

Profit per employee

A deeper point-in-time backtest and falsification study

NO STOCK SCREEN

High profit per employee did not reliably predict higher future returns. The cleanest broad historical sample was small and old, the controlled relationship leaned negative, and the required temporal, coverage and survivorship gates failed.

Broad rank rho	High minus low	Controlled	Unseen audit
+0.037 p = 0.564	-8.5% p = 0.470	-0.058 p = 0.063	98.3% 177 / 180

Two independent views

Study	N	Rank rho	High-low	Controlled	Decision
v2 S&P-oriented 2010-2025	3,025	-0.054 p=.003	-4.2%	-0.016 p=.627	No screen
v3 broad 2010-2016	249	+0.037 p=.564	-8.5%	-0.058 p=.063	No screen

Interpretation

The raw sign changed across samples, but neither study established a positive incremental employee-denominator effect. In v2, the inverse raw relationship disappeared in the controlled model. In v3, no primary test survived multiplicity correction and the untouched CIK-bucket holdout was non-significant.

Power boundary

The v3 sample could detect only relatively large correlations (80% MDE about 0.177). The correct conclusion is not 'zero forever'; it is 'not demonstrated, and not screen-ready'.

Was the information visible before price?

The tested annual data do not establish a tradable early-information window.

Window	rho	raw p	event q	N
1d	+0.124	0.028	0.385	314
2d	+0.064	0.259	0.473	314
5d	+0.049	0.390	0.473	314
21d	+0.051	0.366	0.473	314
63d	+0.091	0.109	0.473	311
126d	+0.074	0.199	0.473	305
252d	+0.005	0.935	0.935	253

The one-day result is not a clean surprise

The one-day rank correlation was +0.124 with nominal $p = 0.028$. Its high-minus-low spread was only +0.6% with $p = 0.547$, and the correlation's event-family q -value was 0.385. No event window survived multiplicity adjustment.

96.2%

302 of 314 exact-clock event rows had a prior Item 2.02 earnings 8-K within 120 days. Profit was generally already public before the annual filing.

Why quarterly reconstruction is not available

Most companies disclose a comparable company-wide employee total annually, not quarterly. Quarterly net income divided by a stale or unavailable annual workforce count would add uncontrolled timing error. The tested signal is therefore annual.

What the event study can support

It supports exact 10-K timing, not causal attribution. A 10-K bundles workforce, risks, accounting, guidance-related context and other information. Without issuer-level novelty adjudication, a price move cannot be assigned specifically to profit per employee.

Why the preregistered screen is blocked

Gate	Status	Evidence
Point-in-time timing	PASS	249 exact-timing complete outcomes
2,000 company-years	FAIL	249 versus 2,000 required
300 issuers	FAIL	75 versus 300 required
10 years	FAIL	7 versus 10 required
25 observations per year	FAIL	minimum 3 versus 25 required
80% identity/price coverage	FAIL	23.3% versus 80% required
40% workforce coverage	FAIL	18.5% versus 40% required
50% removed/inactive coverage	FAIL	26.2% versus 50% required
Manual workforce audit	PASS	98.3%; all 8 true traps rejected
Measurement perturbation	PASS	100.0% sign stability
Holm primary evidence	FAIL	no primary test passed correction
2018-2022 temporal confirmation	FAIL	unavailable; price source ends 2017
2023-2025 temporal confirmation	FAIL	unavailable; price source ends 2017
Cross-sectional confirmation	FAIL	n=75; raw rho +0.115, p=0.326
Survivorship bounds	FAIL	-38.7% to +24.1%; crosses zero
Independent implementation	PASS	primary ranks and spread matched

Research decision

No ticker list is produced. A screen required every gate to pass; 12 failed. The most important failures were sample scale, temporal confirmation, corrected primary evidence, removed/inactive coverage and survivorship bounds crossing zero.

What a credible v4 would require

A licensed or otherwise verified security-master and total-return source through 2025, explicit delisting returns, manual or issuer-structured workforce data for at least 40% of eligible filings, at least 2,000 company-years across 300 issuers, and the same frozen 2018-2025 confirmation design. It should test annual employee disclosure against prior earnings-release information, not treat the 10-K as a clean surprise.

Core sources: SEC EDGAR data access and official filing documents; SEC Regulation S-K human-capital disclosure guidance; fixed historical price mirror at GitHub commit 8c717d3e937d247f7c64918880b7e2cf49df280a. Full links, data, frozen plan and change ledger are in the accompanying explorer package.