported. Values in brackets represent t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests. Standard errors are clustered by firm and year. The regressions are estimated with industry and year fixed effects

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