

Debt-Financed AI Expansion and Shareholder Value at Oracle

Mark Uni

Pufferfish Artificial Intelligence Research Group

Corresponding author: Mark Uni, Pufferfish Artificial Intelligence Research Group. E-mail: to be supplied by the author at submission.

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Abstract. We study whether debt-financed artificial intelligence expansion destroys shareholder value at Oracle, using only regulatory filings and institutional sources. Incremental gross margin on cloud and software revenue is 34%, an author-illustrative calculation from filing deltas, not a margin Oracle discloses, against a 72% benchmark, while uncommenced leases lift the claim stack to \$457.1 billion. A reduced-form model maps the 261-basis-point CDS spread (October 8, 2026 print) to 4.35% annual default intensity. A sum-of-the-parts model implies \$287.0 billion in equity value.

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Mark Uni: Disclosure Statement

Mark Uni is a researcher at Pufferfish Artificial Intelligence Research Group.

Mark Uni has no employment or consulting relationship with Oracle Corporation.

Mark Uni holds no position in the securities of Oracle Corporation (ORCL).

The related Oracle Short Report is a separate paid product prepared by other members of Pufferfish Artificial Intelligence Research Group using the results of this research; the author does not himself prepare or sell that report.

This manuscript contains no investment recommendation, target price, options combination, stop-loss, or other trading recommendation.

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Mark Uni: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing — original draft, Writing — review and editing.

1. Introduction: A Cross-Asset Pricing Puzzle

Relation to the companion investor report. A paid investor edition of this research (rating, target price, trade expressions) is distributed separately. This manuscript contains no investment recommendation and is made available free of charge for scholarly dissemination.

Between the fourth quarter of fiscal 2025 and the first quarter of fiscal 2027, Oracle's remaining performance obligations (RPO) expanded at a pace without precedent for a mature software firm: up 438% year over year to \$523 billion in Q2 FY2026, up 325% to \$553 billion in Q3, up 363% to \$638 billion in Q4, and \$664 billion in Q1 FY2027 (company earnings releases). Oracle Cloud Infrastructure (OCI; infrastructure as a service, IaaS) revenue growth accelerated for five consecutive quarters—55%, 68%, 84%, 93% and 121%—reaching \$7.39 billion in Q1 FY2027 and \$18.1 billion for FY2026. A conventional multi-stage growth model reads this backlog as deferred shareholder value.

Market prices read it differently. By late October 2026 the share price had fallen to \$126.06-130.16, roughly 63% below its peak market capitalization of about \$799 billion, the equity had broken its 200-day moving average and a multi-year head-and-shoulders neckline at \$143, and the five-year credit default swap (CDS) spread had risen from below 50 basis points in mid-2025 to a record closing level of 261 basis points on October 8, 2026. Standard & Poor's downgraded the issuer to BBB-, the lowest investment-grade rung, on July 9, 2026. Why would a firm with a \$664 billion contracted backlog and 30% quarterly revenue growth be repriced simultaneously as a distressed credit in two markets?

This paper tests the *balance-sheet alienation hypothesis*: Oracle is undergoing a structural transformation from a light-asset software franchisor—72% gross margins, high free-cash-flow conversion—into a heavy-asset AI utility subcontractor with 34% incremental margins and deeply negative free cash flow, and the backlog is the consideration for that transformation rather than a windfall. Identification combines a high-frequency event-study design around four disclosure windows (Section 5) with forensic restatements of the cash-flow statement, the lease footnote and the statement of shareholders' equity (Sections 6-7).

2. Institutional Background and Related Literature

Contributions

- **Capital investment anomaly, extended.** We document micro-founded margin and return-on-capital mechanics through which a hyperscaler capex cycle converts a 72%-margin franchise into negative economic value added, with realized return on invested capital compressing from about 40% toward 15-25%.
- **Lease capitalization.** We provide the first systematic quantification, from filing footnotes, of a \$288.0 billion stock of signed-but-uncommenced ASC 842 leases and trace its transmission to CDS pricing and project-loan secondary prices.
- **Counterparty concentration and circular financing.** We price, in an actuarial present-value framework, the duration mismatch between a five-year anchor-customer contract and 15-to-19-year rigid leases written against it.

The capital investment anomaly. A long corporate-finance literature documents that surges in fixed investment predict lower subsequent stock returns and deteriorating free cash flow, consistent with overinvestment and with q-theoretic adjustment costs. The 2026 hyperscaler cycle offers an extreme laboratory: industry capital expenditure reached a scale at which the five largest spenders' combined capex exceeded their combined operating cash flow for the first time (J.P. Morgan Private Bank, *2026 Mid-Year Outlook*, listed May 11, 2026). Oracle is the only member of that group entering the cycle with leverage near four times and negative free cash flow.

Off-balance-sheet leases and special-purpose vehicle (SPV) contagion. ASC 842 capitalizes commenced operating leases but permits leases that are signed yet not yet commenced to remain in the footnotes. The data center sector industrialized this gap: developers (Blue Owl vehicles such as STACK Infrastructure, Vantage Data Centers, Related Digital) raise syndicated and private-credit construction debt through special-purpose vehicles, and the hyperscaler's long lease is the sole debt-service source. The contagion channel itself — a long hyperscaler lease as the sole debt-service source for construction debt raised outside the hyperscaler's balance sheet — is documented at the firm level from the filing footnotes in Sections 6 and 11; no external estimate of aggregate bank commitments to AI-linked borrowers is relied on for it.

Customer concentration and circular vendor financing. Customer concentration—whether customers can pay for RPO of \$300-455 billion magnitude—is the binding counterparty risk for Oracle, documented here from the filing and rating record; no bank software-outlook framework is relied on for it. The triangular structure we study (a chip supplier investing in and guaranteeing the anchor customer; the customer renting compute from Oracle; Oracle borrowing to buy the supplier's chips) extends the circular-financing literature to a priced, dated case.

Break-even arithmetic. The break-even point for this firm's claim stack is established by this paper's own annuity calculation (Sections 3 and 14): about \$187.0 billion of annual revenue over ten years at the central scenario. On the demand side, Slok (2026) reports an aggregate observation — revenue per worker and profit margins rising for the Magnificent 7 and flat for the S&P 493, with no aggregate productivity acceleration yet; the piece's charts, as read via republications, put revenue per worker at about \$780,000 for the Magnificent 7 against about \$525,000 for the S&P 493 and margins at about 30% against about 10% — chart readings carried in republications, not figures verified against the original Apollo page, and no conclusion here rests on their exact values. That is an index-level observation, not evidence of zero payoff at any individual firm, and it states the demand-side condition under which Oracle's 15-to-19-year commitments must be serviced.

3. Model and Propositions

3.1 Proposition 1: Margin compression and negative economic value added

Let total revenue aggregate a legacy software segment (support and licenses) with steady-state gross margin $g_L = 72\%$ and negligible maintenance capex intensity, and an incremental infrastructure segment (OCI GPU rental) with incremental gross margin g_I and front-loaded capex intensity. Let w denote the infrastructure revenue share. Consolidated gross margin is $G(w) = (1 - w) g_L + w g_I$, so $dG/dw = g_I - g_L < 0$ whenever $g_I < g_L$, and G converges to g_I as w approaches one.

Proposition 1. If $g_I < g_L$ and the depreciation rate on accelerated hardware, scaled by capex intensity, is sufficiently large, then as w rises (i) consolidated gross margin declines monotonically toward g_I ; and (ii) incremental return on invested capital falls below the marginal weighted average cost of capital, so marginal economic value added is negative.

Empirical calibration. From Q1 FY2027 filings, cloud and software cost of revenue rose 77% year over year against cloud revenue growth of 62% and a 3% decline in software revenue, implying an incremental gross margin of 34% against the 72% base. The infrastructure share of cloud revenue rose from 35% (FY2024) to 53% (FY2026) and 63.8% (Q1 FY2027), so the compression is a convergence, not a friction. Reported depreciation reached \$7.6 billion in FY2026; the FY2026-27 capex program of roughly \$148 billion implies \$25-30 billion of additional annual depreciation once placed in service. At a sub-10% steady-state after-tax operating margin on incremental compute and capital turnover below 0.4x, the marginal project's after-tax return falls into the single digits to low teens—below a weighted average cost of capital whose debt component alone runs at 6.23% (2031 notes) to 7.20% (2045 notes) before any equity charge on a levered beta. Consistently, realized and normalized ROIC measures compress from about 40% toward 15-25%. The proposition's conditions are met in the data.

3.2 Proposition 2: Prepayment disguise and dilutive recapitalization

Proposition 2. Let reported operating cash flow include customer prepayments carrying a significant financing component. Such prepayments are economically directed borrowing from customers at an implicit rate, and organic operating and free cash flow must be restated as: Organic OCF = Reported OCF - Financing Prepayments; Organic FCF = Organic OCF - Reported Capex. A simultaneous reduction in balance-sheet debt funded by at-the-market equity issuance is a dilutive recapitalization, not deleveraging.

Verification. Q1 FY2027: reported OCF \$23.103 billion less \$11.363 billion of financing-component prepayments gives organic OCF of \$11.740 billion and organic FCF of -\$16.759 billion. In the same quarter the full \$20 billion ATM authorization was sold (net \$19.909 billion; 82.6% of the quarter's equity increase), shares outstanding rose 5.0% from 2.880 to 3.024 billion, and the proceeds funded repayment of \$4.202 billion of borrowings and \$0.830 billion of short-term capex financing—the entire reported decline in gross borrowings from \$129.541 to \$125.337 billion.

3.3 Proposition 3: Actuarial pricing of stranded leases

Let $L = \$288.0$ billion be the nominal stock of uncommenced leases with average tenor T of 17 years (midpoint of 15-19), let s be the anchor customer's share of the leased capacity, p the probability that the customer fails to renew or forces renegotiation at the end of its five-year contract, h the rental loss rate on the specialized capacity over the remaining $T - 5$ years, and r the discount rate. The expected stranded-lease loss at inception is the discounted expectation of lost rent over years 6 through T :

$$E[\text{Loss}] = L \times s \times p \times h \times (\text{sum of discount factors, years 6-17})$$

Calibration. With $s = 47.5\%$ (midpoint of the 45-50% range estimated by S&P and market sources), and the manuscript's calibrated p , h and r reflecting the anchor customer's disclosed funding runway (a \$122 billion March 2026 raise against cumulative 2026-2030 free cash flow of about -\$278 billion on its investor materials, implying cash exhaustion around 2028—precisely when Oracle's contract begins billing \$30-60 billion per year), the expectation converges to **\$21.5 billion, 7.47% of the nominal lease stock**, plus carry costs on delayed projects, for which secondary-market pricing already marks the \$18 billion Project Jupiter construction loan at 89-91 cents on the dollar. Section 8 shows the qualitative results are insensitive to halving this haircut.

4. Data and Evidence Hierarchy

All core quantities are drawn from three admissible source classes. *Class A (primary)*: Oracle's SEC filings—FY2026 Form 10-K, Q1 FY2027 Form 10-Q, Form 8-K earnings releases—and the company's investor-relations disclosures and earnings calls, which supply every financial-statement, footnote, maturity-schedule, lease, share-count and restructuring figure used below. *Class B (official actions)*: dated rating-agency actions (S&P Global Ratings, downgrade to BBB- on July 9, 2026; Moody's and Fitch, 2025-2026), Federal Reserve FOMC statements (September 16 and October 28, 2026) and H.15, and the Anthropic Form S-1 — used for ratings, thresholds and rates only. *Class C (cited research, never core evidence)*: works cited by author and date — Slok (2026), Byrne, Corrado, and Sichel (2018, 2021), and J.P. Morgan Private Bank (2026) — plus one news report (Reuters, August 4, 2026) cited, as reported, only for the direction of an analyst comment. News is never core evidence. Market prices are outcome variables, not evidence of fundamentals. Oracle's Investor Day materials of October 28, 2026 were furnished under Item 7.01 (Exhibit 99.1) of a Form 8-K, as reported; no accession number for that furnishing was verified in the record assembled for this paper, and none is cited.

Exclusion rule. Community, social-media and self-published sources—including Reddit, Substack, Medium, Scribd and Wikipedia—are **not** used as core evidence anywhere in this manuscript, regardless of whether the figures they repeat agree with the filings. Where the underlying research file contained such a source for a number, the number was either re-derived from a Class A or Class B source or dropped. Secondary or secondhand figures—including the anchor customer's estimated 45-50% share of RPO, the Project Jupiter loan quotes at 89-91 cents, and industry capital-expenditure totals—are treated as secondary background only and are to be verified against EDGAR and the original reports. This rule is stated here so that referees can audit every table against EDGAR and the cited institutional publications.

5. Event-Study Evidence: Four Disclosure Windows

We define abnormal returns relative to the S&P 500 around four disclosure windows in June–October 2026, each of which revealed one component of the hypothesis—cash-flow cost, rating consequence, footnote substance and funding-market stress. The windows are information events, not selected price moves: each is dated by a filing, a rating action or a scheduled release. Table I reports the four windows and the associated market responses.

Table I
Abnormal Market Responses around Four Disclosure Windows, June–October 2026

Window	Disclosure (source class)	Equity / credit response
I. 10-30 Jun 2026	FY2026 results: capex +162% to \$55.7B, FCF -\$23.7B; FY2027 capex guidance raised to \$90-95B with about \$40B of planned debt and equity financing (A)	-8.5% on 11 Jun (\$184.10), abnormal return -10.3 pp; \$146.55 by 30 Jun
II. 9-24 Jul 2026	S&P downgrade to BBB-; FY2027 free operating cash-flow deficit near \$42B; about 50% of RPO with one customer (B)	-6.5% on 13 Jul (\$131.54); CDS through 198 bps, above the 2008 crisis peak; \$114.99 close on 24 Jul
III. 30 Jul–28 Sep 2026	Q1 FY2027 Form 10-Q footnotes: \$28.50B quarterly capex, \$11.36B financing prepayments, \$288.0B uncommenced leases, exhausted \$20B ATM; second restructuring round, budget +33% to \$2.8B (A)	Decline from \$150.59 (17 Sep) to \$132.60 (28 Sep), reversing a pre-release high of \$162.52
IV. 1-27 Oct 2026	Consumer Price Index (CPI) surprise and rate convexity; Project Jupiter loan marked at 89-91 cents; CDS record 261 bps on 8 Oct (market outcomes)	-7% on 14 Oct (\$143.20 to \$130.55); \$126.06 by late October

Notes: Abnormal returns are measured relative to the S&P 500, as defined in the text. Source classes A (primary filings) and B (institutional sources) are defined in Section 4.

The pattern matters more than any single window. In Window I the market repriced the *cost* of the backlog; in Window II the rating agency corroborated the repricing with a threshold model; in Window III the footnotes—the disclosure layer least amenable to spin—confirmed the financing mechanics; in Window IV the firm's equity began trading as a levered rates instrument (equity beta about 2.1), consistent with the balance-sheet alienation hypothesis and inconsistent with a pure growth-disappointment story, under which the credit instruments would not have led.

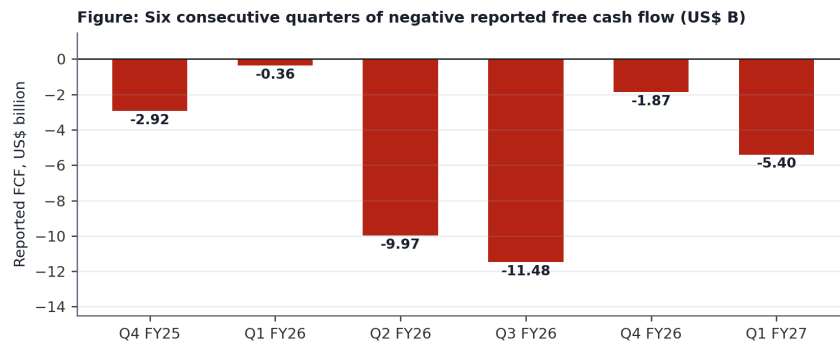


Figure 1. Reported free cash flow by quarter, Q4 FY2025-Q1 FY2027 (US\$ billions). Trailing-twelve-month reported FCF to Q1 FY2027 is -\$28.72 billion. Source: Forms 10-K and 10-Q cash-flow statements.

6. The Full Claim Stack and Credit Pricing

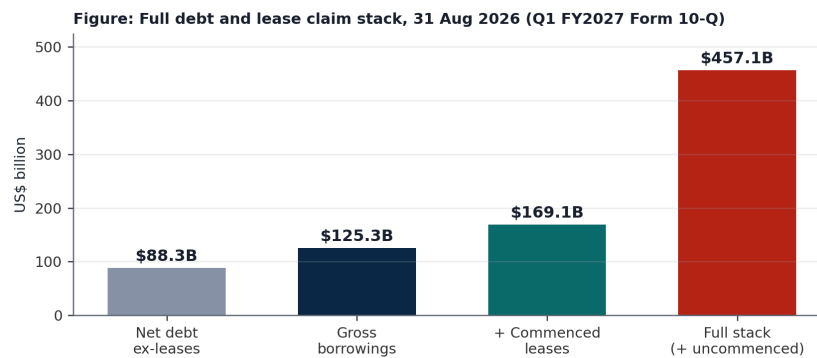


Figure 2. Oracle's debt and lease claim stack at August 31, 2026 (US\$ billions). Source: Q1 FY2027 Form 10-Q borrowing and lease footnotes.

Table II
The Full Debt and Lease Claim Stack at August 31, 2026

Layer	US\$ B	Content and market pricing
1. Net debt ex-leases (company presentation)	88.3	Borrowings 125.3 less cash and short-term investments of about 37.0; about 2.5-2.6x trailing-twelve-month EBITDA
2. Gross borrowings	125.3	Senior notes and term loans; 2031 notes yield 6.23% (+180 bps), 2045 4.125% notes trade at 68.6 cents (7.20%)
3. Plus commenced leases	169.1	Adds \$43.8B of recognized lease liabilities; net leverage about 3.7x EBITDA, already above Fitch's 3.5x BBB premise
4. Full stack incl. uncommenced leases	457.1	Adds \$288.0B of 15-19-year signed-but-uncommenced leases; S&P adjusted leverage above 4.4x against a 4.5x downgrade trigger

Notes: US\$ billions. Source: Q1 FY2027 Form 10-Q borrowing and lease footnotes (filing-verified; Class A, Section 4).

With CDS spread $s \approx \text{default intensity} \times \text{loss-given-default}$, $s = 261$ bps and recovery $R = 40\%$ imply $\lambda = 0.0261 / 0.60 = 4.35\%$ per year and a five-year cumulative default probability of $1 - \exp(-0.0435 \times 5)$, about 19.5% (linear approximation: above 20%). Because index eligibility follows the median rating, and Moody's (Baa2, negative) and Fitch (BBB, on a filing-violated leverage premise) are the only agencies keeping Oracle investment-grade, a single further downgrade would expel the issuer's bonds from investment-grade indices — roughly \$120 billion on author scenario arithmetic (filing gross borrowings: \$125.3 billion, including non-index borrowings). Reuters (August 4, 2026), as reported, has Morgan Stanley credit strategist Lindsay Tyler noting on a podcast that Oracle carried two low-BBB ratings and faced fallen-angel risk; no \$120 billion index-expulsion estimate is attributed to Morgan Stanley — none was verified.

7. Earnings Quality and Human-Capital Liquidation

Reported profitability in Q1 FY2027 appears resilient—GAAP operating margin expanded 35 basis points and non-GAAP earnings per share (EPS) of \$1.92 beat consensus—but a line-by-line decomposition attributes the entire margin expansion to non-operating timing and to labor liquidation rather than to cloud economics. Restructuring charges fell from \$415 million to \$94 million year over year (a \$321 million tailwind) and intangible amortization from \$420 million to \$202 million (a \$218 million tailwind); together, \$539 million of unrelated line-item declines more than explain the margin gain. Eleven days after quarter-end, the company raised its restructuring budget by \$700 million (+33%, to \$2.8 billion) and began a second reduction round; the Q1 Form 10-Q is the first filing to name AI adoption itself as a restructuring rationale. Sales and marketing expense was cut 12% in absolute dollars, compressing its revenue share from 13.8% to 9.4% (440 basis points).

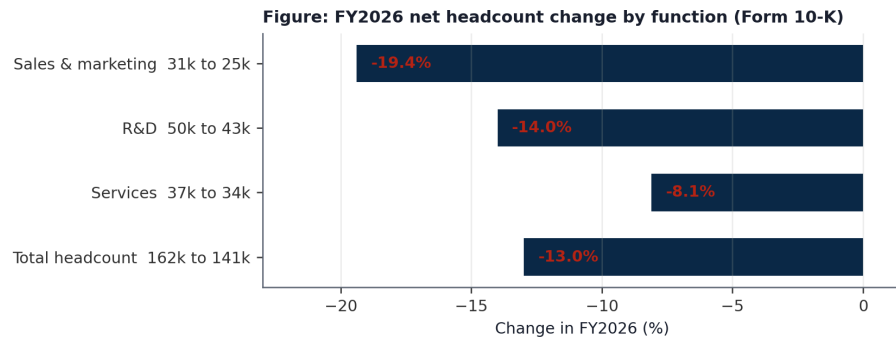


Figure 3. FY2026 net headcount change by function (Form 10-K employee disclosures): research and development -14.0% (50,000 to 43,000), sales and marketing -19.4% (31,000 to 25,000), services -8.1% (37,000 to 34,000), total -13.0% (162,000 to 141,000).

The segment consequences are already visible. Software license revenue fell 8.9% in FY2026 to \$4.74 billion and was \$0.655 billion in Q1 FY2027, 8.9% below consensus; support revenue (\$19.8 billion) grew only 1.4%; cloud applications (SaaS) growth decelerated to 10%, against about 20% at ServiceNow and 23% cloud growth at SAP; research spending rose only 4.0% to \$10.3 billion, falling from 17.2% to 15.3% of revenue while capex rose 162%. Non-GAAP figures additionally exclude over \$5 billion of annual stock-based compensation, and FY2026 reported non-GAAP EPS of \$7.63 includes one-time investment gains (Ampere disposal and warrant marks) worth \$0.80 per share; the underlying figure is \$6.83 (earnings-release footnote 1). Interest expense, meanwhile, rose 47% year over year in Q4 FY2026 to \$1.438 billion.

8. Robustness: Three Alternative Explanations

We subject the valuation and credit conclusions to the three strongest alternative explanations, in each case conceding the alternative's central parameter and resolving the sum-of-the-parts model of Section 9 (Table III). The model-implied per-share values below are reported solely as sensitivity outputs; this manuscript makes no recommendation.

Table III
Robustness: Model-Implied Per-Share Values under Three Alternative Explanations

Check	Concession granted	Implied value/share
Baseline	34% incremental margin; \$21.5B stranded-lease haircut	\$94.90
1. Prepayments and customer-supplied hardware retire the capex burden	\$75B of prepaid / BYO-hardware contracts halve the stranded-lease haircut to \$10.75B	\$98.45
2. Multicloud database growth offsets IaaS dilution	Core software and database multiple raised 1.5x (operating enterprise value (EV) +\$24.75B)	\$103.09
3. Fallen-angel shock (adverse direction)	Leverage through 4.5x triggers BB+; \$120B index expulsion raises WACC by 150 bps; operating EV -10%	\$76.75 (range \$74.50-80.00)

Notes: Sensitivity outputs only; no recommendation is made.

On Check 1: even after all prepayments, management's own net cash capex ceiling for FY2027 is \$70 billion and S&P still models a free operating cash-flow deficit near \$42 billion; the prepayments carry a significant financing component, and a firm whose funding problem had been solved by customers does not exhaust a \$20 billion equity ATM in the same quarter. Customer-supplied hardware, moreover, does not extinguish the \$288.0 billion of building, power and cooling leases. **On Check 2:** multicloud database revenue was \$0.8 billion in Q4 FY2026—4.2% of quarterly revenue; no growth rate on that base can offset infrastructure gravity, and the realized 34% incremental margin already includes its 404% growth. The four-year-old hardware cohort that repriced +20% at renewal is a pre-ChatGPT small-sample outlier and cannot be extrapolated to 4.5 GW of dedicated capacity maturing into a market that will have added roughly \$1 trillion of new supply. **On Check 3:** sovereign AI programs (Stargate, InvestAI) are forward initiatives, whereas the syndicated market has already voted—the \$38 billion Vantage facility unsold after six months, Project Jupiter at 89-91 cents, and a 261-basis-point CDS.

9. Valuation Implication of the Restated Balance Sheet

A forward price-earnings multiple is misspecified for this firm on three counts: it capitalizes a non-GAAP earnings denominator that excludes stock compensation and pre-dates \$25-30 billion of incoming annual depreciation; it ignores \$457.1 billion of claims senior to equity; and it uses a share count that the issuer itself expanded by 5.0% in one quarter. We therefore value the firm segment by segment on FY2027 baselines, deduct restated claims, and divide by the post-ATM share count (Table IV). No external sum-of-the-parts anchor is used as a check on the legacy segments: the only such anchor in the research file reached us through secondary aggregator coverage of an Evercore ISI comment, which under the Section 4 rule cannot serve as core evidence, and it has been removed rather than relied on.

Table IV
Sum-of-the-Parts Valuation on Restated Claims

Segment / adjustment	FY2027E basis	US\$ B
Core software (support + license)	Revenue about 24.2; EBIT about 16.5	+181.5
Cloud applications (SaaS)	Revenue about 17.5; about 5.0x sales	+87.5
Services and hardware	Revenue about 9.3; EBIT about 1.2	+9.6
Cloud infrastructure (IaaS)	Revenue about 36.0 at 34% incremental margin; about 4.5x sales	+162.0
Gross operating enterprise value		440.6
Less net debt ex-leases; commenced leases; stranded-lease haircut	Section 6; Section 3.3	-153.6
Implied equity value		287.0
Per share (3.024 billion shares)		94.90

Notes: US\$ billions, except per-share value. Segment values rest on the FY2027 bases stated in the table; claims are as restated in Sections 6 and 3.3.

Against late-October 2026 prices of \$126.06-130.16, the restated balance sheet therefore accounts for the repricing documented in Section 5 without recourse to sentiment variables: roughly the entire gap between the market price and the model value is explained by claims and share-count adjustments that are visible in the filings but absent from headline multiples. Independent discounted-cash-flow exercises that omit the FY2027 cash-flow deficit, the ATM dilution and the lease haircut produce materially higher values (\$133-146 per share), which we read as a measure of how much of the market price still capitalizes the unrestated accounts.

10. Discussion: Mechanism Sensitivities—Financing Costs, Margin Erosion, and Obsolescence Risk

Three mechanism sensitivities, stated here in summary form and offered as illustrative mechanisms rather than forecasts, qualify the valuation of Section 9 without altering its inputs. First, financing-cost sensitivity: the \$457.1 billion claim stack of Section 6 must be serviced before equity participates, so at an illustrative blended financing cost of 7% the annual interest burden is about \$32.0 billion, which at the 34% incremental margin measured in Section 3 requires about \$94.1 billion of incremental revenue merely to cover interest—before principal repayment and before any further capital expenditure—while each additional 100 basis points of financing cost raises that required revenue by about \$13.4 billion, a repricing of which the 261-basis-point CDS spread is the market's own evidence. Second, competitive margin erosion: the 34% incremental margin is earned against simultaneous capacity additions across the industry, and were that margin to compress to 25% or to 20%, the revenue required to service any given claim would rise by factors of 1.36 and 1.70 respectively. Third, asset specificity and depreciation-life sensitivity: data center hardware is highly specific in use, and its carrying value is exposed not only to time-based depreciation over an assumed useful life but also to utilization risk and technological obsolescence, including the risk that installed or stockpiled capacity is superseded before it is fully utilized; shortening the assumed useful life from ten years toward five raises the annual depreciation charge on a \$55.7 billion annual capital-expenditure cohort from \$5.57 billion to \$11.14 billion, reducing the earnings base against which the claim stack is serviced. Each sensitivity operates in the same direction—it raises the revenue, or lowers the earnings, required to support the restated balance sheet—and none is required for the paper's central result, which rests on the filing evidence of Sections 4 to 9. The point survives even at a zero financing cost: were the financing cost set to zero, a shortened useful life and price-war margin erosion would still raise the revenue required, or lower the earnings base available, to support the stack, so the interest rate is not the sole support of the conclusion.

11. RPO Concentration, Counterparty Growth, and Circular Financing

The filing evidence on backlog is narrower than market discussion suggests. Oracle reports remaining performance obligations (RPO) of \$638 billion in the fiscal 2026 Form 10-K (year ended May 31, 2026), with 12% scheduled within twelve months, 34% in months 13 to 36, and 34% in months 37 to 60; and \$664 billion in the first-quarter fiscal 2027 Form 10-Q (quarter ended August 31, 2026), with 13% (about \$86.3 billion) within twelve months, 37% in months 13 to 36, 34% in months 37 to 60, and about 16% thereafter. Oracle does not disclose RPO by customer, business, or region, and does not disclose a standalone cloud-infrastructure RPO or gross margin. Any customer attribution is therefore a reported estimate, and this paper labels it as such wherever it is used.

On that basis, the largest reported component is a single counterparty. A five-year commitment of about \$300 billion attributed to OpenAI, beginning in 2027, was reported by the Wall Street Journal and relayed in an S&P review; it equals 45.2% of the \$664 billion balance (47.0% of the \$638 billion balance). A straight-line \$60 billion per year is an illustration, not a contractual payment schedule. Write the backlog as a conversion process rather than a stock of revenue:

$$RPO_{t+1} = RPO_t + \text{New signings} - \text{Recognized revenue} - \text{Cancellations and haircuts},$$

$$E[\text{Realized revenue}] = \sum_i \alpha_i RPO_i \kappa_i (1 - d_i) / (1 + r)^t,$$

where α_i is a customer's share, κ_i its conversion rate, and d_i a default or delay rate. Applied to the reported OpenAI block alone, haircuts of 0, 10, 20, and 30% realize \$300, \$270, \$240, and \$210 billion respectively. The counterparty's capacity to pay is itself a growth condition: with annualized revenue of about \$50 billion in September 2026, the reported Oracle bill alone is about 1.2 times that revenue. If s denotes the share of the counterparty's revenue allocated to this contract, required annualized revenue is $60/s$ billion dollars—\$120 billion at $s = 50\%$, \$200 billion at 30%, and \$300 billion at 20%—before that counterparty's other reported commitments, which total roughly \$1.4 trillion across several providers on differing tenors and are therefore not directly additive.

Two characterizations of the surrounding financing chain are reported in the literature and the press, and this paper adopts neither as a finding. Critics describe circular or vendor financing: a chip supplier's equity support and capacity backstops (a September 2025 letter of intent for up to \$100 billion, renegotiated to about \$30 billion of direct equity within a \$122 billion round, paired with 5 GW of the supplier's compute, and a backstop of a neocloud's unsold capacity to 2032) finance the customer that signs the cloud contracts whose providers purchase the supplier's chips. The supplier disputes the label, describing a normal vertical supply chain in which end customers pay. The testable content does not depend on the label: it is the concentration α and the haircut d in the equation above. Finally, the closest competing model developer does not relax the constraint. Anthropic, which filed a registration statement on Form S-1 on October 26, 2026 (Anthropic PBC, Form S-1, 2026) and has not priced (a reported \$1.5 to \$2 trillion valuation appears only in press reports), reports first-half 2026 revenue of \$16.3 billion and cloud commitments of about \$111 billion to Google, about \$110 billion to AWS, and about \$31 billion to Microsoft—about \$450 billion over seven to ten years, and over \$600 billion including amounts in negotiation. Oracle is not among those providers: the competitor raises aggregate supply and demand for accelerators without filling this firm's backlog.

12. Cloud Price Competition and Margin Erosion

Sections 3 and 10 treat margin erosion as a sensitivity. This section gives it a mechanism. Let aggregate industry capacity be K , demand $D(p)$, utilization $u = D(p)/K$, price p , unit variable cost c , and fixed cost F , where F collects leases, interest, and depreciation that are contracted before demand is known. Then

$$\pi_i = (p - c)q - F, \quad q^* = F / (p - c), \quad m = (p - c) / p.$$

Proposition 4 (capacity Bertrand). If capacity is installed ahead of demand, so that $D(p) < K$ at the prevailing price, and the service is sufficiently homogeneous that buyers can switch at low cost, then competition for utilization drives p toward c , m toward zero, and the revenue required to service a fixed claim stack, $R^* = \Pi^* / m$, rises convexly in the price cut. The proposition is falsifiable in the cross-section: margin compression should be greatest where contracted-but-unenergized capacity is largest relative to demand growth.

The historical record is consistent with the mechanism rather than with gentle price drift. In March 2014, Google reduced Compute Engine prices by 32% and storage by 68%; AWS followed within a day with cuts of up to 40% in compute and 65% in storage, and Azure followed at about 35 and 65% respectively (company announcements; magnitudes vary by product line). Between early 2012 and March 2013 the three providers had already cut basic-resource prices 25 times, and systematic measurement (Byrne, Corrado, and Sichel 2018, 2021) puts the cumulative 2009 to 2016 decline at about 50% for compute — the quality-adjusted (hedonic) EC2 index ends the sample at about half its starting level, falling at about 7% a year — and at 70% to 80% for storage on matched-model S3 indexes (about 17% a year), with declines accelerating after 2014.

Supply, meanwhile, is expanding through four channels at once—hyperscaler self-build, a mixed self-build, lease, and neocloud model, joint-venture leasebacks (Meta's Hyperion is held 80% by Blue Owl and leased back, not purely self-built), and landlord campuses of the kind this firm leases from Crusoe, Vantage, and STACK—while GPU-rental specialists (neoclouds) post materially lower rate cards: on an October 2026 public basis, about \$9.50 per B300 GPU-hour against about \$17.80 at AWS, with configurations differing. Reported neocloud scale separates the energized from the merely contracted: CoreWeave about 1.5 GW live and 4.2 GW contracted, Crusoe about 1 GW and 6 GW or more, and Nebius about 170 MW and 3.5 GW or more.

Table V
Price cuts, margin, and the volume required to hold profit

Price cut	Price	Margin m	Unit profit	Volume multiple	R* (20-yr)	R* (10-yr)
0%	1.00	34.0%	0.34	1.00x	\$122.0B	\$187.0B
-10%	0.90	26.7%	0.24	1.42x	\$155.6B	\$238.5B
-20%	0.80	17.5%	0.14	2.43x	\$237.1B	\$363.4B
-30%	0.70	5.7%	0.04	8.50x	\$726.3B	\$1,113.0B

Notes: Price is normalized to 1.00 with $c = 0.66$, so the base margin is 34%. That margin is an author-illustrative incremental margin, not a filing disclosure: Oracle does not disclose a standalone cloud-infrastructure gross margin, and no table in this paper should be read as if it did. Required revenue uses the Section 14 annuity at the 6.5% central rate. A 20% price cut requires 2.43 times the volume, not 25% more, because unit profit falls from 0.34 to 0.14.

13. The Deployment Clock: Power, Siting, and Tail Substitution

The claim stack of Section 6 is serviced by assets that must be energized before they earn. This section summarizes, as a financial mechanism only, the deployment evidence developed in the companion technology paper. The constraint ranking in the tracking literature is consistent: grid interconnection and transmission first, large transformers and switchgear second, turbines third, and permitting and litigation fourth, ahead of water, fiber, and land. Laboratory queue research (Rand et al., *Queued Up: 2026 Edition*, Lawrence Berkeley National Laboratory, June 2026, DOI 10.2172/3376147) counts 2,061 GW active in queues at the end of 2025 and puts the median from interconnection request to operation at more than five years nationally (about seven in Northern Virginia on tracker estimates), with only about 13% of capacity requested in 2000 to 2020 built by the study endpoint and about 75% withdrawn; large-transformer lead times are reported at about 120 weeks in 2024, against about 50 weeks in 2021. A building shell takes twelve to twenty-four months; revenue models that start at shell completion misdate the first cash flow by years.

Three qualifications belong in the record. First, siting opposition is a permitting variable, not a measured price effect: the property-value evidence disagrees—a Berkeley Haas working paper finds declines of about 3% within three miles over five years (about 7.2% within one mile), a Virginia ZIP-code study finds a small, slightly positive effect whose interval excludes large declines, and a Realtor.com tracking study finds no significant effect across 43 ZIP codes—and the designs differ, so this paper draws no sign from them. Second, bypassing the grid substitutes one constraint for another: simple-cycle on-site turbines run at 33% to 37% efficiency against 49% to 54% for combined cycle, and the Memphis installation obtained county air permits for only part of its fleet after litigation was threatened. Third, substitution from outside the industry is a tail state, not a base case. Orbital compute is verified only at roughly kilowatt scale (one H100 in the Starcloud test; four TPUs in Google's Suncatcher test), requires launch costs of about \$500 per kilogram for cost competitiveness and below \$200 for energy parity against roughly \$1,500 today, and reaches general parity no earlier than the mid-2030s on optimistic assumptions, serving training and batch workloads before latency-sensitive inference. Subsea compute is reliable—the Natick trial's 0.7% failure rate against 5.9% on land—and was nonetheless discontinued by its sponsor in 2024 because a sealed pod cannot be upgraded at accelerator speed; tidal proposals remain at study-permit stage. War and attack enter the same way: as a hazard met with redundancy, dispersion, and hardening paid for in capital expenditure — air defense is a state function, and war is typically excluded from standard coverage. Formally, each contributes to the hazard rate λ of Section 15, shortening the life over which the Section 14 annuity must be recovered.

14. The Scenario Grid: Rates, Haircuts, Growth, and Competition

A single break-even number invites the objection that its inputs were chosen to produce it. This section therefore reports the full grid. With claim stack $P = \$457.1$ billion, the annuity profit required to service the stack over T years at rate r is $Pi^* = P r / (1 - (1 + r)^{-T})$, and required revenue is Pi^* / m . The central rate of 6.5% is author-illustrative, of the order of the ten-year Treasury yield (4.99% at the October 27, 2026 close) plus a credit spread; the federal funds target stood at 3.75% to 4.00%, set on September 16, 2026 and maintained by a 10-2 vote on October 28, 2026 (Board of Governors, FOMC statements, September 16 and October 28, 2026; ten-year yield from the H.15 release, October 27, 2026 close). The October 28 statement describes activity expanding at a strong pace, with resilient spending, strong productivity growth, robust capital investment and inflation remaining elevated; Lisa D. Cook and Beth M. Hammack voted against, preferring to raise the range by 1/4 point at that meeting. Our interpretation, labelled as such and not Federal Reserve wording: a pause, not a pivot. The December +25 basis points modelled below is the dissenters' stated preference; it remains hypothetical — not a decision, not a forecast — and the next meeting (December 8-9, 2026, with SEP) is not predicted here. The Implementation Note set interest on reserve balances at 3.90% from October 29, 2026. Treasury par yields for October 28 are mirror-reported only (10-year 5.05%, 2-year 4.67%, 30-year 5.37%), not H.15-verified closes, and do not replace the October 27 close above. No grid number changes. The margin m is the illustrative 34% of Table V unless stated, and is not a filing disclosure.

Table VI
Required revenue by rate scenario and margin (T = 10 years, \$B per year)

Scenario	Rate	Profit Π^*	m = 34%	m = 25%	m = 20%
-25bp (control)	6.25%	\$62.8B	184.8	251.4	314.2
+0bp (base)	6.50%	\$63.6B	187.0	254.3	317.9
+25bp (hypothetical)	6.75%	\$64.3B	189.2	257.3	321.7
+50bp cumulative	7.00%	\$65.1B	191.4	260.3	325.4
+100bp cumulative	7.50%	\$66.6B	195.9	266.4	333.0
+150bp cumulative	8.00%	\$68.1B	200.4	272.5	340.6

Notes: Author calculations from the annuity formula. A 100-basis-point increase raises required revenue at a 34% margin by 4.7%; compressing the margin from 34% to 20% raises it by 70%. The steady-state interest upper bound of a 100-basis-point increase, were the stack refinanced, is about \$4.57 billion a year; most debt is fixed-rate, so this is not next year's cash interest. At five years, required profit is \$110.0 billion and required revenue \$323.5, \$440.0, and \$550.0 billion at margins of 34, 25, and 20%; at twenty years, \$41.5 billion and \$122.0, \$166.0, and \$207.5 billion.

Staged financing. The \$4.57 billion a year figure in the notes above is a steady-state upper bound: it is the annual cost of a 100-basis-point increase only once the entire claim stack has been refinanced at the higher rate, and it is not next year's cash interest. Most existing debt is fixed-rate and does not reprice immediately, so the interest-rate risk in this paper falls mainly on new tranches—new bonds, new leases, and new project borrowings—and on refinancing dates, rather than on an instant repricing of the existing stack.

Stacking the remaining dimensions moves the answer more than rates do. Applying the Section 11 haircut to the reported single-customer share only ($\alpha = 0.452$) raises required revenue at ten years and a 34% margin from \$187.0 billion to \$195.9, \$205.6, and \$216.3 billion at haircuts of 10, 20, and 30%. The combined adverse cell—plus 100 basis points, a 20% margin, and a 30% haircut—requires about \$385 billion a year, roughly 2.1 times the base cell; the favorable cell (a 25-basis-point cut, the margin held at 34%, no haircut) requires \$184.8 billion. The paper's claim is accordingly regional, not absolute: the stack clears only in the favorable region of the grid. Customer growth enters through the counterparty condition of Section 11, and competition through the supply-demand race of Section 12, in which utilization, price, and margin fall in sequence whenever supply growth exceeds demand growth. On credit pricing, the 261-basis-point CDS print of October 8, used in Section 6 as a dated observation, is no longer the latest reported level: subsequent reported prints are about 288 basis points on October 15, 295 on October 19, 308 on October 21, and up to 343 in weekly summaries. This paper has no live feed and cites the range, not a point, as the current state.

15. Expectation, Survival, and Falsifiability

The grid of Section 14 is a set of conditional statements. Aggregating it requires an explicit expectation operator and an explicit statement of what the weights are. Let s index states of the world—clean adoption, the base case, adverse, and stress—with cash flows $CF_t(s)$ and value $V_s = -P + \text{Sum}_t CF_t(s) / (1 + r)^t$. Then

$$E[V] = \text{Sum}_s p_s V_s, \quad \text{Sum}_s p_s = 1,$$

and, with $\lambda(u)$ the instantaneous hazard of obsolescence, substitution, or attack from Section 13, the survival function $S(t) = \exp(-\int_0^t \lambda(u) du)$ gives expected cash flow $S(t) CF_t$. The comparative statics are signed: $dV/d\lambda < 0$, $dR^*/dr > 0$, $dR^*/dm < 0$, and $dR^*/dd > 0$ for the haircut d . The weights p_s in any numerical aggregation are scenario weights chosen by the author; they are not estimated probabilities, and this paper reports the sensitivity rather than a point estimate. At illustrative weights of 20, 35, 30, and 15% across the four states, the expected present value of profit is of the order of \$111.2 billion; at 40, 30, 20, and 10% it is about \$129.5 billion, and at 10, 25, 35, and 30% about \$96.3 billion. A reader who rejects the weights can recompute the conclusion from Table VI under any weights. Re-running the grid at T of five and twenty years and at rates of 4.5% and 8% changes magnitudes, not signs.

Meta Platforms serves here only as a financing-mix comparator—not a valuation comparable, and not pricing evidence, for Oracle. Meta's third-quarter 2026 release (October 21, 2026) reported capital expenditure, including finance-lease principal payments, of \$34.91 billion and free cash flow of -\$2.12 billion; its Form 10-Q for the quarter ended September 30, 2026 records \$24.910 billion of net debt issuance in the first nine months, including \$25.00 billion of fixed-rate notes issued in May 2026; and its October 26, 2026 offering announcement described a balanced mix of operating cash flow, investment-grade debt, strategic partnerships, and complementary equity capital—an approximately \$35 billion underwritten offering (about \$22.5 billion of Class A forward sales, about \$12.5 billion of preferred stock) plus a planned \$60 billion Class C at-the-market program not yet subject to any agreement and not to commence before the first quarter of 2027—priced on October 27, 2026 with the common stock upsized to \$25 billion at \$625 per share, \$12.5 billion of 6.50% preferred stock, and the forwards at about \$622.92 per share, settling no later than November 19, 2027, with no common-stock proceeds received at the initial sale. Revenue in that release was \$64.601 billion, operating cash flow \$32.79 billion, and 2026 capital-expenditure guidance \$135–145 billion; the Form 10-Q records no share repurchases in the period.

Falsifiability. The argument weakens, in stated ways, if any of the following is observed: (i) RPO conversion materially faster than the 13% next-twelve-months bucket in the current filing; (ii) the principal reported counterparty sustaining revenue above the \$60 billion a year its reported contract implies while also covering its other commitments; (iii) the relevant discount rate returning below 4.5%; (iv) the incremental margin held at the illustrative 34% level for two consecutive quarters; (v) a materially shorter grid-interconnection median in the queue research; or (vi) a competing model developer of Anthropic's scale contracting with this firm as a principal cloud provider. None of these is a rhetorical concession: each corresponds to a parameter of the model— κ , the counterparty growth condition, r , m , the deployment delay, and α —moving into the region of the grid where the stack clears. The companion papers develop the two mechanisms this paper only prices: the technology paper (Research Policy format, 23 pages plus an 11-page online supplement) treats generational adoption, ASIC substitution, and the deployment clock in full, and the geopolitics paper (Review of International Political Economy format) treats the oil, inflation, and Treasury-crowding-out channel that moves r (Review of International Political Economy format, 33 pages). This paper cites each companion work for the mechanism it does not itself estimate.

16. The Demand Side: Liquidity, Population, and the Support Ratio

Sections 11 and 14 treat RPO conversion as a counterparty problem. Contracted future revenue is a claim on future consumers; whether they exist, in what numbers, and with what productivity is a demographic question, not a liquidity question. The two regimes must be separated. In the liquidity regime, the summary of the monetary literature prepared for the Congressional Research Service and the Federal Reserve finds faster money and credit growth largely dissipated in inflation, with little lasting real GDP effect, the output-gap effect disappearing after about five years; BIS Working Paper No. 569 adds that a debt-service gap above equilibrium depresses subsequent output growth, policy transmitting through the financial cycle and the collateral loop. Liquidity can therefore inflate capital expenditure and asset prices — the supply side of Sections 12 and 13 — without creating the real income that must service the claims.

In the real-growth regime, the Solow steady state has output per worker growing only at technical progress g ; higher population growth n lowers steady-state output per worker through capital dilution, and higher saving s is a level effect only. In accounting form, $Y/N = (L/N) \times (Y/L)$ and $C/N = (L/N) \times [(1 - s)(Y/L)]$: income per person is the support ratio times productivity. The demographic-dividend magnitudes for East and Southeast Asia, 1970 to 2000 — GDP per effective consumer growing 4.32% a year (first dividend 0.59 percentage points, second 1.31) — show headcount alone is not growth per person; L/N and Y/L are.

Applied to this firm: the conversion condition of Section 11 requires end users to multiply their payments over a 15-to-19-year horizon — a bet on L/N and Y/L in the customer economies, taken at a moment when the demographic facts are routinely misstated. The corrected record, developed in full in the companion geopolitics paper, is: world population of 8.2 billion in 2024 peaking at about 10.3 billion only in the mid-2080s (United Nations, *World Population Prospects 2024*); China and India together 34.9% of world population, about one-third, not one-half; India's population still growing on momentum despite below-replacement fertility of about 1.96, so claims of Indian population decline are false; and no established evidence that AI raises fertility, AI-driven mass unemployment lowering fertility remaining a hypothesis with no established AI-specific causal chain. On the productivity term, the dispersion is itself the finding: the IMF puts about 40% of global jobs exposed to AI (about 60% in advanced economies); Acemoglu's aggregate estimate, 1.1% to 1.6% of GDP over ten years, sits far below optimistic claims of about 7%. In the notation of Section 14, demography moves the demand side of the conversion parameter and the growth of the revenue base; it does not move the annuity. A \$457.1 billion stack serviced from a flat or falling support ratio requires Y/L to do all of the work — which is precisely the assumption the grid of Section 14 prices rather than asserts.

17. Conclusion

Oracle's \$664 billion backlog is best understood not as deferred profit but as the revenue side of a leveraged, long-duration infrastructure commitment whose cost side sits in lease footnotes, financing-component prepayments and a diluted share count. On filing-based evidence alone: incremental margins have converged toward 34%; reported cash flow overstates organic generation by the amount of customer financing; the full claim stack is \$457.1 billion; credit markets price a one-in-five five-year default probability; and the human capital that produces the legacy 72%-margin franchise has been cut by 13% in one year, with research down 14% and sales down 19.4%. Whether AI end-demand eventually validates the build-out is an empirical question the next eight quarters of filings will answer; the balance-sheet transformation, by contrast, has already happened, and it is irreversible on any horizon relevant to the current capital structure.

Data Availability

Data availability. All primary data are public: SEC EDGAR filings for Oracle Corporation (FY2026 Form 10-K; Q1 FY2027 Form 10-Q; Form 8-K earnings releases for Q2 FY2026 through Q1 FY2027), Oracle investor-relations releases and earnings-call disclosures, and the rating-agency and institutional publications listed below. Replication requires no proprietary dataset beyond market price series for the event windows.

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