# Codebook

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The variables defined in this codebook, along with the code files, will allow you to perform analysis like that in our paper *Artificial Intelligence, Productivity, and the Workforce: Evidence from Corporate Executives* (Salomé Baslandze, Zach Edwards, John Graham, Ty McClure, Michael Dwight Sparks, Brent Meyer, Sonya Ravindranath Waddell, and Daniel Weitz) in the *Journal of Finance: Insights and Perspectives*.

**Note:** The data posted only for the approximately 600 respondents who agreed to have their de-identified data posted online, which is not our full analysis sample. Rerunning our analysis code with the posted data will therefore not exactly replicate the results in our paper.

## AI_adopt_last

*Description:* Binary indicator for whether the firm reported any AI expenditure/investment over the past 12 months. Constructed in `1. var_construction_v13.do` from `ai_invest_lastyr_yn`: `AI_adopt_last` = 1 if `ai_invest_lastyr_yn` = 1 ("Yes"), 0 if = 2 ("No"), and missing if the firm answered "Not Sure". (Relates to Question 1)

## AI_adopt_next

*Description:* Binary indicator for whether the firm plans any AI expenditure/investment over the next 12 months. Constructed in `1. var_construction_v13.do`: `AI_adopt_next` = 1 if `AI_invest_next_mid` is non-zero and non-missing; otherwise 0.

## AI_adopt_tot

*Description:* Binary indicator for whether the firm reports AI adoption in *either* the past or the next 12 months. Constructed in `1. var_construction_v13.do` as max(`AI_adopt_last`, `AI_adopt_next`).

## ai_change_ft_emp_26

*Description:* Q1-2026 follow-up survey item asking firms to report, in absolute headcount, the AI-attributed change in full-time employment expected by end-of-2026 (Qualtrics ID `Q1260_4_currentyr_1`). Raw passthrough from `CFO_q12026_AI.dta`; available only for the small Q1-2026 follow-up subsample (5 non-missing responses in the merged analysis dataset).

## ai_change_ft_emp_28

*Description:* Q1-2026 follow-up survey item asking firms to report, in absolute headcount, the AI-attributed change in full-time employment expected by end-of-2028 (Qualtrics ID `Q1260_4_2_1`). Raw passthrough from `CFO_q12026_AI.dta`; available only for the small Q1-2026 follow-up subsample (5 non-missing responses in the merged analysis dataset).

## ai_complement_jobs_text

*Description:* This variable represents the text responses to the question "Please describe the roles/responsibilities of the employees that were (or you expect to be) complemented or enhanced by AI tools." (Relates to Question 11.)

## ai_imp_lastyr_* (family overview)

*Description:* This is a family of variables which relates to question 8. Respondents are asked to report how their firm's use of AI has affected several different outcomes in 2025, such as labor productivity. The raw variables (e.g., `ai_imp_lastyr_prod`) record the categorical bucket the firm selected; the corresponding `*_mid` variables (e.g., `ai_imp_lastyr_prod_mid`) hold the bucket midpoint as a decimal. Per the construction in `FINAL/1. var_construction_v13.do`, each `*_mid` value is set to 0 if the response is missing AND the firm reported no AI investment (`AI_adopt_last` = 0), and is set to missing if the response is "Unsure / Not Applicable".

## ai_imp_lastyr_cust_satis

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **customer satisfaction or retention** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_cust_satis_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_cust_satis` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_decisions

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **decision-making speed or accuracy** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_decisions_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_decisions` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_emp

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **total employment** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_emp_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_emp` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_labor_cost

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **labor costs per worker** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_labor_cost_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_labor_cost` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_opex

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **operating costs (excluding labor)** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_opex_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_opex` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_other

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in an **Other** outcome that the respondent specified; the free-text description of that outcome is captured in `ai_imp_lastyr_other_text`. (Relates to Question 8)

## ai_imp_lastyr_other_text

*Description:* Free-text response describing the **Other** outcome category that the respondent specified for `ai_imp_lastyr_other`. Raw survey field with no transformation. (Parallels Question 8; the open-ended "other" detail is not separately listed in the appendix.)

## ai_imp_lastyr_ppe

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in the **book value of PP&E and intangible assets** (e.g., software) over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_ppe_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_ppe` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_prod

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **labor productivity (output per worker)** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_prod_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_prod` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_quality

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **product / output quality** over the past 12 months. This dimension was added in a later wave of the survey, which explains the higher missingness relative to the other outcomes in the family (the construction file `1. var_construction_v13.do` notes "only 42 responses!"). (Relates to Question 8)

## ai_imp_lastyr_quality_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_quality` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_rev

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **revenue or sales** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_rev_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_rev` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_rev_new

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **revenue from new products** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_rev_new_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_rev_new` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lastyr_value_add

*Description:* Member of the `ai_imp_lastyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed change in **time spent on high value-add tasks** over the past 12 months. (Relates to Question 8)

## ai_imp_lastyr_value_add_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_lastyr_value_add` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_lastyr_*` family. (Relates to Question 8)

## ai_imp_lp

*Description:* AI-attributed change in 2025 labor productivity (revenue-per-worker growth). Constructed in `1. var_construction_v13.do` as `ai_imp_lp` = `ai_imp_lastyr_rev_mid` − `ai_imp_lastyr_emp_mid`.

## ai_imp_lp2026

*Description:* AI-attributed expected change in 2026 labor productivity. Constructed in `1. var_construction_v13.do` as `ai_imp_lp2026` = `ai_imp_nextyr_rev_mid` − `ai_imp_nextyr_emp_mid`.

## ai_imp_nextyr_* (family overview)

*Description:* This is a family of variables which relates to question 9. Respondents are asked to report how they expect their firm's use of AI to affect several different outcomes in 2026, such as labor productivity. The raw variables (e.g., `ai_imp_nextyr_prod`) record the categorical bucket the firm selected; the corresponding `*_mid` variables (e.g., `ai_imp_nextyr_prod_mid`) hold the bucket midpoint as a decimal. Per the construction in `FINAL/1. var_construction_v13.do`, each `*_mid` value is set to 0 if the response is missing AND the firm reported no AI investment intent (`AI_adopt_next` = 0), and is set to missing if the response is "Unsure / Not Applicable".

## ai_imp_nextyr_cust_satis

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in customer satisfaction or retention** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_cust_satis_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_cust_satis` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_decisions

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in decision-making speed or accuracy** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_decisions_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_decisions` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_emp

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in total employment** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_emp_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_emp` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_labor_cost

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in labor costs per worker** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_labor_cost_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_labor_cost` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_opex

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in operating costs (excluding labor)** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_opex_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_opex` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_other

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in an Other outcome** that the respondent specified; the free-text description of that outcome is captured in `ai_imp_nextyr_other_text`. (Relates to Question 9)

## ai_imp_nextyr_other_text

*Description:* Free-text response describing the **Other** expected-outcome category that the respondent specified for `ai_imp_nextyr_other`. Raw survey field with no transformation. (Parallels Question 9; the open-ended "other" detail is not separately listed in the appendix.)

## ai_imp_nextyr_ppe

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in the book value of PP&E and intangible assets** (e.g., software) over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_ppe_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_ppe` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_prod

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in labor productivity (output per worker)** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_prod_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_prod` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_quality

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in product / output quality** over the next 12 months. This dimension was added in a later wave of the survey, which explains the higher missingness relative to other outcomes in the family (the construction file `1. var_construction_v13.do` notes "only 42 responses!"). (Relates to Question 9)

## ai_imp_nextyr_quality_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_quality` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 8)

## ai_imp_nextyr_rev

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in revenue or sales** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_rev_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_rev` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_rev_new

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in revenue from new products** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_rev_new_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_rev_new` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_nextyr_value_add

*Description:* Member of the `ai_imp_nextyr_*` family (see overview above). Categorical bucket reported by the firm for the AI-attributed **expected change in time spent on high value-add tasks** over the next 12 months. (Relates to Question 9)

## ai_imp_nextyr_value_add_mid

*Description:* Numeric midpoint of the bracket reported in `ai_imp_nextyr_value_add` (see family overview for the bucket → midpoint mapping). Member of the `ai_imp_nextyr_*` family. (Relates to Question 9)

## ai_imp_tfp

*Description:* AI-attributed change in 2025 TFP, calibrated to the sample. Constructed in `1. var_construction_v13.do` as `ai_imp_tfp` = `ai_imp_lastyr_rev_mid` − $\alpha$ `ai_imp_lastyr_ppe_mid` − $\beta$ `ai_imp_lastyr_emp_mid`, using the same $\alpha, \beta$ Cobb-Douglas factor shares as `lntfp1_va` / `lntfp1_rev`.

## ai_imp_tfp2026

*Description:* AI-attributed expected change in 2026 TFP, calibrated to the sample. Constructed in `1. var_construction_v13.` as `ai_imp_tfp2026` = `ai_imp_nextyr_rev_mid` − $\alpha$ `ai_imp_nextyr_ppe_mid` − $\beta$ `ai_imp_nextyr_emp_mid`, using the same $\alpha, \beta$ Cobb-Douglas factor shares as `lntfp1_va` / `lntfp1_rev`.

## ai_imp_tfp2026_lit

*Description:* AI-attributed expected change in 2026 TFP, calibrated to literature factor shares. Constructed in `1. var_construction_v13.do` as `ai_imp_tfp2026_lit` = `ai_imp_nextyr_rev_mid`−`alphaK_lit` `ai_imp_nextyr_ppe_mid`−(1 − `alphaK_lit`) `ai_imp_nextyr_emp_mid`.

## ai_imp_tfp_lit

*Description:* AI-attributed change in 2025 TFP, calibrated to literature factor shares. Constructed in `1. var_construction_v13.do` as `ai_imp_tfp_lit` = `ai_imp_lastyr_rev_mid`−`alphaK_lit` `ai_imp_lastyr_ppe_mid`−(1−`alphaK_lit`) `ai_imp_lastyr_emp_mid`, where the capital-share weight `alphaK_lit` is sector-specific (see the `alphaK_lit` entry).

## ai_invest_lastyr_amt

*Description:* Raw passthrough survey variable: the dollar-range bucket the firm selected for its total AI expenditure/investment over the past 12 months. Used (with `ai_invest_lastyr_amt_est` for the "Over $5 million" tail) to build the midpoint `AI_invest_mid`. (Relates to Question 3)

## ai_invest_lastyr_amt_est

*Description:* Open-ended dollar estimate of total AI expenditure over the past 12 months, collected only from firms that answered "More than $5 million" (code 9) in Q3 (`ai_invest_lastyr_amt`). Used in `1. var_construction_v13.do` to refine `AI_invest_mid` for top-bucket firms (`replace AI_invest_mid = ai_invest_lastyr_amt_est if ai_invest_lastyr_amt == 9`). (Relates to Question 4.)

## ai_invest_lastyr_yn

*Description:* Raw passthrough survey variable: Yes / No / Not Sure response to the question of whether the firm made any AI expenditures or financial investments over the past 12 months. Used as the input for the binary adoption indicator `AI_adopt_last`. (Relates to Question 1)

## AI_invest_mid

*Description:* USD midpoint of the dollar-range bucket reported in `ai_invest_lastyr_amt` for the firm's AI expenditure over the past 12 months. For firms in the "Over $5 million" bucket, the value is taken from the open-ended estimate in `ai_invest_lastyr_amt_est`. Constructed in `1. var_construction_v13.do`; set to 0 for firms with `AI_adopt_last` = 0. (Relates to Questions 3 and 4)

*Sensitivity note:* Midpoint values differ in the `_lowend` and `_upend` sensitivity datasets, where the lower or upper end of each reported range is used in place of the midpoint.

## AI_invest_next_mid

*Description:* USD midpoint of the dollar-range bucket reported in `ai_invest_nextyr_amt` for the firm's planned AI expenditure over the next 12 months. For firms in the "Over $5 million" bucket, the value is taken from the open-ended estimate in `ai_invest_nextyr_amt_est`. Constructed in `1. var_construction_v13.do`. (Relates to Questions 6 and 7)

*Sensitivity note:* Midpoint values differ in the `_lowend` and `_upend` sensitivity datasets, where the lower or upper end of each reported range is used in place of the midpoint.

## ai_invest_nextyr_amt

*Description:* Raw passthrough survey variable: the dollar-range bucket the firm selected for its expected total AI expenditure/investment over the next 12 months. Used (with `ai_invest_nextyr_amt_est` for the "Over $5 million" tail) to build the midpoint `AI_invest_next_mid`. (Relates to Question 6)

## ai_invest_nextyr_amt_est

*Description:* Open-ended dollar estimate of expected total AI expenditure over the next 12 months, collected only from firms that answered "More than $5 million" (code 9) in Q6 (`ai_invest_nextyr_amt`). Used in `1. var_construction_v13.do` to refine `AI_invest_next_mid` for top-bucket firms (`replace AI_invest_next_mid = ai_invest_nextyr_amt_est if ai_invest_nextyr_amt == 9`). (Relates to Question 7.)

## ai_no_why_* (family overview)

*Description:* This is a family of dummy variables covering the reasons respondent firms gave for why they *did not* make any expenditures or financial investments in AI technology or solutions over 2025 (the last 12 months as of the time of the survey). Each dummy equals 1 if the firm selected that reason and is otherwise missing; the share of firms selecting each reason is shown below. (Relates to Question 5)

## ai_no_why_bias

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"concerns about bias"**; otherwise missing. (Relates to Question 5)

## ai_no_why_expensive

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"too expensive"** as a reason for not investing in AI; otherwise missing. (Relates to Question 5)

## ai_no_why_lack_knowledge

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"lack of knowledge on the capabilities of AI"**; otherwise missing. (Relates to Question 5)

## ai_no_why_na

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"AI is not applicable to this business"**; otherwise missing. (Relates to Question 5)

## ai_no_why_no_data

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"lack of required data"**; otherwise missing. (Relates to Question 5)

## ai_no_why_not_mature

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"AI is not a mature enough technology yet"** as a reason for not investing; otherwise missing. (Relates to Question 5)

## ai_no_why_not_meet_exp

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"previous or current use of AI did not meet expectations"**; otherwise missing. (Relates to Question 5)

## ai_no_why_not_trained

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"our workers are not yet adequately trained on AI"**; otherwise missing. (Relates to Question 5)

## ai_no_why_other

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm selected **"other (please explain)"**; the free-text explanation is captured in `ai_no_why_other_text`. (Relates to Question 5)

## ai_no_why_other_text

*Description:* Member of the `ai_no_why_*` family (see overview above). Free-text explanation entered by respondents who selected `ai_no_why_other` = 1. (Relates to Question 5)

## ai_no_why_privacy

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"concerns about privacy/security"**; otherwise missing. (Relates to Question 5)

## ai_no_why_use_restricted

*Description:* Member of the `ai_no_why_*` family (see overview above). Dummy = 1 if the firm reported **"laws or regulations prevent or restrict use of AI"**; otherwise missing. (Relates to Question 5)

## ai_replace_jobs_text

*Description:* This variable represents the text responses to the question "Please describe the roles/responsibilities of the employees that were (or you expect to be) replaced by AI tools." (Relates to Question 10.)

## ai_useful_budgeting

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **budgeting and forecasting** responsibilities. (Relates to Question 13)

## ai_useful_cashflow

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **cash flow management** responsibilities. (Relates to Question 13)

## ai_useful_cost_management

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **cost management** responsibilities. (Relates to Question 13)

## ai_useful_ext_reporting

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **external reporting (i.e. financial statements)** responsibilities. (Relates to Question 13)

## ai_useful_finance_plan

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **financial planning & decision-making** responsibilities. (Relates to Question 13)

## ai_useful_int_reporting

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **internal reporting (i.e. board reports)** responsibilities. (Relates to Question 13)

## ai_useful_inv_relations

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **partnership management or investor relations** responsibilities. (Relates to Question 13)

## ai_useful_marketing

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **marketing and product development** responsibilities. (Relates to Question 13)

## ai_useful_mergers

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **mergers and acquisitions** responsibilities. (Relates to Question 13)

## ai_useful_other

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **any other** responsibilities, please explain. (text values of the explanations available in `ai_useful_other_text`). (Relates to Question 13)

## ai_useful_other_other_text

*Description:* This variable contains the text response for respondent firm's who answered `ai_useful_other`. Responses are free-form text inputs (Relates to Question 13)

## ai_useful_payments

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **payment methods** responsibilities. (Relates to Question 13)

## ai_useful_performance_mgmt

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **performance management** responsibilities. (Relates to Question 13)

## ai_useful_prod_planning

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **production/serices operations planning** responsibilities. (Relates to Question 13)

## ai_useful_qual_control

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **quality control and inspection** responsibilities. (Relates to Question 13)

## ai_useful_risk_mgmt

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **risk management** responsibilities. (Relates to Question 13)

## ai_useful_sales

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **sales methods** responsibilities. (Relates to Question 13)

## ai_useful_supply_chain

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **supply chain management** responsibilities. (Relates to Question 13)

## ai_useful_supply_chain

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **supply chain management** responsibilities. (Relates to Question 13)

## ai_useful_tax

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **tax strategy** responsibilities. (Relates to Question 13)

## ai_useful_treasury_func

*Description:* This variable describes how helpful the respondent firm believes AI tools / solutions are in performing **treasury function** responsibilities. (Relates to Question 13)

## ai_why_* (family overview)

*Description:* This is a family of variables which measure the importance of various possible motivations behind respondent firm's expenditure/investment in AI technologies or solutions. Each variable is an ordinal importance rating; `ai_why_other_text` captures the free-text explanation for respondents who selected "Other". Values in the table below are the number of firms responding with a particular importance rating, and values in parentheses are shares. (Relates to Question 2)

## ai_why_customer_svc

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Reaching or serving customers more effectively"** (marketing, customer interaction, after-sales support) as a motivation for AI investment. (Relates to Question 2)

## ai_why_decision_making

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Enhancing decision-making and management"** (e.g., data analytics, forecasting, workflow optimization) as a motivation for AI investment. (Relates to Question 2)

## ai_why_dev_workforce

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Developing workforce skills / adapting labor"** (training, hiring, reorganizing teams for AI use) as a motivation for AI investment. (Relates to Question 2)

## ai_why_labor_prod

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Improving labor productivity"** (revenue or output per worker) as a motivation for AI investment. (Relates to Question 2)

## ai_why_other

*Description:* Member of the `ai_why_*` family (see overview above).Ordinal importance rating of whether there was a "other" reasong not captured by the other available options – provides text input space `ai_why_other_text`. (Relates to Question 2)

## ai_why_other_text

*Description:* Member of the `ai_why_*` family (see overview above). Free-text explanation entered by respondents who selected "Other" as a motivation for AI investment. (Relates to Question 2)

## ai_why_prod_effic

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Improving production efficiency"** as a motivation for the firm's investment in AI. (Relates to Question 2)

## ai_why_product_dev

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Developing or improving products/services"** (new or higher-quality offerings, personalization, faster R&D cycles) as a motivation for AI investment. (Relates to Question 2)

## ai_why_reduc_labor_costs

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Reducing labor costs"** as a motivation for AI investment. (Relates to Question 2)

## ai_why_reduc_nonlabor_costs

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Reducing non-labor costs"** as a motivation for AI investment. (Relates to Question 2)

## ai_why_upgrade_capital

*Description:* Member of the `ai_why_*` family (see overview above). Ordinal importance rating of **"Upgrading physical or digital capital"** (hardware, data infrastructure, cloud systems) as a motivation for AI investment. (Relates to Question 2)

## aiexp_last_* (family overview)

*Description:* This is a family of variables which describes what percent of a respondent firm's spending over the past 12 months on AI technologies/solutions is directed at hardware for AI (`aiexp_last_hardware`), developing or customizing internal AI systems (`aiexp_last_dev_internal`), operational expenses like AI subscriptions, services, and training (`aiexp_last_operation_exp`), or other (`aiexp_last_other` and `aiexp_last_other_text`). The four numeric shares are reported as percentages and sum to 100 across the four buckets for each respondent. (Relates to Question 19)

## aiexp_last_dev_internal

*Description:* Member of the `aiexp_last_*` family (see overview above). Percent of the respondent firm's spending over the past 12 months on AI technologies/solutions that was directed at **developing or customizing internal AI systems**. (Relates to Question 19)

## aiexp_last_hardware

*Description:* Member of the `aiexp_last_*` family (see overview above). Percent of the respondent firm's spending over the past 12 months on AI technologies/solutions that was directed at **hardware for AI** (e.g., semiconductors, information-processing equipment). (Relates to Question 19)

## aiexp_last_operation_exp

*Description:* Member of the `aiexp_last_*` family (see overview above). Percent of the respondent firm's spending over the past 12 months on AI technologies/solutions that was directed at **operational expenses for AI** (e.g., AI subscriptions, services, training). (Relates to Question 19)

## aiexp_last_other

*Description:* Member of the `aiexp_last_*` family. Percent of the firm's past-12-months AI-related spending directed at **other** categories not captured by hardware, internal development, or operational expenses. Used in `1. var_construction_v13.do` alongside the other three buckets in the line `gen total = aiexp_last_hardware + aiexp_last_dev_internal + aiexp_last_operation_exp + aiexp_last_other`. Free-text detail is in `aiexp_last_other_text`. (Relates to Question 19)

## aiexp_last_other_text

*Description:* Free-text description of the **other** AI-spending category for the past 12 months (companion to `aiexp_last_other`). Raw survey field with no transformation. (Relates to Question 19)

## aiexp_next_* (family overview)

*Description:* This is a family of variables which describes what percent of a respondent firm's spending over the next 12 months on AI technologies/solutions is directed at hardware for AI (`aiexp_next_hardware`), developing or customizing internal AI systems (`aiexp_next_dev_internal`), operational expenses like AI subscriptions, services, and training (`aiexp_next_operation_exp`), or other (`aiexp_next_other` and `aiexp_next_other_text`). The four numeric shares are reported as percentages and sum to 100 across the four buckets for each respondent. (Relates to Question 19)

## aiexp_next_dev_internal

*Description:* Member of the `aiexp_next_*` family (see overview above). Percent of the respondent firm's planned spending over the next 12 months on AI technologies/solutions to be directed at **developing or customizing internal AI systems**. (Relates to Question 19)

## aiexp_next_hardware

*Description:* Member of the `aiexp_next_*` family (see overview above). Percent of the respondent firm's planned spending over the next 12 months on AI technologies/solutions to be directed at **hardware for AI** (e.g., semiconductors, information-processing equipment). (Relates to Question 19)

## aiexp_next_operation_exp

*Description:* Member of the `aiexp_next_*` family (see overview above). Percent of the respondent firm's planned spending over the next 12 months on AI technologies/solutions to be directed at **operational expenses for AI** (e.g., AI subscriptions, services, training). (Relates to Question 19)

## aiexp_next_other

*Description:* Member of the `aiexp_next_*` family (see overview above). Percent of the respondent firm's planned spending over the next 12 months on AI technologies/solutions to be directed at **other categories** not captured by hardware, internal development, or operational expenses. Free-text detail is captured in `aiexp_next_other_text`. (Relates to Question 19)

## aiexp_next_other_text

*Description:* Free-text description of the **other** AI-spending category for the next 12 months (companion to `aiexp_next_other`). Raw survey field with no transformation. (Relates to Question 19.)

## alphaK_lit

*Description:* Capital-share parameter assigned by the firm's broad sector (`broadSectors`). Constructed in `1.var_construction_v13.do` with the following values: 0.40 if Mfg & Construction (`broadSectors` = 1); 0.20 if Low-Skill Service (= 2); 0.30 if High-Skill Service (= 3); 0.30 if Finance (= 4). Used as the PP&E weight in TFP measures (`ai_imp_tfp_lit`, `ai_imp_tfp2026_lit`).

## big

*Description:* Binary firm-size indicator: 0 = Small, 1 = Large. Firms with more than 500 employees are considered large (`big` = 1). Those with less than 500 employees are considered small (`big` = 0).

## broadSectors

*Description:* Coarse 4-group recode of the raw `sector` string into broad analytic buckets. Constructed in `1.var_construction_v13.do`: 1 = Mfg & Construction (Mining, Manufacturing, Construction), 2 = Low-Skill Service (Leisure, Retail/Wholesale Trade, Transportation, Other Services), 3 = High-Skill Service (Education, Healthcare, Information, Professional/Business Services, Real Estate), 4 = Finance and Insurance.

## capex_spending_lastyr

*Description:* This variable reflects the respondents 2024 capital expenditures (including structures).

## change_creative_2026

*Description:* The expected percentage point change from 2025 to 2026 in the share of a firm's employment engaged in creative or managerial tasks.

$$\texttt{change\_creative\_2026} = \texttt{pct\_creative\_2026} - \texttt{pct\_creative\_2025}$$

## change_creative_2028

*Description:* The expected percentage point change from 2025 to 2028 in the share of a firm's employment engaged in creative or managerial tasks.

$$\texttt{change\_creative\_2028} = \texttt{pct\_creative\_2028} - \texttt{pct\_creative\_2025}$$

## change_emp_2025

*Description:* The a respondent firm's percent change in employment in 2025.

$$\texttt{change\_emp\_2025} = 100 * \texttt{ai\_imp\_lastyr\_emp\_mid}$$

## change_emp_2026

*Description:* This variable describes a respondent firm's expected percent change in employment in 2026.

$$\texttt{change\_emp\_2026} = 100 * \texttt{ai\_imp\_nextyr\_emp\_mid}$$

## change_routine_2026

*Description:* The expected percentage point change from 2025 to 2026 in the share of a firm's number of total full-time employees engaged in routine/clerical roles or tasks.

$$\texttt{change\_routine\_2026} = \texttt{pct\_routine\_2026} - \texttt{pct\_routine\_2025}$$

## change_routine_2028

*Description:* The expected percentage point change from 2025 to 2028 in the share of a firm's number of total full-time employees engaged in routine/clerical roles or tasks.

$$\texttt{change\_routine\_2028} = \texttt{pct\_routine\_2028} - \texttt{pct\_routine\_2025}$$

## change_technical_2026

*Description:* The expected percentage point change from 2025 to 2026 in the share of a firm's employment engaged in skilled technical tasks.

$$\texttt{change\_technical\_2026} = \texttt{pct\_technical\_2026} - \texttt{pct\_technical\_2025}$$

## change_technical_2028

*Description:* The expected percentage point change from 2025 to 2028 in the share of a firm's employment engaged in skilled technical tasks.

$$\texttt{change\_technical\_2028} = \texttt{pct\_technical\_2028} - \texttt{pct\_technical\_2025}$$

## combined_weight_repr_emp

*Description:* Employment-representativeness weight, formed by multiplying the sector-by-size count weight (`wght_count_sector_size`) by the firm-level employment-proxy weight (`emp_weight`, which is `emp_ft_lastyr` winsorized at the 1st and 95th percentiles and filled with `emp_ft_curr` when missing). Constructed in `1. var_construction_v13.do`.

## combined_weight_repr_rev

*Description:* Revenue-representativeness weight, formed by multiplying the sector-by-size count weight (`wght_count_sector_size`) by the firm-level revenue-proxy weight (`revenue_weight`, which is `revenue_lastyr` winsorized at the 1st and 95th percentiles). Constructed in `1. var_construction_v13.do`.

## contactid

*Description:* Unique respondent identifier used as the key for merging the Q4-2025 CFO survey, the Q1-2026 follow-up (`CFO_q12026_AI.dta`), the MBA-RA replacement classifications, and the weights crosswalk. One row per firm.

## current_val_ppe

*Description:* This variable reflects the respondents 2024 current book value of PP&E and intangible assets.

## customer_type_id

*Description:* Numeric recode of the free-text `customertype` field, classifying who the firm primarily serves. Constructed in `1. var_construction_v13.do` by regex matching `customertype` against keyword patterns: 1 = Business, 2 = Consumer, 3 = Government.

## customertype

*Description:* Raw text customer-type response from the survey demographics (free-form strings such as "Businesses", "Consumers", "Government"). Originates from demographic survey. `customer_type_id` is constructed from this field via regex matching in `1. var_construction_v13.do` (`regexm(customertype,''Businesses'')` → 1, etc.).

## dem_sector02_15_TEXT

*Description:* Raw free-text response to the demographic sector-specification question. classification when industry sector falls outside the list provided.

## digitnaics

*Description:* Raw NAICS 2-digit string from the survey demographics (e.g., `''33''`, `''54''`, `''42''`). Used in `1. var_construction_v13.do` to fill missing or `OTHER SECTORS` values of `sector` via NAICS-to-sector mapping.

## emp_ft_curr

*Description:* This variable reflects the respondents number of domestic full-time employees at the present time

## emp_ft_lastyr

*Description:* This variable reflects the respondents number of domestic full-time employees at end of the last calendar year

## emp_ft_nextyr

*Description:* This variable reflects the respondents expected number of domestic full-time employees at end of next calendar year

## emp_weight

*Description:* Firm-level employment-proxy weight. Constructed in `1. var_construction_v13.do` as `gen emp_weight = emp_ft_lastyr`, then filled with `emp_ft_curr` for the ∼37 firms with 2025 but not 2024 employment, and finally winsorized at the 1st and 95th percentiles. Multiplied by `wght_count_sector_size` to form `combined_weight_repr_emp`.

## enhancement_status

*Description:* This variable indicates whether a firm's enhancement status is defined as no enhancement (by `no_enhancement` = 1), some enhancement (by `no_enhancement` = 0), or uncertain (by `uncertain_enhancement` = 1). (Relates to Question 11)

## exp_revenue_currentyr

*Description:* The respondent firm's expected year-over-year percent change in revenue calendar year 2025 (the current year as of the time of the survey).

## exp_revenue_nextyr

*Description:* The respondent firm's expected year-over-year percent change in revenue for calendar-year 2026 (the next year as of the time of the survey).

## input_costs_lastyr

*Description:* This variable reflects the respondents total input costs in 2024

## labor_costs_lastyr

*Description:* This variable reflects the respondents total labor costs in 2024

## large_firm

*Description:* Binary indicator for whether the firm has more than 500 full-time employees in the current year. Constructed in `1. var_construction_v13.do` as `large_firm` = 1 if `emp_ft_curr` > 500, else 0.

## lnK

*Description:* Natural log of the firm's book value of property, plant, and equipment. Constructed in `1. var_construction_v13.do` as ln(`current_val_ppe`).

## lnL

*Description:* Natural log of the firm's current full-time employment. Constructed in `1. var_construction_v13.do` as ln(`emp_ft_curr`).

## lnL_lastyr

*Description:* Natural log of the firm's full-time employment one year prior. Constructed in `1. var_construction_v13.do` as ln(`emp_ft_lastyr`).

## lnLP_rev

*Description:* Log of revenue per worker for 2025 (a labor productivity measure). Constructed in `1. var_construction_v13.do` as ln(`revenue_2025` / `emp_ft_curr`).

## lnLP_rev_2026

*Description:* Log of expected revenue per worker for 2026. Constructed in `1. var_construction_v13.do` as ln(`revenue_2026` / `emp_ft_nextyr`).

## lnLP_va

*Description:* Log of value-added per worker (a labor productivity measure). Constructed in `1. var_construction_v13.do` as ln(`VA` / `emp_ft_curr`).

## lnrevenue_2025

*Description:* Natural log of implied 2025 revenue. Constructed in `1. var_construction_v13.do` as ln(`revenue_2025`).

## lntfp1_rev

*Description:* Cobb–Douglas TFP residual using revenue. Constructed in `1. var_construction_v13.do` as `lntfp1_rev` = `lnrevenue_2025` $-\alpha$ `lnK` $-\beta$ `lnL`, where $\alpha$ and $\beta$ are the OLS coefficients from a Cobb-Douglas regression of `lnrevenue_2025` on `lnK` and `lnL` in this sample.

## lntfp1_va

*Description:* Cobb–Douglas TFP residual using value added. Constructed in `1. var_construction_v13.do` as `lntfp1_va` = `lnVA` $-\alpha$ `lnK` $-\beta$ `lnL`, where $\alpha$ and $\beta$ are the OLS coefficients from a Cobb-Douglas regression of `lnVA` on `lnK` and `lnL` in this sample.

## lnVA

*Description:* Natural log of value added. Constructed in `1. var_construction_v13.do` as ln(`VA`).

## logAI_invest_last_mid

*Description:* Log of one plus the past-12-month AI investment midpoint. Constructed in `1. var_construction_v13.do` as ln(`AI_invest_mid` + 1).

*Sensitivity note:* Midpoint values differ in the `_lowend` and `_upend` sensitivity datasets, where the lower or upper end of each reported range is used in place of the midpoint.

## logAI_invest_tot_mid

*Description:* Log of one plus the combined past + next 12 months AI investment midpoint. Constructed in `1. var_construction_v13.do` as ln(`AI_invest_mid` + `AI_invest_next_mid` + 1).

*Sensitivity note:* Midpoint values differ in the `_lowend` and `_upend` sensitivity datasets, where the lower or upper end of each reported range is used in place of the midpoint.

## no_enhancement

*Description:* This is a dummy variable which indicates whether the firm did not identify any enhancement based on the text response in `ai_complement_jobs_text`. (Relates to Question 11).

Phrases indicating no enhancement: NONE, N/A, NA, N?A, 0, ZERO, NONE AT THIS TIME, NONE AT THE CURRENT TIME, NOT AT ALL, NOTHING, LITTLE TO NONE, NO NEED AT THIS TIME, WE ARE NOT LOOKING AT IMPLEMENTING ANY AI TOOLS AT THIS POINT.

## no_replacement

*Description:* This is a dummy variable which indicates whether the firm did not identify any replacement based on the text response in `ai_replace_jobs_text`. (Relates to Question 10).

Phrases indicating no replacement: NONE, N/A, NA, N?A, 0, ZERO, NONE AT THIS TIME, NONE AT THE CURRENT TIME, NOT AT ALL, NOTHING, LITTLE TO NONE, WE DO NOT, WE DON'T, WEREN'T ANY, NONE OF OUR EMPLOYEES, WE ARE NOT REPLAC, WE ARE NOT USING AI, WE'RE NOT, I DON'T ANTICIPATE, I DON'T BELIEVE, I DON'T SEE, I DON'T THINK, WILL NOT REPLACE, WILL NOT BE REPLACED, WON'T BE REPLACED, DON'T EXPECT, DO NOT EXPECT, NOT EXPECTING, NOT APPLICABLE, NOT REPLACEMENT, NO REPLACEMENT, NO AI REPLACEMENT, NO ONE HAS BEEN, NO ONE WILL, NO EXPECTATIONS, NO EXPECTATION, DO NOT ANTICIPATE, NOT ANTICIPATE, NO ANTICIPAT, NO PLANS, NO CURRENT PLANS, NOT REPLACE, NO REPLAC, NOT HAVE, HAVE NOT, HAS NOT, NO EMPLOYEES, NO EMPLOYEE, NO WORKERS, NO JOBS, NO POSITIONS, NO ROLES, NO ROLE, NO ONE REPLACED, NON REPLACED, NO SIGNIFICANT, NO DISPLACEMENT, NO DIFFERENT, THERE

WILL BE NONE, NOT LOOKING TO REPLACE, NOT REALLY REPLAC, NO NEED AT THIS TIME, NOTHING IN THE SHORT TERM, NOT WASTING MONEY, NOT CHANGING MUCH, DON'T SEE IT CHANGING, UNLIKELY, NONE, 0, ZERO.

## pct_creative_2025

*Description:* The percent of the respondent firm's total full-time employees at the end of 2025 that perform "creative/managerial" tasks or roles, with examples being "design", "strategy", and "leadership". (Relates to Question 12)

## pct_creative_2026

*Description:* The respondent firm's expectation for the percent of total full-time employees at the end of 2026 that perform "creative/managerial" tasks or roles, with examples being "design", "strategy", and "leadership". (Relates to Question 12)

## pct_creative_2028

*Description:* The respondent firm's expectation for the percent of total full-time employees at the end of 2028 that perform "creative/managerial" tasks or roles, with examples being "design", "strategy", and "leadership". (Relates to Question 12)

## pct_other_2025

*Description:* The percent of the respondent firm's total full-time employees at the end of 2025 whose tasks/roles fall into categories other than "routine/clerical", "skilled technical". or "creative/managerial". (Relates to Question 12)

## pct_routine_2025

*Description:* The percent of the respondent firm's total full-time employees at the end of 2025 that perform "routine / clerical" tasks or roles, with examples being "data entry" and "accounting". (Question 12)

## pct_routine_2026

*Description:* The respondent firm's expectation for the percent of the total full-time employees at the end of 2026 that will perform "routine / clerical" tasks or roles, with examples being "data entry" and "accounting". (Relates to Question 12)

## pct_routine_2028

*Description:* The respondent firm's expectation for the percent of the total full-time employees at the end of 2028 that will perform "routine / clerical" tasks or roles, with examples being "data entry" and "accounting". (Relates to Question 12)

## pct_technical_2025

*Description:* The percent of the respondent firm's total full-time employees at the end of 2025 that perform "skilled technical" tasks or roles, with examples being "engineering", "data analysts / scientists". (Relates to Question 12)

## pct_technical_2026

*Description:* The respondent firm's expectation for the percent of total full-time employees at the end of 2028 that will perform "skilled technical" tasks or roles with examples being "engineering", "data analysts / scientists".. (Relates to Question 12)

## pct_technical_2028

*Description:* The respondent firm's expectation for the percent of total full-time employees at the end of 2028 that will perform "skilled technical" tasks or roles, with examples being "engineering" and "data analysts / scientists".. (Relates to Question 12)

## replacement_status

*Description:* This variable indicates whether a firm's replacement status is defined as no replacement (by `no_replacement` = 1), some replacement (by `no_replacement` = 0), or uncertain (by `uncertain_replacement` = 1). (Relates to Question 10)

## revenue_2025

*Description:* Implied 2025 revenue (USD), constructed in `1. var_construction_v13.do` by scaling reported 2024 revenue by the firm's own expectation for current-year revenue growth: `revenue_2025` = (1+`exp_revenue_currentyr`/100)× `revenue_lastyr`.

## revenue_2026

*Description:* Implied 2026 revenue (USD), constructed in `1. var_construction_v13.do` by scaling the implied 2025 revenue by the firm's own expectation for next-year revenue growth: `revenue_2026` = (1+`exp_revenue_nextyr`/100)× `revenue_2025`.

## revenue_lastyr

*Description:* This variable reflects the respondents total revenue in 2024

## revenue_weight

*Description:* Firm-level revenue-proxy weight. Constructed in `1. var_construction_v13.do` as `gen revenue_weight = revenue_lastyr` and then winsorized at the 1st and 95th percentiles (`winsor2 revenue_weight emp_weight, cut(1 95) replace`). Multiplied by `wght_count_sector_size` to form `combined_weight_repr_rev`.

## sector

*Description:* Cleaned industry-sector string for the firm. Constructed in `1. var_construction_v13.do` by normalizing the raw `sector` survey field and filling missing or "OTHER SECTORS" values from `digitnaics` (NAICS 2-digit code, with explicit mappings such as 33 → MANUFACTURING, 54 → PROFESSIONAL AND BUSINESS SERVICES, 81 → OTHER SERVICES EXCEPT GOVERNMENT, 92, 72, 61, 51, 56, 42). Coarser groupings are available in `broadSectors` and a numeric encoding in `sector_id`.

## sector_id

*Description:* Integer encoding of the cleaned `sector` string, produced by `encode sector, gen(sector_id)` in `1. var_construction_v13.do`. Provides a numeric sector key for regressions and merges.

## source

*Description:* Indicator for the survey sample the respondent came from. Confirmed values in the dataset: `CFO`, `Duke`, `FEI`, `NASDAQ`. Used as a fixed effect / dummy in some regressions.

## uncertain_enhancement

*Description:* This is a dummy variable which indicates whether the firms text response in `ai_complement_jobs_text` contains words or phrases indicating that the firm is uncertain regarding the impact on enhancement. (Relates to Question 11).

Phrases indicating uncertain enhancement: UNSURE, UNCERTAIN, UNKNOWN, NOT SURE, DON'T KNOW, DO NOT KNOW, TBD, TO BE DETERMINED, YET TO BE, STILL DETERMINING, STILL EVALUATING, TOO EARLY, TOO SOON, UNCLEAR, NOT CLEAR, NOTHING IDENTIFIED YET, NOT IDENTIFIED, MAY BE ABLE, EARLY PHASES.

## uncertain_replacement

*Description:* This is a dummy variable which indicates whether the firms text response in `ai_replace_jobs_text` contains words or phrases indicating that the firm is uncertain regarding the impact on replacement. (Relates to Question 10).

Phrases indicating uncertain replacement: UNSURE, UNCERTAIN, UNKNOWN, NOT SURE, DON'T KNOW, DO NOT KNOW, TBD, TO BE DETERMINED, YET TO BE, STILL DETERMINING, STILL EVALUATING, TOO EARLY, TOO SOON, UNCLEAR, NOT CLEAR, NOTHING IDENTIFIED YET, NOT IDENTIFIED, MAY BE ABLE, AT THIS POINT, AT THIS TIME, EARLY PHASES, EARLY STAGE.

# VA

*Description:* Implied 2025 value added (USD), constructed in `1. var_construction_v13.do` as `VA` = `revenue_2025` − `input_costs_lastyr`.

## wght_count_sector_size

*Description:* This is a representative weight variable weighting sectors within the survey to be representative to their population.

# A Survey Questions on Artificial Intelligence

*Answer options are in italic, separated by a semicolon.*

1. Artificial intelligence (AI) refers to the broad field of machines capable of replicating human behavior and intelligence.

   Over the last 12 months, has your firm made any expenditures or financial investments in AI technology or solutions?

   This includes:

   - AI applications (e.g., large language models, machine learning, speech/voice recognition, data/text analytics, virtual agents/chatbots, visual content creation, robotics, mechanization, etc.)
   - Infrastructure to support these applications - including equipment (e.g., semiconductors and information processing equipment), structures (e.g., data centers or power production), and intellectual property (e.g., spending on model R&D and software).

   *Yes; No; Not Sure*

2. (If "Yes" to 1) Please rate the importance of the following possible motivations behind your firm's expenditure/investment in AI:

   - Improving production efficiency
     - e.g., improving speed of processes, automating or optimizing internal processes, logistics, or maintenance
   - Improving Labor Productivity
     - Increasing revenue per worker or output per worker
   - Reducing Labor Costs
   - Reducing non-labor costs
   - Enhancing Decision-making and Management
     - e.g., data analytics, forecasting, workflow/HR optimization
   - Developing or Improving Products/Services
     - e.g., new or higher-quality offerings, personalization, testing, faster R&D cycles
   - Reaching or Serving Customers More Effectively
     - e.g., marketing, customer interaction, after-sales support
   - Upgrading Physical or Digital Capital
     - e.g., investments in hardware, data infrastructure, or cloud systems
   - Developing Workforce Skills/Adapting Labor
     - e.g., training, hiring, or reorganizing teams for AI use
   - Other (Please Specify)

   *Not at all important; Slightly important; Moderately important; Very important; Extremely important*

3. (If "Yes" to 1) What was your company's total expenditure and financial investment in AI technology/solutions over the last 12 months?

   *$0; $1-$5,000; $5,001-$20,000; $20,001-$50,000; $50,001-$100,000; $100,001-$500,000; $500,001-$1 million; $1 million - 5 million; Over $5 million; Prefer not to say*

4. (If "Over $5 million " in 3) Roughly, what was your company's total expenditure and financial investment in AI technology/solutions over the last 12 months? *(estimates are acceptable)*

5. (If "No" to 1) Why did you firm not make any expenditures or financial investments in AI technology or solutions over the last 12 months? *(Please select all that apply)*

   *Too expensive; AI is not a mature enough technology yet; Lack of knowledge on the capabilities of AI; Concerns about privacy/security; Concerns about bias; Our workers are not yet adequately trained on AI; Lack of required data; Laws or regulations prevent or restrict use of AI; Previous or current use of AI did not meet expectations; AI is not applicable to this business; Other (Please explain)*

6. What do you expect your company's total expenditure and financial investment in AI technology/solutions will be over the next 12 months?

   *$0; $1-$5,000; $5,001-$20,000; $20,001-$50,000; $50,001-$100,000; $100,001-$500,000; $500,001-$1 million; $1 million - 5 million; Over $5 million; Prefer not to say*

7. (If "Over $5 million " in 6) Roughly, what do you expect your company's total expenditure and financial investment in AI technology/solutions will be over the next 12 months? *(Estimates are acceptable)*

8. Over the last 12 months, how has your firm's use of AI affected the following outcomes for your firm?

   - Labor Productivity (output per worker)
   - Total employment
   - Book value of PP&E and intangible assets (e.g. software)
   - Operating costs (exuding labor)
   - Labor costs per worker
   - Revenue or sales
   - Revenue from new products
   - Decision-making speed or accuracy
   - Customer satisfaction or retention
   - Time spent on high value-add tasks
   - Other

   *Increased significantly (more than 10%); Increased moderately (5.1 to 10%); Increased somewhat (1 to 5%); Little to no change; Decreased somewhat (-1 to -5%); Decreased moderately (-5.1 to -10%); Decreased significantly (more than 10%); Unsure/Not Applicable*

9. Over the next 12 months, how do you expect your firm's use of AI to affect the following outcomes for your firm?

   - Labor Productivity (output per worker)
   - Total employment
   - Book value of PP&E and intangible assets (e.g. software)
   - Operating costs (exuding labor)
   - Labor costs per worker
   - Revenue or sales
   - Revenue from new products
   - Decision-making speed or accuracy
   - Customer satisfaction or retention
   - Time spent on high value-add tasks
   - Other

   *Increased significantly (more than 10%); Increased moderately (5.1 to 10%); Increased somewhat (1 to 5%); Little to no change; Decreased somewhat (-1 to -5%); Decreased moderately (-5.1 to -10%); Decreased significantly (more than 10%); Unsure/Not Applicable*

10. The questions on this screen pertain to AI tools and your workforce. Please describe the roles/responsibilities of the employees that were (or you expect to be) replaced by AI tools. *[Open-ended response.]*

11. Please describe the roles/responsibilities of employees whose roles were (or you expect to be ) complemented or enhanced by A
    *[Open-ended response.]*

12. Please provide the percent of your firm's total full-time employees that fall into each of the below categories. Please also provide your expectations for the percent of your total headcount that will fall into these categories 12 and 36 months from now. *(Results for each column should sum to 100%)*

- Routine/clerical (e.g. data entry, accounting)
- Skilled Technical (e.g. engineers, data analysts/scientists)
- Creative/managerial (e.g. design/strategy/leadership)
- All other

*Current; 12 Months from Now; 36 Months from Now*

13. How helpful are AI tools or solutions in performing the following responsibilities?

    - Budgeting and forecasting
    - Cash flow management
    - Cost management
    - Financial planning & decision-making
    - External reporting (e.g. financial statements)
    - Internal reporting (e.g. board reports)
    - Marketing and product development
    - Mergers and acquisitions
    - Partnership management or investor relations
    - Payment methods
    - Performance management
    - Production/services operations planning
    - Quality control and inspection
    - Risk management
    - Sales methods
    - Supply chain management
    - Tax strategy
    - Treasury functions
    - Other (Please describe)

    *Very helpful; Moderately helpful; Not helpful; Unsure; Not Applicable/Do Not Know*

14. Please provide specific examples of AI usage or initiatives that provide value for your firm. *[Open-ended response.]*

15. Roughly, how much did your firm spend on capital expenditures (including structures, land, equipment, software, and AI investment) over the last 12 months? *(Estimates are acceptable)*

16. Roughly, what is your company's current book value of PP&E and intangible assets (e.g. software)? *(Estimates are acceptable)*

17. Roughly, what was your firm's total labor costs (including wages, salaries, and benefits) over the last 12 months? *(Estimates are acceptable)*

18. Roughly, what were your firm's costs for intermediate inputs (COGS + materials/energy/hired professional services) over the last 12 months? *(Estimates are acceptable)*

19. Please indicate what percent of your firm's spending on AI technology/solutions over the next 12 months was allocated to each of the below categories. *(Results should sum to %100)*

    - Hardware for AI (e.g. servers/GPUs, devices)
    - Developing or customizing internal AI systems
    - Operational expenses: AI subscriptions, services, and training (cloud-based tools, software fees, consultants, employee training, data prep)
    - Other (Please explain)