

Supplemental Appendix

Eclipse of Rent-Sharing: The Effects of Managers' Business Education on Wages and the Labor Share in the US and Denmark

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A Evidence from the Diffusion of Business Managers

Our second instrumental variable (IV) strategy is based on the idea that hiring a manager with a business degree becomes popular among certain types of firms at different times. This is similar to the strategy of ?, who exploited regional democratization waves as an instrument for a country switching from nondemocracy to democracy. In our context, we create region $\times$ industry $\times$ firm size quintile cells, and document that after the appointment of the first business manager within a cell, the likelihood of other firms in the cell also appointing a business manager increases significantly. We then use this relationship as the first stage of this two-stage least squares (2SLS) strategy. The first-stage equation is:

$$B_{it} = \sum_{k=1}^3 \theta_k Z_{i,t-k} + X'_{it} \beta^F + \lambda_i^F + \delta_t^F + \epsilon_{it}, \quad (5)$$

where $Z_{it} = \frac{1}{|I_i|} \sum_{j \in \{I_i: j \neq i, C_j = C_i, B_{jt_0} = 0\}} B_{jt}$ is the instrument, defined as the jackknifed average of business managers among publicly listed firms in the same region $\times$ industry $\times$ size peer group that did not have a business manager at the beginning of the sample.³¹ In the first stage, we include lags of the instrument up to three years, because the influence of peer firms may be felt with a lag. In practice, we find that lags beyond three years do not predict business manager hiring significantly. In all specifications, we control for year and firm fixed effects. We also include region, size quintile, and industry fixed effects interacted with year fixed effects, ensuring that we exploit only within-cell variation in the diffusion of business managers.

Our second-stage equation is the same as (??). The exclusion restriction in this case is that, conditional on our covariates, the timing of the first switch to a business manager in a cell is orthogonal to future outcomes of other firms in that cell. We provide a number of placebo exercises to bolster confidence in this exclusion restriction.

The first-stage relationships for the US and Denmark, which follow equation (??), are presented in Appendix Tables ?? and ??, while the two panels of Appendix Figure ?? depict the first-stage results

³¹In this second IV analysis, we exclude firms that already had business managers at the start of our sample so that we only estimate the impact of hiring a business manager, which our event-study estimates suggest is different from the effect of firing a business manager.

visually. In these figures, we can see that the blue line, corresponding to firms in a cell following the first hiring of business manager, starts out lower than the average of other cells, as shown by the red line (which is by definition, since firms in the former cell initially had no business managers). However, we also see fast convergence of the two lines, indicating that the practice of hiring managers with a business degree diffuses rapidly across companies in the same industry, region, and size quintile. Our identification interprets this diffusion as resulting from a “fad” or from learning from peers. What we require for our exclusion restriction is that this diffusion driven by first adoption is orthogonal to other factors subsequently affecting wages and the labor share in the same cell.

Appendix Tables ?? and ?? present estimates from this second IV strategy for the US and Denmark, respectively. The first three columns in each table show the effects on sales/value added, which are insignificant, although not precisely zero as in our event studies. The next six columns in each table depict robust negative effects on earnings per worker and labor share in both countries.

The bottom panel of both tables presents the OLS estimates in the same sample, exploiting the switch from a non-business to a business manager, essentially replicating the event-study design. Broadly, the IV estimates in Panel A are about 50% larger than the OLS estimates. Our interpretation of this difference between OLS and IV is related to the preceding discussion on management practices and attitudes associated with the increasing popularity of business programs over time. For example, suppose that, in a given cell, business managers and thus business management methods become more popular. This will lead to the hiring of more business managers, but simultaneously there will also be some adoption of these methods by existing non-business managers and their more intensive use by business managers relative to other cells.

If this interpretation is correct, then estimates from this second IV strategy will capture some of the systemic impacts of business school doctrines on changes in management-labor relations. Reflecting this, if we use the IV estimates, the implied magnitudes are correspondingly larger. In the US, with the IV estimates, the switch towards management practices associated with business schools would explain close to 40% of the decline of the labor share (as opposed to 16% in our baseline case). In Denmark, this number would be 9% (as opposed to 6% in our baseline).

The main concern with this IV strategy is that economic shocks correlated within firm cells might simultaneously affect the hiring of business managers and firm wages. While the industry $\times$ year fixed effects, region $\times$ year fixed effects, and size quintile $\times$ year fixed effects already absorb industry-level and region-level shocks and shocks related to firm size, we conduct several robustness tests to further address this concern. In columns 1, 4, and 7 in Appendix Table ??, we control for a full set of interactions between earnings per worker quintile in 1995 and year dummies, which should take out common shocks related to the initial wage level. In columns 2, 5, and 8 of this table, we include

cell-specific trends to deal with unobserved heterogeneity across industry-region-size cells. In columns 3, 6, and 9, we control for three lags of value added and worker earnings of other firms in the same cell to allow value added and worker earnings to be flexibly correlated within cells. In all columns, we estimate very similar first-stage F-statistics, and the IV estimates of the effect on worker earnings and labor share remain negative, significant, and close to our baseline estimates.

B Text Analysis of the MD&A Section of 10-K Filings

To analyze the texts of the MD&A Section of 10-K Filings, we use the word embedding model following ?. The word embedding model is a computational approach for representing text data in a format that allows words with similar meaning to have a similar representation. By mapping words into a high-dimensional space, this model enables the capture of contextual nuances and semantic similarities between words.

B.1 Preprocessing of Text Data

1. **Tokenization:** The text is initially broken down into a list of words for each sentence, a process known as tokenization, which structures the unprocessed text.
2. **Lemmatization:** We recorded the lemmatized form of all words. This step ensures that different forms of the same word are recognized as identical in analysis.
3. **Phrase Identification:** The process identifies phrases that have a collective meaning and links their lemmatized form with a delimiter to maintain their contextual value.
4. **Named Entity Normalization:** Concurrently, any named entities within the text are replaced with placeholders that denote the entity type, thus standardizing the entities while retaining their categorical importance.
5. **Filtering and Normalization:** The tokens undergo a series of filtering steps where numerical digits, punctuation, and single-letter words (except for significant ones like ‘I’ or ‘a’) are removed. This helps in reducing noise and focusing on more meaningful content.
6. **Stopword Removal and Case Standardization:** Commonly used stopwords are removed to emphasize more informative words, and all remaining tokens are converted to lowercase to maintain consistency across the data set.

B.2 Training of the Embedding Model

We employ the Bigram model to link words that frequently appear together, creating compound words or phrases. The mathematical principle behind the Bigram model is to calculate the probability of a word given the presence of its preceding word, effectively treating the text as a Markov chain. Parameters that can be set for this model include the minimum frequency of occurrence for word pairs to be considered (to filter out infrequent pairs) and the strength of the association needed to form a bigram (which determines how likely two words are to form a phrase based on their co-occurrence).

It is important to note that if two adjacent words have already been preprocess to a phrase, they can potentially be linked again with another word by the Bigram model, leading to trigram phrases.

Similarly, we can recursively identify trigram phrases by building upon the bigrams, linking a third word to an already established bigram if they frequently co-occur in the corpus.

Word embedding, as used in Word2Vec, involves mapping words to a continuous vector space where similar words are positioned closely together. The mathematical concept is based on the context in which a word appears, training the model either to predict a word given its context (Skip-Gram) or to predict the context given a word (CBOW). Because words are translated into vectors, the model captures semantic meaning and relates words to each other based on the similarity of their contexts.

B.3 Generating the Dictionary

We begin with a set of seed words for each corporate value. For *shareholder value*, we use seed words *shareholder value*, *stockholder value*, *share owner value*, *stock owner value*, *stock returns*, and *shareholder returns*. For *lean thinking*, the seed words are words with the highest frequency from ? and ?: *lean thinking*, *lean enterprise*, *lean techniques*, *lean production*, *lean principles*, *lean system*, *lean methods*, *reduce costs*, *cost reduction*, *production cost*, *target cost*, *low cost*, *lead time*, *reengineering*, *reengineered processes*, *business processes*, *lower costs*, *labor costs*, and *division labor*. For *employee*, the seed words are *stakeholder*, *people*, *team*, *talent*, *partner*, *employee*, *human capital*, *empower*, *teamwork*, *personnel*, and *qualified*. Words that reach a certain threshold of similarity to these seed words are added to the corresponding dimension in the dictionary.

B.4 Scoring Documents for Semantic Content

This process provides a score for each article against each dimension, representing the emphasis or relevance of the article to those specific areas.

The TF score is defined as the frequency of a word’s occurrence in a document. The mathematical formula is:

$$TF(t) = \frac{\text{Number of times term } t \text{ appears in a document}}{\text{Total number of terms in the document}}$$

Using the compiled dictionary, we calculate the TF-IDF score for all terms across all documents, quantifying how often dictionary terms appear in each document.

The TF-IDF score is a statistical measure used to evaluate the importance of a word to a document in a collection or corpus. The formula for TF-IDF is:

$$TFIDF(t, d) = TF(t, d) \times IDF(t)$$

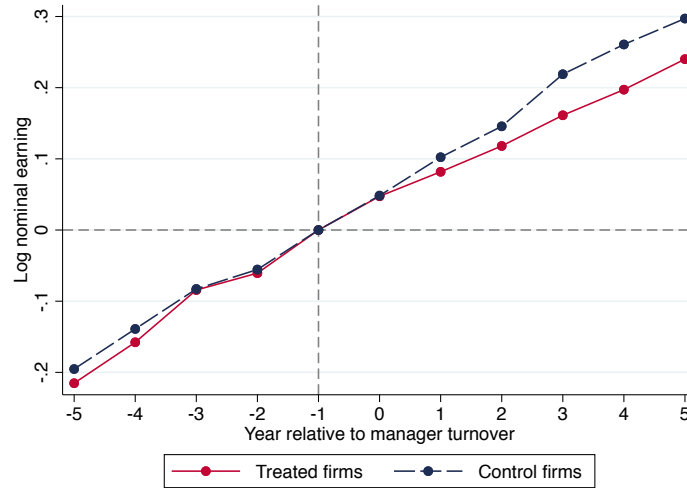
where:

$$IDF(t) = \log \left(\frac{\text{Total number of documents}}{\text{Number of documents with term } t} \right)$$

We generated a lexicon from all tokens, and then the IDF score is computed based on this lexicon and the previously calculated TF scores.

C Additional Figures and Tables

Figure A1: Nominal Earnings Per Worker in Treated and Control Firms



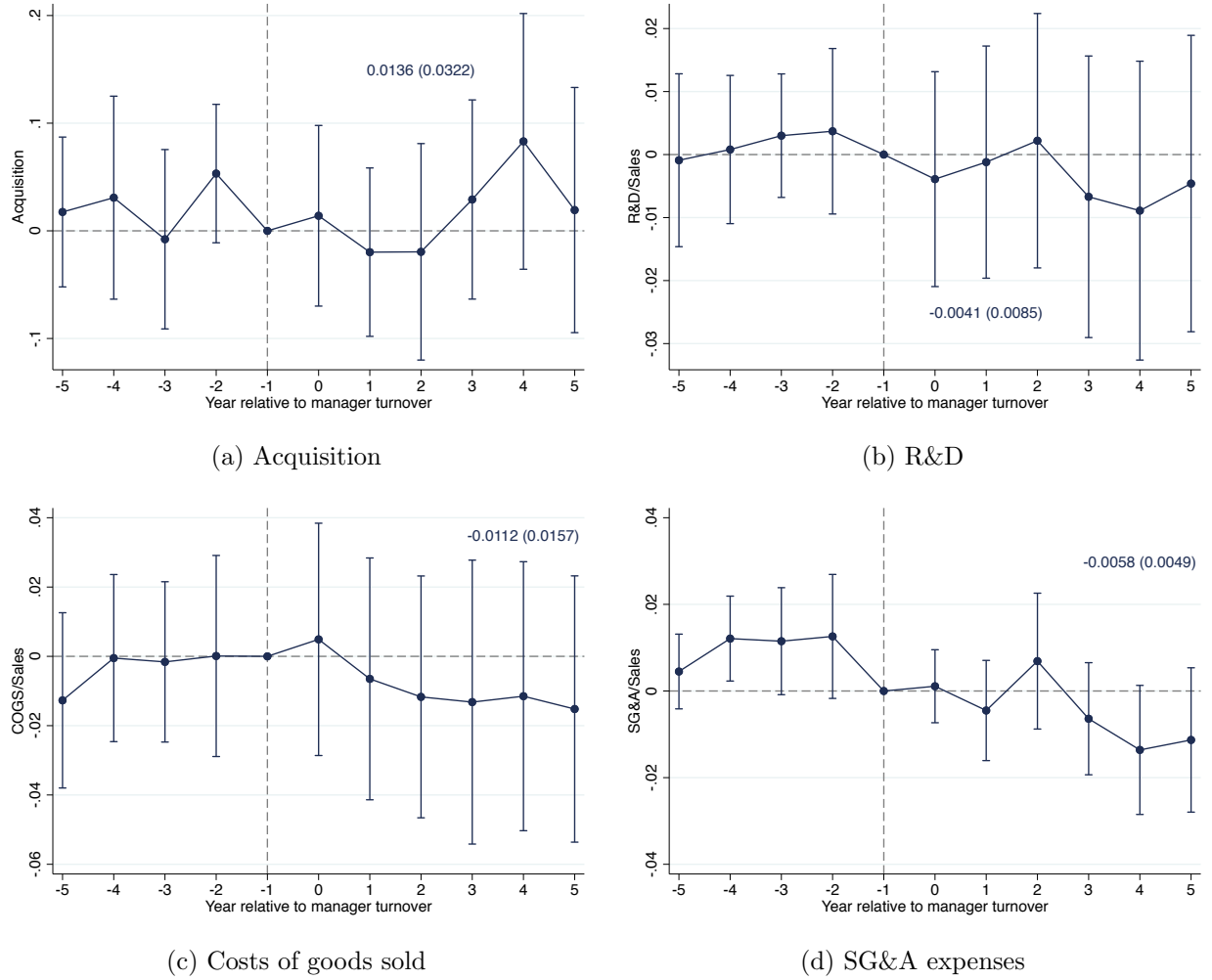
(a) US



(b) Denmark

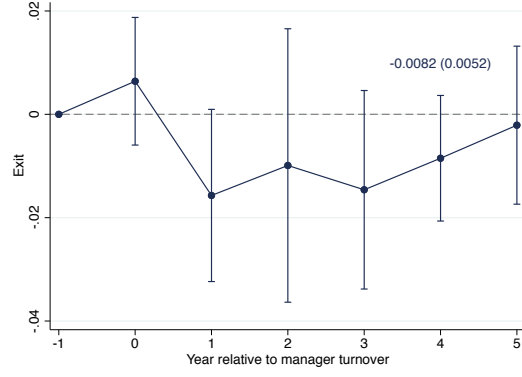
This figure plots the nominal worker earnings trends in treated and matched control firms. Panel (a) is based on US data and Panel (b) is based on Danish data. In each panel, the dashed blue line is the log (nominal) earnings per worker of matched control firms, normalizing the earnings per worker in year -1 to zero. The solid red line in Panel (a) (Panel (b)) is the sum of the log (nominal) earnings per worker of matched control firms plus the estimated event study coefficients in Figure ?? (Figure ??) Panel (a).

Figure A2: Changes in Other Firm Outcomes around Non-Business to Business Manager Transitions in the US

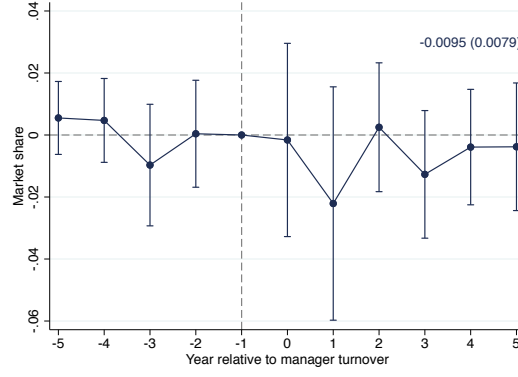


This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. All specifications include firm fixed effects, industry $\times$ year fixed effects, state $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are a dummy variable for acquisition in Panel (a), R&D expenses divided by sales in Panel (b), costs of goods sold divided by sales in Panel (c), and SG&A expenses divided by sales in Panel (d). In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

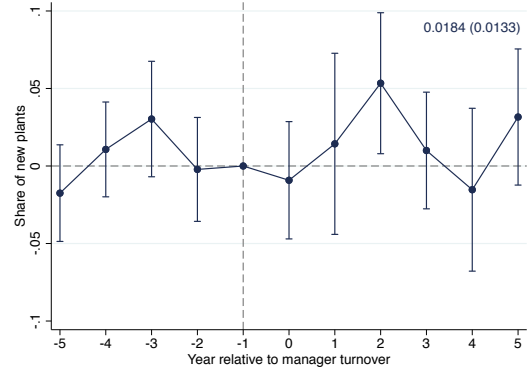
Figure A3: Changes in Entry and Exit around Non-Business to Business Manager Transitions in the US



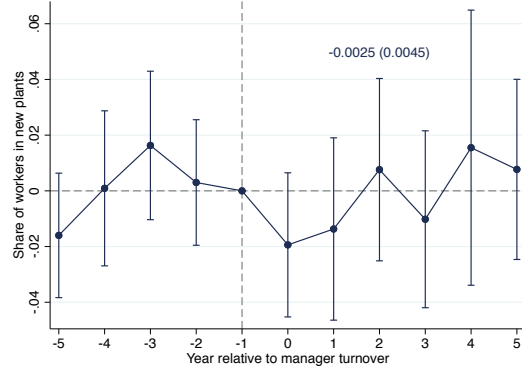
(a) Firm exit



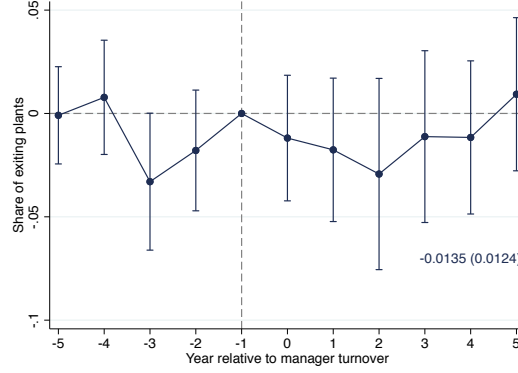
(b) Market share



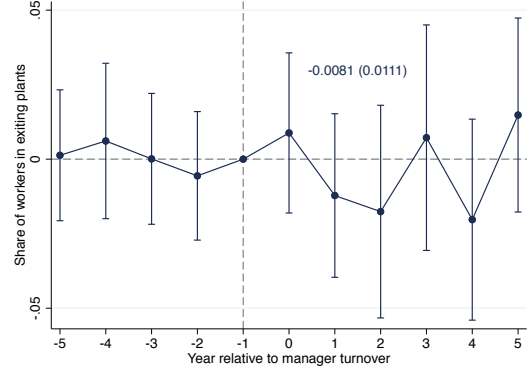
(c) Share of new plants



(d) Share of workers in new plants



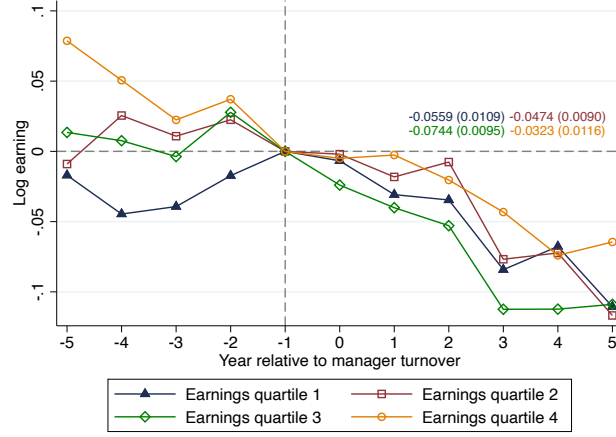
(e) Share of exiting plants



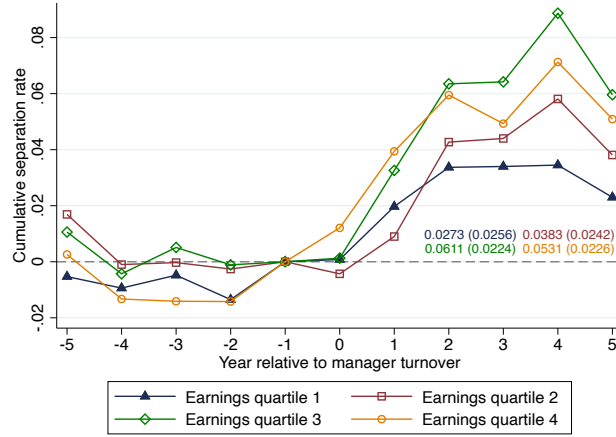
(f) Share of workers in exiting plants

This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. All specifications include firm fixed effects, industry $\times$ year fixed effects, state $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are a dummy variable for firm exit in Panel (a), market share in the 4-digit NAICS industry in Panel (b), the share of new plants in Panel (c), the share of workers in new plants in Panel (d), the share of plants exiting next year in Panel (e), and the share of workers in plants exiting next year by sales in Panel (f). In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A4: Heterogeneous Effects of Business Managers on Worker Earnings and Separation Rates in the US



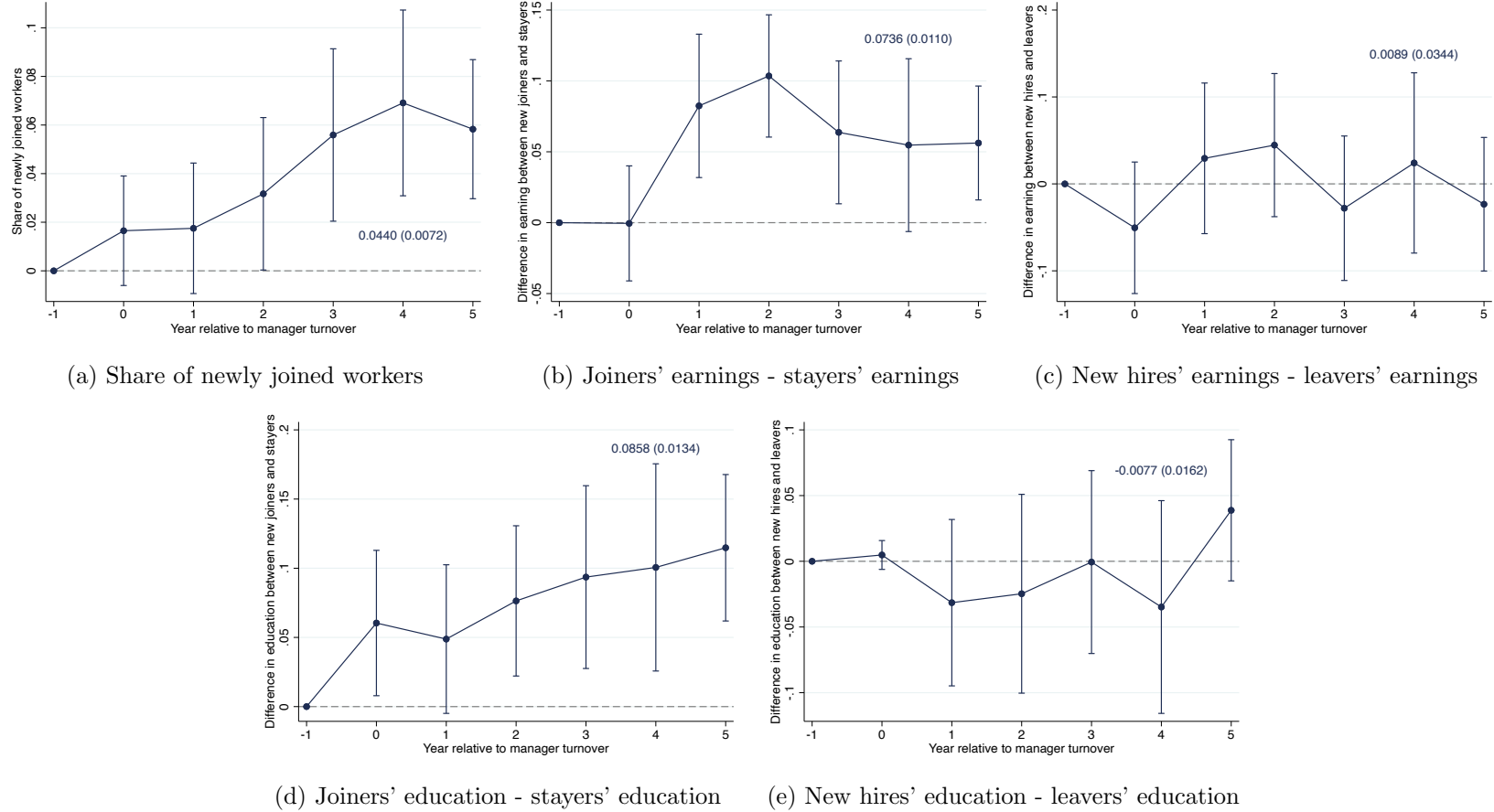
(a) Earnings



(b) Separation rates

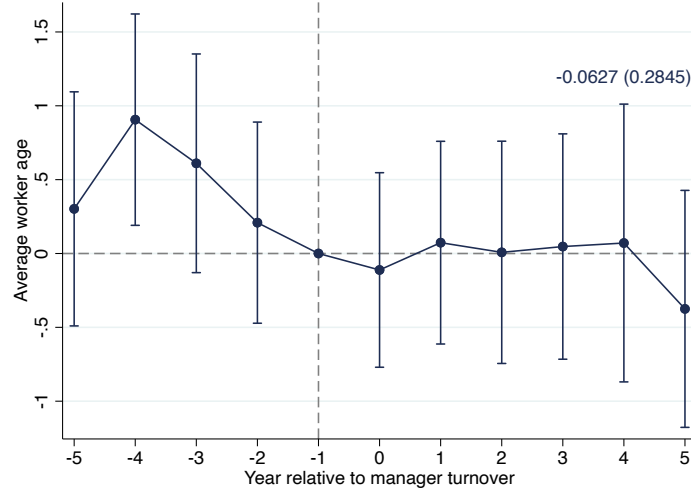
This figure plots event-study estimates and 95% confidence intervals separately by different worker groups, where events are transitions from a non-business manager to a business manager in the US. The dependent variable is log annual earnings in Panel (a) and cumulative separation rate in Panel (b). The estimates are based on the matching estimator described in Section ???. Workers are divided into four groups based on their annualized earnings in year -1. For each group, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

Figure A5: Changes in Worker Composition around Non-Business to Business Manager Transitions in the US

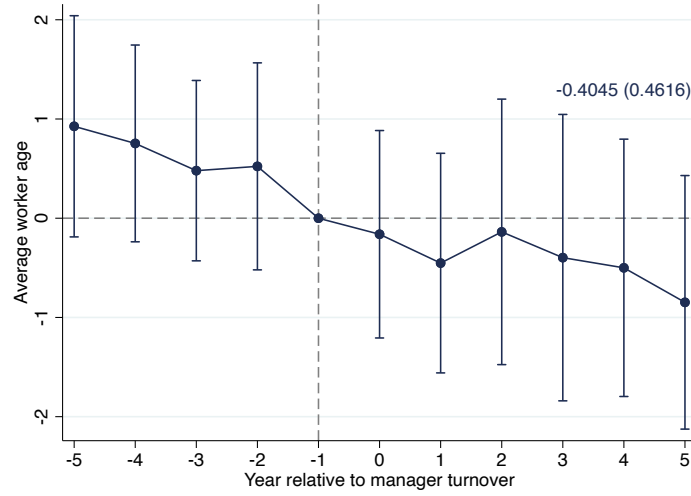


This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. The estimates are based on the matching estimator described in Section ???. The dependent variables are the share of workers who join after year -1 in Panel (a), the log average earnings of workers who join after year -1 minus the log average earnings of stayers (workers who join on or before year -1 and remain in the firm until a given year) in Panel (b), the log average earnings of new hires minus the log average earnings of leavers (workers who separate in the following year) in Panel (c), the average education level of workers who join after year -1 minus the average education level of stayers in Panel (d), and the average education level of new hires minus the average education level of leavers in Panel (e). In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A6: Changes in Worker Age around Non-Business to Business Manager Transitions



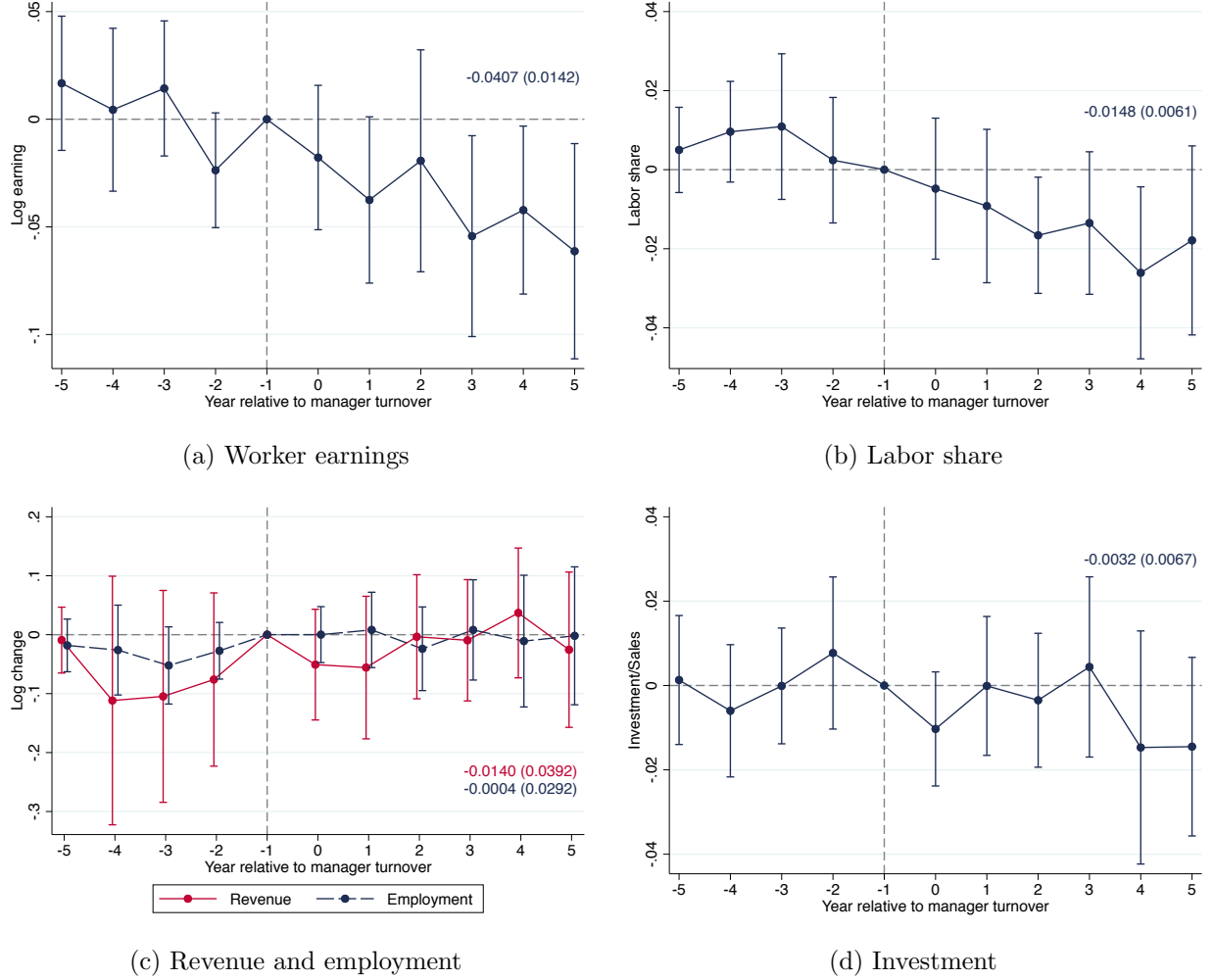
(a) US



(b) Denmark

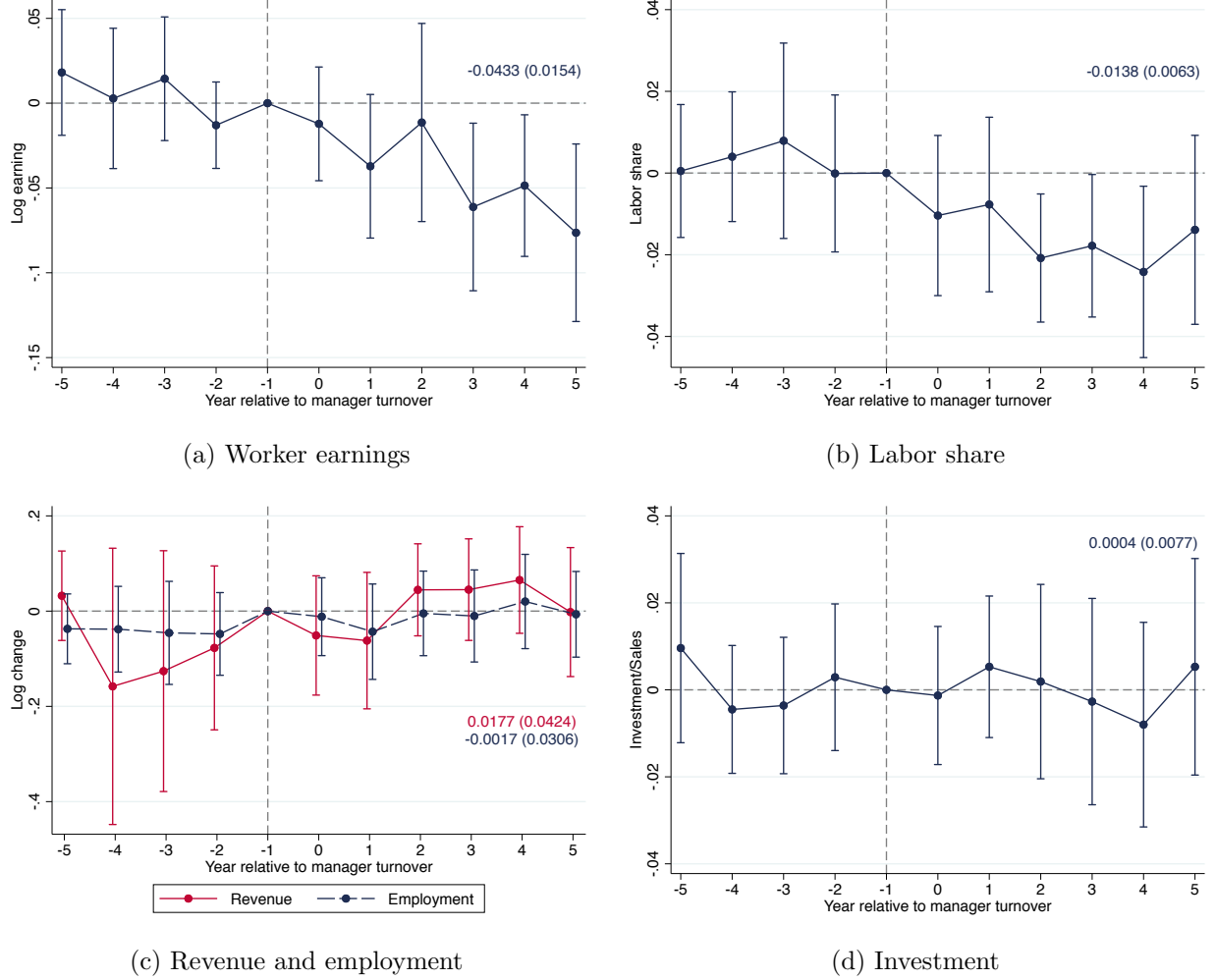
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager. Panel (a) is based on US data and Panel (b) is based on Danish data. The dependent variable is the average worker age. The sample includes firms that have non-business managers in all years, and firms that have a non-business to business manager transition event during the sample period. All firm-level specifications include firm fixed effects, industry $\times$ year fixed effects, state(region) $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A7: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions in the US Controlling for Firm Age $\times$ Year Fixed Effects



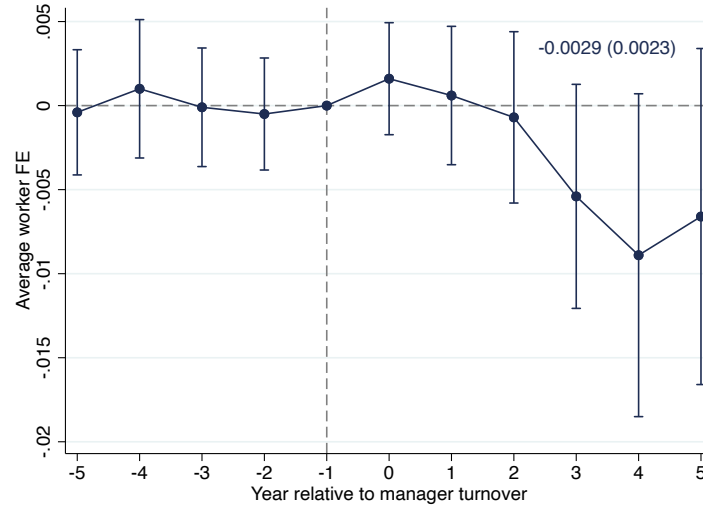
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. The sample includes firms that have non-business managers in all years, and firms that have a non-business to business manager transition event during the sample period. All specifications include firm fixed effects, firm age $\times$ year fixed effects, industry $\times$ year fixed effects, state $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), and investment divided by sales in Panel (d). The labor share is defined as total wage bill divided by sales. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A8: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions for a Balanced Panel of Firms in the US



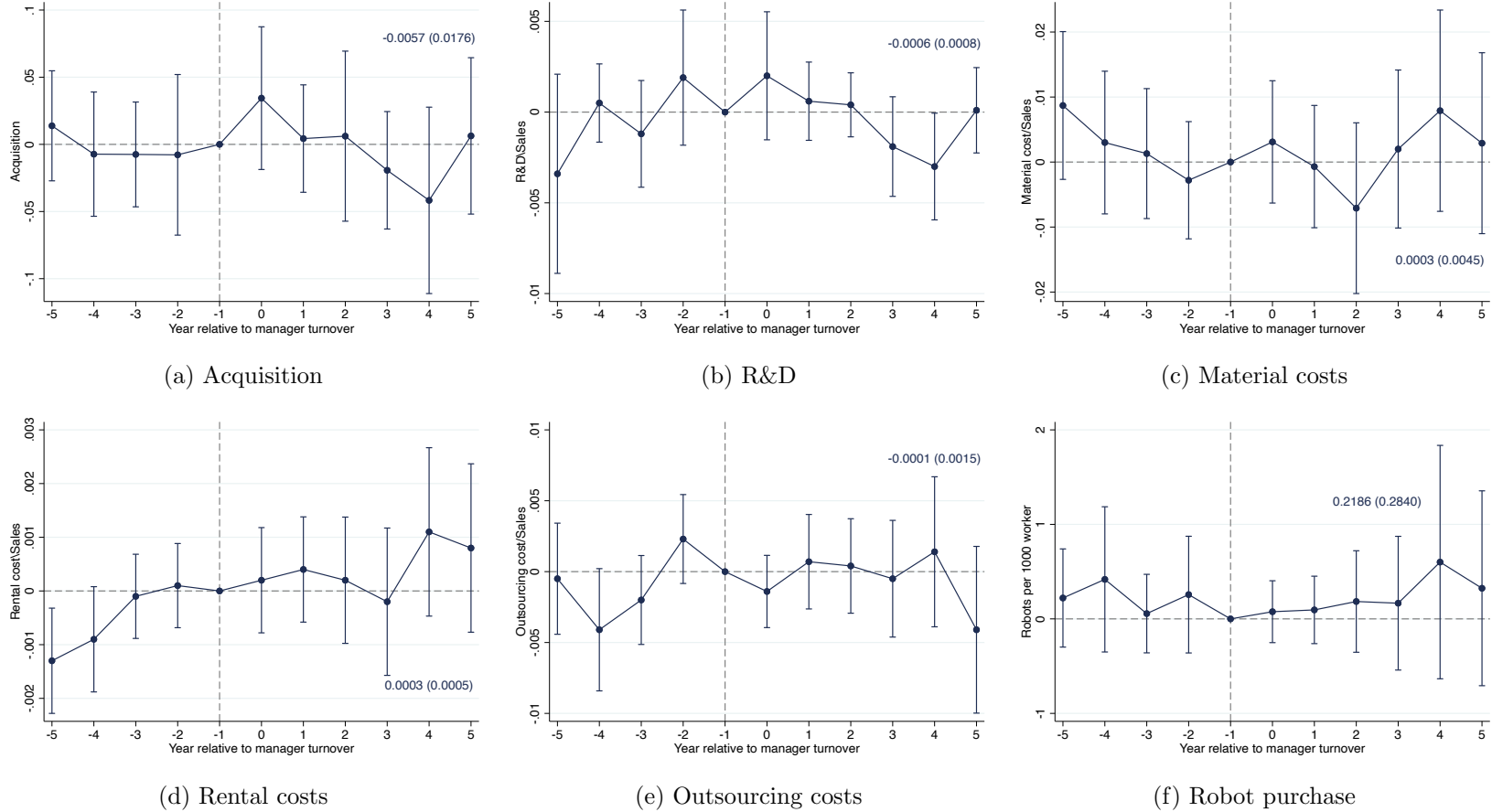
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. The sample includes firms that have non-business managers in all years, and firms that have a non-business to business manager transition event during the sample period. We only keep firms with full observations in each year from 5 years before the manager transition to 5 years after the manager transition. All specifications include firm fixed effects, industry $\times$ year fixed effects, state $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), and investment divided by sales in Panel (d). The labor share is defined as total wage bill divided by sales. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A9: Changes in Worker Quality around Non-Business to Business Manager Transitions in Denmark



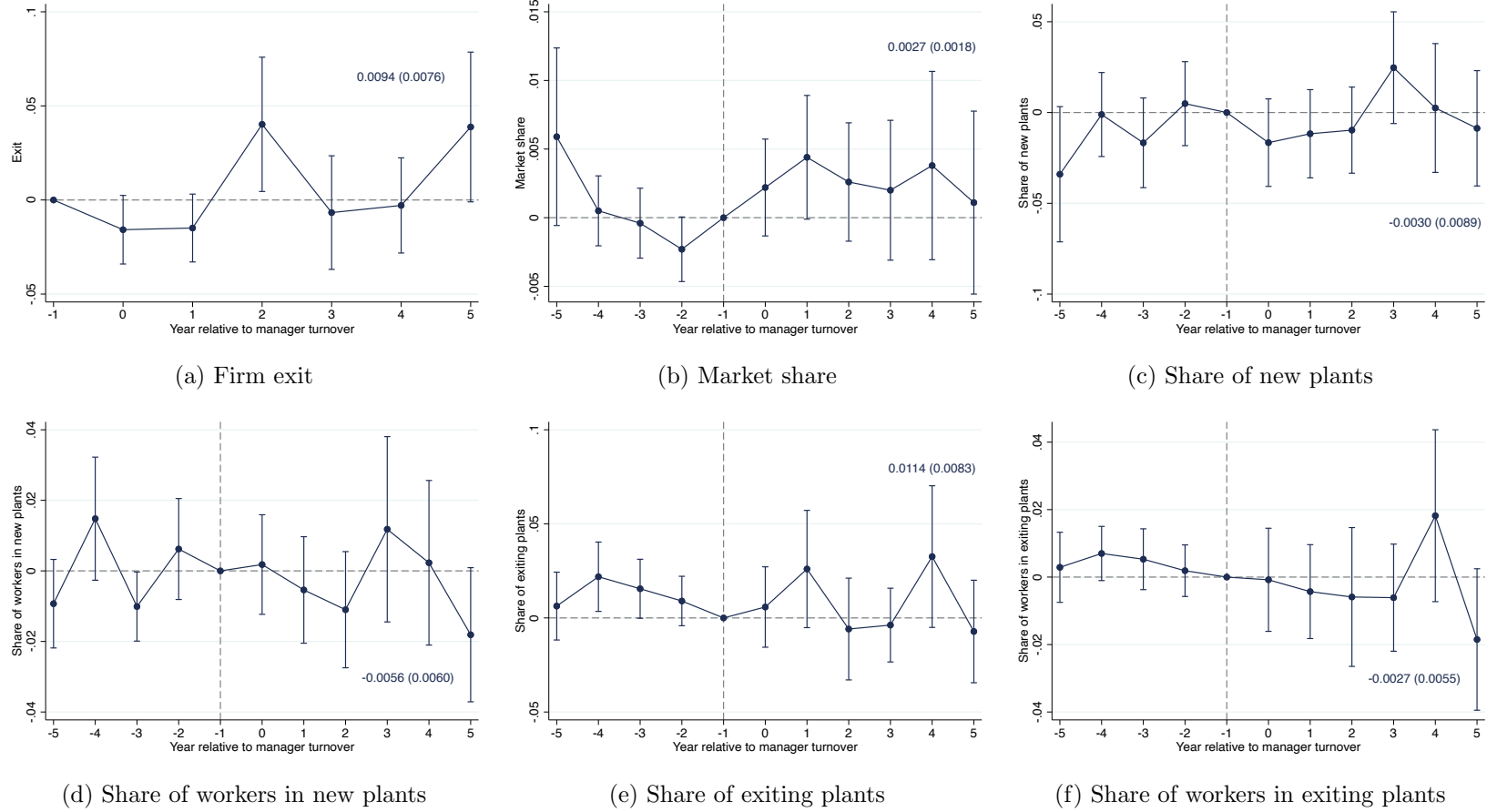
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The dependent variable is the firm's average worker fixed effects, which are estimated from two-way-fixed-effect regressions with worker fixed effects and establishment fixed effects and log annual wage as the dependent variable. The regression controls for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects and industry $\times$ year fixed effects, and observations are weighted by firm employment. we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

Figure A10: Changes in Other Firm Outcomes around Non-Business to Business Manager Transitions in Denmark



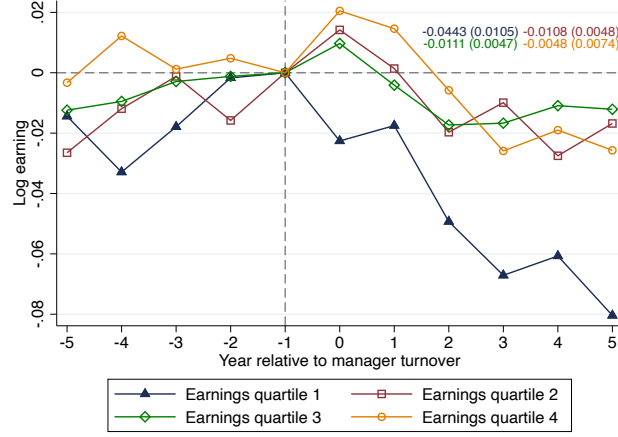
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. All specifications include firm fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are a dummy variable for acquisition in Panel (a), R&D expenses divided by sales in Panel (b), material costs divided by sales in Panel (c), rental costs divided by sales in Panel (d), outsourcing costs divided by sales in Panel (e), and the number of robots per thousand workers in Panel (f). In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A11: Changes in Entry and Exit around Non-Business to Business Manager Transitions in Denmark

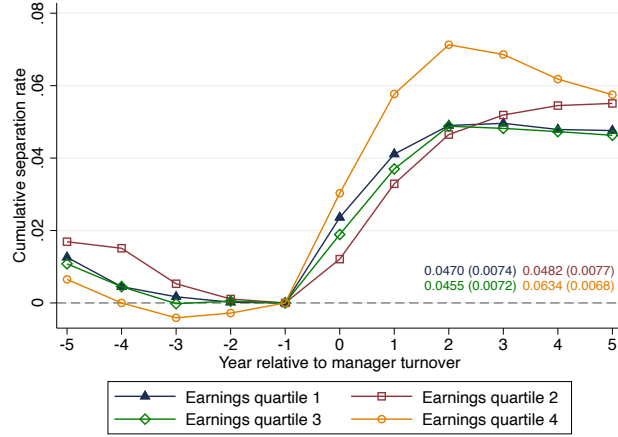


This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. All specifications include firm fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are a dummy variable for firm exit in Panel (a), market share in the industry in Panel (b), the share of new plants in Panel (c), the share of workers in new plants in Panel (d), the share of plants exiting next year in Panel (e), and the share of workers in plants exiting next year by sales in Panel (f). In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A12: Heterogeneous Effects of Business Managers on Worker Earnings and Separation Rates in Denmark



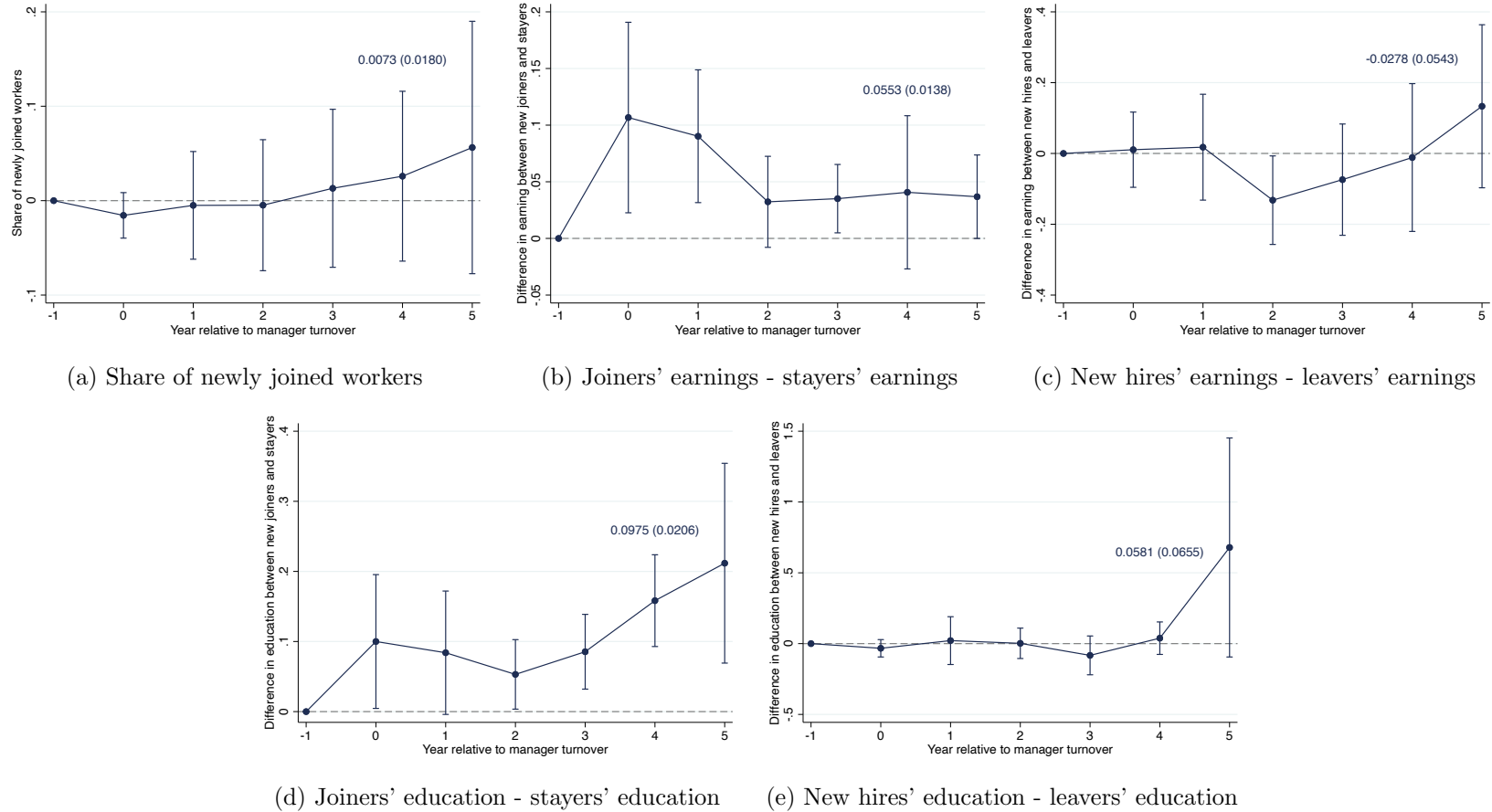
(a) Earnings



(b) Separation rates

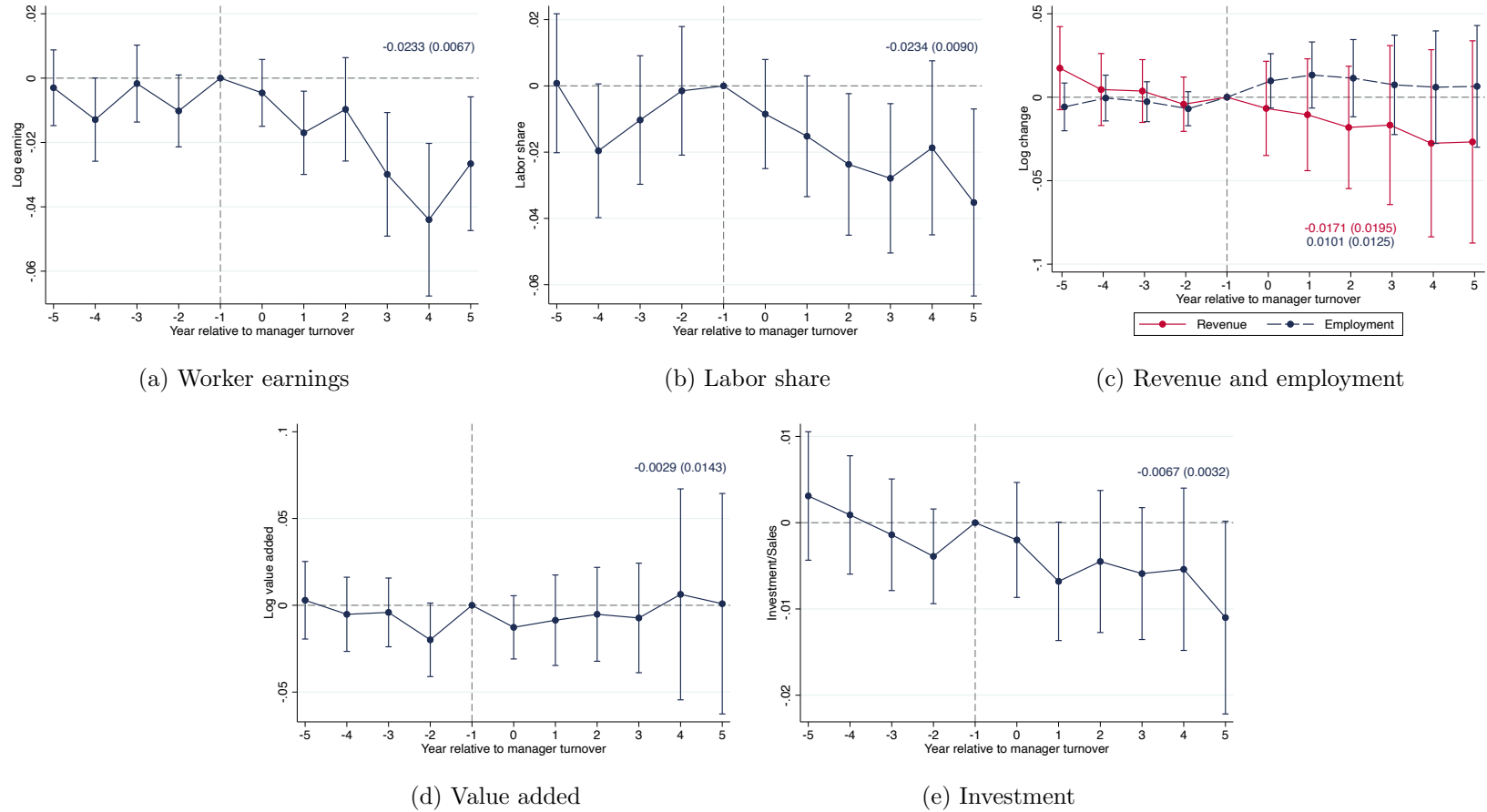
This figure plots event-study estimates and 95% confidence intervals separately by different worker groups, where events are transitions from a non-business manager to a business manager in Denmark. The dependent variable is log annual earnings in Panel (a) and cumulative separation rate in Panel (b). The estimates are based on the matching estimator described in Section ???. Workers are divided into four groups based on their earnings in year -1. For each group, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

Figure A13: Changes in Worker Composition around Non-Business to Business Manager Transitions in Denmark



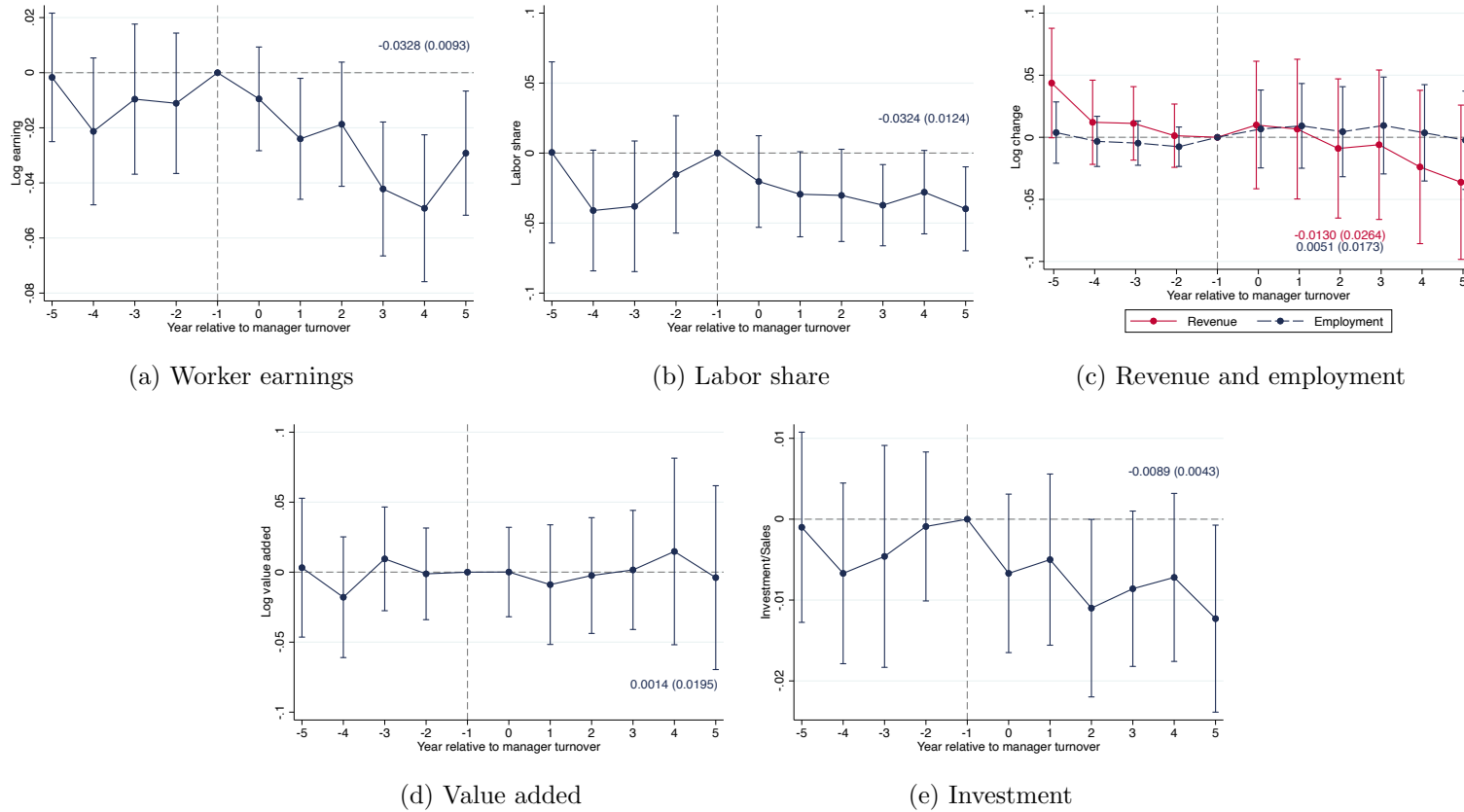
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The estimates are based on the matching estimator described in Section ???. The dependent variables are the share of workers who join after year -1 in Panel (a), the log average earnings of workers who join after year -1 minus the log average earnings of stayers (workers who join on or before year -1 and remain in the firm until a given year) in Panel (b), the log average earnings of new hires minus the log average earnings of leavers (workers who separate in the following year) in Panel (c), the average education level of workers who join after year -1 minus the average education level of stayers in Panel (d), and the average education level of new hires minus the average education level of leavers in Panel (e). In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A14: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions in Denmark Controlling for Firm Age $\times$ Year Fixed Effects



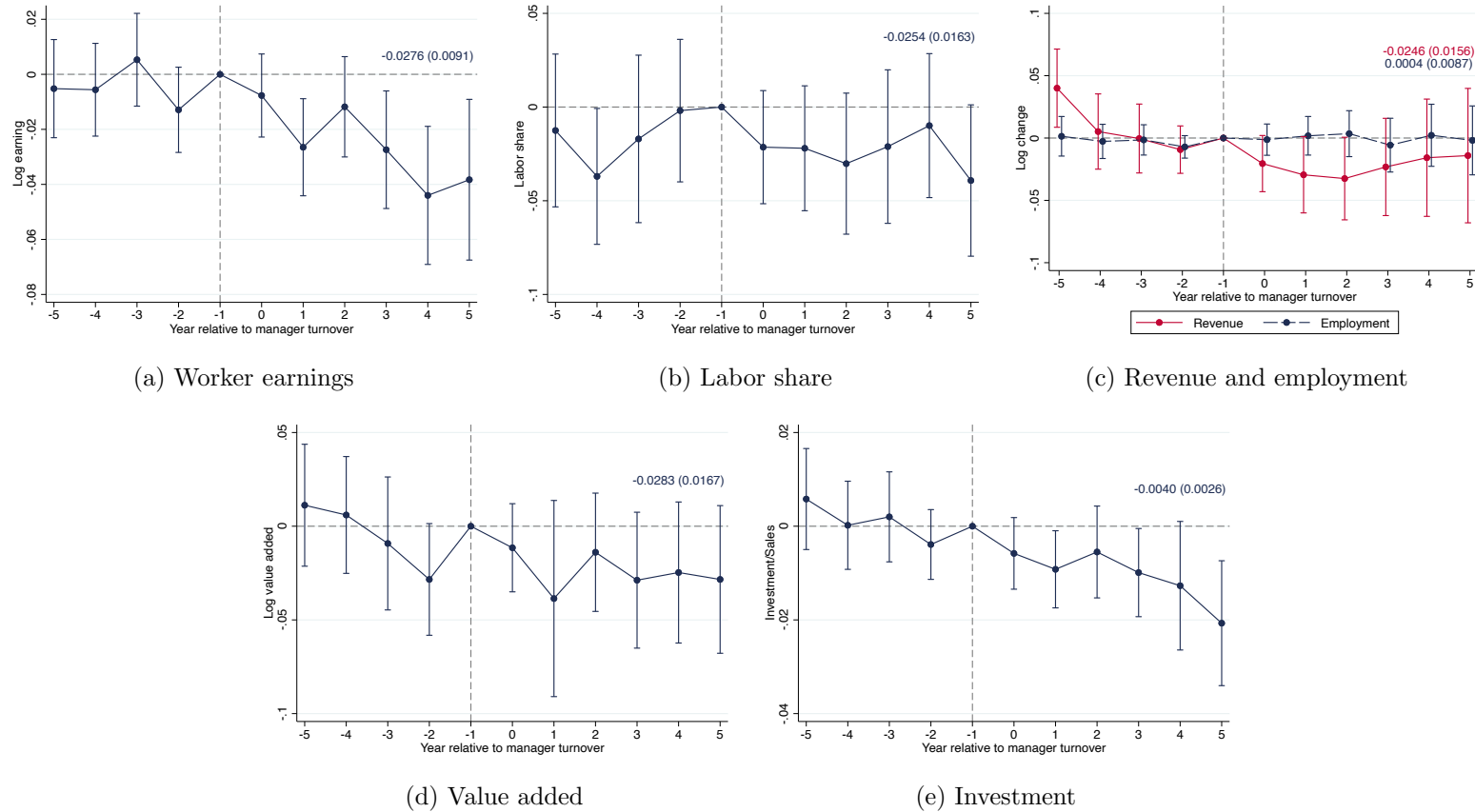
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The sample includes firms that have non-business managers in all years, and firms that have a non-business to business manager transition event during the sample period. All specifications include firm fixed effects, firm age $\times$ year fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A15: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions for a Balanced Panel of Firms in Denmark



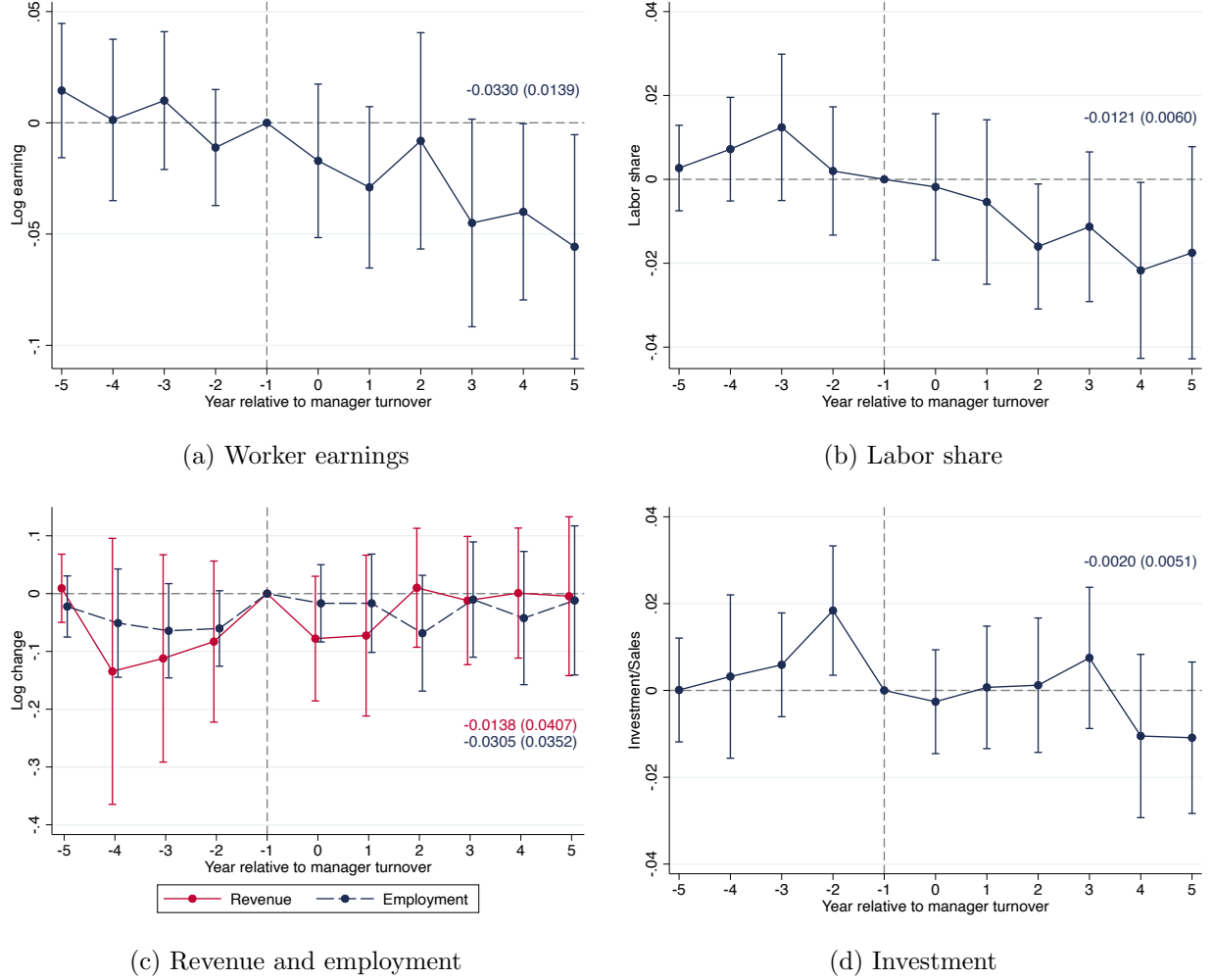
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The sample includes firms that have non-business managers in all years, and firms that have a non-business to business manager transition event during the sample period. We only keep firms with full observations in each year from the manager transition to 5 years after the manager transition. All specifications include firm fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A16: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions in Denmark Reweighting by US Firm Size Distribution



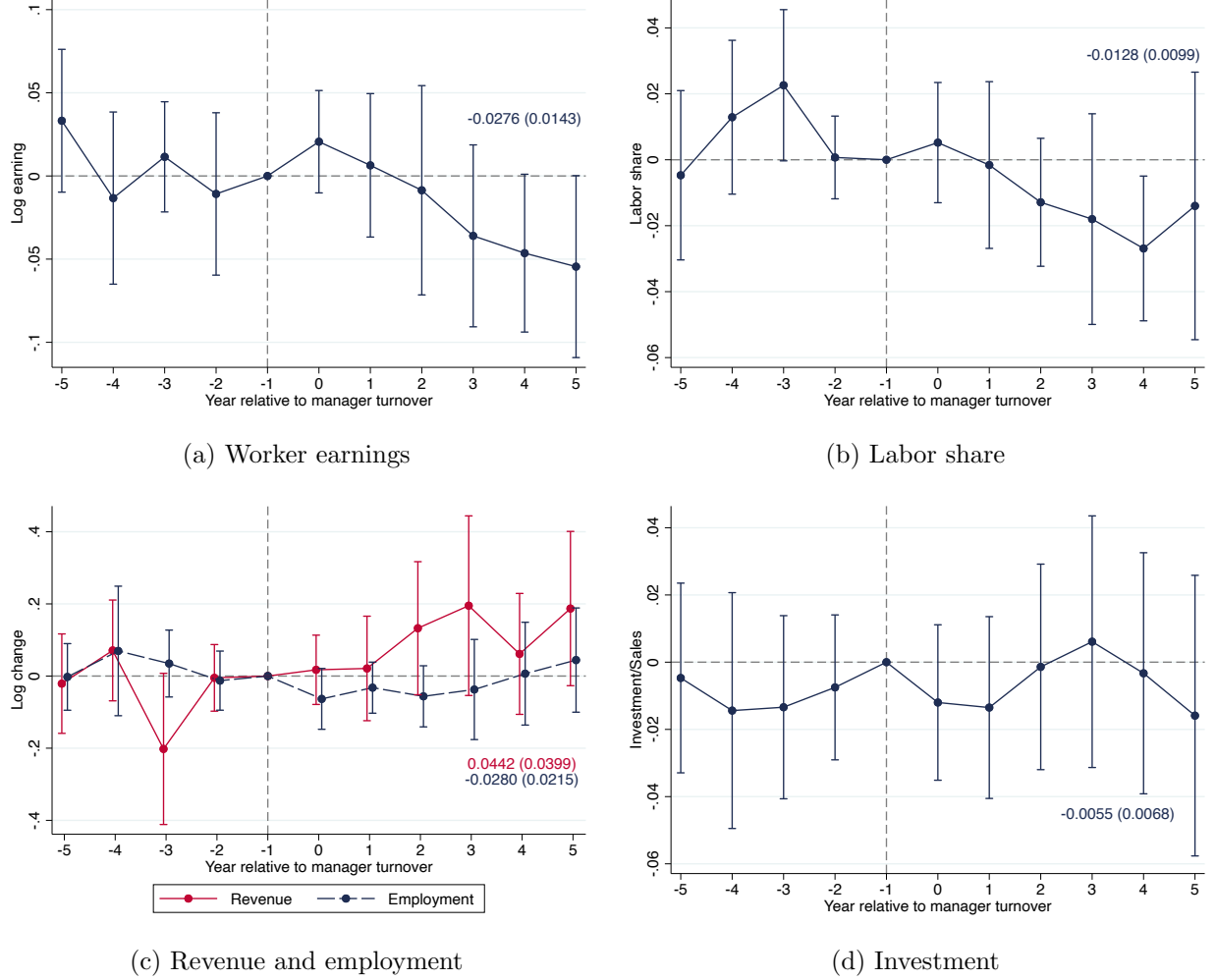
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. All specifications include firm fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, and firm size quintile by year fixed effects. Observations are weighted by firm employment multiplied by firm-size-bin-level weights. For each year, we calculate 20 equal-sized bins based on the employment distribution of publicly-listed US firms, and apply bin-level weights equal to the fraction of publicly-listed US firms in a bin divided by the fraction of Danish firms in that bin. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A17: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions in the US Reweighting by LBD Firm Size Distribution



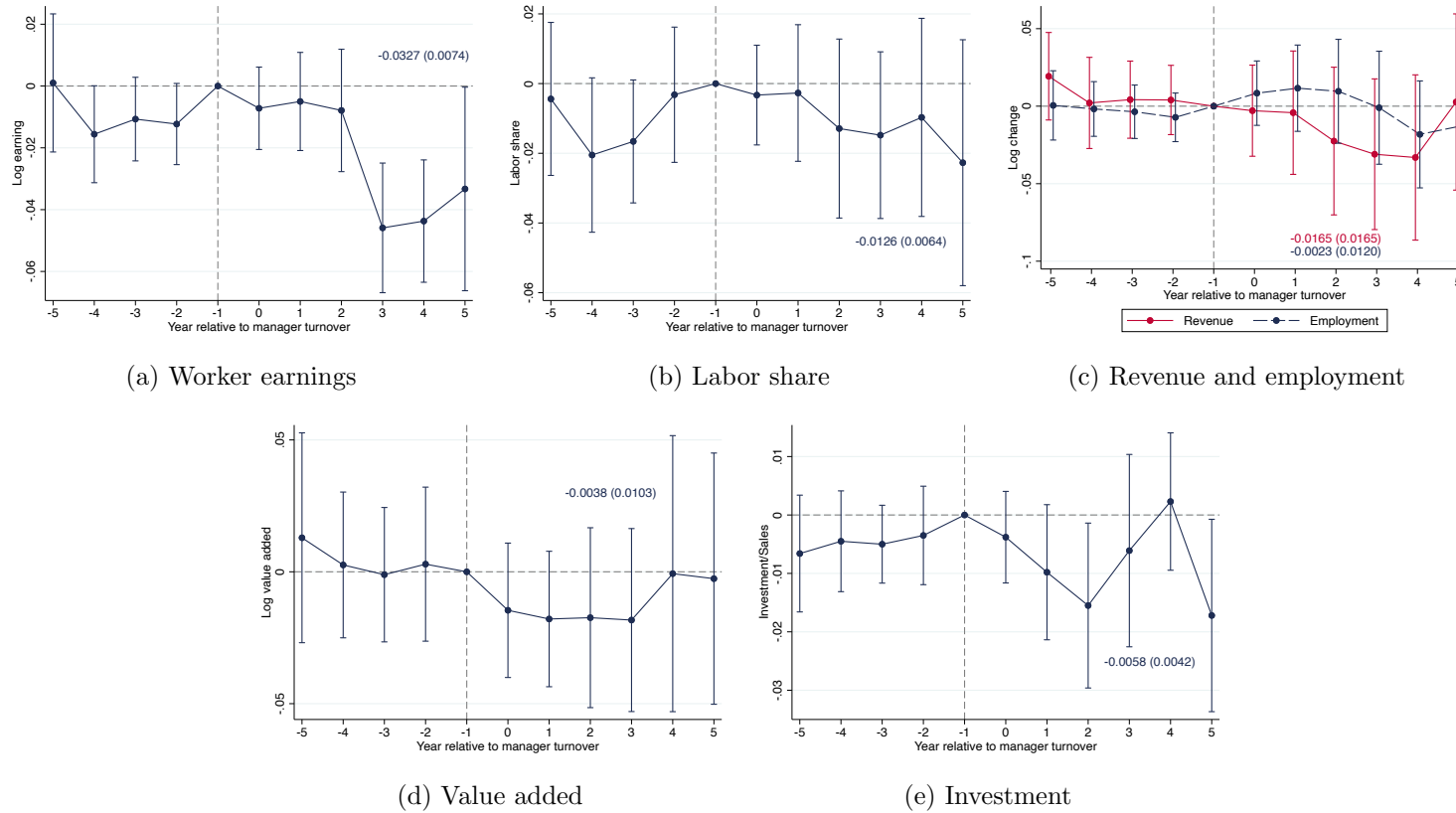
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. All specifications include firm fixed effects, industry $\times$ year fixed effects, state $\times$ year fixed effects, and firm size quintile by year fixed effects. Observations are weighted by firm employment multiplied by firm-size-bin-level weights. For each year, we calculate 20 equal-sized bins based on the employment distribution of all firms in the LBD, and apply bin-level weights equal to the fraction of all LBD firms (public and private) in a bin divided by the fraction of publicly-listed LBD firms in that bin. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), and investment divided by sales in Panel (d). The labor share is defined as total wage bill divided by revenue. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A18: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions Using the Last-Treated Firms as Control in the US



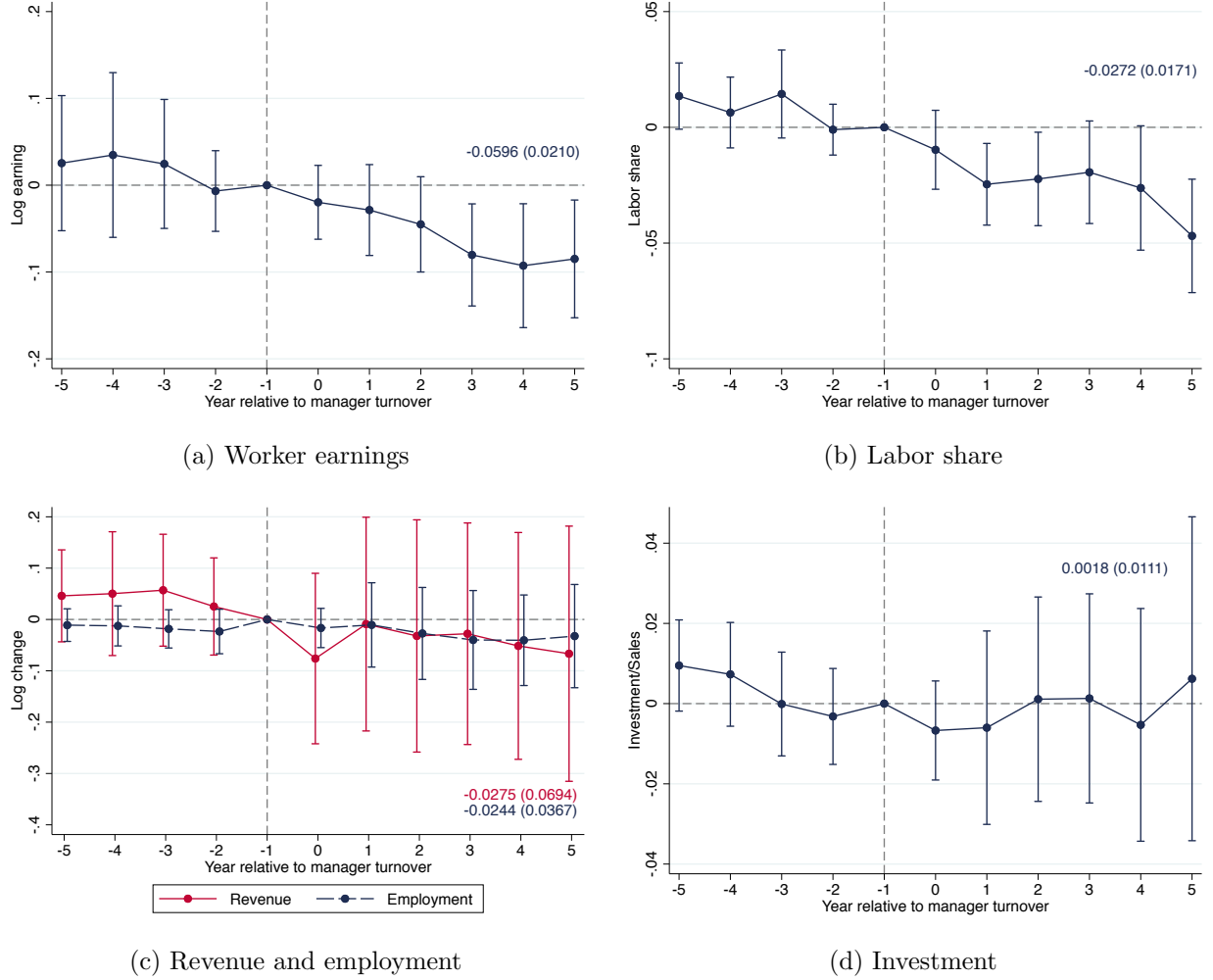
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. The sample includes firms that have a non-business to business manager transition event during the sample period, and firms that have the non-business to business manager transition event in the last year of the sample period are used as the control group. All specifications include firm fixed effects and year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), and investment divided by sales in Panel (d). The labor share is defined as total wage bill divided by sales. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A19: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions Using the Last-Treated Firms as Control in Denmark



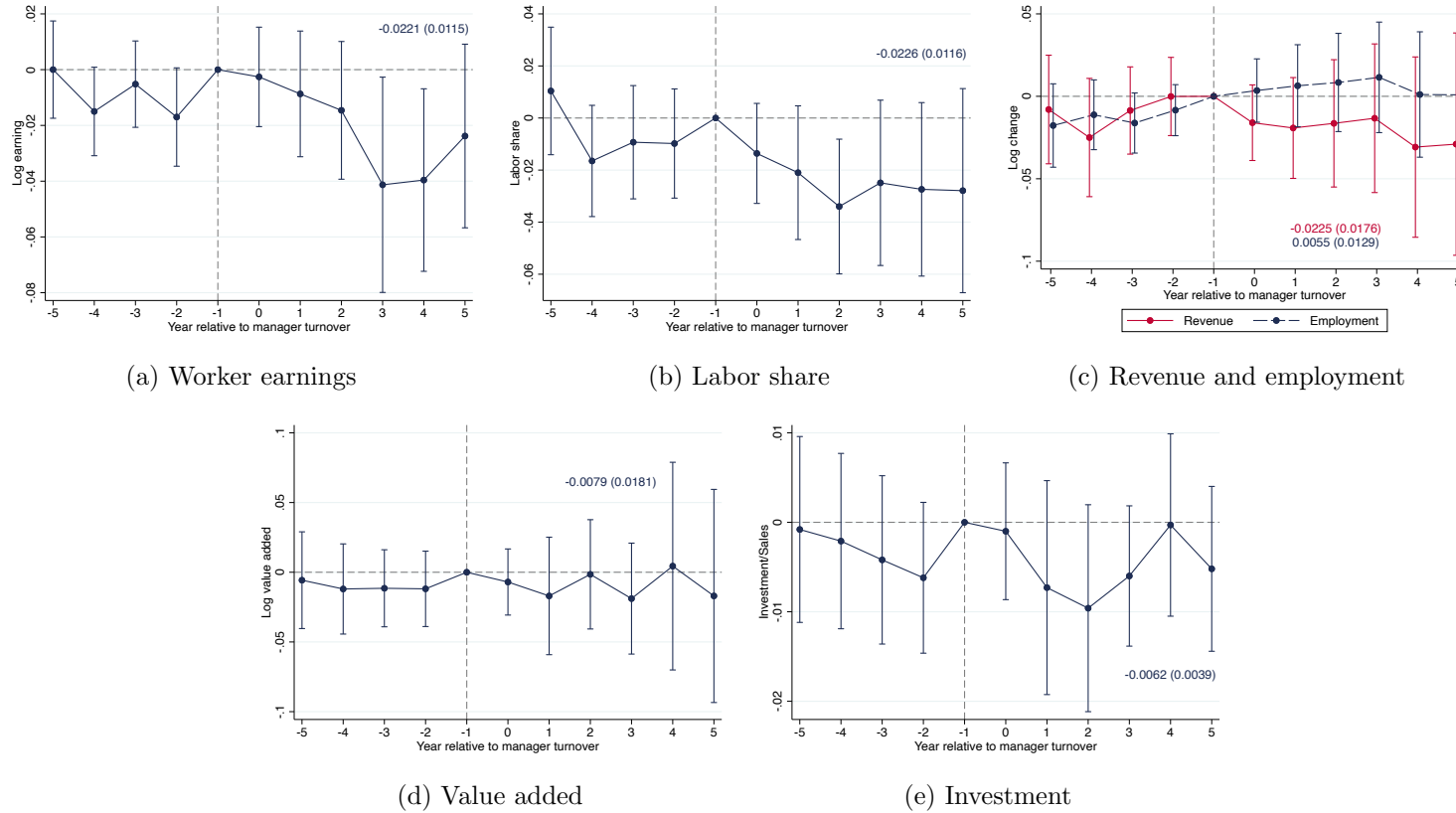
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The sample includes firms that have a non-business to business manager transition event during the sample period, and firms that have the non-business to business manager transition event in the last year of the sample period are used as the control group. All specifications include firm fixed effects and year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A20: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions Using Propensity Score Matching in the US



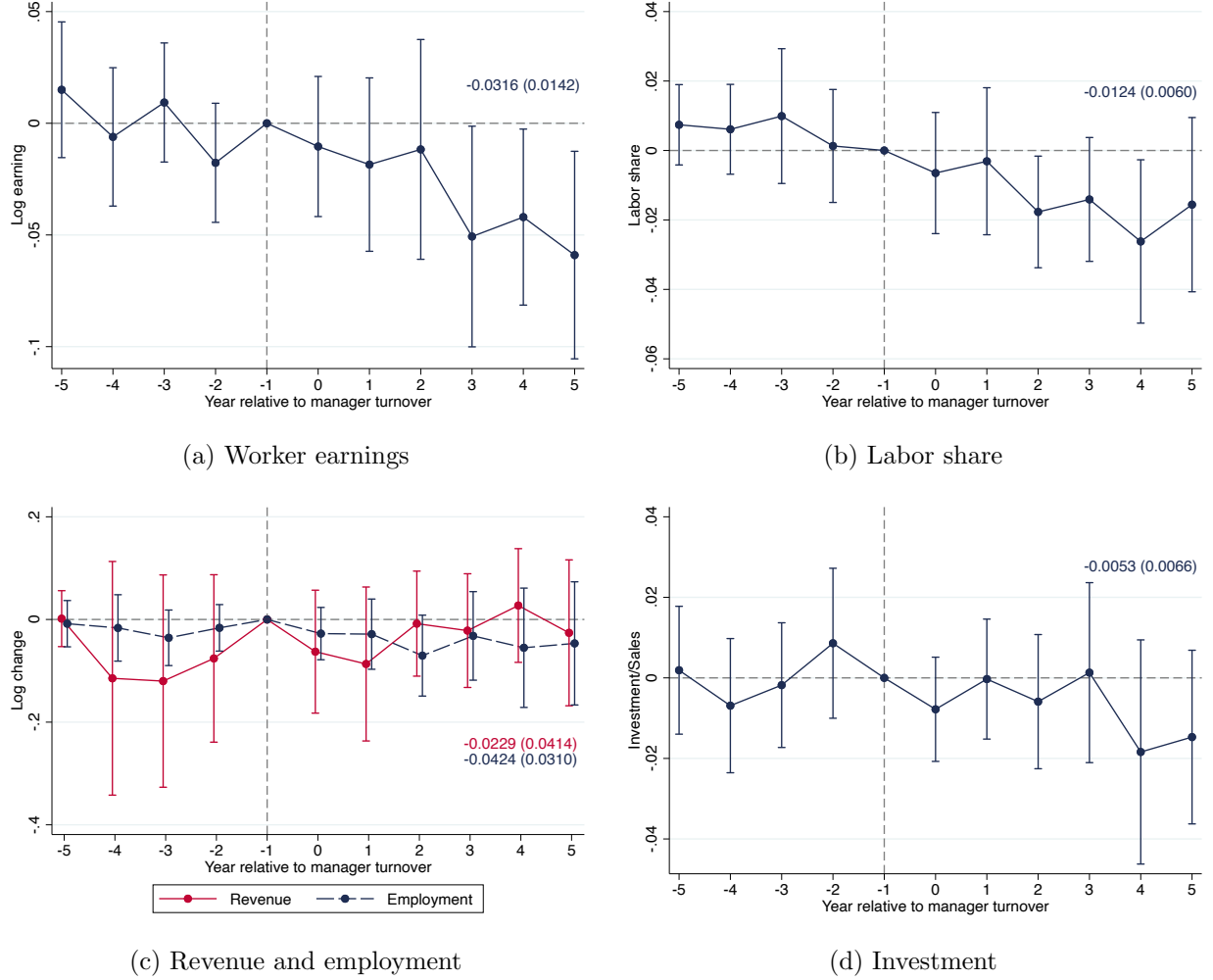
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. The sample includes firms that have a non-business to business manager transition event during the sample period and their matched control firms. Each treated firm is matched to a control firm in the same industry, state, and size quintile that has the closest propensity score. All specifications include firm fixed effects and year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), and investment divided by sales in Panel (d). The labor share is defined as total wage bill divided by sales. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A21: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions Using Propensity Score Matching in Denmark



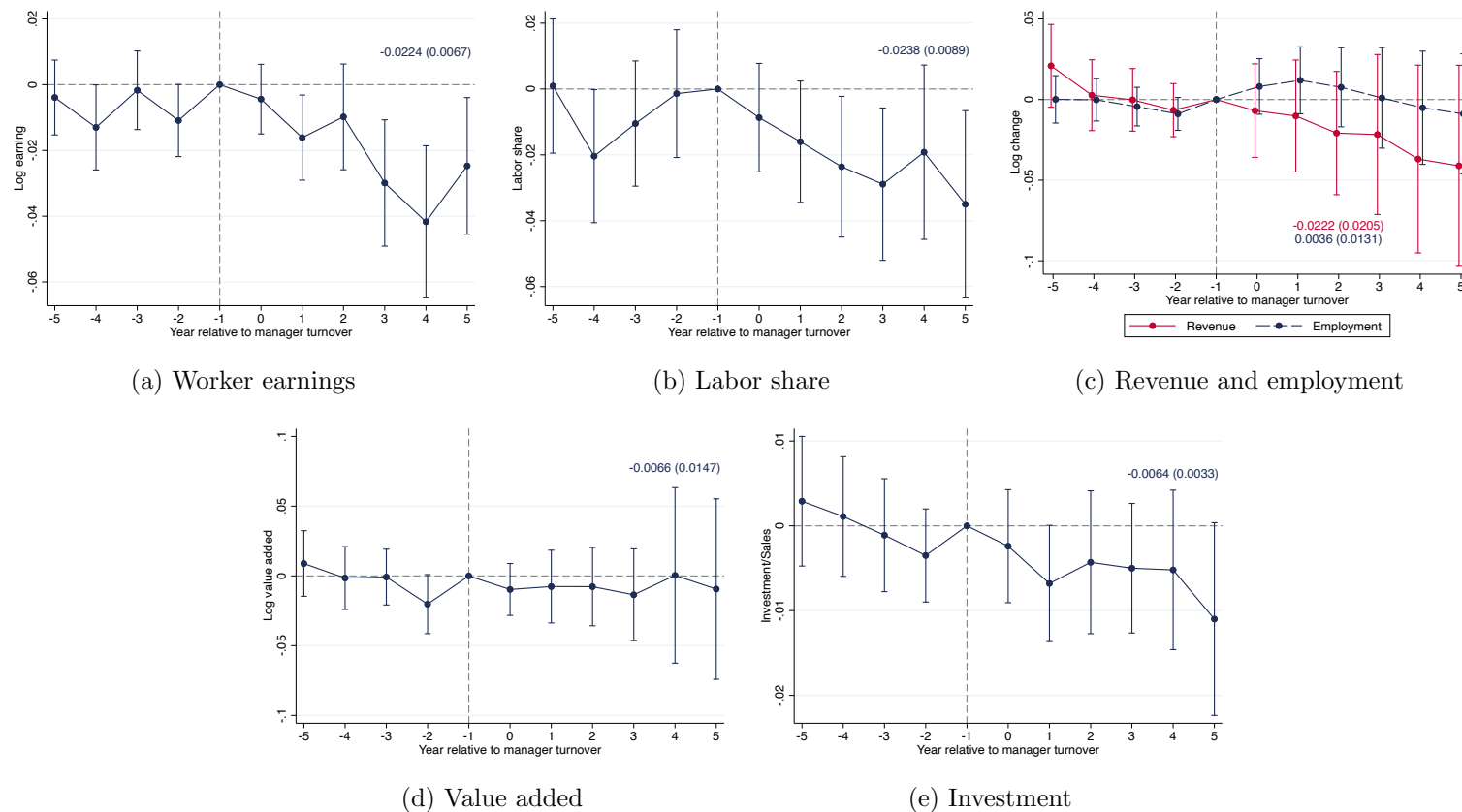
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The sample includes firms that have a non-business to business manager transition event during the sample period and their matched control firms. Each treated firm is matched to a control firm in the same industry, region, and size quintile that has the closest propensity score. All specifications include firm fixed effects and year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A22: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions Controlling for Earnings Per Worker Quintile Fixed Effects in the US



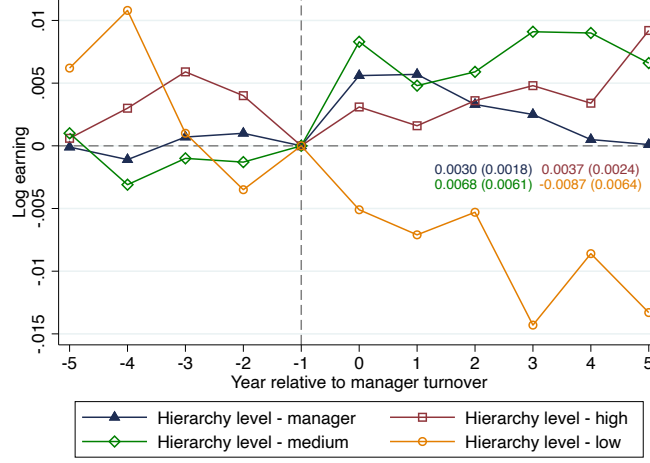
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in the US. The sample includes firms that have non-business managers in all years, and firms that have a non-business to business manager transition event during the sample period. All firm-level specifications include firm fixed effects, industry $\times$ year fixed effects, state $\times$ year fixed effects, firm size quintile by year fixed effects, and earnings per worker quintile by year fixed effects. Observations are weighted by employment. The dependent variables are log earnings per worker and log earnings of staying workers in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), and investment divided by sales in Panel (d). The labor share is defined as total wage bill divided by sales. For log earnings of staying workers in Panel (a), we use the matching estimator as described in Section ???. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A23: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions Controlling for Earnings Per Worker Quintile Fixed Effects in Denmark

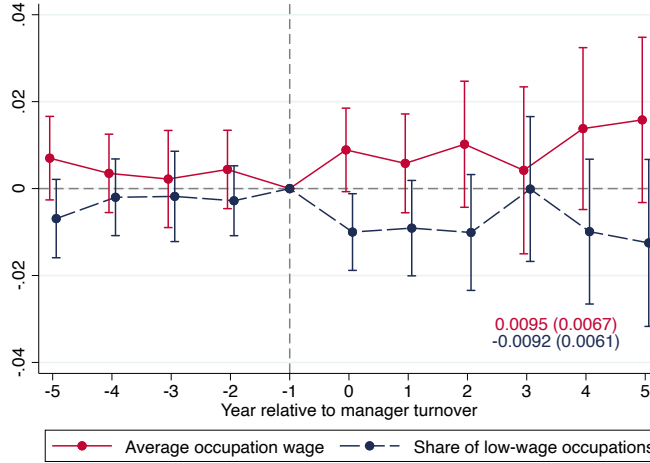


This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The sample includes firms that have non-business managers in all years, and firms that have a non-business to business manager transition event during the sample period. All firm-level specifications include firm fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, firm size quintile by year fixed effects, and earnings per worker quintile by year fixed effects. Observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. For log earnings of staying workers in Panel (a), we use the matching estimator as described in Section ???. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A24: Changes in Organization and Occupation Structure around Non-Business to Business Manager Transitions in Denmark



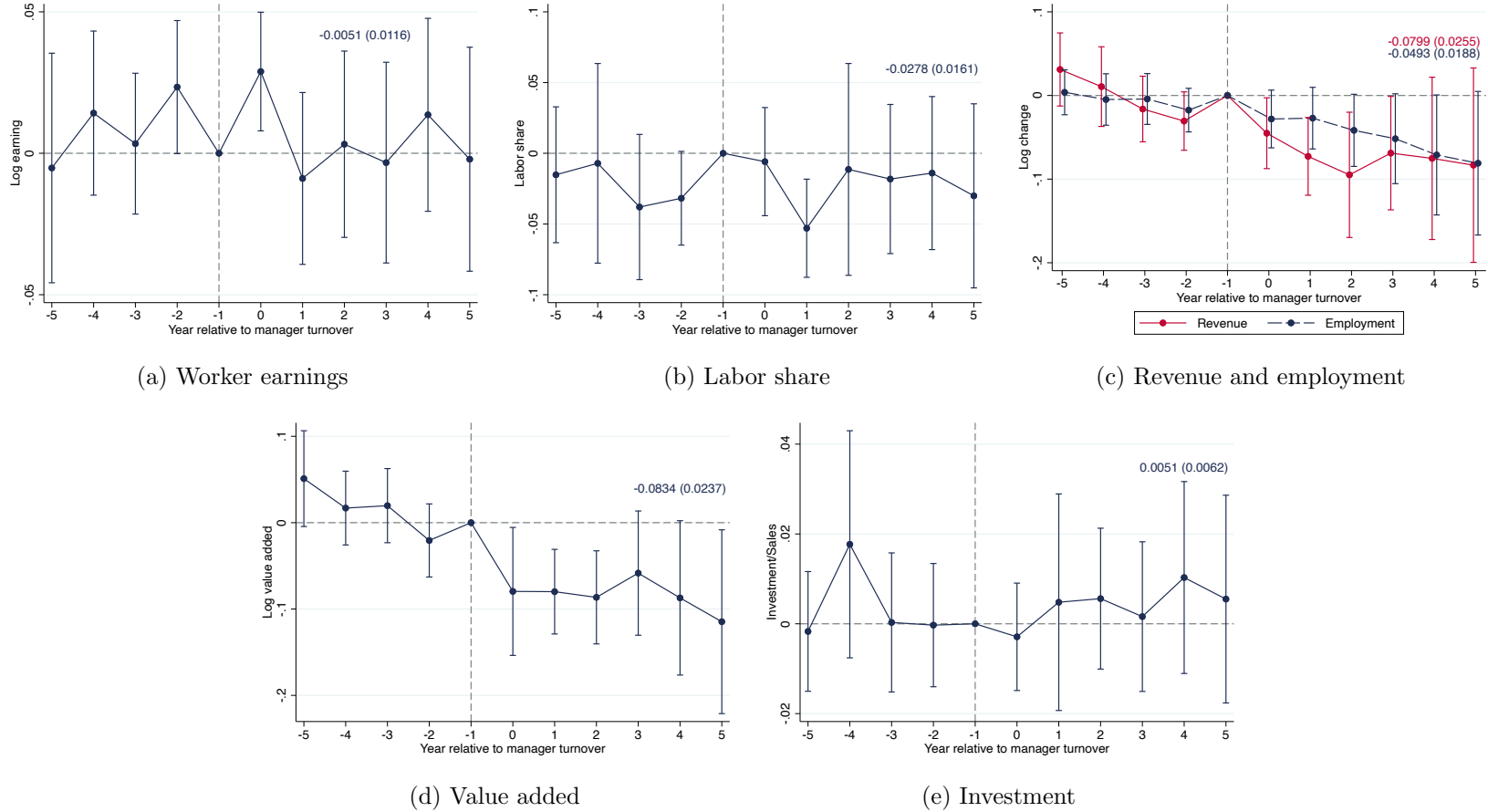
(a) Hierarchy levels



(b) Occupation average wage and share of low-skilled occupations

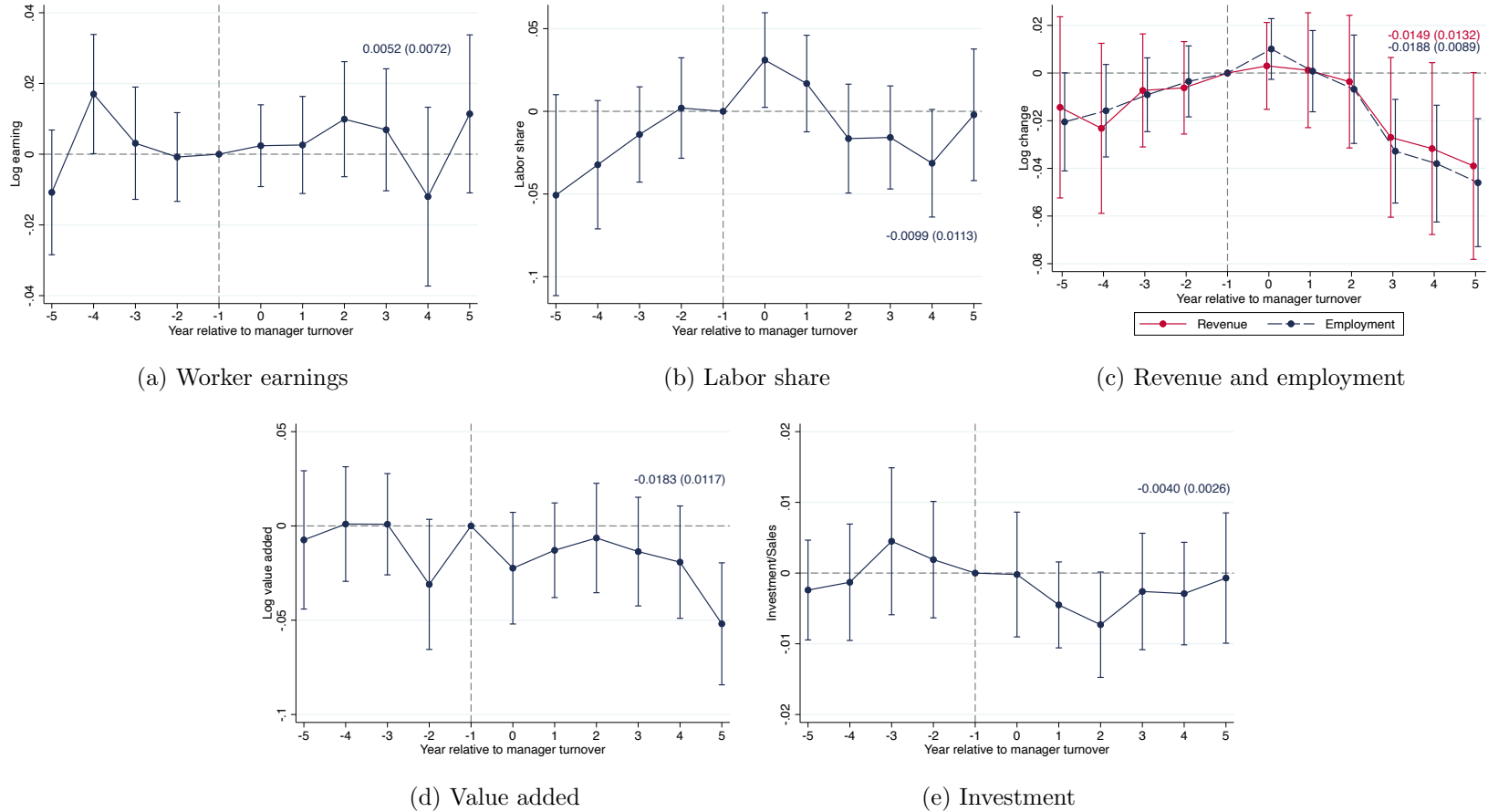
This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a non-business manager to a business manager in Denmark. In Panel (a), the dependent variables are the share of workers in each hierarchy level (manager, high, medium, and low). In Panel (b), the dependent variables are mean occupation-level average wage and the share of workers in low-wage occupations (occupations in the lowest quartile of the wage distribution). All regressions include firm fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

Figure A25: Changes in Firm and Worker Outcomes around Non-Economics to Economics Manager Transitions in Denmark



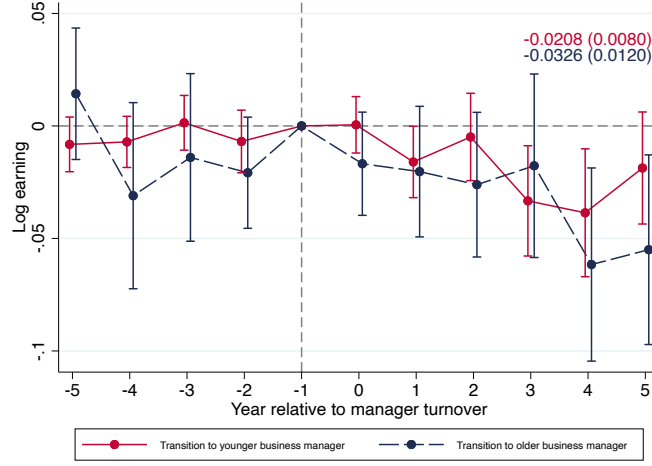
This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a manager without an economics degree to a manager with an economics degree in Denmark. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects and industry×year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A26: Changes in Firm and Worker Outcomes around Non-Engineering to Engineering Manager Transitions in Denmark



This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a manager without an engineering degree to a manager with an engineering degree in Denmark. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects and industry $\times$ year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A27: Changes in Worker Earnings and the Labor Share around Non-Business to Younger or Older Business Manager Transitions in Denmark



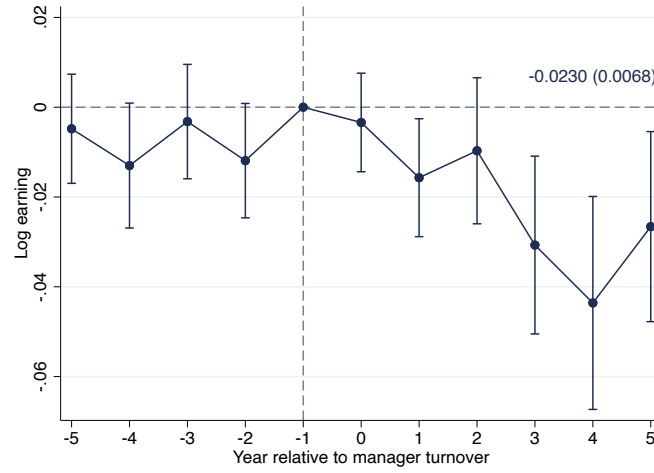
(a) Worker earnings



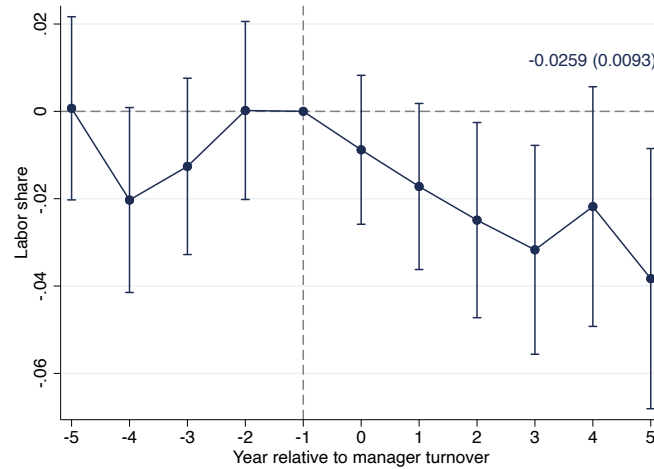
(b) Labor share

This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a non-business manager to a younger business manager (solid lines) or an older business manager (dashed lines) in Denmark. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects and industry $\times$ year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a) and the labor share in Panel (b). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A28: Changes in Worker Earnings and the Labor Share around Non-Business to Business Manager Transitions Excluding Family CEOs in Denmark



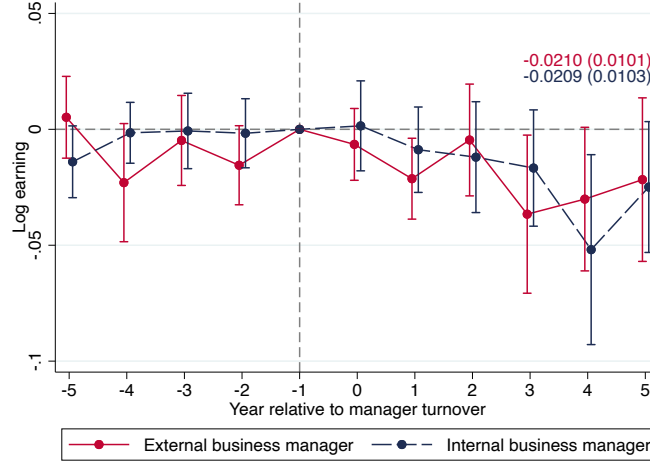
(a) Worker earnings



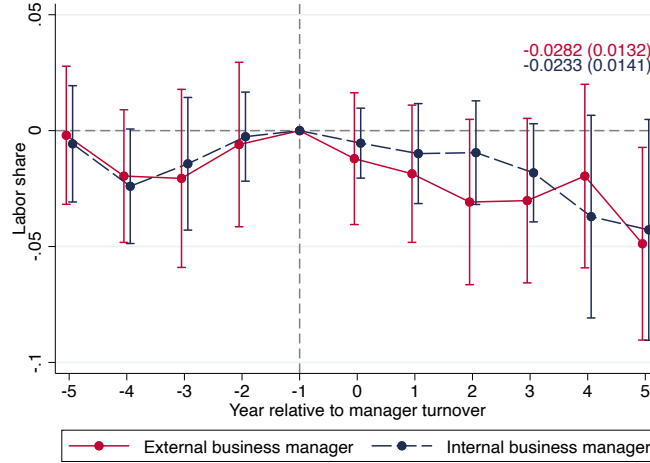
(b) Labor share

This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a non-business manager to a business manager in Denmark. We exclude manager transitions involving family CEOs, who are related by blood or marriage to the previous or successor CEOs at their firms. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects and industry×year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a) and the labor share in Panel (b). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A29: Changes in Worker Earnings and the Labor Share around Non-Business to External or Internal Business Manager Transitions in Denmark



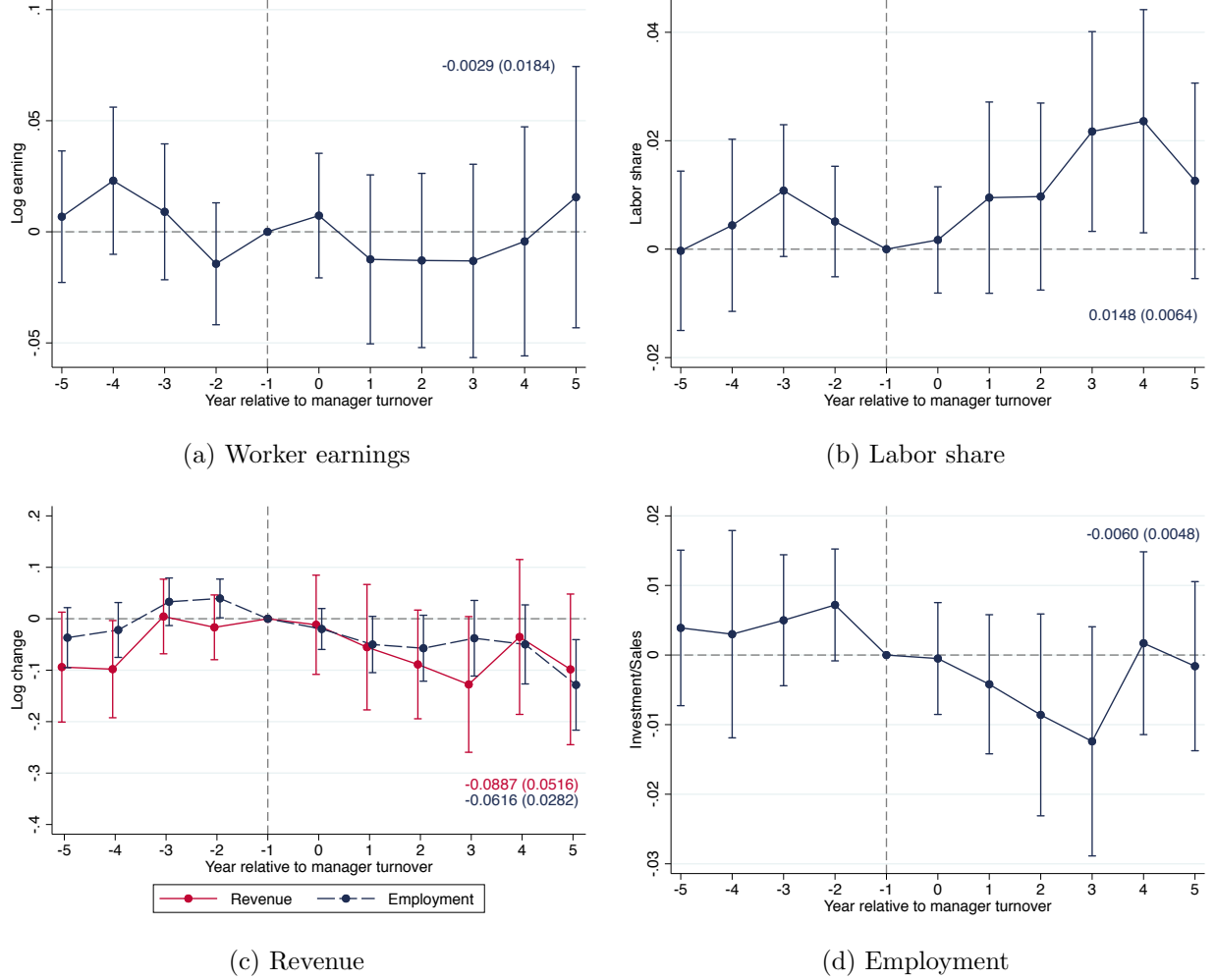
(a) Worker earnings



(b) Labor share

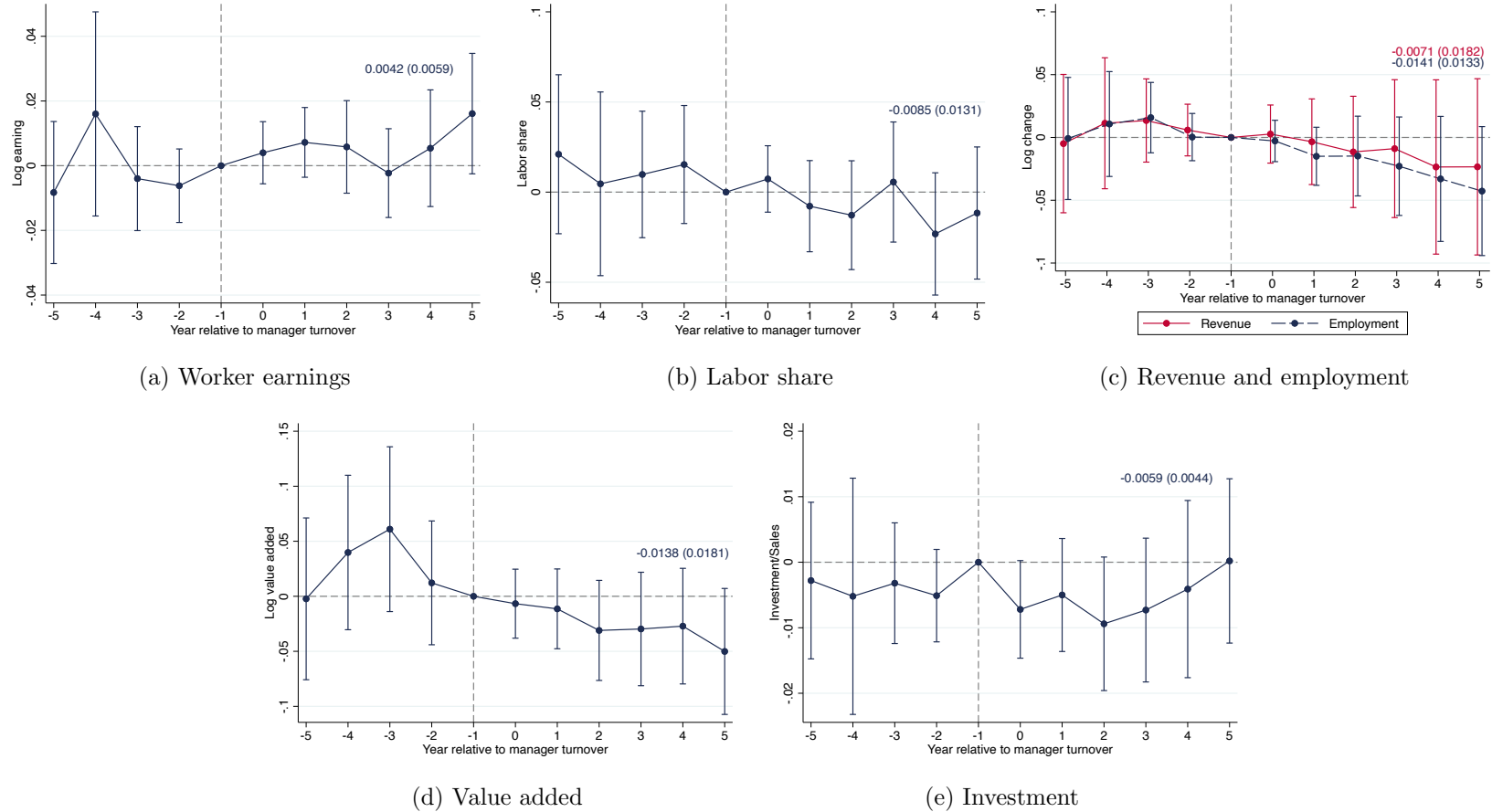
This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a non-business manager to an externally-hired business manager (solid lines) or an internally-promoted business manager (dashed lines) in Denmark. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects and industry $\times$ year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a) and the labor share in Panel (b). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A30: Changes in Firm and Worker Outcomes around Business to Non-Business Manager Transitions in the US



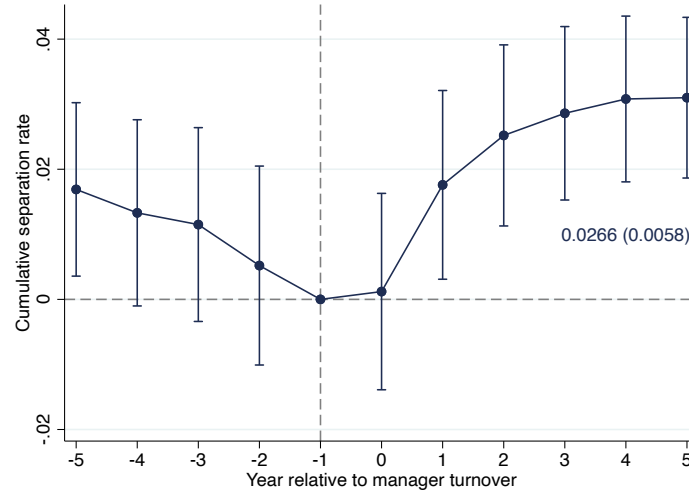
This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a business manager to a non-business manager in the US. The sample includes firms that have business managers in all years, and firms that have a business to non-business manager transition event during the sample period. All firm-level specifications include firm fixed effects, industry $\times$ year fixed effects, state $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), and investment divided by sales in Panel (d). The labor share is defined as total wage bill divided by sales. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A31: Changes in Firm and Worker Outcomes around Business to Non-Business Manager Transitions in Denmark

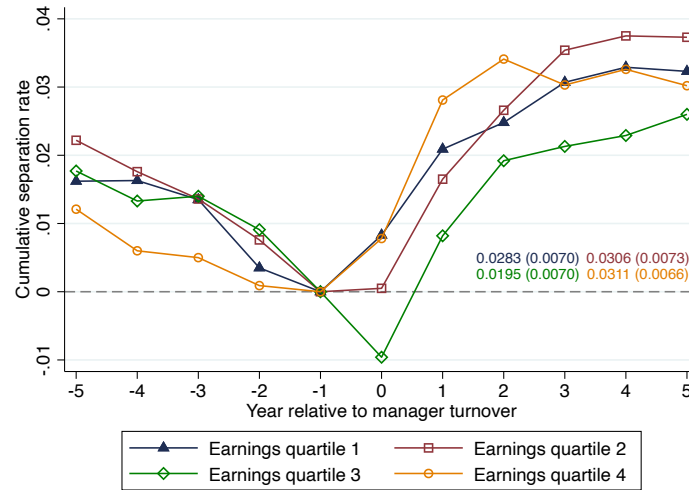


This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a business manager to a non-business manager in Denmark. The sample includes firms that have business managers in all years, and firms that have a business to non-business manager transition event during the sample period. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects and industry $\times$ year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A32: Changes in Separation Rates around Business to Non-Business Manager Transitions in Denmark



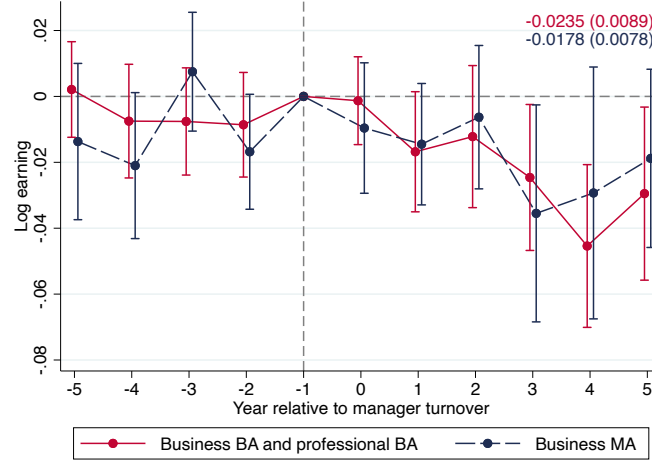
(a) Separation rates of all workers



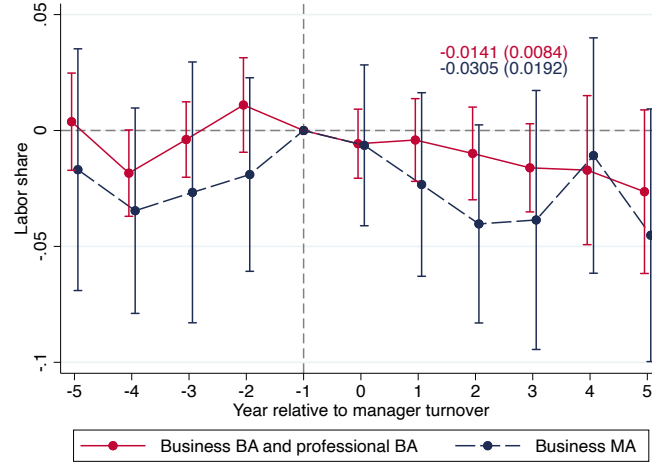
(b) Separation rates by wage level

This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a business manager to a non-business manager in Denmark. The dependent variable is cumulative separation rate, defined as the share of workers initially employed at the firm between year -5 and year -1 who are no longer employed at the firm in a given year. In Panel (b), workers are divided into four groups based on their annualized earnings in year -1. The estimates are based on the matching estimator described in Section ???. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

Figure A33: Heterogeneous Effects by the Degree Level of Business Managers in Denmark



(a) Worker earnings



(b) Labor share

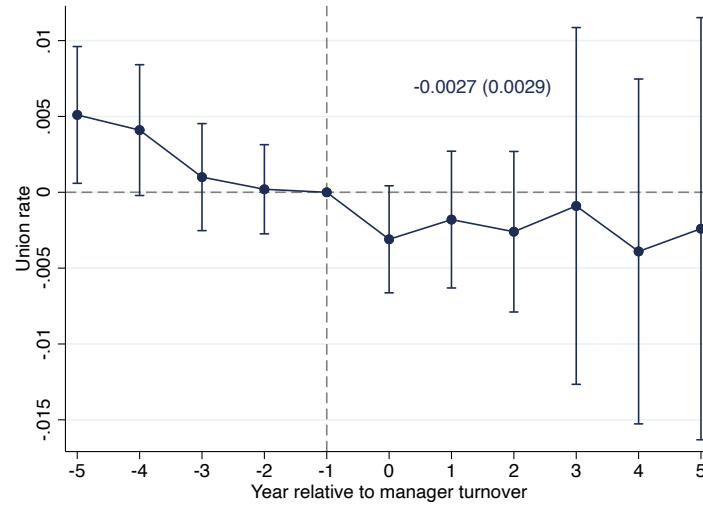
This figure plots event-study estimates and 95% confidence intervals from separate regressions for transitions from a non-business manager to a business manager who has a business BA or professional BA degree but doesn't have a business MA degree (solid line) and transitions from a non-business manager to a business manager with a business MA degree (dashed line) in Denmark. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects, and industry $\times$ year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a) and the labor share in Panel (b). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

Figure A34: Changes in Earnings around Non-Business to Business Manager Transitions for Union and Non-Union Workers in Denmark



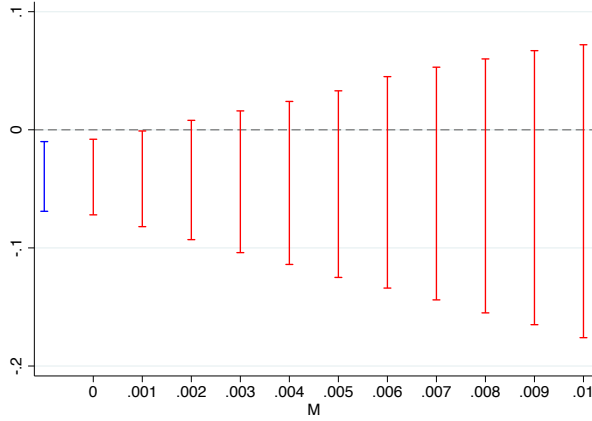
This figure plots event-study estimates and 95% confidence intervals separately for workers who are union members and workers who are not union members, where events are transitions from a non-business manager to a business manager in Denmark. The estimates are based on the matching estimator described in Section ???. The dependent variable is log annual earnings. We also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

Figure A35: Changes in Unionization Rates around Non-Business to Business Manager Transitions in Denmark

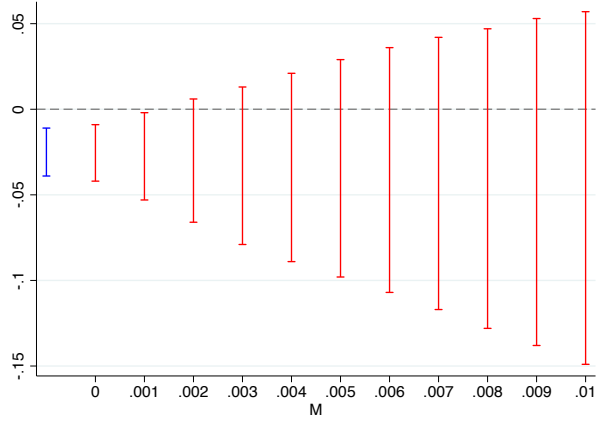


This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The regression controls for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects and industry×year fixed effects, and observations are weighted by firm employment. The dependent variable is the share of workers at the firm who are union members. we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

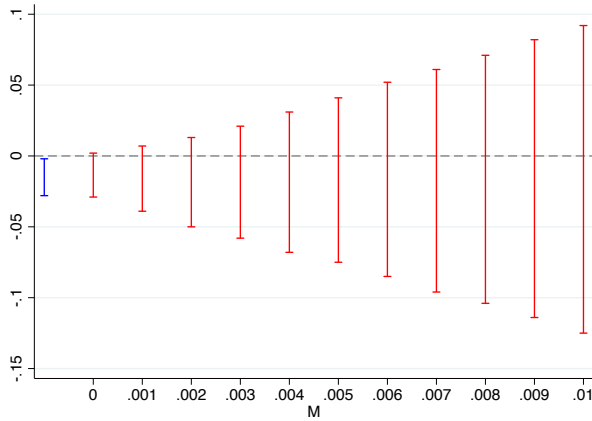
Figure A36: Sensitivity Analysis of Pre-trends



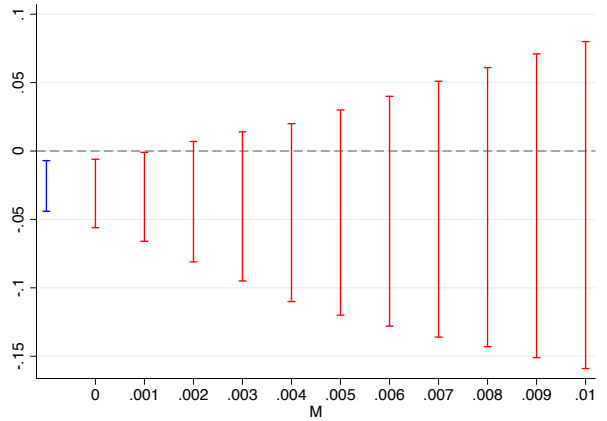
(a) Earnings per Worker, US



(b) Earnings per Worker, Denmark



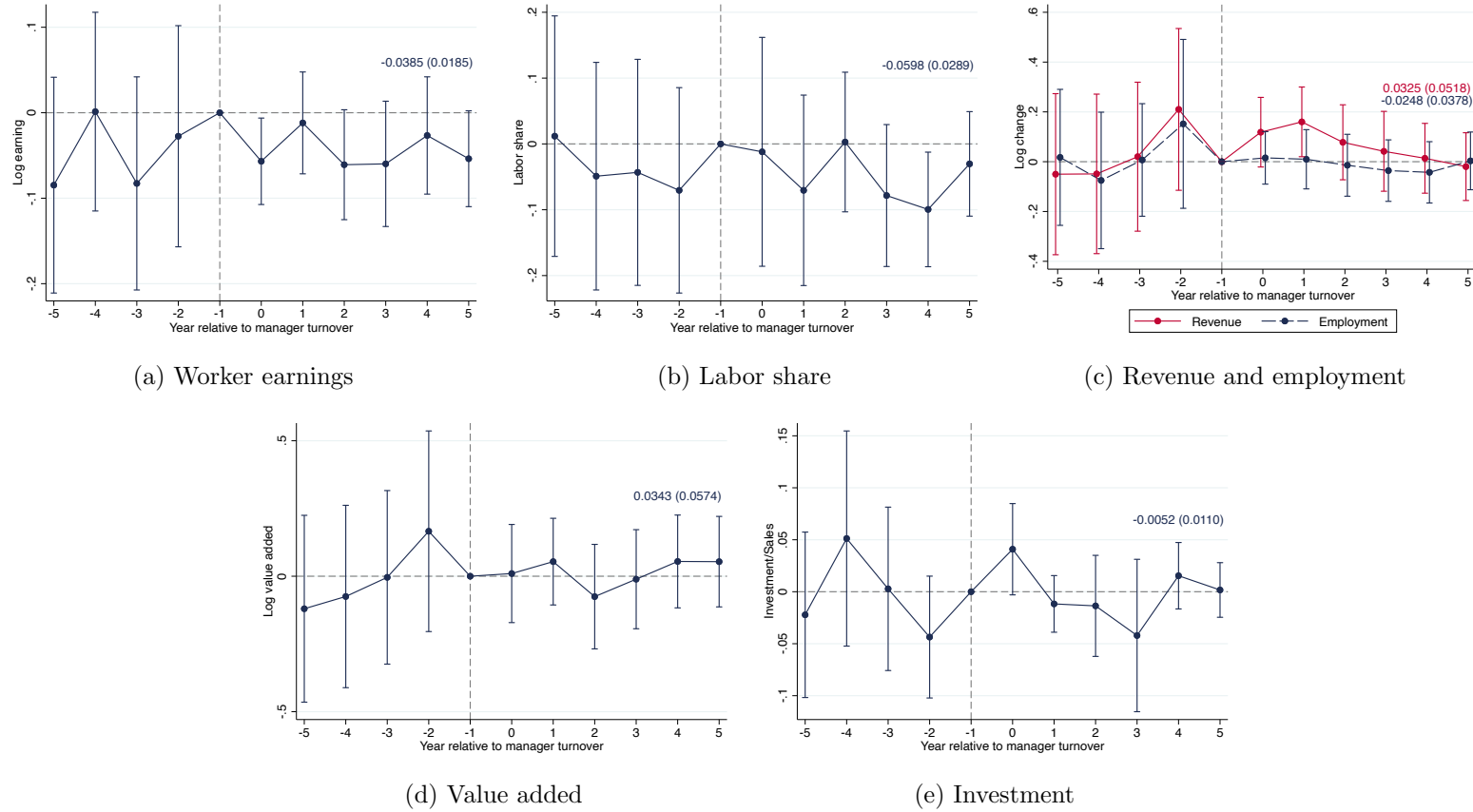
(c) Labor Share, US



(d) Labor Share, Denmark

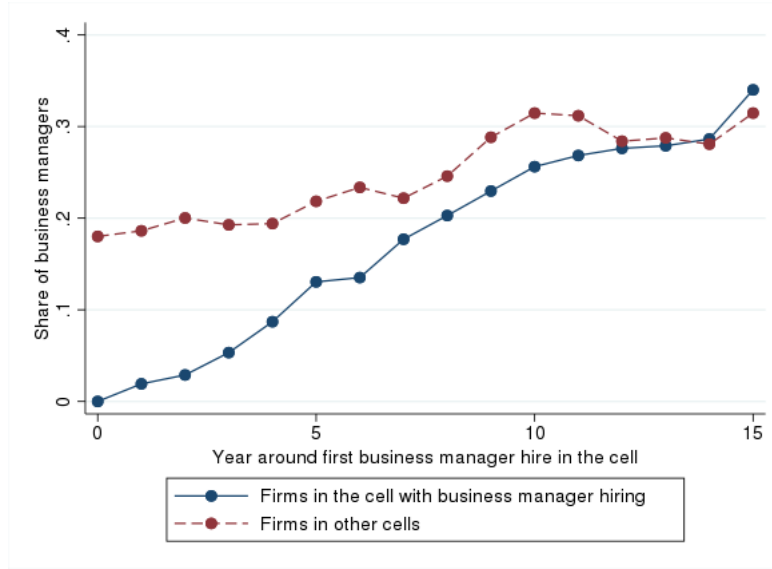
This figure reports results of a sensitivity analysis from ? for the average treatment effect of business-to-non-business manager transitions on log earnings per worker and labor share across all five post-treatment periods relative to the pre-period, constructing robust 95% confidence sets under varying assumptions on the class of possible violations of parallel trends. In blue, we plot the original OLS confidence intervals. In red, we plot fixed length confidence intervals (FLCIs) when $\Delta = \Delta^{SD}(M)$ for different values of M . $M = 0$ corresponds with allowing only for linear violations of parallel trends, and larger values of M allow for larger deviations from linearity. Panels (a) and (c) are based on US data and Panels (b) and (d) are based on Danish data. The dependent variables are log earnings per worker in Panels (a) and (b) and the labor share in Panels (c) and (d).

Figure A37: Changes in Firm and Worker Outcomes around Transitions to Business Managers due to Manager Deaths in Denmark

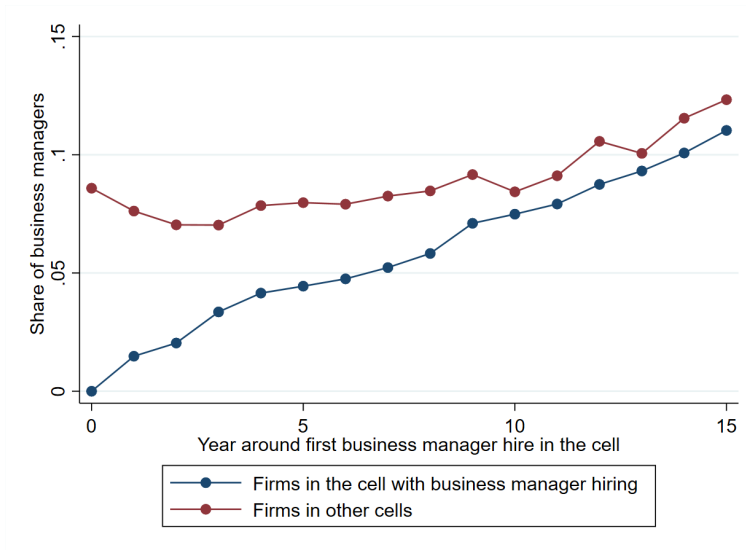


This figure plots event-study estimates and 95% confidence intervals, where events are sudden deaths (as defined in the text) of non-business managers with the successor being a business manager in Denmark. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects and industry $\times$ year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A38: Visual Representation of the First Stage for Business Manager Transitions



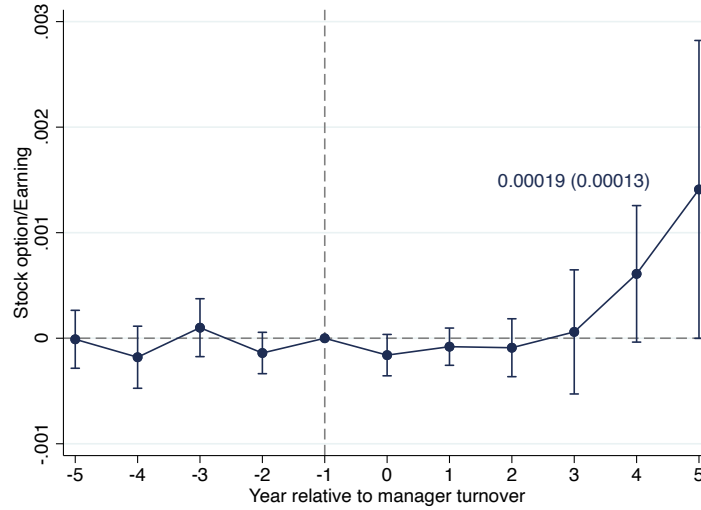
(a) US



(b) Denmark

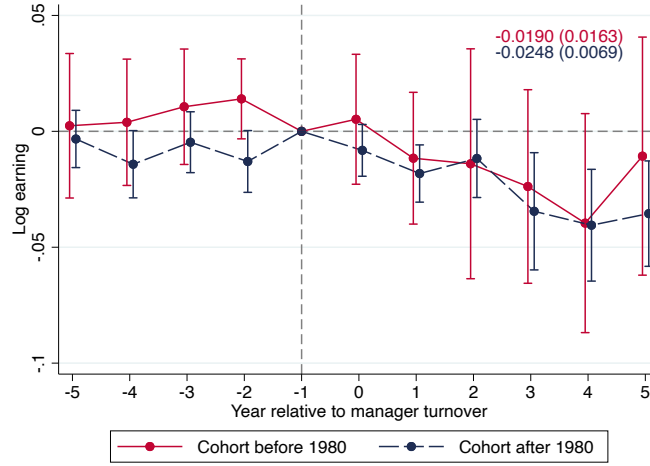
This figure plots the average fraction of firms in a region-industry-size cell with no past business manager (blue), where zero is the year of first business manager hiring in the cell. For comparison, we also plot average fraction of firms in other cells (red) in the same year. Panel (a) is for the US and Panel (b) for Denmark. See Appendix ?? for further details.

Figure A39: Changes in Workers' Stock Options around Non-Business to Business Manager Transitions in Denmark

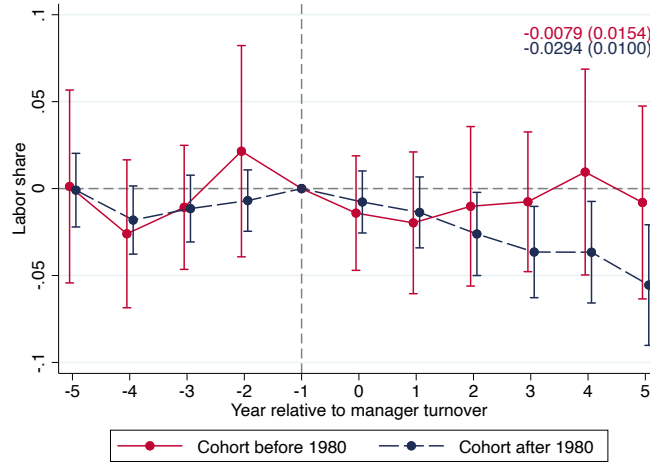


This figure plots event-study estimates and 95% confidence intervals of workers' stock options, where events are manager transitions from a non-business manager to a business manager in Denmark. The sample includes firms that have non-business managers in all years, and firms that have a non-business to business manager transition event during the sample period. The dependent variable is the value of stock option payments received by non-manager workers divided by the total earnings of non-manager workers. All regressions include firm fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. Standard errors are clustered at the firm level.

Figure A40: Changes in Worker Earnings and the Labor Share around Non-Business to Business Manager Transitions for Business Managers in Different Cohorts in Denmark



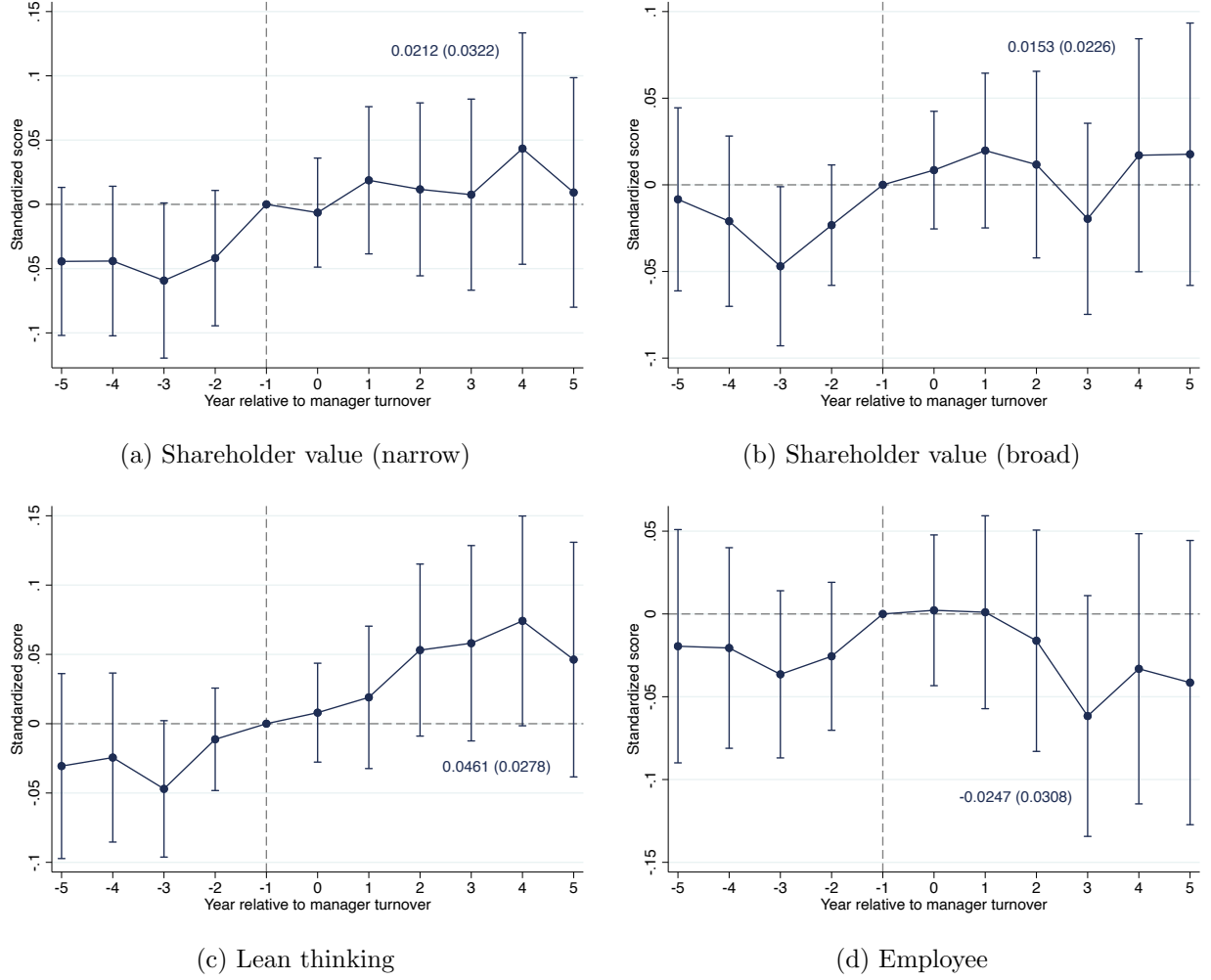
(a) Worker earnings



(b) Labor share

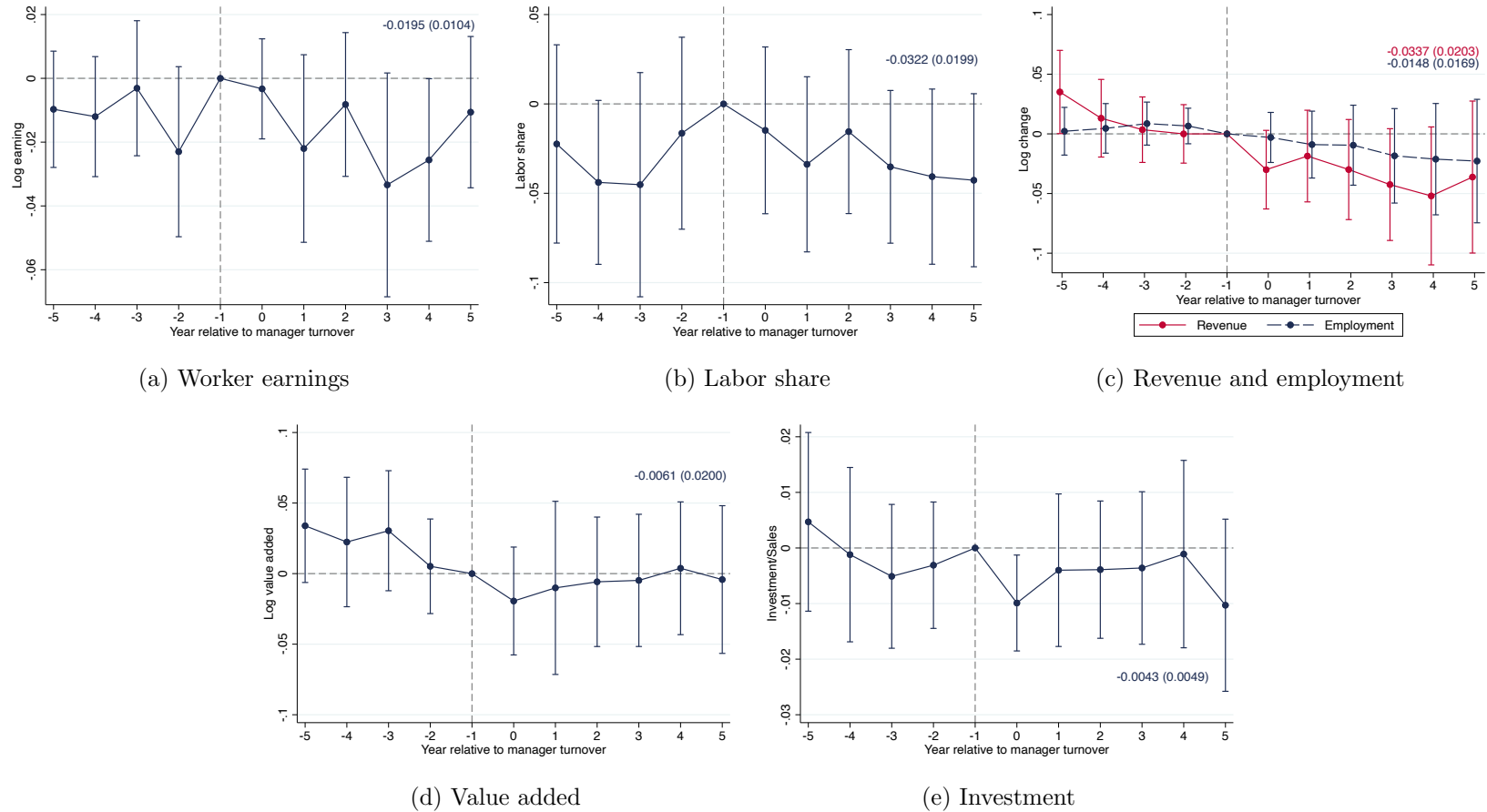
This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a non-business manager to a business manager who gets the business degree before 1980 (solid line) or after 1980 (dashed line) in Denmark. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects, and industry $\times$ year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a) and the labor share in Panel (b). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A41: Changes in Corporate Value around Business to Non-Business Manager Transitions in the US



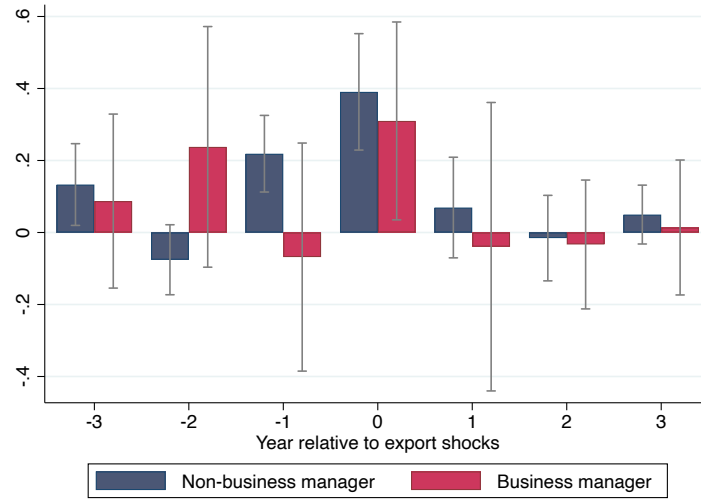
This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a business manager to a non-business manager in the US. The dependent variables are the *narrow shareholder value* score in Panel (a), the *broad shareholder value* score in Panel (b), the *lean thinking* score in Panel (c), and the *employee* score in Panel (d). We derive these corporate values using the management discussion and analysis (MD&A) sections of firms' 10-Ks, and the methodology is described in detail in Section ?? and Appendix ?. All scores are standardized to mean zero and standard deviation of one. All specifications include firm fixed effects, industry $\times$ year fixed effects, state $\times$ year fixed effects, and firm size quintile by year fixed effects. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A42: Changes in Firm and Worker Outcomes around Non-Business to Business Manager Transitions among Exporters in Denmark

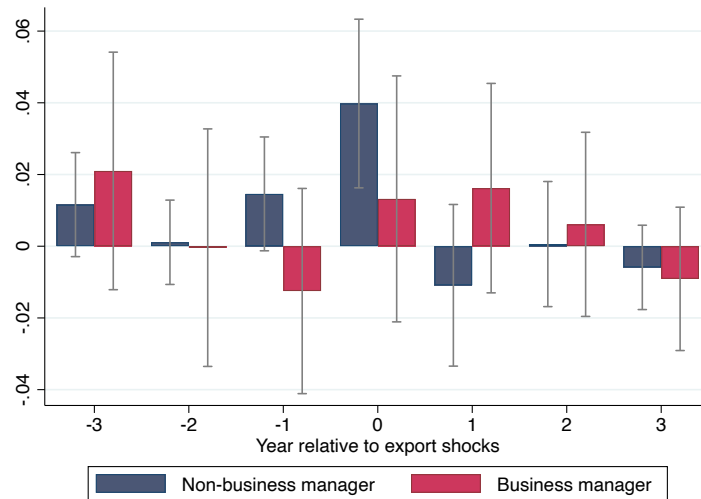


This figure plots event-study estimates and 95% confidence intervals, where events are transitions from a non-business manager to a business manager in Denmark. The sample includes exporters (firms in the regression sample of Table ??) that have non-business managers in all years, and exporters that have a non-business to business manager transition event during the sample period. All specifications include firm fixed effects, industry $\times$ year fixed effects, region $\times$ year fixed effects, and firm size quintile by year fixed effects, and observations are weighted by employment. The dependent variables are log earnings per worker in Panel (a), the labor share in Panel (b), log revenue and log employment in Panel (c), log value added in Panel (d), and investment divided by sales in Panel (e). The labor share is defined as total wage bill divided by value added. In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A43: Output and Wage Response to Leads and Lags of Trade Shocks in Denmark



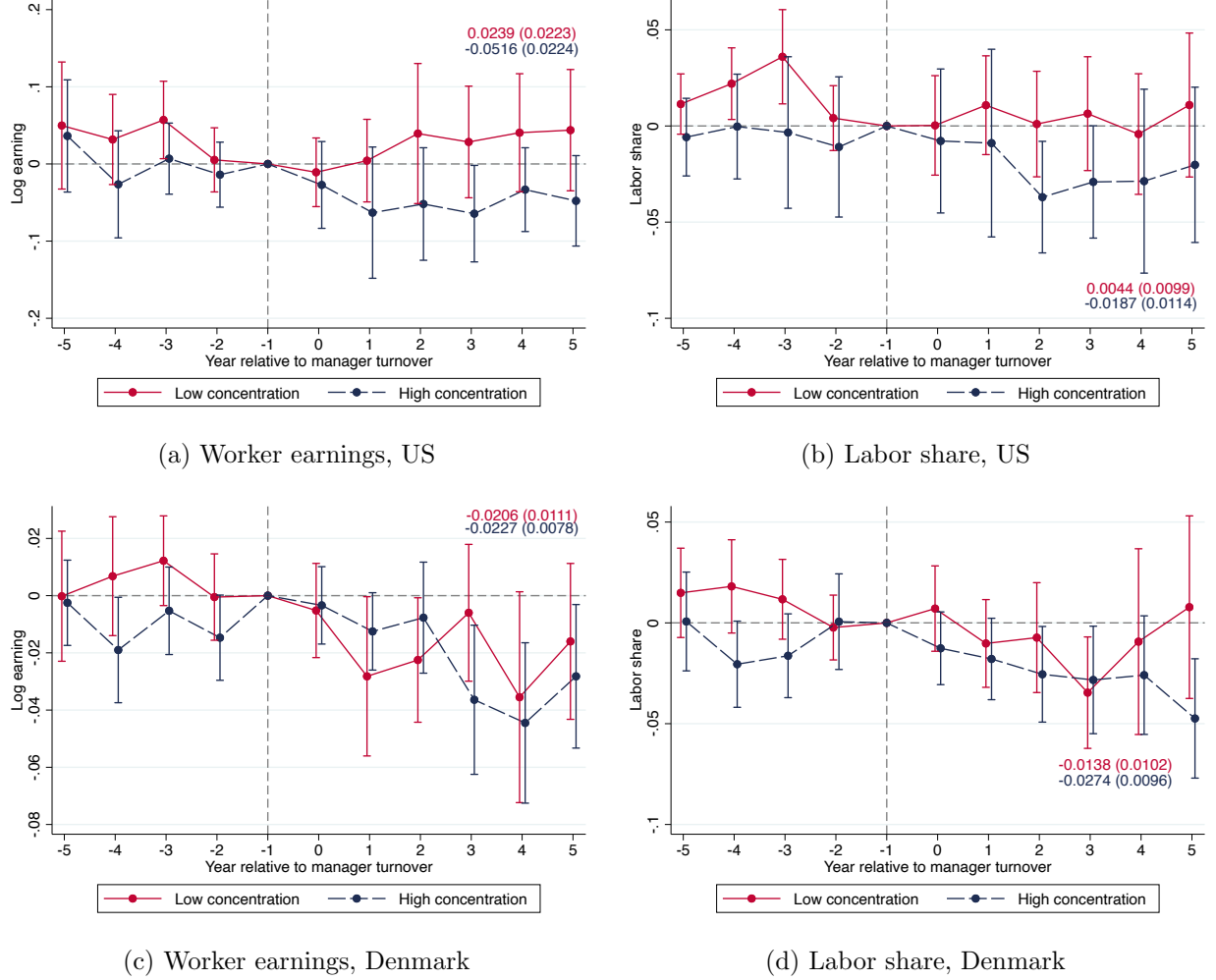
(a) Value added



(b) Worker earnings

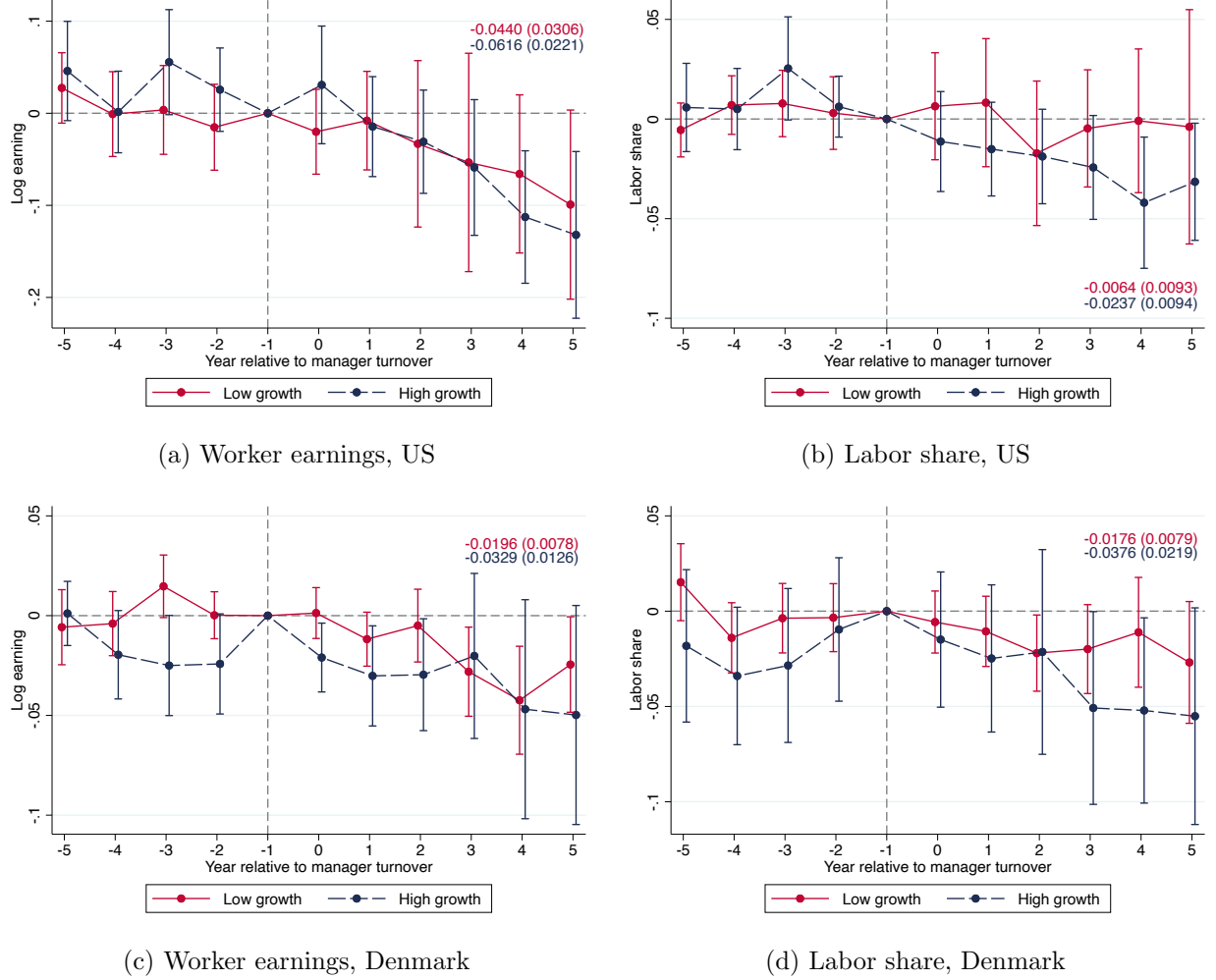
This figure reports the coefficients and 95% confidence intervals from regressing log value added (in Panel (a)) and log annual earnings (in Panel (b)) on the leads and lags of export shocks up to 3 years interacted with business manager. The blue bars are coefficients for leads and lags of export shocks interacted with business manager dummy, and red bars are coefficients for leads and lags of export shocks interacted with non-business manager dummy. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects and industry $\times$ year fixed effects. Worker-level regressions in Panel (b) additionally control for firm $\times$ worker fixed effects, quadratic in experience, and union and marital status dummies. In Panel (a), observations are weighted by firm employment. Standard errors are clustered at the firm level.

Figure A44: Changes in Worker Earnings and the Labor Share around Non-Business to Business Manager Transitions in High-Concentration and Low-Concentration Industries



This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a non-business manager to a business manager. Panels (a) and (b) use US data, and Panels (c) and (d) use Danish data. The dependent variables are log earnings per worker in Panels (a) and (c) and the labor share in Panels (b) and (d). In each panel, the solid lines use the sample of firms in low-concentration industries, and the dashed lines use the sample of firms in high-concentration industries. High-concentration (low-concentration) industries are industries with above-median (or below-median) Herfindahl-Hirschman index. All regressions control for firm fixed effects, firm size quintile by year fixed effects, state(region) $\times$ year fixed effects and industry $\times$ year fixed effects, and observations are weighted by employment. The labor share is defined as total wage bill divided by revenue in Panel (b) and total wage bill divided by value added in Panel (d). In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Figure A45: Changes in Worker Earnings and the Labor Share around Non-Business to Business Manager Transitions in High-Growth and Low-Growth Firms



This figure plots event-study estimates and 95% confidence intervals, where events are manager transitions from a non-business manager to a business manager. Panels (a) and (b) use US data, and Panels (c) and (d) use Danish data. The dependent variables are log earnings per worker in Panels (a) and (c) and the labor share in Panels (b) and (d). In each panel, the solid lines plots the treatment effects for firms with below-median sales growth from year -6 to year -1, and the dashed lines plots the treatment effects for firms with above-median sales growth from year -6 to year -1. All regressions control for firm fixed effects, firm size quintile by year fixed effects, state(region) $\times$ year fixed effects and industry $\times$ year fixed effects, and observations are weighted by employment. The labor share is defined as total wage bill divided by revenue in Panel (b) and total wage bill divided by value added in Panel (d). In each panel, we also report the coefficient (and standard error) of the static treatment effect, where all post-treatment indicators are assumed to be equal. All standard errors are clustered at the firm level.

Table A1: Summary Statistics for LBD Firms in the US

	All LBD Firms		Publicly-listed LBD Firms	
	Mean	Standard Deviation	Mean	Standard Deviation
Employment (US Census)	26.24	1400	3600	22500
Payroll (Thousands)	900	43000	156000	798000
Log Earnings per Worker	2.882	0.9671	3.864	0.75
Revenue (US Census, Millions)	5200	361000	1312000	8825000
Labor Share (Wage Bill/Sales)	0.2679	0.1808	0.2563	0.1720
Share of New Plants	0.0805	0.2709	0.1264	0.2703
Share of Exiting Plants	0.1275	0.3325	0.1357	0.2928
Share of Employment in New Plants	0.0802	0.2707	0.1043	0.2638
Share of Employment in Exiting Plants	0.1272	0.3325	0.1174	0.2919
Number of Establishments	1.295	18.94	73.06	365.8
Number of Observations	150500000		163000	
Number of Firms	20240000		23000	

This table reports the mean and standard deviation of firm-level variables for US firms in the LBD data. The first two columns contain all firms in the LBD data including all public and private firms. The last two columns contain publicly-listed firms that have non-missing education information of CEOs from BoardEx. We also reports the number of observations and the number of firms at the bottom of the table.

Table A2: Summary Statistics for the US Sample

	Mean	Standard Deviation
Employment (US Census)	3356	22000
Employment (Compustat)	4446	33290
Payroll (Thousands)	152000	772000
Log Earnings per Worker	4.065	0.7101
Revenue (US Census, Millions)	1054	6285
Sales (Compustat, Millions)	1117	7766
Labor Share (Wage Bill/Sales)	0.2647	0.1726
Investment (Millions)	66.86	447.7
Investment/Sales	0.1148	0.3634
Cash/Assets	0.2078	0.2456
Assets (Millions)	2053	10500
Share of New Plants	0.1134	0.254
Share of Exiting Plants	0.1214	0.2799
Share of Employment in New Plants	0.0912	0.2457
Share of Employment in Exiting Plants	0.1042	0.2784
Number of Establishments	60.71	289.3
ROA	0.0973	0.1211
Acquisition	0.2352	0.4241
Age	14.54	12.49
Annualized Stock Return	0.1117	0.5648
Number of Observations	41500	
Number of Treated Firms	1300	
Number of Control Firms	2700	

This table reports the mean and standard deviation of firm-level variables for the sample of US firms used in Figure ???. We also reports the number of observations, the number of treated firms (firms that have a non-business to business manager transition event during the sample period) and the number of control firms (firms that have non-business managers in all years) at the bottom of the table.

Table A3: Summary Statistics for the Danish Sample

	Mean	Standard Deviation
Employment	31.54	153.6
Payroll (Thousands DKK)	10321	52155
Log Earnings per Worker	5.686	0.3179
Sales (Millions DKK)	54.23	482.6
Value Added (Millions DKK)	16.11	128.0
Labor Share (Wage Bill/Value Added)	0.7612	0.2657
Investment (Millions DKK)	2.728	55.05
Investment/Sales	0.0489	0.0886
Cash/Assets	0.0975	0.1072
Assets (Millions DKK)	46.15	886.3
Share of New Plants	0.0199	0.1143
Share of Exiting Plants	0.0175	0.1097
Share of Employment in New Plants	0.0135	0.0982
Share of Employment in Exiting Plants	0.0130	0.1003
Number of Establishments	1.463	5.797
ROA	0.0771	0.1951
Acquisition	0.0052	0.0716
Age	15.57	8.770
Number of Observations	237660	
Number of Treated Firms	2366	
Number of Control Firms	26964	

This table reports the mean and standard deviation of firm-level variables for the sample of Danish firms used in Figure ???. We also reports the number of observations, the number of treated firms (firms that have a non-business to business manager transition event during the sample period) and the number of control firms (firms that have non-business managers in all years) at the bottom of the table.

Table A4: Event-study Estimates of Business Managers on Firm Outcomes with Varying Fixed Effects in Denmark

	Log Value Added				Log Earnings per Worker				Labor Share			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Business Manager	-0.0262 (0.0147)	-0.0085 (0.0147)	-0.0021 (0.0144)	-0.0058 (0.0147)	-0.0220 (0.0101)	-0.0171 (0.0059)	-0.0205 (0.0066)	-0.0225 (0.0066)	-0.0231 (0.0106)	-0.0269 (0.0089)	-0.0268 (0.0089)	-0.0244 (0.0090)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry-year FE	N	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y
Region-year FE	N	N	Y	Y	N	N	Y	Y	N	N	Y	Y
Size quintile-year FE	N	N	N	Y	N	N	N	Y	N	N	N	Y
Obs	237,660	237,660	237,660	237,660	279,357	279,357	279,357	279,357	237,660	237,660	237,660	237,660

This table reports the coefficients (and standard errors) of the static treatment effect from the event-study analysis, where events are manager transitions from a non-business manager to a business manager in Denmark. All columns control for firm fixed effects and year fixed effects. Columns 2, 3, 4, 6, 7, 8, 10, 11, and 12 additionally control for industry×year fixed effects. Columns 3, 4, 7, 8, 11, and 12 control for region×year fixed effects. Columns 4, 8, and 12 additionally control for firm size quintile by year fixed effects. The dependent variables are log sales in columns 1–4, log earnings per worker in columns 5–8, and the labor share (wage bill divided by value added) in columns 9–12. Observations are weighted by firm employment and standard errors are clustered at the firm level.

Table A5: Differences in Firm Characteristics Between Treated and Control Firms in the US

	Log Employment	Log Earnings per Worker	Labor Share	Age	ROA	Log Revenue per Worker	Investment /Sales	R&D /Sales	SG&A /Sales	COGS /Sales	Import Shock	1-Year Industry Growth	5-Year Industry Growth	Industry HHI
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Hire Business Manager	0.6762 (0.1481)	-0.0480 (0.0933)	-0.0608 (0.0367)	9.650 (1.923)	-0.0136 (0.0087)	0.1635 (0.0934)	-0.0128 (0.0119)	-0.0111 (0.0168)	0.0067 (0.0098)	0.0106 (0.0129)	-0.0235 (0.0243)	0.0250 (0.0371)	0.0571 (0.0809)	0.0507 (0.0231)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Obs	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500

	Log Employment	Log Earnings per Worker	Labor Share	Age	ROA	Log Revenue per Worker	Investment /Sales	R&D /Sales	SG&A /Sales	COGS /Sales
	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Hire Business Manager	0.2516 (0.0547)	0.0496 (0.0245)	0.0155 (0.0107)	5.723 (1.143)	-0.0123 (0.0087)	0.0415 (0.0736)	0.0034 (0.0139)	0.0062 (0.0295)	0.0393 (0.0094)	-0.0230 (0.0143)
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
State-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Obs	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500	41,500

This table reports the differences in firm characteristics between treated and control firms in the US. The independent variable is a dummy variable for hiring a new business manager in the following year. The dependent variables are log employment in columns 1 and 15, log earnings per worker in columns 2 and 16, the labor share (wage bill divided by sales) in columns 3 and 17, firm age in columns 4 and 18, return on assets in columns 5 and 19, log revenue per worker in columns 6 and 20, investment divided by sales in columns 7 and 21, R&D expenses divided by sales in columns 8 and 22, SG&A expenses divided by sales in columns 9 and 23, costs of goods sold divided by sales in columns 10 and 24, Chinese import shock (growth in Chinese imports in the firm's industry from 1992 to 2007) in column 11, industry employment growth over the last year in column 12, industry employment growth over the last 5 years in column 13, and industry's Herfindahl-Hirschman index in column 14. Columns 1 to 14 include year fixed effects, and columns 15 to 24 include industry×year fixed effects, state×year fixed effects, and firm size quintile by year fixed effects. Observations are weighted by firm employment and standard errors are clustered at the firm level.

Table A6: Differences in Firm Characteristics Between Treated and Control Firms in Denmark

	Log Employment	Log Earnings per Worker	Labor Share	Age	ROA	Log Revenue per Worker	Log Value Added per Worker	Investment /Sales	R&D /Sales	Material Costs /Sales	Robots per Worker	1-Year Industry Growth	5-Year Industry Growth	Industry HHI
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Hire Business Manager	10.361 (0.0500)	0.0871 (0.0274)	-0.0240 (0.0181)	0.8831 (0.5242)	-0.0006 (0.0089)	0.0805 (0.0701)	0.1253 (0.0509)	0.0101 (0.0069)	0.0065 (0.0042)	-0.0378 (0.0159)	0.1677 (0.2091)	-0.0010 (0.0115)	-0.0085 (0.0795)	0.0287 (0.0109)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Obs	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205
	Log Employment	Log Earnings per Worker	Labor Share	Age	ROA	Log Revenue per Worker	Log Value Added per Worker	Investment /Sales	R&D /Sales	Material Costs /Sales	Robots per Worker			
	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)			
Hire Business Manager	0.3316 (0.0261)	0.0208 (0.0081)	-0.0070 (0.0112)	0.2080 (0.4545)	0.0001 (0.0084)	0.0685 (0.0188)	0.0276 (0.0147)	0.0059 (0.0043)	0.0026 (0.0034)	-0.0063 (0.0073)	-0.0555 (0.2689)			
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Region-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
Obs	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205	190,205			

This table reports the differences in firm characteristics between treated and control firms in Denmark. The independent variable is a dummy variable for hiring a new business manager in the following year. The dependent variables are log employment in columns 1 and 15, log earnings per worker in columns 2 and 16, the labor share (wage bill divided by sales) in columns 3 and 17, firm age in columns 4 and 18, return on assets in columns 5 and 19, log revenue per worker in columns 6 and 20, log value added per worker in columns 7 and 21, investment divided by sales in columns 8 and 22, R&D expenses divided by sales in columns 9 and 23, material costs divided by sales in columns 10 and 24, number of robots per thousand workers in columns 11 and 25, industry employment growth over the last year in column 12, industry employment growth over the last 5 years in column 13, and industry's Herfindahl-Hirschman index in column 14. Columns 1 to 14 include year fixed effects, and columns 15 to 25 include industry×year fixed effects, region×year fixed effects, and firm size quintile by year fixed effects. Observations are weighted by firm employment and standard errors are clustered at the firm level.

Table A7: Propensity to Hire a Business Manager in the US

	Hire Business Manager			
	(1)	(2)	(3)	(4)
Log Earnings per Worker	0.0042 (0.0010)	0.0079 (0.0011)	0.0054 (0.0012)	0.0061 (0.0013)
Log Employment		0.0099 (0.0011)		0.0057 (0.0022)
Age		0.0057 (0.0013)		0.0041 (0.0014)
ROA		-0.0030 (0.0010)		-0.0018 (0.0011)
Log Revenue per Worker		-0.0022 (0.0012)		-0.0008 (0.0013)
Year FE	Y	Y	Y	Y
Industry-year FE			Y	Y
State-year FE			Y	Y
Size quintile-year FE			Y	Y
Obs	41,500	41,500	41,500	41,500

This table reports estimates for the propensity score to hire a business manager in the US. The dependent variable is a dummy variable hiring a new business manager in the following year. All independent variables are normalized to have mean zero and standard deviation of one. All columns include year fixed effects, and columns 3 and 4 include industry×year fixed effects, state×year fixed effects, and firm size quintile by year fixed effects. Standard errors are clustered at the firm level.

Table A8: Propensity to Hire a Business Manager in Denmark

	Hire Business Manager			
	(1)	(2)	(3)	(4)
Log Earnings per Worker	0.0127 (0.0040)	0.0016 (0.0041)	0.0045 (0.0018)	0.0022 (0.0031)
Log Employment		0.0211 (0.0027)		0.0256 (0.0029)
Age		-0.0018 (0.0023)		-0.0001 (0.0021)
ROA		-0.0007 (0.0031)		-0.0002 (0.0023)
Log Value Added per Worker		0.0058 (0.0060)		0.0014 (0.0030)
Year FE	Y	Y	Y	Y
Industry-year FE			Y	Y
Region-year FE			Y	Y
Size quintile-year FE			Y	Y
Obs	190,205	190,205	190,205	190,205

This table reports estimates for the propensity score to hire a business manager in Denmark. The dependent variable is a dummy variable hiring a new business manager in the following year. All independent variables are normalized to have mean zero and standard deviation of one. All columns include year fixed effects, and columns 3 and 4 include industry×year fixed effects, region×year fixed effects, and firm size quintile by year fixed effects. Standard errors are clustered at the firm level.

Table A9: Event-Study Estimates of Business Managers on Earnings and Labor Share by Firm Size Quintiles

Panel A: US

	Log Earnings per Worker					Labor Share				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Business Manager	-0.0659 (0.0367)	0.0108 (0.0224)	0.0189 (0.0183)	-0.0168 (0.0164)	-0.0415 (0.0181)	-0.0038 (0.0217)	-0.0019 (0.0116)	0.0080 (0.0082)	-0.0144 (0.0077)	-0.0161 (0.0075)
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
State-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Obs	41,500	41,500	41,500	41,500	41,500	24,000	24,000	24,000	24,000	24,000

Panel B: Denmark

	Log Earnings per Worker					Labor Share				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Business Manager	0.0081 (0.0193)	-0.0287 (0.0162)	-0.0198 (0.0117)	-0.0259 (0.0103)	-0.0229 (0.0071)	0.0245 (0.0312)	-0.0153 (0.0248)	-0.0134 (0.0246)	0.0091 (0.0179)	-0.0269 (0.0096)
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Region-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Obs	279,357	279,357	279,357	279,357	279,357	237,661	237,661	237,661	237,661	237,661

This table reports the coefficients (and standard errors) of the static treatment effect from the event-study analysis, where events are manager transitions from a non-business manager to a business manager, for each size quintile of firms. We estimate the treatment effect separately for each size quintile by interacting the post-treatment dummy with dummies for each firm size quintile. Panel A is based on US data and Panel B is based on Danish data. The dependent variables are log earnings per worker in columns 1–5 and the labor share in columns 6–10. All specifications include firm fixed effects, industry×year fixed effects, state(region)×year fixed effects, and firm size quintile by year fixed effects. Standard errors are clustered at the firm level.

Table A10: Correlations Between Firm Characteristics and Business Director Share in the US

	Log Employment	Log Earnings per Worker	Labor Share	Age	ROA	Log Revenue per Worker	Investment /Sales	R&D /Sales	SG&A /Sales	COGS /Sales
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Business Director Share	1.720 (0.3329)	-0.0928 (0.0890)	-0.0471 (0.0477)	0.9373 (1.045)	0.0351 (0.1059)	0.0128 (0.1582)	-0.0396 (0.0206)	-0.0397 (0.2737)	-0.1597 (0.1327)	-0.1315 (0.3013)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

This table reports the relationship between firm characteristics and the instrument in the US. The sample is the set of firms where a non-business manager retires. The independent variable is the share of external board directors with a business degree five years before the retirement. The dependent variables are log employment in column 1, log earnings per worker in column 2, the labor share (wage bill divided by sales) in column 3, firm age in column 4, return on assets in column 5, log revenue per worker in column 6, investment divided by sales in column 7, R&D expenses divided by sales in column 8, SG&A expenses divided by sales in column 9, and costs of goods sold divided by sales in column 10. All dependent variables are measured one year before the retirement. All columns control for year fixed effects. Observations are weighted by firm employment and standard errors are clustered at the firm level.

Table A11: 2SLS Estimates of Business Managers on Firm Outcomes Using All Board Directors in the US

Panel A: Share of All Directors with Business Degrees 1 Year Before Retirement

	Business Manager ×Post Retirement	Log Worker Earnings	Labor Share	Log Revenue	Log Employment	Investment /Sales
	(1)	(2)	(3)	(4)	(5)	(6)
Business Director Share×Post Retirement	0.7905 (0.0126)					
Business Manager×Post Retirement		-0.0513 (0.0157)	-0.0236 (0.0064)	-0.0273 (0.0500)	0.0709 (0.0379)	-0.0012 (0.0043)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs	18,000	18,000	18,000	18,000	18,000	18,000

Panel B: Share of All Directors with Business Degrees 5 Years Before Retirement

	Business Manager ×Post Retirement	Log Worker Earnings	Labor Share	Log Revenue	Log Employment	Investment /Sales
	(1)	(2)	(3)	(4)	(5)	(6)
Business Director Share×Post Retirement	0.7734 (0.0132)					
Business Manager×Post Retirement		-0.0458 (0.0163)	-0.0335 (0.0067)	0.0598 (0.0540)	0.0501 (0.0403)	-0.0014 (0.0044)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs	18,000	18,000	18,000	18,000	18,000	18,000

This table reports the first-stage and 2SLS estimates based on board composition around manager retirements in the US. The sample is the set of firms where a non-business manager retires. The instrument in two panels, respectively, are the share of external board directors with a business degree one year before the retirement and the share of external board directors with a business degree five years before the retirement. In all columns, we control for firm fixed effects and year fixed effects. Column 1 of each panel reports the first-stage estimates of the IV (described in equation ??). Columns 2–5 report 2SLS estimates of business managers on firm outcomes. The dependent variables are log earnings per worker in column 2, the firm’s labor share (wage bill divided by sales) in column 3, log revenue in column 4, log employment in column 5, and investment divided by sales in column 6. Observations are weighted by firm employment and standard errors are clustered at the firm level.

Table A12: 2SLS Estimates of Business Managers on Firm Outcomes Using Board Composition Around Manager Retirements with Firm Size Quintile*Year Fixed Effects in the US

Panel A: Share of External Directors with Business Degrees 1 Year Before Retirement

	Business Manager ×Post Retirement	Log Worker Earnings	Labor Share	Log Revenue	Log Employment	Investment /Sales
	(1)	(2)	(3)	(4)	(5)	(6)
Business Director Share×Post Retirement	0.5746 (0.0117)					
Business Manager×Post Retirement		-0.0493 (0.0192)	-0.0255 (0.0076)	0.0598 (0.0594)	0.0677 (0.0871)	-0.0019 (0.0053)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Size quintile-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs	18,000	18,000	18,000	18,000	18,000	18,000

Panel B: Share of External Directors with Business Degrees 5 Years Before Retirement

	Business Manager ×Post Retirement	Log Worker Earnings	Labor Share	Log Revenue	Log Employment	Investment /Sales
	(1)	(2)	(3)	(4)	(5)	(6)
Business Director Share×Post Retirement	0.5819 (0.0114)					
Business Manager×Post Retirement		-0.0371 (0.0182)	-0.0350 (0.0074)	0.0272 (0.0603)	0.0197 (0.0449)	-0.0014 (0.0050)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Size quintile-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs	18,000	18,000	18,000	18,000	18,000	18,000

This table reports the first-stage and 2SLS estimates based on board composition around manager retirements in the US. The sample is the set of firms where a non-business manager retires. The instrument in two panels, respectively, are the share of external board directors with a business degree one year before the retirement and the share of external board directors with a business degree five years before the retirement. In all columns, we control for firm fixed effects, year fixed effects, and firm size quintile by year fixed effects. Column 1 of each panel reports the first-stage estimates of the IV (described in equation ??). Columns 2–5 report 2SLS estimates of business managers on firm outcomes. The dependent variables are log earnings per worker in column 2, the firm’s labor share (wage bill divided by sales) in column 3, log revenue in column 4, log employment in column 5, and investment divided by sales in column 6. Observations are weighted by firm employment and standard errors are clustered at the firm level.

Table A13: Board Composition and Pre-trends Before Retirement Controlling for Size Quintile Fixed Effects

	$\Delta \text{ Log Worker Earnings }_{t-2,t-1}$	$\Delta \text{ Log Worker Earnings }_{t-3,t-1}$	$\Delta \text{ Log Worker Earnings }_{t-4,t-1}$	$\Delta \text{ Log Worker Earnings }_{t-5,t-1}$
	(1)	(2)	(3)	(4)
Business Director Share _{$t-5$}	-0.0080 (0.0277)	-0.0192 (0.0309)	-0.0143 (0.0283)	0.0040 (0.0328)
Year FE	Yes	Yes	Yes	Yes
Size Quintile FE	Yes	Yes	Yes	Yes
Obs	1000	1000	1000	1000

	$\Delta \text{ Labor Share }_{t-2,t-1}$	$\Delta \text{ Labor Share }_{t-3,t-1}$	$\Delta \text{ Labor Share }_{t-4,t-1}$	$\Delta \text{ Labor Share }_{t-5,t-1}$
	(5)	(6)	(7)	(8)
Business Director Share _{$t-5$}	-0.0033 (0.0065)	-0.0004 (0.0079)	-0.0010 (0.0078)	-0.0044 (0.0073)
Year FE	Yes	Yes	Yes	Yes
Size Quintile FE	Yes	Yes	Yes	Yes
Obs	1000	1000	1000	1000

	$\Delta \text{ Log Revenue }_{t-2,t-1}$	$\Delta \text{ Log Revenue }_{t-3,t-1}$	$\Delta \text{ Log Revenue }_{t-4,t-1}$	$\Delta \text{ Log Revenue }_{t-5,t-1}$
	(9)	(10)	(11)	(12)
Business Director Share _{$t-5$}	-0.0175 (0.0295)	-0.0084 (0.0407)	-0.0151 (0.0381)	0.0185 (0.0438)
Year FE	Yes	Yes	Yes	Yes
Size Quintile FE	Yes	Yes	Yes	Yes
Obs	1000	1000	1000	1000

This table reports the correlations between the IV and pre-trends in firm outcomes before manager retirement. The independent variable is the share of external board directors with a business degree five years before manager retirement. The dependent variable are pre-trends in log earnings per worker in columns 1–4, pre-trends in the labor share in columns 5–8, and pre-trends in log revenue in columns 9–12. For example, column 1 is the change in log earnings per worker from 2 years before the retirement to 1 year before the retirement, column 2 is the cumulative change in log earnings per worker from 3 years before the retirement to 1 year before the retirement, etc. All columns control for year fixed effects and firm size quintile fixed effects. Observations are weighted by firm employment and standard errors are clustered at the firm level.

Table A14: 2SLS and OLS Estimates of Business Managers on Firm Outcomes in the US

Panel A: IV

	Log Revenue			Log Earnings per Worker			Labor Share		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business Manager	-0.027 (0.052)	-0.051 (0.046)	-0.032 (0.043)	-0.094 (0.055)	-0.075 (0.044)	-0.105 (0.041)	-0.035 (0.019)	-0.023 (0.015)	-0.036 (0.016)
Log Earnings t-1	x	x	x	x	x	x	x	x	x
Log Earnings t-2		x	x		x	x		x	x
Log Earnings t-3			x			x			x
Log Sales t-1	x	x	x	x	x	x	x	x	x
Log Sales t-2		x	x		x	x		x	x
Log Sales t-3			x			x			x
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
State-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
F-statistic	32.6	44.8	41.9	32.6	44.8	41.9	32.6	44.8	41.9
Obs	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300

Panel B: OLS

	Log Revenue			Log Earnings per Worker			Labor Share		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business Manager	-0.006 (0.008)	-0.004 (0.008)	-0.012 (0.007)	-0.059 (0.013)	-0.047 (0.013)	-0.063 (0.011)	-0.021 (0.003)	-0.012 (0.003)	-0.023 (0.003)
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
State-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Obs	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300

This table reports 2SLS (Panel A) and OLS (Panel B) estimates of business managers on log sales, log earnings per worker and the labor share in the US. The sample in both panels is the set of firms with a single transition from non-business to business manager or firms with non-business managers as in our event-study regressions. For the 2SLS models, the first stage is described in equation (??) in Appendix ?? and is based on the average lagged business manager of peer firms (those in the same industry, region and size quintile). Table ?? in the Appendix presents the first-stage estimates and Figure ?? shows them visually. In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects and industry×year fixed effects. Columns 1, 4 and 7 control for one-year lags of firm (log) sales and (log) earnings per worker, columns 2, 5 and 8 control for one and two-year lags of firm sales and earnings per worker, and columns 3, 6 and 9 control for one, two and three-year lags of firm sales and earnings per worker. The dependent variables are log revenue in columns 1–3, log earnings per worker in columns 4–6, and the firm’s labor share (wage bill divided by sales) in columns 7–9. Observations are weighted by firm employment and standard errors are clustered at the firm level. First-stage F-statistics for the excluded instruments are reported at the bottom of Panel A.

Table A15: 2SLS and OLS Estimates of Business Managers on Firm Outcomes in Denmark

Panel A: IV

	Log Value Added			Log Earnings per Worker			Labor Share		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business Manager	0.105 (0.068)	0.091 (0.068)	0.078 (0.067)	-0.048 (0.024)	-0.038 (0.024)	-0.044 (0.024)	-0.037 (0.027)	-0.046 (0.027)	-0.052 (0.027)
Log Earnings t-1	-0.179 (0.010)	-0.155 (0.010)	-0.157 (0.010)	0.129 (0.005)	0.128 (0.005)	0.125 (0.005)	0.002 (0.004)	0.010 (0.004)	0.011 (0.004)
Log Earnings t-2		-0.028 (0.011)	-0.018 (0.011)		-0.011 (0.005)	-0.010 (0.005)		-0.018 (0.005)	-0.009 (0.005)
Log Earnings t-3			-0.066 (0.010)			-0.038 (0.005)			-0.020 (0.004)
Log Value Added t-1	0.479 (0.004)	0.441 (0.005)	0.440 (0.005)	0.006 (0.002)	0.006 (0.002)	0.006 (0.002)	-0.011 (0.002)	-0.019 (0.002)	-0.021 (0.002)
Log Value Added t-2		0.069 (0.005)	0.060 (0.005)		-0.001 (0.002)	0.002 (0.003)		0.018 (0.002)	0.005 (0.002)
Log Value Added t-3			0.016 (0.004)			-0.007 (0.002)			0.026 (0.002)
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Region-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
F-statistic	32.2	32.0	32.4	31.6	31.1	31.4	32.0	31.3	31.7
Obs	44,731	44,539	44,474	44,731	44,550	44,490	44,962	44,761	44,697

Panel B: OLS

	Log Value Added			Log Earnings per Worker			Labor Share		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business Manager	0.007 (0.015)	0.008 (0.015)	0.008 (0.015)	-0.028 (0.006)	-0.028 (0.006)	-0.029 (0.006)	-0.025 (0.007)	-0.024 (0.007)	-0.024 (0.007)
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Region-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Obs	44,731	44,539	44,474	44,731	44,550	44,490	44,962	44,761	44,697

This table reports 2SLS (Panel A) and OLS (Panel B) estimates of business managers on log value added, log earnings per worker and the labor share in Denmark. For the 2SLS models, the first stage is described in equation (??) in Appendix ?? and is based on the average lagged business manager of peer firms (those in the same industry, region and size quintile). Table ?? in the Appendix presents the first-stage estimates and Figure ?? shows them visually. In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects and industry×year fixed effects. Columns 1, 4 and 7 control for one-year lags of firm (log) value added and (log) earnings per worker, columns 2, 5 and 8 control for one and two-year lags of firm value added and earnings per worker, and columns 3, 6 and 9 control for one, two and three-year lags of firm value added and earnings per worker. The dependent variables are log value added in columns 1–3, log earnings per worker in columns 4–6, and the firm’s labor share (wage bill divided by value added) in columns 7–9. Observations are weighted by firm employment and standard errors are clustered at the firm level. First-stage F-statistics for the excluded instruments are reported at the bottom of Panel A.

Table A16: Robustness of 2SLS Estimates of Business Managers on Firm Outcomes in Denmark

	Log Value Added			Log Earnings per Worker			Labor Share		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business Manager	0.064 (0.067)	0.029 (0.083)	0.046 (0.075)	-0.040 (0.024)	-0.063 (0.031)	-0.046 (0.027)	-0.053 (0.027)	-0.066 (0.032)	-0.056 (0.029)
Log Earnings t-1	-0.152 (0.010)	-0.156 (0.011)	-0.157 (0.010)	0.122 (0.005)	0.139 (0.005)	0.125 (0.005)	0.008 (0.005)	0.003 (0.005)	0.012 (0.005)
Log Earnings t-2	-0.020 (0.011)	0.007 (0.013)	-0.025 (0.011)	-0.012 (0.005)	-0.007 (0.006)	-0.008 (0.006)	-0.011 (0.005)	-0.021 (0.006)	-0.008 (0.005)
Log Earnings t-3	-0.067 (0.010)	-0.050 (0.010)	-0.066 (0.010)	-0.040 (0.005)	-0.034 (0.005)	-0.035 (0.005)	-0.020 (0.004)	-0.033 (0.005)	-0.019 (0.005)
Log Value Added t-1	0.436 (0.005)	0.468 (0.005)	0.434 (0.005)	0.007 (0.002)	0.006 (0.003)	0.006 (0.002)	-0.020 (0.002)	-0.031 (0.002)	-0.020 (0.002)
Log Value Added t-2	0.062 (0.005)	0.068 (0.005)	0.064 (0.005)	0.003 (0.003)	0.003 (0.003)	0.002 (0.003)	0.004 (0.002)	-0.001 (0.002)	0.004 (0.002)
Log Value Added t-3	0.015 (0.004)	0.004 (0.005)	0.016 (0.004)	-0.009 (0.002)	-0.007 (0.002)	-0.007 (0.002)	0.024 (0.002)	0.034 (0.002)	0.026 (0.002)
Size quintile-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Region-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
F-statistic	32.3	28.1	25.5	31.2	27.8	24.6	31.6	28.2	24.8
Obs	44,474	44,474	43,631	44,490	44,490	43,650	44,697	44,697	43,853

This table reports 2SLS estimates of business managers on log value added, log earnings per worker and the labor share in Denmark. The first stage is described in equation (??) in Appendix ?? and is based on the average lagged business manager of peer firms (those in the same industry, region and size quintile). Table ?? in the Appendix presents the first-stage estimates and Figure ?? shows them visually. In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects and industry×year fixed effects, and one, two and three-year lags of firm value added and earnings per worker. Columns 1, 4, and 7 control for a full set of interactions between earnings quintile in 1995 and year dummies. Columns 2, 5, and 8 control for cell-specific trends (year interacted with dummies for each cell). Columns 3, 6, and 9 control for three lags of value added and earnings of other firms in the same cell. The dependent variables are log value added in columns 1–3, log earnings per worker in columns 4–6, and the firm’s labor share (wage bill divided by value added) in columns 7–9. Observations are weighted by firm employment and standard errors are clustered at the firm level. First-stage F-statistics for the excluded instruments are reported at the bottom of Panel A.

Table A17: Types of Compensation of Business Managers in the US

	Percent Salary	Percent Bonus	Percent Stock	Percent Options	Percent Incentive Plan	Percent Other
	(1)	(2)	(3)	(4)	(5)	(6)
Business Major	-0.0038 (0.0028)	-0.0051 (0.0020)	-0.0001 (0.0015)	0.0070 (0.0027)	0.0012 (0.0021)	0.0008 (0.0033)
Year FE	Y	Y	Y	Y	Y	Y
Manager Characteristics	Y	Y	Y	Y	Y	Y
Firm Characteristics	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Obs	36,607	36,607	36,607	36,607	36,607	36,607

This table reports the coefficients from regressions of different components of compensation from the Execucomp dataset on an indicator for having a business degree in the US. The dependent variable is each form of compensation as a percentage of total compensation, and all columns include year and firm fixed effects, manager characteristics (gender, experience, age), firm characteristics (log employment and log sales). Standard errors are clustered at person level.

Table A18: Types of Compensation of Business Managers in Denmark

	Log Hourly Wage	Percent Stock Option	Percent Fringe Benefits
	(1)	(2)	(3)
Business Major	0.0583 (0.0075)	0.0011 (0.0005)	0.0011 (0.0011)
Year FE	Y	Y	Y
Manager Characteristics	Y	Y	Y
Firm Characteristics	Y	Y	Y
Firm FE	Y	Y	Y
Obs	244,072	266,660	266,660

This table reports the coefficients from regressions of manager compensation on an indicator for having a business degree in Denmark. The dependent variables are log hourly wage in column 1, the share of compensation in the form of stock options in column 2, and the share of compensation in the form of fringe benefits in column 3. All columns include year and firm fixed effects, manager characteristics (gender, experience, age), and firm characteristics (log employment and log sales). Standard errors are clustered at person level.

Table A19: Summary Statistics for the Sample of Danish Exporters

	Mean	Standard Deviation
Employment	226.4	599.4
Payroll (Thousands DKK)	75095	229476
Log Earnings per Worker	5.734	0.2607
Sales (Millions DKK)	382.9	1499
Value Added (Millions DKK)	138.8	533.0
Labor Share (Wage Bill/Value Added)	0.7264	0.2289
Investment (Millions DKK)	21.94	107.1
Investment/Sales	0.0559	0.0808
Cash/Assets	0.0555	0.0810
Assets (Millions DKK)	407.7	2187
Share of New Plants	0.0290	0.1200
Share of Exiting Plants	0.0281	0.1172
Share of Employment in New Plants	0.0130	0.0848
Share of Employment in Exiting Plants	0.0113	0.0829
Number of Establishments	2.102	4.084
ROA	0.0529	0.1525
Acquisition	0.0186	0.1352
Age	19.60	6.993
Number of Observations	11400	
Number of Firms	1051	

This table reports the mean and standard deviation of firm-level variables for the sample of Danish exporters used in Table ???. We also reports the number of observations and the number of firms at the bottom of the table.

Table A20: Business Managers and Firm Response to Export Shocks in Denmark

	Log Profit per Worker	Log Value Added per Worker	Log Export	Log Value Added	Log Employment	Log Investment
	(1)	(2)	(3)	(4)	(5)	(6)
Export Shock*Non-Business Manager	0.1576 (0.0865)	0.0972 (0.0446)	0.3251 (0.0740)	0.2381 (0.0547)	0.1409 (0.0328)	0.3620 (0.0990)
Export Shock*Business Manager	0.1614 (0.0875)	0.0696 (0.0474)	0.2995 (0.0770)	0.2138 (0.0568)	0.1442 (0.0342)	0.2667 (0.1051)
F-statistic	0.0	2.0	1.2	1.5	0.1	5.7
F-test p value	0.905	0.153	0.273	0.224	0.725	0.017
Industry-year FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Obs	5,665	5,665	5,665	5,665	5,665	5,665

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This table reports the coefficients from regressions of firm-level outcomes on export shocks interacted with a dummy for having a business manager. Export shocks are shocks to export demand from destination-product combinations the firm exports to as defined in the text. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects, industry×year fixed effects, and a dummy variable for whether the firm has a business manager. The dependent variables are log profits per worker in column 1, log value added per worker in column 2, log value of exports in column 3, log value added in column 4, log employment in column 5, and log investment in column 6. Regressions are weighted by firm employment, and standard errors are clustered at the firm level. We report the F-statistic and corresponding p-value for the F-test testing the difference between the coefficient of *Export Shock*Non-Business Manager* and the coefficient of *Export Shock*Business Manager* at the bottom of the table.

Table A21: Response to Positive and Negative Export Shocks in Denmark

	Log Hourly Wage	Log Annual Earnings	Labor Share	Log Hourly Wage	Log Annual Earnings	Labor Share
	(1)	(2)	(3)	(4)	(5)	(6)
Pos Export Shock*Non-Business Manager	0.0223 (0.0048)	0.0173 (0.0044)	0.0065 (0.0156)	0.0204 (0.0047)	0.0223 (0.0044)	0.0023 (0.0149)
Pos Export Shock*Business Manager	0.0056 (0.0111)	0.0077 (0.0072)	-0.0136 (0.0372)	0.0045 (0.0108)	0.0079 (0.0075)	-0.0128 (0.0344)
Neg Export Shock*Non-Business Manager	-0.0038 (0.0044)	0.0011 (0.0028)	-0.0044 (0.0121)	-0.0059 (0.0044)	0.0051 (0.0038)	-0.0034 (0.0118)
Neg Export Shock*Business Manager	0.0069 (0.0105)	0.0064 (0.0074)	-0.0156 (0.0371)	0.0031 (0.0102)	0.0100 (0.0070)	-0.0089 (0.0338)
F-statistic (Positive Shocks)	2.0	1.4	0.3	1.9	2.8	0.2
F-test p value (Positive Shocks)	0.152	0.242	0.597	0.168	0.095	0.670
F-statistic (Negative Shocks)	0.9	0.4	0.1	0.7	0.4	0.0
F-test p value (Negative Shocks)	0.336	0.529	0.765	0.413	0.528	0.874
Industry-year FE	Y	Y	Y	Y	Y	Y
Worker-firm FE	Y	Y		Y	Y	
Firm FE	Y	Y	Y	Y	Y	Y
Obs	1,776,520	1,776,520	5,313	1,776,520	1,776,520	5,313

This table reports the coefficients from regressions of wages and the labor share on positive and negative export shocks interacted with a dummy for having a business manager. Positive and negative export shocks are defined in section ???. In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects, industry×year fixed effects, and a dummy variable for whether the firm has a business manager. Worker-level regressions additionally control for firm×worker fixed effects, quadratic in experience, and union and marital status dummies. Columns 3–6 also control for time-varying firm characteristics (log output, log employment, log capital-labor ratio, share of high-skilled workers). The dependent variables are log hourly wage of workers in columns 1 and 4, log annual earnings of workers in columns 2 and 5, and the labor share of firms (wage bill divided by value added) in columns 3 and 6. Firm-level regressions in columns 3 and 6 are weighted by firm employment. Standard errors are clustered at the firm level. We report the F-statistic and corresponding p-value for the F-test testing the difference between the coefficient of *Pos Export Shock*Non-Business Manager* (or *Neg Export Shock*Non-Business Manager*) and the coefficient of *Pos Export Shock*Business Manager* (or *Neg Export Shock*Business Manager*) at the bottom of the table.

Table A22: Response to Export Shocks Before and After Manager Transitions Including Non-Switchers in Denmark

	Value Added per Worker (1)	Log Hourly Wage (2)	Log Annual Earnings (3)	Labor Share (4)
Export Shock*Pre	0.1031 (0.0573)	0.0335 (0.0075)	0.0503 (0.0087)	0.0269 (0.0272)
Export Shock*Post	0.1051 (0.0556)	0.0171 (0.0076)	0.0202 (0.0075)	0.0038 (0.0264)
Post – Pre	0.0020	-0.0184	-0.0301	-0.0231
F-statistic	0.0	2.8	8.2	0.4
F-test p value	0.839	0.094	0.004	0.541
Industry-year FE	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Worker-firm FE		Y	Y	
Obs	1,008	511,754	511,754	1,008

This table reports the coefficients from the regression of wages, value added per worker and the labor share on export shocks before and after transitions from a non-business manager to a business manager. *Pre* is a dummy variable that equals 1 if the observation is before the manager transition, and *Post* is a dummy variable that equals 1 if the observation is after the manager transition. The sample includes firms with a manager transition from a non-business manager to a business manager and firms that always had non-business managers (for which *Pre* equals 1 for all years). In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects, industry×year fixed effects, and a dummy variable for whether the observation is after the manager transition. Worker-level regressions additionally control for firm×worker fixed effects, quadratic in experience, and union and marital status dummies. Dependent variables are log value added per worker in column 1, log hourly wage in column 2, log annual earnings in column 3, and the labor share (wage bill divided by value added) in column 4. Firm-level regressions in columns 1 and 4 are weighted by firm employment. Standard errors are clustered at the firm level. We report the difference between the coefficients of *Export Shock*Pre* and *Export Shock*Post* as well as F-statistic and corresponding p-value for the F-test testing the difference between the two coefficients at the bottom of the table.

Table A23: Response to Export Shocks Before and After Placebo Manager Transitions in Denmark

	Value Added per Worker		Log Hourly Wage		Log Annual Earnings		Labor Share	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Export Shock*Pre	0.0577 (0.0344)	0.0929 (0.0323)	0.0152 (0.0031)	0.0179 (0.0031)	0.0138 (0.0042)	0.0226 (0.0039)	-0.0028 (0.0150)	-0.0107 (0.0102)
Export Shock*Post	0.0672 (0.0356)	0.0947 (0.0326)	0.0149 (0.0030)	0.0173 (0.0031)	0.0162 (0.0041)	0.0228 (0.0040)	-0.0075 (0.0154)	-0.0118 (0.0105)
F-statistic	0.7	0.1	0.0	0.3	3.4	0.0	1.1	0.1
F-test p value	0.410	0.829	0.831	0.605	0.065	0.893	0.287	0.712
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Worker-firm FE			Y	Y	Y	Y		
Obs	1,782	5,469	599,701	1,950,716	599,701	1,950,716	1,782	5,469

This table reports the coefficients from the regression of wages, value added per worker and the labor share on export shocks before and after placebo transitions from a non-business manager to another non-business manager. *Pre* is a dummy variable that equals 1 if the observation is before the manager transition, and *Post* is a dummy variable that equals 1 if the observation is after the manager transition. Columns 1, 3, 5, 7 include firms with a manager transition from a non-business manager to another non-business manager, and columns 2, 4, 6, 8 also include firms that had non-business managers and no manager transitions (for which *Pre* equals 1 for all years). In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects, industry×year fixed effects, and a dummy variable for whether the observation is after the manager transition. Worker-level regressions additionally control for firm×worker fixed effects, quadratic in experience, and union and marital status dummies. Dependent variables are log value added per worker in columns 1 and 2, log hourly wage in columns 3 and 4, log annual earnings in columns 5 and 6, and the labor share (wage bill divided by value added) in columns in columns 7 and 8. Firm-level regressions in columns 1, 2, 7, 8 are weighted by firm employment. Standard errors are clustered at the firm level. We report the F-statistic and corresponding p-value for the F-test testing the difference between the coefficient of *Export Shock*Pre* and the coefficient of *Export Shock*Post* at the bottom of the table.

Table A24: Wage Response to Export Shocks Controlling for Product Export Shocks in Denmark

	Log Hourly Wage	Log Annual Earnings	Labor Share	Log Hourly Wage	Log Annual Earnings	Labor Share
	(1)	(2)	(3)	(4)	(5)	(6)
Export Shock*Non-Business Manager	0.0191 (0.0040)	0.0219 (0.0050)	-0.0281 (0.0134)	0.0155 (0.0038)	0.0157 (0.0046)	-0.0168 (0.0129)
Export Shock*Business Manager	0.0018 (0.0089)	0.0080 (0.0081)	-0.0344 (0.0139)	-0.0032 (0.0090)	0.0005 (0.0080)	-0.0241 (0.0132)
Log Output				0.0120 (0.0033)	0.0106 (0.0052)	-0.1469 (0.0146)
Log Employment				0.0174 (0.0045)	0.0510 (0.0057)	0.1382 (0.0161)
Log Capital-labor Ratio				0.0050 (0.0018)	0.0014 (0.0019)	-0.0179 (0.0060)
Share of High-skilled Workers				0.0820 (0.0245)	0.0579 (0.0281)	0.0819 (0.0818)
Product Export Shocks	0.0086 (0.0052)	0.0162 (0.0053)	-0.0331 (0.0199)	0.0119 (0.0051)	0.0117 (0.0049)	-0.0443 (0.0203)
F-statistic	4.0	2.5	2.2	4.7	2.9	3.4
F-test p value	0.045	0.113	0.142	0.031	0.088	0.065
Industry-year FE	Y	Y	Y	Y	Y	Y
Worker-firm FE	Y	Y		Y	Y	
Firm FE	Y	Y	Y	Y	Y	Y
Obs	1,210,720	1,210,720	3,797	1,210,720	1,210,720	3,797

This table reports the coefficients from regressions of wages and the labor share on export shocks interacted with a dummy for having a business manager. All regressions control for product demand shocks at the firm level, constructed as the weighted average of total imports (excluding imports from Denmark) at six-digit product level, with the weights being the ex-ante shares of sales in each six-digit product. In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects, industry×year fixed effects, and a dummy variable for whether the firm has a business manager. Worker-level regressions additionally control for firm×worker fixed effects, quadratic in experience, and union and marital status dummies. Columns 3–6 also control for time-varying firm characteristics (log output, log employment, log capital-labor ratio, share of high-skilled workers). The dependent variables are log hourly wage of workers in columns 1 and 4, log annual earnings of workers in columns 2 and 5, and the labor share of firms (wage bill divided by value added) in columns 3 and 6. Firm-level regressions in columns 3 and 6 are weighted by firm employment. Standard errors are clustered at the firm level. We report the F-statistic and corresponding p-value for the F-test testing the difference between the coefficient of *Export Shock*Non-Business Manager* and the coefficient of *Export Shock*Business Manager* at the bottom of the table.

Table A25: Wage Response to Export Shocks Using a Balanced Panel of Firms in Denmark

	Log Hourly Wage	Log Annual Earnings	Labor Share	Log Hourly Wage	Log Annual Earnings	Labor Share
	(1)	(2)	(3)	(4)	(5)	(6)
Export Shock*Non-Business Manager	0.0191 (0.0031)	0.0245 (0.0051)	0.0031 (0.0127)	0.0153 (0.0029)	0.0181 (0.0043)	0.0050 (0.0123)
Export Shock*Business Manager	0.0084 (0.0058)	0.0108 (0.0071)	-0.0058 (0.0124)	0.0024 (0.0057)	0.0003 (0.0066)	-0.0052 (0.0118)
Log Output				0.0152 (0.0036)	0.0133 (0.0052)	-0.1087 (0.0159)
Log Employment				0.0153 (0.0043)	0.0426 (0.0054)	0.0982 (0.0206)
Log Capital-labor Ratio				0.0026 (0.0015)	-0.0002 (0.0014)	-0.0117 (0.0053)
Share of High-skilled Workers				0.0861 (0.0214)	0.0909 (0.0268)	0.2570 (0.1034)
F-statistic	3.3	3.0	5.4	4.8	5.9	7.7
F-test p value	0.070	0.081	0.020	0.028	0.015	0.005
Industry-year FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Worker-firm FE	Y	Y		Y	Y	
Obs	1,473,178	1,473,178	4,461	1,473,178	1,473,178	4,461

This table reports the coefficients from regressions of wages and the labor share on export shocks interacted with a dummy for having a business manager. The sample is a balanced sample of firms between 1995 and 2006 (i.e. firms that exist in every single year of that period). In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects, industry×year fixed effects, and a dummy variable for whether the firm has a business manager. Worker-level regressions additionally control for firm×worker fixed effects, quadratic in experience, and union and marital status dummies. Columns 3–6 also control for time-varying firm characteristics (log output, log employment, log capital-labor ratio, share of high-skilled workers). The dependent variables are log hourly wage of workers in columns 1 and 4, log annual earnings of workers in columns 2 and 5, and the labor share of firms (wage bill divided by value added) in columns 3 and 6. Firm-level regressions in columns 3 and 6 are weighted by firm employment. Standard errors are clustered at the firm level. We report the F-statistic and corresponding p-value for the F-test testing the difference between the coefficient of *Export Shock*Non-Business Manager* and the coefficient of *Export Shock*Business Manager* at the bottom of the table.

Table A26: Effects of Export Shocks on Firm Exit in Denmark

	Exit - 1 year	Exit - 3 years
	(1)	(2)
Export Shock*Non-Business Manager	-0.0012 (0.0172)	0.0173 (0.0200)
Export Shock*Business Manager	-0.0119 (0.0186)	0.0067 (0.0200)
F-statistic	2.2	1.4
F-test p value	0.142	0.235
Industry-year FE	Y	Y
Firm FE	Y	Y
Obs	8,430	8,430

This table reports the coefficients from regressions of firm exit on export shocks interacted with a dummy for having a business manager. All regressions control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects, industry×year fixed effects, and a dummy variable for whether the firm has a business manager. The dependent variable is an indicator variable for firm exit in next year in column 1 and an indicator variable for firm exit in the next 3 years in column 2. Regressions are weighted by firm employment, and standard errors are clustered at the firm level. We report the F-statistic and corresponding p-value for the F-test testing the difference between the coefficient of *Export Shock*Non-Business Manager* and the coefficient of *Export Shock*Business Manager* at the bottom of the table.

Table A27: College-Degree Managers and Wage Response to Trade Shocks in Denmark

	Log Hourly Wage	Log Annual Earnings	Labor Share	Log Hourly Wage	Log Annual Earnings	Labor Share
	(1)	(2)	(3)	(4)	(5)	(6)
Export Shock*Non-College Non-Business Manager	0.0152 (0.0049)	0.0301 (0.0051)	-0.0036 (0.0130)	0.0128 (0.0047)	0.0253 (0.0047)	0.0005 (0.0122)
Export Shock*College Non-Business Manager	0.0175 (0.0035)	0.0163 (0.0052)	-0.0113 (0.0128)	0.0140 (0.0034)	0.0093 (0.0043)	-0.0076 (0.0119)
Export Shock*Business Manager	0.0003 (0.0066)	0.0092 (0.0067)	-0.0154 (0.0126)	-0.0047 (0.0065)	-0.0010 (0.0062)	-0.0128 (0.0116)
Log Output				0.0125 (0.0035)	0.0127 (0.0053)	-0.1087 (0.0155)
Log Employment				0.0131 (0.0040)	0.0450 (0.0054)	0.0982 (0.0202)
Log Capital-labor Ratio				0.0028 (0.0014)	0.0000 (0.0014)	-0.0115 (0.0050)
Share of High-skilled Workers				0.0743 (0.0207)	0.0748 (0.0264)	0.2787 (0.0999)
Industry-year FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Worker-firm FE	Y	Y		Y	Y	
Obs	1,707,311	1,707,311	5,305	1,707,311	1,707,311	5,305

This table reports the coefficients from regressions of wages and the labor share on export shocks interacted with whether the manager has no college degree, has a college degree but no business degree, or has a business degree. Export shocks are shocks to export demand from destination-product combinations the firm exports to as defined in the text. In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region $\times$ year fixed effects, industry $\times$ year fixed effects, a dummy variable for whether the firm has a business manager, and a dummy variable for whether the firm has a college-degree manager. Worker-level regressions additionally control for firm $\times$ worker fixed effects, quadratic in experience, and union and marital status dummies. Columns 3–6 also control for time-varying firm characteristics (log output, log employment, log capital-labor ratio, share of high-skilled workers). The dependent variables are log hourly wage of workers in columns 1 and 4, log annual earnings of workers in columns 2 and 5, and the labor share of firms (wage bill divided by value added) in columns 3 and 6. Firm-level regressions in columns 3 and 6 are weighted by firm employment. Standard errors are clustered at the firm level.

Table A28: Wage Response to Export Shocks for Union and Non-Union Workers in Denmark

	Union Workers		Non-Union Workers	
	Log Hourly Wage	Log Annual Earnings	Log Hourly Wage	Log Annual Earnings
	(1)	(2)	(3)	(4)
Export Shock*Non-Business Manager	0.0176 (0.0031)	0.0233 (0.0047)	0.0021 (0.0038)	0.0015 (0.0048)
Export Shock*Business Manager	0.0007 (0.0069)	0.0091 (0.0068)	0.0003 (0.0075)	-0.0005 (0.0098)
F-statistic	6.7	3.4	0.1	0.0
F-test p value	0.009	0.064	0.812	0.843
Industry-year FE	Y	Y	Y	Y
Worker-firm FE	Y	Y	Y	Y
Obs	1,548,697	1,548,697	196,686	196,686

This table reports the coefficients from regressions of wages on export shocks interacted with a dummy for having a business manager. Columns 1 and 2 only include union workers, and columns 3 and 4 include only non-union workers. In all columns we control for firm fixed effects, firm size quintile by year fixed effects, region×year fixed effects, industry×year fixed effects, firm×worker fixed effects, a dummy variable for whether the firm has a business manager, quadratic in experience, and union and marital status dummies. The dependent variables are log hourly wage in columns 1 and 3, and log annual earnings in columns 2 and 4. Standard errors are clustered at the firm level. We report the F-statistic and corresponding p-value for the F-test testing the difference between the coefficient of *Export Shock*Non-Business Manager* and the coefficient of *Export Shock*Business Manager* at the bottom of the table.

Table A29: First Stage of Diffusion IV in the US

	Business Manager							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Peer Firm Business Manager t-1	0.160 (0.039)	0.083 (0.059)	0.158 (0.039)	0.081 (0.059)	0.164 (0.047)	0.066 (0.065)	0.149 (0.047)	0.053 (0.065)
Peer Firm Business Manager t-2		0.270 (0.058)		0.274 (0.058)		0.285 (0.065)		0.291 (0.065)
Peer Firm Business Manager t-3		0.242 (0.052)		0.239 (0.052)		0.411 (0.059)		0.394 (0.059)
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Size quintile-year FE			Y	Y	Y	Y	Y	Y
Industry*year FE					Y	Y	Y	Y
Lagged sales and earnings							Y	Y
F-statistic	16.7	30.2	16.2	29.8	12.3	43.6	9.9	41.9
Obs	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300

This table reports the first-stage estimates instrumenting business manager with up to three lags of average business manager of peer firms (those in the same industry, region and size quintile) in the US. The first stage equation is described in equation (??) in Appendix ???. The dependent variable is a dummy for business manager. Odd columns regress on one-year lag of the average business manager of peer firms, and even columns include three years' lags of the average business manager of peer firms. All columns control for firm fixed effects and year fixed effects. We add firm size quintile by year fixed effects in columns 3 and 4, industry×year fixed effects and region×year fixed effects in columns 5 and 6, and lags of firm value added and earnings per worker as controls in columns 7 and 8. Observations are weighted by firm employment and standard errors are clustered at the firm level. First-stage F-statistics for the excluded instruments are reported at the bottom.

Table A30: First Stage of Diffusion IV in Denmark

	Business Manager							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Peer Firm Business Manager t-1	0.115 (0.035)	0.098 (0.040)	0.166 (0.034)	0.095 (0.040)	0.277 (0.038)	0.226 (0.042)	0.324 (0.049)	0.326 (0.052)
Peer Firm Business Manager t-2		0.258 (0.045)		0.255 (0.045)		0.331 (0.045)		0.141 (0.054)
Peer Firm Business Manager t-3		0.225 (0.047)		0.219 (0.047)		0.216 (0.048)		0.361 (0.057)
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Size quintile-year FE			Y	Y	Y	Y	Y	Y
Industry*year FE					Y	Y	Y	Y
Region*year FE					Y	Y	Y	Y
Lagged value added and earnings							Y	Y
F-statistic	11.0	30.6	23.5	28.9	52.8	44.4	43.8	32.9
Obs	82,805	76,516	82,805	76,516	82,805	76,516	51,246	48,649

This table reports the first-stage estimates instrumenting business manager with up to three lags of average business manager of peer firms (those in the same industry, region and size quintile) in Denmark. The first stage equation is described in equation (??) in Appendix ??. The dependent variable is a dummy for business manager. Odd columns regress on one-year lag of the average business manager of peer firms, and even columns include three years' lags of the average business manager of peer firms. All columns control for firm fixed effects and year fixed effects. We add firm size quintile by year fixed effects in columns 3 and 4, industry×year fixed effects and region×year fixed effects in columns 5 and 6, and lags of firm sales and earnings per worker as controls in columns 7 and 8. Observations are weighted by firm employment and standard errors are clustered at the firm level. First-stage F-statistics for the excluded instruments are reported at the bottom.