CME gideon lens

CME Group (CME) - Gideon-Lens Equity Research

Report ID: CME-ER2-20260917T080231+0800 **Report date:** 2026-09-17 **Analyst:** Codex ER2 Production workflow **Price anchor:** XNAS:CME USD 272.46, completed session 2026-09-16 **Market capitalization:** approximately USD 98.43B **Fiscal year end:** December 31 **Research authority:** security underwriting only; no trade, ranking, sizing, messaging, or portfolio authority.

Verdict block

Verdict: PASS

Scorecard:

Gate	Result	Notes
Management	YELLOW	CEO transition, payout discipline, and Class B governance remain unresolved
Moat	PASS	Benchmark liquidity and clearing offsets pass the 2046 test
P/E <= 15 on confident EPS at TTM + 5 calendar years	FAIL	Base support USD 218.32; cushion -19.87% versus USD 272.46
Compounder Score	Audited 61/100	Score-implied Reject; strong franchise, not a dream investment; diagnostic only
Business Quality Score	Audited 57/80	Durable moat, but ROIIC and stewardship evidence remain incomplete
20% Return UW Score	Audited 4/20	Today's price does not support the 20% stretch objective

One-line thesis (or reason to pass): CME is a durable, cash-generative market-infrastructure franchise, but the 2027 leadership transition and a USD 272.46 entry price leave only mid-single-digit Base and probability-weighted returns while the P/E-15 gate fails.

Security return underwriting (mandatory even when the verdict is PASS):

Measure	Result	Notes
Primary valuation method	P/E	One audited method controls every scenario, probability weighting, reverse-return diagnostics, and net-SGD
Gross local-currency bear / base / bull IRR	-3.13% / 6.77% / 13.07%	Five-year annualized shareholder return in USD
Probability-weighted gross local-currency IRR	6.13%	CAGR of USD 366.77638029 probability-weighted terminal wealth; weights 25%/55%/20%
Return bridge	USD 272.46 to USD 232.460791 / 378.069124 / 503.615823	Terminal diluted EPS times 18x/22x/25x plus cumulative dividends; no net-cash add-on

Gross underwriting is in USD over 2026-06-30 to 2031-06-30; net-SGD adjustments appear separately in CIO actionability. P/E is locked across scenarios. Statutory EPS already reflects financing and capital structure, so cash, debt, leases, NCI, clearing collateral, and affiliate value receive no second terminal adjustment. Distributions are counted once.

Bear-case operating and return bridge

Bear case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 6.7726B	USD 6.8373B	0.19%	Weak activity and mix; only modest market-data growth
Operating margin	65.10%	61.00%	-4.10 pp	Clearing, regulatory, cyber, and technology costs persist
Operating earnings	USD 4.4090B	USD 4.1707B	-1.11%	Statutory operating income under the single-segment fallback

Bear case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Diluted share count	361.282000M	359.7242833M	-0.09%	USD 150M annual buybacks plus 0.314M annual net vesting shares
EPS	USD 11.2040690820	USD 10.2858106	-1.70%	Bear ongoing normalized current perimeter to statutory diluted terminal EPS
Valuation denominator	Ongoing normalized EPS	Same recurring statutory EPS	Comparable	Raw reported EPS is event-heavy and not used as a cap
Valuation	24.3179507x normalized	18.0x P/E	-6.3179507x	Discounts declining EPS, activity, and operating leverage
Share value	USD 272.46	USD 185.1445908	-7.44%	USD 10.2858106 times 18.0x; no net-cash adjustment
Annual dividend	USD 11.35	USD 9.2572295	-3.99%	90% terminal payout; current includes regular and declared variable dividends
Dividend yield	4.17%	5.00%	+0.83 pp	Annual dividend divided by endpoint share value
Five-year dividends	-	USD 47.3162	cumulative	Repaired synthesis schedule; counted once
Total ending value	USD 272.46	USD 232.4607908	-3.13% gross USD IRR	Terminal share value plus cumulative distributions

Base-case operating and return bridge

Base case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 6.7726B	USD 8.8930B	5.60%	Mid-single-digit products, data growth, and broader distribution
Operating margin	65.10%	66.50%	+1.40 pp	Shared-platform leverage exceeds resilience investment
Operating earnings	USD 4.4090B	USD 5.9138B	6.05%	Statutory operating income under the single-segment fallback
Diluted share count	361.282000M	357.8408467M	-0.19%	USD 300M annual buybacks plus 0.314M annual net vesting shares
EPS	USD 11.2240086137	USD 14.5549329	5.33%	Base ongoing normalized current perimeter to statutory diluted terminal EPS
Valuation denominator	Ongoing normalized EPS	Same recurring statutory EPS	Comparable	OSTTRA transaction effects are removed at both endpoints
Valuation	24.2747497x normalized	22.0x P/E	-2.2747497x	Near recent CME low and peer median for mature growth
Share value	USD 272.46	USD 320.2085238	3.28%	USD 14.5549329 times 22.0x; no net-cash adjustment
Annual dividend	USD 11.35	USD 12.8083409	2.45%	88% terminal payout; current includes regular and declared variable dividends
Dividend yield	4.17%	4.00%	-0.17 pp	Annual dividend divided by endpoint share value
Five-year dividends	-	USD 57.8606	cumulative	Repaired synthesis schedule; counted once
Total ending value	USD 272.46	USD 378.0691238	6.77% gross USD IRR	Terminal share value plus cumulative distributions

Bull-case operating and return bridge

Bull case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 6.7726B	USD 10.2855B	8.72%	Open interest, pricing, international reach, and clearing adjacencies all succeed
Operating margin	65.10%	69.00%	+3.90 pp	Growth outpaces capacity, cyber, 24/7, and distribution costs
Operating earnings	USD 4.4090B	USD 7.0970B	9.99%	Statutory operating income under the single-segment fallback
Diluted share count	361.282000M	355.4475667M	-0.33%	USD 500M annual buybacks plus 0.314M annual net vesting shares
EPS	USD 11.2439481454	USD 17.6153129	9.39%	Bull ongoing normalized current perimeter to statutory diluted terminal EPS
Valuation denominator	Ongoing normalized EPS	Same recurring statutory EPS	Comparable	Raw reported multiple remains disclosure only
Valuation	24.2317019x normalized	25.0x P/E	+0.7682981x	Peer high end, below CME's older premium regime
Share value	USD 272.46	USD 440.3828225	10.08%	USD 17.6153129 times 25.0x; no net-cash adjustment
Annual dividend	USD 11.35	USD 14.9730160	5.70%	85% terminal payout; current includes regular and declared variable dividends
Dividend yield	4.17%	3.40%	-0.77 pp	Annual dividend divided by endpoint share value
Five-year dividends	-	USD 63.2330	cumulative	Repaired synthesis schedule; counted once
Total ending value	USD 272.46	USD 503.6158225	13.07% gross USD IRR	Terminal share value plus cumulative distributions

CIO actionability (separate from ER2 underwriting):

Measure	Result	Notes
Status	PASS	Base net-SGD IRR is below 8%; separate from the ER2 verdict
Bear / Base / Bull net SGD IRR	-5.95% / 5.19% / 12.81%	After 0.50% entry/exit costs, 30% dividend withholding, and scenario FX
Probability-weighted net SGD IRR	4.69%	CAGR of probability-weighted terminal SGD wealth; weights 25%/55%/20%
10% mandate hurdle	FAIL	Base 5.19% and probability-weighted 4.69% both fail
15% stretch hurdle	FAIL	Even Bull reaches only 12.81% net SGD
Downside and portfolio fit	FAIL	Better modeled Bear resilience than VLUE, but weaker Base return and little premium to cash
Proposed sizing ceiling	none	Research-only conclusion; owner approval remains mandatory

The net-SGD diagnostic uses spot USD/SGD 1.2727641, 0.50% entry and exit costs, 30% U.S. dividend withholding, and terminal USD/SGD of 1.18/1.25/1.32. A hypothetical 2% whole-NAV substitution would be SGD 55,005, but no allocation, ranking, or trade is proposed. Versus the current VLUE sleeve, CME improves modeled Bear resilience but reduces Base return; versus cash, its modeled premium is too small for equity and clearing-tail risk.

Trade execution authorized: NO

Stage 0 - Time anchor

- Today is 2026-09-17 SGT.
- CME Group's fiscal year ends December 31.

- The latest reported quarter is Q2 FY2026 ended 2026-06-30.
- TTM is Q3 FY2025 + Q4 FY2025 + Q1 FY2026 + Q2 FY2026, ending 2026-06-30.
- The horizon is exactly 2031-06-30, five calendar years after the TTM anchor.

Stage 1 - Disqualifier sweep

- **ROIC - YELLOW:** five-year median goodwill-inclusive adjusted ROIC is 9.77%, but defensible three-year, five-year, and acquisition-inclusive ROIIC cannot be calculated from disclosed reinvestment data.
- **FCF conversion - GREEN/YELLOW:** TTM FCF/net income is 98.27% and multi-year conversion is strong, although affiliate economics make simple operating-NOPAT comparisons imperfect.
- **Leverage - GREEN:** net debt/EBITDA is about 0.24x; shareholder leverage is modest, while clearing-tail obligations remain separately material.
- **End markets - GREEN/YELLOW:** demand for risk transfer, rates, energy, commodities, and equity hedging is durable but activity and mix are cyclical.
- **Governance - YELLOW:** Class B special-election rights, payout above TTM FCF, and the March 2027 CEO transition require monitoring.
- **AI disruption - GREEN:** AI can improve trading and data workflows but does not replace regulated matching, clearing, collateral efficiency, or established liquidity.
- **Pricing power - GREEN:** benchmark franchises and offset economics support pricing, constrained by tiers, regulation, and credible exchange competition.

Management

Management is **YELLOW**. Terry Duffy's move to Executive Chair in March 2027 leaves Lynne Fitzpatrick's independent authority untested. Disclosure and operating stewardship are strong, but TTM dividends plus repurchases exceeded FCF, compensation lacks an explicit per-share FCF or ROIC anchor, and Class B reform remains unresolved. Upgrade requires four quarters of independent CEO execution, payout no greater than sustainable FCF, and material Class B governance reform.

Moat

Moat and the 2046 durability test are **PASS**. Two-sided benchmark liquidity, open interest, integrated clearing, margin offsets, trusted infrastructure, and proprietary market data reinforce one another. Newer cash markets and products are less protected, and regulation or a clearing failure could damage the franchise. AI changes workflows, but it does not eliminate customers' need for regulated execution, collateral efficiency, and authoritative prices.

Stage 5 synthesis

The 11/11-cleared synthesis produces Base revenue of USD 8.893B, statutory operating income of USD 5.914B, parent net income of USD 5.208B, and diluted EPS of USD 14.5549. At 15x, Base value is USD 218.32 against USD 272.46, a negative 19.87% cushion. Bear, Base, and Bull all fail the binary P/E-15 gate. The return model therefore uses independently supported 18x/22x/25x exits rather than turning the entry gate into an exit assumption.

Synthesis metric	Bear	Base	Bull
Revenue, USD B	6.837	8.893	10.286
Statutory operating income, USD B	4.171	5.914	7.097
Parent net income, USD B	3.700	5.208	6.261
Diluted EPS, USD	10.2858	14.5549	17.6153
EPS times 15, USD	154.29	218.32	264.23

Scoring audit and red team

The independent scoring audit preserved 61/100, 57/80, and 4/20. Strong moat and cash generation do not compensate for missing acquisition-inclusive ROIIC, unresolved stewardship, or weak entry-price returns. The maximum price for a 20% probability-weighted return is USD 147.40, 45.90% below the anchor.

The red team classified the return objection **IMMATERIAL**. Its strongest attack is the generous 22x Base exit: an 18x sensitivity lowers Base gross IRR to 3.26%. Its strongest counterpoint is that 22x is below the 24.27x normalized current multiple and that paying dividends through time, rather than only at the horizon, would lift Base IRR by about 0.48 percentage point. Neither challenge changes PASS or CIO actionability.

Kill / trigger criteria

- BUY trigger: none today. USD 218.32 is the mechanical Base P/E-15 support level, but price alone cannot clear Management YELLOW or the 10% net-SGD return hurdle.
- PASS trigger 1: core rates futures/options open interest declines more than 10% year over year for two consecutive quarters while FMX comparable open interest exceeds 500,000 and grows more than 50% year over year.
- PASS trigger 2: statutory operating margin falls below 61% for two consecutive quarters without a clearly temporary volume shock.
- PASS trigger 3: payout again exceeds FCF on a normalized trailing-year basis after OSTTRA proceeds are excluded.
- Upgrade conditions: Management reaches PASS; Class B reform and succession execution improve; Base P/E-15 cushion becomes positive; and Base plus probability-weighted net-SGD IRRs both exceed 10% after conservative costs, withholding, and FX.

Research sizing if actionable: none. This report proposes no size and authorizes no trade.

Analyst flags

- Gross restricted awards vested and a full issuer gross-to-net share bridge are unavailable; disclosed net vesting and treasury-method dilution are used without double counting.
- Exact product market shares, product margins, acquisition-inclusive ROIIC, and the absolute DCO/DCM regulatory-capital excess remain unavailable.
- Scenario probabilities of 25%/55%/20% and FX assumptions are explicit judgment calls; the PASS conclusion survives the red team's valuation challenges.
- The Pulse comparison is a research diagnostic only. It is not a ranking, allocation, message, or execution instruction.

Appendix A - Company Primer

CME Group — Institutional Business Primer

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Information date: September 17, 2026 **Latest reported quarter:** Q2 2026, ended June 30, 2026 **TTM period:** Q3 2025 through Q2 2026, ended June 30, 2026 **ER2 five-year horizon anchor:** June 30, 2031, exactly five years after the TTM endpoint **Currency and scale:** U.S. dollars in millions unless stated otherwise

1. Business overview

CME Group is best understood as a regulated market infrastructure company, not as a broker taking directional market risk. It provides venues on which customers trade standardized futures and options, selected cash and over-the-counter products, the central counterparty that clears most of those derivatives, and the data and reference prices generated by those markets. The company owns four U.S. derivatives exchanges—Chicago Mercantile Exchange, Chicago Board of Trade, New York Mercantile Exchange and Commodity Exchange—and operates the CME Globex electronic trading platform. BrokerTec extends the system into cash government bonds and repo; EBS serves spot and over-the-counter foreign exchange. CME Clearing stands between buyers and sellers in cleared markets.

The customer problem is risk transfer. Commercial firms hedge input prices, selling prices or currencies; financial institutions and investors manage rates, equity and macro exposures; and trading firms supply liquidity or express views. The contract standardizes the exposure, the exchange concentrates orders, and clearing reduces bilateral counterparty risk. The resulting prices also become reference information for non-traders.

Customers reach CME through several routes. Large firms can connect directly under CME's access rules, while most end users trade through futures commission merchants, brokers or other intermediaries. Independent software vendors and proprietary front ends connect to CME Globex through an open application-programming interface. CME Direct supports arranging, executing, recording and risk-managing electronic and privately negotiated trades. A limited open-outcry venue remains for SOFR options. Market data is sold directly and through third-party distributors, generally under device, subscription, usage or licensing arrangements. Thus, CME's commercial system combines direct infrastructure access with an extensive channel network.

The central economic idea is simple: CME earns mostly when customers transact, but the willingness to transact depends on liquidity, confidence in clearing, broad distribution and dependable technology. Those assets reinforce one another. A contract with many active buyers and sellers offers tighter spreads and better execution; that attracts more users and order flow; greater order flow produces more useful prices and data; and a broader portfolio creates more opportunities to offset risk and margin within the clearing house.

2. Accounting perimeter and revenue architecture

CME reports **one operating and one reportable segment: CME Group consolidated**. The chief operating decision maker's disclosed segment-profit measure is **consolidated net income**. That is an important accounting fact, but it is not the ER2 operating-profit endpoint. Because consolidated net income sits below interest, investment income, equity-method income, other non-operating items and taxes, the governed ER2 model uses **statutory operating income under the single-segment non-operating-CODM fallback**. The two measures remain distinct: TTM statutory operating income is $4,409.0, while the separately disclosed TTM CODM measure, consolidated net income, is $4,287.0. No corporate allocation or synthetic segment adjustment is inserted between the one modeled segment and statutory operating income.

Reportable segment

Segment	FY2025 revenue	Share of FY2025 revenue	Profit measure used in ER2
CME Group consolidated	$6,520.6	100.0%	Statutory operating income fallback
Total	$6,520.6	100.0%	One operating/reportable segment

The one-segment presentation is economically sensible because execution, clearing, technology, distribution and data reinforce one another. It also limits product-level margin analysis: CME discloses product revenue categories, but it does not disclose separate operating profit for interest rates, equity indexes, commodities, market data, BrokerTec or EBS.

Revenue streams

Revenue stream	FY2025	Share of FY2025	TTM to 2026-06-30	Share of TTM	What the customer pays for
Clearing and transaction fees	$5,281.1	81.0%	$5,450.9	80.5%	Trade matching, execution, novation, clearing and related services
Market data	$803.1	12.3%	$872.7	12.9%	Real-time, delayed, historical and derived data; benchmarks and analytics
Other revenue	$436.4	6.7%	$449.0	6.6%	Connectivity, co-location, collateral management and other exchange services
Total revenue	$6,520.6	100.0%	$6,772.6	100.0%	Consolidated revenue

Clearing and transaction fees. The dominant revenue stream is assessed per contract, or in some products by notional amount. Pricing varies by product, execution venue, membership status, volume tier and incentive program. Revenue is generally recognized when a trade is successfully executed and the matching, novation and clearing obligations have substantially been performed; canceled or unfilled orders do not create transaction revenue. The average rate per contract is therefore a mix statistic, not a fixed tariff. A shift from lower-rate interest-rate futures toward higher-rate commodities can lift the average rate even with unchanged aggregate volume, while growth in member, micro or incentive-program flow can have the opposite effect.

Market data. CME sells proprietary quotations, trades, depth, historical information, derived prices and reference rates. Basic display use is commonly billed at a flat monthly fee per device, while enterprise, non-display, cloud and licensed benchmark uses have different commercial structures. Data is both a separate product and a by-product of the trading network. TTM market-data revenue was $872.7, and Q2 2026 reached $238.1, the highest quarterly value in the reconciled history. The stream is more subscription-like than transaction fees, but it still depends on financial-sector headcount, device counts, licensing compliance, customer budgets and the perceived value of CME's prices.

Other revenue. This includes access and communications charges to members and clearing firms, CME Globex connectivity, co-location, collateral-management fees, equity subscriptions, order-routing arrangements and other services. These fees monetize the infrastructure around the market rather than the trade itself. They are smaller, but they make CME more deeply embedded in customer workflows.

Geographically, CME does not organize its financial reporting into regional segments. The network is nevertheless global. In 2025, approximately 31% of electronic futures and options volume was reported from outside the United States, and approximately 53% of market-data revenue came from outside the United States. Those operating indicators show that international distribution is material even though the accounting segment remains consolidated.

3. Product families

The derivatives franchise spans six principal risk families. Each family has distinct users and catalysts, which helps diversify volume, but all draw on common execution, clearing and distribution infrastructure.

Family	Representative products	Primary economic use
Interest rates	SOFR, U.S. Treasury and Federal Funds futures and options	Hedge or express views on policy rates, yield curves, bond prices and funding costs
Equity indexes	E-mini and Micro E-mini S&P 500, Nasdaq-100 and Russell 2000 contracts	Adjust broad or factor equity exposure efficiently
Foreign exchange	Euro, yen, sterling, Australian dollar and other currency contracts	Hedge currency cash flows and manage macro exposure
Agricultural commodities	Corn, soybeans, wheat and livestock	Transfer production, inventory, weather and input-price risk
Energy	WTI crude oil, natural gas and refined products	Hedge physical energy prices, basis and calendar exposure
Metals and cryptocurrencies	Gold, silver, copper, Bitcoin, Ether and newer digital-asset contracts	Manage commodity, monetary and digital-asset price risk

Product breadth matters beyond diversification. Correlated products create spreads and relative-value strategies. A customer may hedge a cash Treasury with a Treasury future, offset SOFR exposures along a curve, or combine equity-index futures

with options. Micro sizes, shorter expiries and event-specific structures can widen an established benchmark's audience without requiring a separate distribution network.

BrokerTec and EBS add cash-market workflows. BrokerTec operates electronic markets in U.S. Treasuries, European government bonds and repo, serving banks and non-bank professional trading firms through central limit order books and request-for-quote tools. BrokerTec Chicago places a cash U.S. Treasury order book alongside CME's Treasury derivatives ecosystem. EBS provides central-limit-order-book and relationship-based markets for spot foreign exchange, precious metals and non-deliverable forwards. FX Spot+ links spot FX trading with the futures liquidity complex. These cash businesses broaden the customer workflow and create cross-venue opportunities, but they face more fragmented competition and greater internalization than CME's leading listed derivatives benchmarks.

4. Trading, clearing and data value chain

The operating chain begins before an order arrives and continues after the trade:

- A customer identifies a risk or desired exposure and chooses a standardized contract or cash-market instrument.
- The order reaches CME through a broker, an independent software vendor, a proprietary system, CME Direct or another approved channel.
- CME Globex or another supported venue matches orders. The central-limit-order-book design concentrates transparent bids and offers; privately negotiated transactions and selected open-outcry activity supplement the electronic market.
- For a cleared trade, CME Clearing novates the contract and becomes buyer to every seller and seller to every buyer. This substitutes exposure to the clearing house for bilateral exposure to an unknown trading counterparty.
- CME collects margin through clearing firms, marks positions to market at least twice each business day for futures and options, transfers settlement variation, and monitors delivery and concentration risks. Contracts are closed, expire, cash-settle or proceed to physical delivery under product rules.
- Quotes, trades, settlement prices, curves and open-interest information become real-time, delayed, historical and derived data products. Those prices feed trading, risk, valuation and benchmark workflows around the world.

The integrated chain lowers operational friction for customers. Execution without trusted clearing would be less useful; clearing without liquid price discovery would be harder to risk-manage; and data without a deep underlying market would carry less authority. CME also offers portfolio margining, cross-margining and collateral tools intended to recognize offsets among correlated exposures. These services can reduce the amount of capital customers must post compared with treating every position independently, which strengthens the incentive to consolidate activity in the same clearing ecosystem.

5. Customer groups and buying behavior

CME serves a two-sided and multi-layered network rather than a single buyer persona.

Commercial hedgers include agricultural producers, energy companies, manufacturers, airlines and multinational corporations. They use contracts to reduce uncertainty in input costs, selling prices, currencies and funding rates. Their demand is tied to real economic exposures and can persist even when speculative appetite is low.

Financial institutions include banks, futures commission merchants, broker-dealers and clearing firms. They trade for client facilitation, market making, balance-sheet hedging and proprietary risk management. Clearing firms are the contractual link between CME Clearing and most end users; one clearing firm generated 12% of 2025 clearing and transaction fee revenue, although CME notes that customer activity has historically moved to other clearing firms when an intermediary exits.

Institutional investors—asset managers, pension funds, insurers, hedge funds and proprietary trading firms—use futures and options for asset allocation, duration management, overlays, relative value and liquidity provision. High-frequency and market-making firms are especially important to order-book depth.

Retail and smaller professional users access markets through brokers and increasingly use micro-sized contracts, which reduce notional exposure and margin requirements per contract. Simplified event products and CME's FanDuel joint venture represent another distribution route, although prediction markets have a distinct and unsettled regulatory risk profile.

Governments and central banks use the markets for reserve, policy and risk-management purposes, and also help shape the underlying rate and currency exposures that other customers hedge.

Data consumers include trading firms, banks, asset managers, vendors, academics, benchmark licensees and enterprises that need authoritative market prices. Some are active traders; others purchase the information without executing on CME.

Membership matters commercially. Members generally receive lower transaction fees and certain trading protections; CME reported that members accounted for 85% of derivatives contract volume in 2025. That supports liquidity but creates governance and pricing tension because member economics do not always align perfectly with those of public shareholders.

6. Unit economics and capital intensity

CME combines a largely fixed operating cost base with volume-linked revenue. The platform, matching engines, clearing risk systems, regulatory functions, surveillance, cybersecurity, data distribution and sales network must operate whether daily volume is high or low. Compensation is the largest expense category; technology, professional services, depreciation, acquired-intangible amortization and other infrastructure costs are also meaningful. Licensing and other fee agreements are a more directly variable cost for selected equity, energy and swap products because CME pays owners of important indexes or other intellectual property.

This structure produces strong incremental economics when volume rises: the next contract generally requires little physical capital and limited direct labor. But the symmetry works in reverse. If trading activity falls, CME cannot remove core technology, clearing or compliance capacity in proportion to the revenue decline. Product and customer mix further complicate the relationship because contract fees differ substantially across families and member categories.

Physical capital intensity is low. TTM capital expenditure was $96.3, only 1.4% of TTM revenue, compared with $4,409.0 of statutory operating income. The economic asset base is instead intangible and institutional: benchmark contracts, open interest, customer connectivity, exchange and clearing licenses, rulebooks, proprietary data, trusted risk management and resilient systems. Those assets require continuous operating spending even if accounting capital expenditure remains modest. The Google Cloud migration illustrates the distinction: cloud architecture can accelerate product development and scaling, but the transition can temporarily duplicate on-premises and cloud costs and introduces concentration and execution risk at a critical vendor.

How one TTM revenue dollar flows through the business

Step	Dollars per $1.00 of TTM revenue	Interpretation
Clearing and transaction revenue	$0.805	Primarily volume and mix driven
Market-data revenue	$0.129	Subscription, usage and licensing characteristics
Other revenue	$0.066	Connectivity and adjacent services
Total operating expense	$(0.349)	Mostly fixed platform, people, technology and control costs
Statutory operating income	$0.651	Governed ER2 modeled profit endpoint
Consolidated net income	$0.633	Disclosed CODM metric after non-operating items and tax
Operating cash flow	$0.636	Cash generated by operations in the exact TTM
Capital expenditure	$(0.014)	Purchases of property, net
Free cash flow	$0.622	Operating cash flow less capital expenditure

This bridge is orientation, not a forecast. It also requires one caveat: CME records very large gross investment income on clearing-member collateral and a largely offsetting distribution expense below operating income. Those balances reflect the clearing model and interest-rate environment, not an unencumbered proprietary investment portfolio. Statutory operating income is therefore the clearest measure of the core exchange economics, while net income and cash flow remain the endpoints for shareholder cash generation.

7. Liquidity and network effects

Liquidity is CME's central competitive asset. A deep order book lets customers execute larger trades with less market impact; reliable execution attracts additional flow; and more flow improves price discovery. Open interest adds persistence because existing positions create future hedging, rolling and offsetting needs. Once a contract becomes a benchmark, surrounding tools, market-making models, broker connections, risk limits, documentation and back-office processes are built around it. Switching is possible, but coordinating a move by both sides of a market is difficult.

Distribution partners extend CME's reach; clearing firms connect end users to the central counterparty; margin offsets reward customers for bringing correlated positions into the same system; and data users amplify CME prices. Major index licenses and proprietary benchmarks such as CME Term SOFR reinforce this position.

These effects are powerful rather than absolute. A new venue can subsidize liquidity, undercut fees or target a product where users are dissatisfied. Large dealers can internalize client flow. Cash and OTC instruments, exchange-traded funds, securities options, contracts for difference and structured products can substitute for a futures exposure. Network quality also depends on uptime and confidence: a major outage, cyber event, clearing loss or regulatory failure can damage precisely the trust that sustains the moat.

8. Competitive landscape

In listed derivatives, major competitors include Intercontinental Exchange, Cboe Global Markets, Deutsche Börse/Eurex, Euronext and Hong Kong Exchanges, as well as newer entrants such as FMX and digital-asset or prediction platforms. Competition is contract specific. A rival does not need to replace all of CME; it can attack one interest-rate, commodity, crypto or equity workflow with aggressive pricing, a different margin model or superior distribution.

In clearing, CME competes with ICE clearing houses, LCH, OCC, Cboe Clear, DTCC/FICC, Eurex Clearing and other regional central counterparties. The relevant dimensions are creditworthiness, margin efficiency, reliability, regulatory capital treatment, product breadth, confidentiality and price. CME's integrated futures franchise and ability to recognize offsets are major advantages, while regulatory mandates can both expand the addressable clearing pool and invite new competition.

BrokerTec and EBS operate in more fragmented markets. Banks, electronic communication networks, dealer platforms, request-for-quote systems, voice brokers and new venues compete for FX, government-bond and repo flow. Internalization lets large institutions match customers without sending the order to an external venue. Data competes with other exchanges, information vendors, front-end systems and alternative or indicative price sources. A distributor can also use CME data as an input to a product that competes with CME's traded contract.

Competition therefore turns on a bundle: liquidity, all-in transaction and margin cost, product breadth, execution quality, clearing safety, technology, global access, data quality and regulatory standing. CME's strongest positions are the products in which benchmark status and deep liquidity reinforce each other; its more contestable positions are fragmented cash markets, newer products and services that have not yet accumulated open interest.

9. Regulatory and clearing structure

CME's U.S. derivatives exchanges and clearing house are regulated principally by the Commodity Futures Trading Commission under the Commodity Exchange Act. CME is designated both a systemically important financial market utility and a systemically important derivatives clearing organization, bringing additional oversight from the CFTC and Federal Reserve. BrokerTec is regulated as a broker-dealer and alternative trading system in the United States and participates in FICC for selected Treasury and repo settlement. UK and European businesses are overseen by the relevant local authorities. CME Benchmark is supervised by the UK Financial Conduct Authority. CME Securities Clearing received SEC approval as a securities clearing agency in December 2025, creating the regulatory foundation for U.S. Treasury and repo clearing services.

Central clearing changes rather than eliminates risk. CME becomes the legal counterparty to each cleared trade, so it must manage the possibility that a clearing firm cannot meet variation-margin or delivery obligations. The safeguards are layered:

- admission, capital and operational requirements for clearing firms;
- initial margin and collateral haircuts calibrated to potential price moves;
- at-least-twice-daily mark-to-market and settlement for futures and options, with capacity for more frequent calls;
- concentration, stress and delivery-risk monitoring;
- separate financial-safeguard packages for the base futures/options pool and cleared interest-rate swaps;
- a default waterfall that first uses the defaulter's margin, guaranty contribution and other available assets, then CME's designated corporate contribution, then the applicable guaranty fund of non-defaulting clearing firms and assessments; and
- committed liquidity facilities and repurchase arrangements designed to convert eligible collateral into cash during a payment disruption.

The distinction between solvency resources and liquidity resources is essential. Adequate collateral may cover a loss economically but still fail to produce cash at the time settlement is due. CME must therefore manage both the ultimate loss and the timing of payments. No waterfall is infallible: model error, correlated defaults, operational failures, extreme gaps or physical-delivery complications can exceed assumptions.

10. Macro and volume cyclicality

CME does not require markets to rise; it requires customers to manage or assume risk. Trading volume often increases when uncertainty, price dispersion or volatility rises because hedgers rebalance and speculators supply or demand liquidity. Interest-rate changes, central-bank policy, Treasury issuance, geopolitical conflict, commodity supply shocks, weather, equity drawdowns, currency moves and crypto volatility can all stimulate activity.

That relationship is not mechanical. After a severe shock, customers may reduce gross exposure, lose capital or face tighter risk limits, causing volume to fall even while uncertainty remains high. Prolonged calm can reduce urgency to hedge. Dealer balance-sheet constraints, consolidation, regulation or higher margin requirements can suppress participation. Revenue also depends on which contracts trade: TTM transaction fees cannot be inferred from aggregate contract counts alone because the rate per contract differs by family, customer and venue.

Diversification across interest rates, equities, FX, agriculture, energy, metals and digital assets dampens dependence on any single macro factor. Interest rates remain especially important to the activity mix, but commodity weather, energy shocks, equity volatility and currency policy can generate independent demand. Market data and connectivity add a smaller recurring layer, though they are still exposed to industry employment, customer budgets and regulatory rules.

11. Capital allocation and shareholder cash

CME's low physical capital needs allow a high share of operating profit to become cash. In the TTM, operating cash flow was $4,309.0, capital expenditure was $96.3 and free cash flow was $4,212.7. The company paid $4,076.0 of dividends and repurchased $1,494.8 of shares over the same period. Because combined dividends and buybacks exceeded TTM free cash flow, the cash balance declined from $4,416.9 at year-end 2025 to $2,144.2 at June 30, 2026. That period therefore reflects both current cash generation and the deployment of accumulated cash; it should not be read as a permanently repeatable payout ratio.

The standing distribution architecture combines a regular quarterly dividend with an annual variable dividend whose amount considers prior performance, expected cash needs, capital expenditure, acquisitions and other capital returns. Repurchases became material in FY2025 and accelerated in the first half of 2026. At June 30, 2026, gross statutory debt was $3,424.2 and net debt was $1,280.0 after cash. Stock-based compensation was $99.5 in the TTM, modest relative to free cash flow but relevant when judging whether repurchases reduce the share count or merely offset issuance.

Capital allocation must coexist with the liquidity and credibility needs of a systemically important clearing organization. The apparent cash abundance of an asset-light exchange cannot be separated from regulatory capital, default-management resources, debt maturities, technology investment, strategic licenses and the need to preserve confidence during market stress.

12. Growth vectors to monitor

The following are current operating initiatives, not forecasts or valuation inputs.

Broader participation in the core franchise. Micro contracts, shorter expiries, options and more precise event- or season-specific products widen the set of usable exposures. CME is also extending trading hours in selected products and adding contracts around credit, Treasury bills, mortgages, environmental markets and digital assets.

Global distribution. Sales coverage, international telecommunications hubs, regional products and more channel partners can deepen activity outside U.S. hours. Non-U.S. participation is already material, so the vector is increased density rather than a greenfield entry.

Cash-and-derivatives integration. BrokerTec Chicago, FX Spot+ and co-located cash/futures workflows aim to capture more of a customer's execution chain. The strategic benefit is not only fee revenue; linked liquidity and hedging can make the entire ecosystem more useful.

Treasury clearing. CME Securities Clearing has regulatory approval, and the company is building services around expanded central clearing requirements for U.S. Treasuries and repo. Cross-margining between cash Treasury positions and

interest-rate derivatives could be a meaningful customer-efficiency proposition, subject to execution, approval and competitive response.

Portfolio and collateral efficiency. SPAN 2, cross-margining, compression and margin analytics can reduce customers' capital burden. This is a structural differentiator because customers compare venues on the total cost of exposure, not just the posted transaction fee.

Data and benchmarks. Native cloud delivery, historical and derived datasets, CME Term SOFR and other benchmark licenses extend monetization beyond screens. Artificial intelligence may increase demand for normalized market data while also raising licensing-enforcement and misuse risks.

Cloud modernization. Migrating clearing-support and eventually trading infrastructure to Google Cloud is intended to improve scalability and product-development speed. The same initiative creates transition, vendor-concentration, latency, resilience and duplicate-cost risks until the architecture is fully proven.

13. Material risks

- **Volume and mix risk.** Transaction revenue can fall if customers reduce exposure, volatility subsides, capital becomes scarce or activity moves to lower-fee products and member tiers.
- **Liquidity fragmentation.** Competing venues, internalization and substitute instruments can weaken the self-reinforcing order book, especially in newer or cash-market products.
- **Clearing and counterparty risk.** A clearing-firm default, margin-model failure, correlated stress or collateral-liquidity shortfall could consume mutualized resources, create losses or impair confidence.
- **Operational and cyber risk.** CME depends on continuous, high-capacity systems across trading, clearing, settlement and data. Outages, malicious attacks, human error and vendor failures can halt markets and trigger regulatory or reputational damage.
- **Cloud-transition risk.** Parallel environments can raise costs, while dependence on a strategic cloud provider adds concentration, implementation and recovery risks.
- **Regulatory risk.** Transaction taxes, user fees, capital and margin rules, restrictions on digital assets or prediction markets, altered Treasury-clearing rules, or changes to futures tax treatment could affect customer economics or CME's market structure.
- **Intellectual-property risk.** Important equity-index products depend on licensed benchmarks. Unfavorable renewals, lost exclusivity or successful substitute indexes can erode a franchise.
- **Data-business risk.** Customer consolidation, fewer devices, regulatory access rules, alternative datasets, unauthorized use and AI-driven redistribution can pressure market-data pricing or volumes.
- **Customer and channel concentration.** CME relies on clearing firms, members, brokers, independent software vendors and distributors. One firm represented 12% of 2025 clearing and transaction fees, and members generated 85% of derivatives volume.
- **Capital-allocation risk.** Distributions that outrun current free cash flow reduce balance-sheet flexibility; acquisitions, partnerships and new ventures can consume capital without building durable liquidity.
- **Non-operating-income complexity.** Interest earned on clearing collateral and the related distributions can move sharply with rates and collateral balances. Gross presentation can obscure the much smaller net economic contribution.
- **Physical-delivery and benchmark-integrity risk.** Delivery failures, disputed settlement processes, benchmark manipulation or surveillance failures could create direct cost and undermine the trust on which the franchise depends.

14. Investor orientation

The cleanest way to read CME is as a high-fixed-cost, low-physical-capital infrastructure network. Roughly four-fifths of revenue comes from transaction and clearing activity, so volume, product mix and rate per contract matter most in the short run. The smaller market-data and connectivity businesses deepen customer dependence and provide more recurring revenue. The integrated clearing house enhances safety and customer capital efficiency but also concentrates operational, regulatory and tail-risk responsibility in CME.

The core questions for the main ER2 analysis are therefore not whether derivatives will exist, but whether CME can preserve benchmark liquidity, expand use without weakening price realization, operate safely through extreme markets, convert technology investment into better distribution and efficiency, and return capital without compromising clearing resilience. This primer deliberately makes no forecast, valuation, ranking, position-size recommendation or trade authorization.

Sources and evidence basis

All financial figures and reconciliation statements above come from the governed `quant_foundation.md`, which cleared independent review with `RECONCILIATION: 8/8 checks PASSED`. Qualitative business, competition, regulation and clearing descriptions were checked against the QFR-cleared copies of the [2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000009/cme-20251231.htm), [Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000047/cme-20260630.htm) and [Q2 2026 earnings release](https://www.cmegroup.com/media-room/press-releases/2026/7/22/cme_group_inc_reportsstrongfinancialresultsforq22026.html). No local data-warehouse cache was used.

Appendix M - Management Assessment

CME Group - Management Assessment

Assessment date: 2026-09-17 **Financial anchor:** latest reported quarter ended 2026-06-30; TTM ended 2026-06-30; forward horizon 2031-06-30 **Management gate: YELLOW Trade execution authorized:** NO (`trade_execution_authorized=false`)

CME Group has one of the strongest operating records in listed market infrastructure, but the management gate does not yet earn PASS. Terry Duffy has overseen the creation of an exceptionally profitable, systemically important franchise and has navigated technology shifts, regulation, crises and consolidation. The team below him is deep, internally developed and credible. The unresolved issues are not cosmetic: the CEO transition has been announced but not executed; Duffy will remain Executive Chairman; aggregate TTM capital returns exceed free cash flow; compensation still rewards adjusted earnings, margin and relative TSR rather than ROIC or per-share FCF; and an effort to remove legacy Class B board-election rights did not clear the 2026 shareholder vote. Those facts make the company investable under continued monitoring, but they preclude following the next leadership configuration for a decade without conditions.

1. Who is running the company

Terrence A. "Terry" Duffy, age 67 in the 2025 Form 10-K, has been Chairman and Chief Executive Officer since November 2016, Executive Chairman since 2006 and a director since 1995. More important than the formal CEO start date, he has been the institution's principal strategic and political leader since becoming Chairman in 2002. He owns the demutualization and public-market transition, the CBOT and NYMEX combinations, the 2018 NEX acquisition, the Google Cloud partnership and CME's positioning as a regulated, neutral clearing and risk-management venue. CME announced on June 17, 2026 that Duffy will step down as CEO and become Executive Chairman on March 1, 2027. [Succession release](https://www.sec.gov/Archives/edgar/data/1156375/000119312526273442/d129556dex991.htm)

Lynne Fitzpatrick, 47, is President and CFO and the designated next CEO. She became CFO in April 2023 and President and CFO in November 2024; she previously served as Deputy CFO, Managing Director of Corporate Development and Treasurer, and has worked at CME since 2006. Her remit already includes finance, human resources, transformation and execution. Her background is well suited to capital allocation, but her record as the final operating decision maker is necessarily untested. The succession announcement did not name her CFO successor, leaving an important bench-strength question open.

The key operating bench is experienced. Suzanne Sprague has been COO and Global Head of Clearing since November 2024, after more than two decades at CME and extensive responsibility for counterparty credit, liquidity, collateral and risk policy. Julie Winkler has been Chief Commercial Officer since 2016 and leads sales, product development, market data, international and retail initiatives. Derek Sammann leads commodities; Tim McCourt leads equities, FX, crypto and alternative products; Michael Dennis has led fixed income, SOFR, Treasury futures and BrokerTec since August 2024; Sunil Cutinho has been CIO since 2022 after running the clearing house. These are not newly assembled external hires. The 2025 10-K reports 4.1% voluntary turnover, 35.9% of openings filled internally and 14.5% of employees promoted, supporting the existence of an internal pipeline. [2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000009/cme-20251231.htm)

Duffy combines Chairman and CEO today. Charles P. Carey has served as independent Lead Director since May 2025 and can chair executive sessions, call a special meeting and lead evaluation of the CEO. That is a meaningful counterweight, but Carey has served on the board since the 2007 CBOT merger and described himself in the succession release as Duffy's friend and colleague of more than 40 years. Formal independence is present; visibly hard separation from Duffy is less certain.

The board has 20 members and reports 95% Nasdaq independence. Only eight meet the CFTC-oriented definition of a "public director," reflecting the substantial exchange-member and trading-industry representation needed for a regulated market utility. The board's audit, compensation, risk, finance, clearing-house oversight and market-regulation oversight committees are real strengths. The unusually large board and long tenures, however, raise diffusion-of-accountability and entrenchment risks.

2. Tenure and track record

Duffy has been in place long enough to own both the strengths and the unresolved liabilities. Three decisions define the record.

First, the conversion of a member-owned floor exchange into a public electronic marketplace, followed by the CBOT and NYMEX combinations, created the multi-asset liquidity and clearing network that drives today's economics. The current five-year record is strong: verified revenue increased from $4.690 billion in FY2021 to $6.521 billion in FY2025, statutory operating margin rose from 56.4% to 64.9%, and diluted EPS increased from $7.29 to $11.16. These outcomes are not solely management skill - volatility and interest-rate regimes matter - but sustained margin expansion and relatively stable diluted shares show that scale was converted into per-share earnings.

Second, NEX broadened CME into BrokerTec, EBS and optimization services. The result is strategically useful but not an unambiguous high-return acquisition. In FY2025 BrokerTec and EBS generated $151.1 million and $132.6 million of revenue respectively, while goodwill-inclusive operating ROIC for the whole company improved from 7.39% in FY2021 to 11.85% in FY2025. That remains below the Gideon 15%-plus disqualifier bar and far below a 20% compounder ideal. The 2025 OSTTRA disposition produced significant cash proceeds, but the need to dispose of a major NEX-derived business means NEX should be graded as mixed, not declared a clean triumph.

Third, the 2021 Google Cloud partnership and broader technology migration seek to modernize a systemically important matching and clearing estate without sacrificing resilience. Management has progressed from non-latency-sensitive applications toward client testing and a purpose-built Chicago region. The strategy is coherent, and Fitzpatrick has been unusually specific about migration spend and the timing of incremental expense. Yet the primary exchange migration remains ahead, and operating-market reliability is a non-negotiable gate. The return on this investment cannot be credited in advance.

Management has also shown an ability to pivot without hiding the change. OSTTRA was sold rather than retained indefinitely; proceeds were redirected to repurchases. The weakness is that management describes the repurchase program as "opportunistic" while also committing remaining OSTTRA proceeds to it. A program tied to a fixed proceeds pool is not wholly price-sensitive.

3. Capital allocation behavior

The controlling capital-allocation record is Section 7 of the DR-verified data package. R&D is not separately disclosed; CME expenses technology and capitalizes qualifying internal-use software, so treating all technology expense as R&D would be false precision.

Fiscal year	Capex ($B)	Capex / revenue	Class A buybacks ($B)	Dividends ($B)	M&A net cash flow ($B)
2021	0.127	2.7%	0.000	2.189	+0.145
2022	0.090	1.8%	0.000	2.634	(0.402)
2023	0.076	1.4%	0.000	3.236	+0.096
2024	0.094	1.5%	0.000	3.584	+0.010
2025	0.084	1.3%	0.266	3.933	+1.580

The classification matters. Cash outflows of $21.4 million in FY2023 and $33.0 million in FY2024 were employee taxes on restricted-stock vesting, not Class A repurchases. Actual Class A repurchases were zero in both years. CME began buying Class A shares in FY2025 and repurchased $1.237 billion in H1 2026 at an average $280.87 per share, leaving about $1.5 billion under the authorization at June 30. Calling the vesting-tax amounts buybacks would materially overstate past capital return and understate dilution control.

The dividend architecture is shareholder friendly: regular dividends target 50%-60% of prior-year cash earnings, and the annual variable dividend sweeps excess cash after considering operating needs, capex, M&A and repurchases. The problem is current intensity. The verified TTM record shows aggregate dividends plus Class A repurchases exceeding FCF. The data package does not print the exact TTM payout bridge, so no ratio is invented here; the management conclusion is still clear. Asset-sale proceeds can rationally fund a one-time excess, but a recurring payout above internally generated cash would reduce clearing and strategic flexibility. This is particularly important for a systemically relevant clearing organization entering Treasury clearing and a major technology migration.

CME's low capex burden and 0.24x net debt/TTM EBITDA provide capacity, but capital return should not be graded only by balance-sheet affordability. Repurchasing at elevated prices after two zero-buyback years must demonstrate per-share value, not simply absorb OSTTRA cash. The observable test is whether diluted shares decline sustainably after accounting for the March 2026 preferred conversion, stock compensation and vesting taxes.

4. Compensation alignment

The 2026 proxy discloses a coherent but incomplete pay system. The annual bonus is funded from "cash earnings," calculated from net income with adjustments including depreciation, stock compensation, purchased-intangible amortization, capex and net interest expense. FY2025 performance reached 114.3% of target. The measure aligns with the dividend framework and rewards expense discipline, but adding back stock compensation and purchased-intangible amortization weakens the link to common-shareholder economics. The program does not directly use ROIC, incremental return on capital or per-share FCF.

Annual equity awards were 50% performance shares and 50% time-vested restricted stock. The performance half is itself split equally between relative TSR and a three-year adjusted net income margin measure. Thus only one-quarter of the total annual equity award is tied to each performance metric, while one-half is retention-based. Net income margin is economically relevant for an exchange, but it can reward favorable volume and volatility regimes and excludes specified items. It is not a substitute for capital-allocation efficiency. The 2023-2025 TSR award paid at 200% of target after CME ranked at the 78.8th percentile versus the S&P 500.

Duffy's FY2025 disclosed total compensation was $23.395 million; Fitzpatrick's was $4.752 million. At March 2, 2026, Duffy beneficially owned 55,594 Class A shares and Fitzpatrick 20,924. This is real ownership, but Duffy's stake is not large relative to his annual compensation, and directors and executives together owned only 0.3% of Class A and B shares. The five-year diluted-share series rose modestly from 358.929 million in FY2021 to 360.310 million in FY2025 despite no Class A repurchases through FY2024. Dilution is not abusive, but the record does not support claiming aggressive share-count discipline.

Controls are good: CME has a Dodd-Frank/Nasdaq-compliant clawback, prohibits hedging, restricts pledging, does not reprice underwater options and withholds dividends on performance awards until goals are met. These protections prevent easy gaming, but the next proxy should add an explicit return-on-capital or per-share cash-generation component.

5. Disclosure quality and candor

Eight live FMP transcripts were reviewed: Q3 2024 through Q2 2026. The strongest disclosure comes from Fitzpatrick, who routinely quantifies rate per contract, expense components, market-data drivers and nonrecurring items. In Q2 2026 she explicitly identified approximately $7 million of market-data audit and catch-up payments versus $3.8 million in Q1 and called them nonrecurring. That is the kind of voluntary disclosure that prevents investors from annualizing noise. Expense guidance has been updated with concrete explanations about cloud timing, professional fees and occupancy rather than hidden behind generic "investment" language.

Question handling is generally direct. Management addressed FMX, BrokerTec share, rate-per-contract dilution, event contracts, perpetual futures, Treasury clearing, cloud costs and buybacks. Duffy declined to discuss pending floor-trader litigation in Q2 2025; that was legally appropriate, and he disclosed that no accrual had been recorded. In Q2 2026, after the CFTC stayed a 24/7 crude-oil contract, he explained the Rule 40.2/40.3 filing choice instead of pretending the stay had not happened. His tone was defensive and combative, however, and he emphasized CME's legal interpretation more than the relationship and process failure that allowed a launch to be stopped immediately before go-live. That is a candor strength with a stewardship caveat.

The capital-return narrative evolved in a way investors should monitor. In Q3 2024 management said it was merely reviewing buybacks. In Q4 2024 and Q2 2025, Fitzpatrick described the new authorization as opportunistic. By Q1 2026, she acknowledged that OSTTRA proceeds would be deployed to repurchases and that buybacks accelerated even as the share price rose. The answers were direct, but the word "opportunistic" became less precise once a proceeds-linked program was established.

Beyond boilerplate, uncertainty language appeared in six of eight calls, mostly to describe macro and geopolitical conditions that drive hedging demand. It was not systematically used to disguise product shrinkage. The one recurring soft spot is limited willingness to provide a precise medium-term revenue conversion for retail distribution, event contracts and new products. Management usually labels these as experiments and provides usage metrics rather than unsupported revenue promises, which is preferable to promotional forecasting.

6. Strategic coherence

CME says its purpose is "empowering market participants worldwide to efficiently manage risk and capture opportunities." That statement is consistent with investment: multi-asset liquidity, cross-margining, Treasury clearing, 24/7 crypto, market

data, Google Cloud, retail distribution and capital-efficient micro contracts all extend the same risk-management network. [2026 proxy](https://www.sec.gov/Archives/edgar/data/1156375/000162828026020500/cme-20260323.htm)

The strategy is not a sequence of unrelated pivots. It is a hub-and-spoke extension of core liquidity and clearing economics. Management also names competition directly: ICE, Cboe, FMX, FICC, prediction-market platforms, crypto-native venues and substitute cash/OTC instruments. The risk is adjacency creep. Event contracts, an owned FCM option, single-stock futures, tokenized settlement and potential perpetual products can strengthen distribution, but they can also blur CME's neutral infrastructure identity. Duffy's insistence that CME will not sacrifice market integrity is credible only if clearing conservatism and regulatory coordination remain ahead of product-launch speed.

7. Governance flags

The most material governance issue is the legacy Class B structure. Tiny classes associated with exchange memberships retain rights to elect six of 20 directors. Voter participation had been so low that several Class B directors served as holdovers. In 2026 the board proposed eliminating the special election rights, but the Class B-1 proposal failed, the Class B-2 proposal also did not produce reform, and Class B-3 lacked quorum; one director therefore remained a holdover. [June 2026 vote results](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000035/cme-20260609.htm) The attempt at reform is positive. The failed result means the distortion remains.

Related-party items are disclosed rather than hidden: two of Duffy's immediate family members held non-officer roles and received combined FY2025 compensation of about $132,000; a director's family member received about $188,000. Exchange-member directors or their firms pay ordinary-course trading and data fees, and certain firms received published liquidity incentives. These amounts are not financially material, but they reinforce why Nasdaq independence alone does not eliminate user-conflict risk. Eight CFTC "public directors," dedicated risk and clearing committees and quarterly independent sessions partly mitigate it.

The 2025 Form 10-K reports effective internal control over financial reporting and an unqualified auditor opinion; no restatement or material weakness was identified. The attempted SEC submissions feed used for a 12-month Form 4 scan returned 404 twice, so clustered insider-selling behavior could not be independently cleared in this stage. The proxy ownership table should not be misrepresented as a transaction history.

8. Peer comparison

Intercontinental Exchange / Jeffrey Sprecher. ICE has the stronger recent per-dollar reinvestment and M&A narrative: it has compounded through exchanges, data and mortgage technology under a founder CEO, while also returning capital. Sprecher's combined Chair/CEO role and long tenure create governance concentration comparable to Duffy's. CME ranks ahead on the transparency and predictability of its variable-dividend architecture and on clearing neutrality; ICE ranks ahead on demonstrated reinvestment breadth. On five-year stewardship, the two are close, with CME less acquisitive but also showing lower goodwill-inclusive ROIC than its operating margin might suggest. [ICE 2026 proxy](https://www.sec.gov/Archives/edgar/data/1571949/000119312526134700/ice-20260330.htm)

Cboe Global Markets / Craig Donohue. Donohue became Cboe CEO in May 2025 after prior leadership transitions and has a shorter in-seat record. Cboe's independent Chair and smaller, cleaner board structure are governance advantages, and its use of EPS plus TSR in performance awards is at least as shareholder-oriented as CME's margin/TSR mix. CME ranks ahead on operating continuity, crisis-tested clearing stewardship and demonstrated scale economics. Cboe ranks ahead on structural board independence and a more explicit recent capital-allocation reset. [Cboe 2026 proxy](https://www.sec.gov/Archives/edgar/data/1374310/000162828026022939/cboe-20260401.htm)

Overall, CME's leadership ranks first on institutional continuity and regulated-market experience, approximately tied with ICE on long-run strategic achievement, and behind both peers on clean separation of Chair and CEO authority. It is not obviously the best-managed alternative once governance and capital-allocation design are included.

9. Management gate verdict

YELLOW - investable but unresolved. Duffy's record, the internally developed leadership bench, strong clearing discipline, rising margins, restrained dilution and unusually specific quarterly disclosure argue decisively against FAIL. PASS is withheld because the March 2027 transition has not occurred, Duffy will remain Executive Chairman, the CFO succession is undisclosed, aggregate TTM payout exceeds FCF, compensation lacks an explicit ROIC/per-share FCF metric, and failed Class B reform leaves six special-class board seats and a holdover mechanism in place.

The gate upgrades to PASS only if all three conditions are met: (1) Fitzpatrick operates independently as CEO for at least four quarters, a credible CFO successor is installed, and board disclosures establish clear decision rights between CEO and Executive Chair; (2) rolling-12-month dividends plus repurchases return to or below FCF after the one-time OSTTRA proceeds are absorbed, with net share-count reduction and no impairment of clearing or technology investment; and (3) CME materially reforms the Class B election structure, eliminates holdover directors or achieves an equivalent governance remedy while increasing demonstrably public risk oversight.

The gate downgrades to FAIL if Duffy functions as a shadow CEO, the company repeats payout above FCF for two consecutive TTM periods without a bounded asset-sale explanation, repurchases remain mechanical at elevated prices while per-share economics stagnate, the board abandons Class B reform, or a preventable clearing/regulatory control failure occurs during Treasury clearing or cloud migration.

Appendix W - Moat and 2046 Durability

CME Group (CME) - Moat and 2046 Durability

Date: 2026-09-17 Information cutoff: 2026-09-17 Financial perimeter: one reportable segment, `CME Group consolidated trade_execution_authorized=false`

1. Moat taxonomy applied

Network effects - very strong in benchmark listed derivatives. CME's deepest moat is two-sided liquidity reinforced by open interest. Hedgers want reliable execution in size; market makers and speculators go where existing flow tightens spreads and reduces market impact, attracting more hedgers. Open positions must later be margined, rolled, offset or taken to expiry, while broker connections, risk limits, models and back-office processes organize around the contract. Aggregate average daily volume rose from 19.6 million contracts in 2021 to 28.1 million in 2025; the Q2 2026 call reported about 130 million open positions, up 8% year over year and 16% year to date. A challenger must attract both sides, market makers, clearing connectivity and risk capital simultaneously; low posted fees alone do not create comparable depth.

Switching costs - moderate for an individual order, high for a market ecosystem. A trader can route a new order elsewhere, so this is not contractual lock-in. The harder switch is collective. Moving a benchmark position entails different basis risk, liquidity, collateral, margin, clearing-member processes, market-data entitlements, execution algorithms and operational approvals. These costs are highest in mature interest-rate, equity-index and commodity contracts and lower in cash FX, cash Treasuries, new crypto/event products and undeveloped contracts. The relevant unit of lock-in is therefore the network, not the user interface.

Scale economies - strong and observable. Trading, surveillance, cyber resilience, regulatory compliance, settlement and clearing require a large fixed-cost platform, while the marginal contract and incremental data subscriber consume little physical capital. Statutory operating margin rose from 56.4% in 2021 to 64.9% in 2025, and TTM operating margin was about 65.1%, despite continuing technology and compliance spending. TTM capex was only about 1.4% of revenue. Scale also permits CME to support many asset classes and recognize portfolio offsets that a single-product venue cannot match.

Brand and high-trust procurement - strong, but earned continuously. Institutional customers choose a venue partly on whether prices, settlement, risk controls and default management will remain credible under stress. CME's designation as a systemically important derivatives clearing organization and its history operating critical markets are barriers because customers and regulators cannot cheaply trial an unproven clearing house for systemically important exposures. A material outage, benchmark failure, cyber event or clearing loss could destroy this trust.

Regulatory position - meaningful but not a license to extract. CME operates regulated exchanges and clearing houses and must maintain DCO/DCM capital and liquidity resources, robust rulebooks, surveillance, default waterfalls and operational resilience. Replicating that stack is costly and slow. Yet regulation is two-edged: open-access or interoperability rules can weaken vertical integration; transaction taxes or higher customer capital requirements can reduce activity; and mandated Treasury clearing can invite FICC, ICE and other infrastructure providers rather than reserve the pool for CME. Regulatory status raises the entry bar but does not guarantee share.

Intellectual property - important around benchmarks, secondary to liquidity. CME owns proprietary data, rulebooks, settlement procedures and technology IP and licenses major S&P, Nasdaq, Russell and Dow Jones indices. The 2025 10-K identifies Nasdaq licenses through 2039 and Russell licenses through 2037, but warns that exclusivity or favorable renewals are not assured. A licensed contract without liquidity has little value; IP protects specific franchises but is not the core moat.

Distribution and access - strong complement, not an independent fortress. CME reaches customers through FCMs, brokers, ISVs, direct connections, global hubs and data distributors. Roughly 31% of 2025 electronic futures/options volume came from outside the United States, and Q2 2026 non-U.S. ADV was 9.1 million. Partners can change priorities and direct-to-customer platforms can own retail distribution, but CME access leads into an institutional liquidity and clearing pool. The [2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000009/cme-20251231.htm) frames competition around liquidity, margin efficiency, reliability, regulation, connectivity and total transaction cost.

2. Per-segment moat

CME Group consolidated - sole reportable and modeled segment

CME has one reportable segment, so no separate segment economics should be invented. Within that perimeter, the strongest profit pool is mature listed futures and options across rates, equity indexes, energy, agriculture and metals. Its durability is 10-20 years because benchmark liquidity, open interest, clearing and margin offsets reinforce one another. The moat would break if executable depth and open interest migrated persistently to a rival or substitute, not simply if a competitor launched a contract. The earliest signal would be a multi-quarter combination of declining CME open interest, loss of ADV share in a core benchmark, widening spreads or reduced large-holder participation while a rival's equivalent contract builds durable open interest.

Clearing adds a second layer. CME novates trades, holds collateral, runs margin and default-management systems, and can recognize offsets across correlated positions. Q2 2026 management estimated more than $95 billion of daily margin efficiencies. The economic point is not the promotional number alone: customers compare the all-in cost of exposure, including capital tied up as margin, not just cents per contract. Cross-margining with FICC and OCC can make the existing pool more valuable as positions accumulate. This layer is durable for 10-20 years if models, liquidity resources and trust hold. It can break through a tail loss, serious model failure, regulatory forced access that commoditizes clearing, or a competitor that offers comparable safety with structurally better offsets.

Market data and information services form a smaller but real moat layer. CME owns authoritative quotes, trades, settlement prices, curves and open-interest data generated by its markets. Market-data revenue rose from $576.9 million in 2021 to $803.1 million in 2025 and $872.7 million TTM; Q2 2026 was a record $238.1 million. The data is hard to reproduce independently because its authority derives from the underlying benchmark market. However, distribution, analytics and derived-data workflows are more contestable than the raw feed. Regulatory access rules, customer consolidation, device compression, unauthorized AI use or vendors building competing products from CME inputs can weaken this pool.

BrokerTec cash fixed income, EBS cash FX, event contracts and newer products have a weaker moat than the listed core. Cash markets are fragmented and vulnerable to dealer internalization, RFQ systems and price competition; new contracts lack mature open interest. These activities can strengthen the blend when they connect cash and futures liquidity or add offsets, as Treasury Link intends, but do not yet deserve the mature franchise's durability. The company moat remains strong because clearing and transaction fees are about 80.5% of TTM revenue and the largest fee pools are mature listed markets.

3. Margin persistence evidence

The margin record is consistent with a strong, scalable infrastructure moat, though not a perfectly stable one. Live FMP annual income-statement pulls on 2026-09-17 and the QFR-cleared data package show the following statutory margins.

Fiscal year	Operating margin
2016	61.2%
2017	63.4%
2018	60.5%
2019	53.2%
2020	54.0%
2021	56.4%
2022	60.1%
2023	61.6%
2024	64.1%
2025	64.9%
TTM to 2026-06-30	65.1%

Margin compressed in 2019-2020 but remained above 53%, then expanded for five consecutive years. FY2021-FY2025 revenue increased from $4.69 billion to $6.52 billion while operating income rose from $2.65 billion to $4.23 billion, consistent with strong incremental economics rather than a commodity spread. Quarterly margin still moves with volume and expense timing: Q3 2025 was 63.3%, Q4 61.8%, Q1 2026 69.7% and Q2 64.9%. The moat supports a high through-cycle margin, not immunity from calm markets, mix, technology migration cost or license fees.

Because the company reports one segment, no legitimate five-year segment-margin series exists beyond consolidated statutory operating income. Product revenue histories show diversification rather than separate profit margins: interest rates remain the largest fee pool, while equities, energy, agriculture and metals reduce dependence on one volatility regime. Market

data and other revenue add recurring characteristics but do not change the single-segment accounting perimeter.

4. AI disruption stress test

AI is primarily a workflow tool for CME's customers and internal operations, not a substitute for the regulated liquidity and clearing service. A model can generate hedging ideas, forecast volatility, optimize order placement, reconcile trades or automate surveillance. It cannot by itself create legally final, two-sided benchmark liquidity; become buyer to every seller and seller to every buyer; hold and move margin; mutualize defaults; or earn regulator and clearing-member trust. In that sense, core listed trading and clearing are chokepoint economics supported by network density and regulated infrastructure rather than a prompt-to-output workflow.

AI could still attack the perimeter. Smart routers and execution agents can compare venues continuously, making pricing and latency differences more visible and helping fragment order flow. Models can commoditize basic analytics and front ends. They can also synthesize indicative prices from alternative sources, reduce the value of some derived datasets and make unauthorized redistribution easier. The 10-K explicitly flags misappropriation or misuse of CME data through AI. Market-data packaging and analytics are therefore the most exposed sub-businesses; central clearing and the most liquid benchmark contracts are the most protected.

AI may be net additive if it increases automated risk management, demand for normalized real-time data and the speed at which customers adjust exposures. Compute Futures illustrate that new technology can create new hedgeable inputs rather than displace the exchange. The investment case should not assume this upside. The moat conclusion requires only that AI does not remove the need for neutral price discovery, standardized contracts, collateral and default management. It does not.

5. The 2046 test

2046 date: 2046-09-17. A specific plausible description is: CME Group operates a globally distributed, near-continuous marketplace and clearing network for standardized financial and real-economy risks. Banks, asset managers, hedge funds, corporations, producers, utilities, governments, market makers and retail intermediaries pay per contract or transaction to execute and clear interest-rate, equity, currency, energy, agricultural, metals, digital-asset and newly standardized risks. They pay because CME concentrates counterparties in benchmark order books, provides price/time certainty, nets correlated exposures and turns bilateral credit risk into exposure to a regulated central counterparty. FCMs and members pay access, connectivity, collateral and clearing-related charges; data vendors, trading firms, banks and enterprises pay subscription or license fees for authoritative real-time, historical, settlement and benchmark data generated by those markets.

The named contracts and delivery technology will change. Some cash-market and event products may wither; AI-native interfaces will likely replace today's workflow software; cloud or successor infrastructure will host more processing. The economic functions persist: coordination of two-sided liquidity, independent price discovery, risk mutualization, collateral efficiency, settlement finality, surveillance and trusted reference data. Mature benchmark contracts, central clearing and cross-asset portfolio offsets remain the high-return core. Treasury clearing may be material by then, but only if CME earns share against FICC and ICE rather than merely benefiting from a mandate.

Directional 2046 operating margin is **stable to modestly lower than today's roughly 65%**, still structurally high. Scale and automation support margins, while 24/7 operations, cyber resilience, cloud/vendor redundancy, greater regulatory obligations, open-access pressure and fee competition consume part of the benefit. Margins persist because the marginal cost of another contract or licensed data use remains low and customers pay for total execution-and-capital efficiency, not code. They erode if liquidity fragments enough that CME must subsidize market makers and lower fees, if clearing becomes interoperable and commoditized, or if trust failures require permanently higher capital and operating cost.

Bear description. In the adverse 2046 state, smart routing, vertically integrated direct platforms and regulatory interoperability split liquidity across venues; cash, ETF, options, OTC and perpetual-style substitutes take speculative flow; forced open access separates execution from clearing; FICC or ICE dominates Treasury clearing; and a major outage or default-management failure reduces confidence. CME still operates important legacy benchmarks, but posted fees and data prices fall, incentives rise, cross-margin advantages narrow and the cost base remains fixed. This outcome is credible but not the central case because liquidity coordination is path-dependent and the 2016-2026 margin and volume record shows adaptation across multiple product and volatility cycles. Its probability is meaningful enough to require operational and regulatory monitoring, not high enough to invalidate the moat.

6. Competitive threat inventory

Threat	Mechanism	Segment / profit pool affected	Earliest observable signal	Plausibility
ICE, Cboe, Nasdaq, FMX and substitutes fragment benchmarks	Fee rebates, differentiated products, index/IP control, better distribution, cash/ETF/options/OTC alternatives or internalization draw flow away	Mature listed products; newer contracts; data	Rival open interest and executable depth rise for 4+ quarters while CME core open interest, ADV share or large-holder counts fall	Medium
Regulatory redesign and Treasury-clearing competition	Open-access/interoperability rules weaken vertical economics; FICC/ICE win the mandated Treasury pool; taxes or bank-capital rules raise customer cost	Clearing, rates, BrokerTec, connectivity	Mandates require unfavorable access; cross-margin approvals stall; CME Treasury volumes remain immaterial after launch	Medium
Clearing, operational or cyber tail event	Default waterfall, margin model, settlement liquidity, benchmark integrity or cloud/vendor resilience fails and damages trust	Entire franchise	Uncovered loss, emergency assessment, repeated material outage, regulatory capital action or customer collateral migration	Low probability / very high severity

Competitive pressure is product-specific. ICE is strongest where energy, fixed-income/data assets and clearing overlap; Cboe is relevant in listed options, volatility and alternative index exposures; Nasdaq matters through index licensing, market technology, cash/options venues and data. No rival must replace all of CME to damage economics. The most likely attack is a narrow contract or workflow where a challenger can subsidize liquidity, exploit a regulatory change or bundle distribution. Conversely, core liquidity cannot be inferred from venue market capitalization or technology spending; it must be visible in tradable depth and open interest.

7. Pricing power verification

Pricing power is observable but constrained by volume elasticity and mix. The 2025 10-K reports that a February 2025 fee change helped lift average rate per contract to $0.696 from $0.692; a higher-fee product mix also helped, while volume-tier incentives offset part of the gain. On the Q4 2025 call, management estimated April 2026 fee changes would add roughly 1%-1.5% to total revenue on a 2025-like activity base. The subsequent consolidated RPC moved from $0.702 in Q3 2025 to $0.707 in Q4, $0.652 in record-volume Q1 2026 and $0.678 in Q2. That pattern is not evidence of price failure: tiering and lower-rate product mix dilute realized RPC when volumes surge. It does show why posted increases cannot be extrapolated one-for-one.

Market data provides clearer price-and-usage evidence. FY2025 revenue increased 13% to $803.1 million, with the filing attributing the increase largely to certain price increases and greater usage. Q2 2026 increased 20% to a record $238.1 million and represented the 33rd consecutive quarter of year-over-year growth according to the live FMP transcript. Contracts are generally monthly subscriptions based on devices or subscribers, with some annual licenses. CME did not disclose churn, renewal rates or the adoption rate for specific price increases, so the evidence supports **moderate-to-strong**, not unlimited, pricing power.

The economic ceiling is the customer's all-in cost. Members represented 85% of 2025 derivatives volume and generally receive lower fees; incentives can be required to seed products or retain flow. If a fee rise harms depth, its second-order damage can exceed the direct revenue gain. CME's strongest pricing position exists where a small fee buys access to uniquely deep liquidity and substantial margin offsets. It is weakest in fragmented cash markets, new contracts and derived-data services with close substitutes.

8. Concentration, tail risk and moat falsification

The moat concentrates responsibility as well as economics. One clearing firm represented 12% of FY2025 clearing and transaction fees, although end-customer activity can migrate among FCMs. Two market-data resellers represented about 30% of 2025 data revenue. Clearing-member collateral and guaranty-fund assets were $158.1 billion at 2026-06-30 with matching liabilities; they are not CME shareholder cash. The FY2025 disclosed futures/options safeguard stack included a $0.1 billion CME contribution, $8.3 billion of guaranty-fund contributions and $22.8 billion of assessment powers, with separate IRS resources. These layers reduce expected loss, but model error, correlated defaults, collateral gaps or settlement-liquidity failure can exceed assumptions.

Observable falsification signals are: (1) sustained core open-interest loss to a named competitor rather than merely lower market volatility; (2) margin efficiency stagnating while competitor offsets expand; (3) successive fee increases producing

weaker net transaction revenue and rising incentives; (4) market-data growth falling below usage growth or broad license resistance after AI-policy changes; (5) a material clearing loss, assessment, repeated outage or regulatory capital constraint; and (6) Treasury clearing failing to gain economically relevant activity after the mandate while costs persist. These are moat signals, not portfolio or trading instructions.

9. Moat verdict

Moat gate: PASS. CME has a concrete, observable moat in benchmark liquidity and open interest, integrated clearing and cross-margin economics, proprietary price data, broad institutional distribution and trusted regulated infrastructure. Ten-year margins stayed above 53% and recovered to roughly 65%, while ADV, open interest, market-data revenue and customer margin efficiencies strengthened. Competition and regulation can erode individual products, but the core profit pool does not depend on a temporary capacity shortage, a replaceable software workflow or untested pricing.

2046 test: PASS. In 2046, identifiable customers still pay CME for executing and clearing standardized risk, reducing collateral requirements through offsets, obtaining settlement finality and licensing authoritative prices and benchmarks. AI changes interfaces and improves workflows but does not substitute for neutral two-sided liquidity, legal novation, collateral movement or trusted default management. The verdict would fail if sustained benchmark-liquidity migration, forced commoditization of clearing, or an operational/default event broke that coordination and trust; current evidence does not make those outcomes the base case.

Evidence note

Quantitative claims use the QFR/DR-cleared `data_package.md`, supplemented by a live FMP annual income-statement pull and live FMP Q2 2026 transcript retrieval on 2026-09-17. Competitive, risk, pricing, cross-margin and data claims were checked live against the [2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000009/cme-20251231.htm), [Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000047/cme-20260630.htm), [Q4/FY2025 SEC-filed release](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000006/exhibit991123125.htm), and [Q2 2026 CME release](https://www.cmegroup.com/media-room/press-releases/2026/7/22/cme_group_inc_reportsstrongfinancialresultsforq22026.html). The primer was used only for orientation. No local data-warehouse cache was used.

Appendix B1 - Consolidated Company

CME Group - Consolidated company segment deep dive

Information date: 2026-09-17 Forecast anchor: TTM ended 2026-06-30 Forecast horizon: 2031-06-30, exactly five calendar years Reporting currency: USD `trade_execution_authorized=false`

0. Segment boundary and taxonomy note

CME Group has one operating and reportable segment, and the perimeter is stable across FY2021-FY2025 and the TTM ended 2026-06-30. Interest rates, equity indexes, foreign exchange, agricultural commodities, energy, metals, BrokerTec, EBS, interest-rate swaps, market data, and other revenue are product or revenue families inside that single segment; they are not separate financial segments. The issuer tells its CODM story using consolidated net income, a below-operating-income statutory endpoint. The QFR-sealed bridge therefore requires one modeled segment called `Consolidated company` on the exact basis **Statutory operating income (single-segment non-operating CODM fallback)**. This appendix preserves consolidated net income only as issuer-disclosed CODM context. It does not rename net income as operating income, allocate taxes or non-operating items to products, or create separate product financial segments. The older Optimization fee row stopped being separately disclosed after FY2021, but that presentation change does not alter the segment perimeter. [data_package sections 1, 3, and 3a]

1. What this segment actually is

CME is an infrastructure network for transferring and managing market risk. Customers use its futures and options to hedge or take exposure to interest rates, equity indexes, currencies, energy, agricultural commodities, metals, and digital assets. BrokerTec provides cash fixed-income execution, EBS provides cash foreign-exchange execution, and the interest-rate-swaps franchise clears eligible OTC activity. Market data and information services distribute real-time prices, derived data, licenses, and benchmark information. Other revenue includes access, communication, hosting, and issuer-classified services.

The core pricing unit for listed derivatives is a fee per contract. What CME realizes depends on the product, venue, membership status, incentive program, tier, and customer mix. The official Q2 2026 product-line rates were $0.480 for interest rates, $0.605 for equity indexes, $0.813 for foreign exchange, $1.131 for energy, $1.426 for agricultural commodities, and $1.315 for metals. The consolidated rate per contract moved from $0.702 in Q3 2025 to $0.707 in Q4, $0.652 in record-volume Q1 2026, and $0.678 in Q2. That sequence is economically important: volume tiers and mix can reduce realized rate while encouraging enough incremental contracts to expand fee revenue. A forecast that multiplies an unconstrained volume growth rate by an independent posted-price increase would overstate economics. [data_package section 5; D-IR-Q3, D-IR-Q4, D-IR-Q1, and D-IR-Q2]

Customers reach CME electronically, directly or through clearing firms, brokers, trading firms, asset managers, banks, corporates, commercial hedgers, and retail distribution partners. FY2025 electronic volume was 93% of total listed ADV, and H1 2026 institutional customers originated 94% of volume. Outside-U.S. participation was about 31% of FY2025 electronic futures and options volume; Q2 2026 non-U.S. ADV was 9.1 million contracts, about 30.5% of total. One clearing firm represented 12% of FY2025 clearing and transaction fees, but the underlying trading activity can migrate among futures commission merchants, so billing concentration is not identical to end-customer concentration. [data_package sections 0a and 1]

The go-to-market model is ecosystem-led. CME adds contracts, maturities, options, smaller-sized products, extended trading hours, cross-margining, and distribution links; customers add orders and open positions; clearing firms post collateral and mutualize defined default resources; and the resulting liquidity attracts more customers. Management's FanDuel distribution discussion, 24/7 crypto access, planned Compute Futures, planned Treasury Link, and prospective U.S. Treasury clearing are option-like growth initiatives. They are not firm revenue commitments, and this model assigns no stand-alone revenue to them. Their effect appears only in differentiated volume and product-family growth rates where adoption would plausibly show up.

2. Current economics at the TTM anchor

TTM revenue was $6.7726 billion, comprising $5.4509 billion of clearing and transaction fees, $0.8727 billion of market data and information services, and $0.4490 billion of other revenue. The exact modeled profit was $4.4090 billion, producing a

65.10% **Statutory operating income (single-segment non-operating CODM fallback)** margin. TTM issuer-disclosed CODM consolidated net income was $4.2870 billion, but it is not the forecast profit metric in this appendix. Investment income, collateral-related other non-operating expense, borrowing cost, equity-method earnings, and income tax remain below the operating line for later consolidated synthesis. [data_package sections 0a, 3, and 3a; D-FMP-PROD and OFFICIAL_TTM_RECONCILIATION]

The mix remains heavily transaction-led: clearing and transaction fees were 80.5% of TTM revenue, market data 12.9%, and other revenue 6.6%. Yet the smaller market-data stream matters disproportionately to resilience because it does not require each subscriber to trade another contract. Market data reached $872.7 million in the TTM, after FY2025 revenue of $803.1 million and a record $238.1 million in Q2 2026. Other revenue was $449.0 million TTM. The transaction engine remains broad: FY2025 clearing fees included $1.7196 billion from interest rates, $1.1704 billion from equity indexes, $813.2 million from energy, $658.1 million from agricultural commodities, $354.7 million from metals, and smaller FX, cash-market, and swaps lines. [data_package sections 0a, 4, and 5; D-FMP-PROD, D-SEC-25K, and D-IR-Q2]

Activity is volatile quarter to quarter. Aggregate ADV was 25.322 million in Q3 2025, 27.353 million in Q4 2025, 36.231 million in Q1 2026, and 29.843 million in Q2. Q2 product ADV was 14.532 million for interest rates, 8.633 million for equity indexes, 0.989 million for FX, 2.667 million for energy, 2.080 million for agriculture, and 0.941 million for metals. Open interest ended Q2 up 8% year on year and 16% year to date at roughly 130 million positions. The package correctly flags the absence of a clean five-year open-interest series. [data_package sections 0a, 4, 5, and 10]

Capital intensity is unusual rather than conventionally high. FY2025 capex was only $84 million, 1.3% of revenue, and historical capex ranged from $76 million to $127 million during FY2021-FY2025. The business can therefore turn a large share of operating earnings into cash without continuously building physical inventory or plants. However, clearing is balance-sheet and liquidity intensive in a risk-management sense. Performance bonds and guaranty-fund contributions were $158.111 billion at Q2 2026, matched by liabilities and unavailable to shareholders. At FY2025, CME's designated corporate contribution was $100 million for futures and options and $150 million for IRS; clearing members supplied $8.306 billion and $2.381 billion of corresponding guaranty-fund contributions, with $22.842 billion and $1.734 billion of assessment powers. A $7.0 billion secured clearing facility, expandable to $10.0 billion, plus $1.0 billion of committed repo and $0.750 billion of FX facilities supported liquidity. This structure keeps ordinary capex low but makes operational resilience, collateral mobilization, member quality, and confidence non-negotiable. [data_package sections 0a, 7, and 8; D-FMP-CF, D-SEC-25K, and D-SEC-Q2]

3. Unit economics and operating-cost mechanics

Transaction revenue can be expressed conceptually as eligible activity multiplied by realized price, but the actual bridge has four interacting components. First is ADV or cash-market activity: more risk-transfer demand and more participants create more contracts. Second is mix: a shift from lower-rate interest-rate contracts toward higher-rate agriculture, metals, or energy raises the consolidated rate even with unchanged fee schedules. Third is explicit pricing: management estimated the April 2026 fee adjustments would add about 1%-1.5% to total revenue on 2025-like activity. Fourth is tiering and incentives: Q1 2026 demonstrated that record volume can reduce realized rate per contract as customers cross volume thresholds. The correct modeling discipline is therefore to assign each listed family a combined revenue CAGR and separately disclose the assumed volume and effective rate/mix contributions; those two components are explanatory, not mechanically independent promises.

Incremental margins are attractive because the matching engine, clearing infrastructure, regulatory framework, product development, market surveillance, and core distribution network are largely shared. A second contract uses little additional physical capital. Market-data delivery also scales well after the prices and entitlements are created. However, costs do not stand still. Technology capacity, cybersecurity, cloud migration, disaster recovery, regulatory compliance, market surveillance, client onboarding, product engineering, and compensation rise with the breadth and criticality of the franchise. Twenty-four-hour trading increases staffing and operational coverage. Treasury clearing introduces new operational, regulatory, and liquidity responsibilities. High-volume periods may require more infrastructure and support even when they produce good incremental economics.

The TTM operating-cost base implied by the sealed revenue and exact modeled-profit figures is $2.3636 billion. The scenarios model that cost pool directly rather than inventing product profit margins that CME does not disclose. In the base case, revenue reaches $8.8930 billion and operating cost reaches $2.9791 billion, a 4.74% five-year CAGR; revenue grows 5.60%, allowing 140 basis points of margin expansion to 66.5%. In the bull case, cost rises faster in dollars, to $3.1885 billion or a 6.17% CAGR, because CME invests in capacity, round-the-clock operations, Treasury clearing, and international

distribution. Revenue nevertheless grows faster and margin reaches 69.0%. In the bear case, cost reaches $2.6665 billion, a 2.44% CAGR, while revenue is nearly flat; fixed and semi-fixed costs, regulatory spend, and resilience requirements drive a margin contraction to 61.0%. This is the key asymmetry: CME can flex some compensation and project spending, but it cannot safely strip the clearing house merely because contract activity is weak.

Market data adds a different unit-economic profile. Subscriber, display, device, licensing, and derived-data adoption can lift revenue without a one-for-one increase in trading activity. Management reported 32 consecutive quarters of year-on-year market-data growth and a 20% increase in Q2 2026. The base case deliberately fades that exceptional current rate to an 8% five-year CAGR. The bull case uses 11%, requiring sustained professional-display growth, pricing, and new licensed uses. The bear case still assumes 3%, reflecting contractual and workflow stickiness but allowing customer optimization, redistribution pressure, or regulation to limit pricing.

Other revenue is treated conservatively because the package does not disclose enough sub-lines to assign separate economics. Its FY2023-FY2025 growth was distorted by a 32.1% increase in FY2024 followed by only 1.1% in FY2025. The model therefore does not extend the historical two-year CAGR. Base growth is 3%, bear growth is negative 1%, and bull growth is 6%. No unverified revenue is assigned to hosting, connectivity, or a new initiative.

4. Competitive dynamics

The relevant competitive set spans other exchange groups, cash and OTC venues, clearing organizations, digital-asset platforms, prediction markets, ETFs, options, and bilateral substitutes. The data package identifies ICE, Cboe, Euronext, HKEX, Deutsche Boerse, and FMX Futures Exchange, as well as substitute cash, OTC, ETF, and options exposures. In U.S. Treasury clearing, FICC is the primary incumbent and ICE Clear Credit is another entrant. Competition is multidimensional: the headline fee matters, but so do order-book depth, bid-ask spreads, fill certainty, product breadth, margin offsets, collateral efficiency, clearing-house credit quality, uptime, data quality, and the cost of connecting to another venue. [data_package section 9]

The data package contains no independently verified numeric market-share series, so this appendix does not invent one. The defensible current-share context is qualitative: CME operates established benchmark contracts across multiple asset classes, FY2025 electronic volume was 93% of listed ADV, Q2 open interest was roughly 130 million positions, and management estimated more than $95 billion of average daily margin savings in Q2 2026. Those indicators support deep participation and netting value, but they are not substitutes for a market-share percentage. [DATA GAP: the reviewed data package does not provide a numeric, comparable market-share series by product or competitor.]

Pricing power is strongest when users need the incumbent liquidity pool and can save more through netting than they pay in fees. It is weaker where products are readily fungible, customers can internalize flow, a rival can subsidize migration, or regulators force interoperability or fee changes. The 2026 fee adjustment estimate of 1%-1.5% of total revenue is tangible evidence that CME can reprice without assuming every product receives the same uplift. Yet the Q1 volume-tiering comment shows management also deliberately gives up rate to attract incremental flow. Sustainable pricing should be judged by revenue and open-interest retention after the price change, not by the posted schedule alone.

Substitution risk differs by family. Interest rates and equity indexes benefit from benchmark adoption and portfolio margining, but rival futures, cash instruments, swaps, ETFs, and options can satisfy related exposure needs. Energy, agriculture, and metals depend on commercial relevance, contract design, and physical-market credibility; they can grow strongly when volatility and hedging needs rise, but activity may normalize. FX faces both listed and enormous OTC/cash substitutes, explaining the more modest historical dollar growth. BrokerTec and EBS compete in electronically traded cash markets with different economics from listed futures. Event contracts and crypto can bring new retail engagement but also expose CME to fast-moving competitors and regulatory boundary questions.

5. Moat at the consolidated-segment level

CME's strongest defense is the liquidity-and-clearing network. Traders prefer the venue where counterparties and open interest already exist because deeper liquidity tends to improve execution. Clearing members and customers then benefit from offsetting positions and cross-product margin efficiencies, which make the combined portfolio cheaper to support than isolated exposures. The estimated $95 billion of daily margin savings is not revenue or corporate capital, but it illustrates why the network can create customer value beyond a low transaction fee. Open interest of roughly 130 million positions and continuing year-on-year growth provide a current depth signal. [data_package sections 4 and 6]

The second defense is benchmark and product breadth. A customer can use interest-rate, equity, commodity, FX, and other contracts inside one operating and clearing ecosystem. New contracts can attach to existing distribution, clearing, market data, and risk systems. Breadth also improves cross-margining possibilities. The third defense is regulation, operational reliability, and risk-management credibility. A systemically important derivatives clearing organization cannot be replicated merely by launching a matching website. It requires capital, liquidity, default-management rules, clearing-member relationships, surveillance, cybersecurity, and regulatory approval. Those requirements support durability but also impose real fixed costs and public-policy constraints.

The moat is durable over five to ten years if CME retains benchmark relevance, reliable clearing, capital efficiency, and open interest. It is not impregnable. A rival can build liquidity with incentives, a new product can shift the risk-transfer convention, regulators can reshape clearing or pricing, and a major default or outage can damage trust quickly. The bear case is not built around the moat disappearing entirely; it models enough share, activity, and pricing pressure to keep revenue almost flat while unavoidable costs rise. The bull case assumes new distribution and products strengthen, rather than merely harvest, the network.

6. Historical growth rates reproduced from the data package

The table uses FY2023 as FY-3, FY2024 as FY-2, and FY2025 as FY-1. The displayed historical CAGR is the annualized two-year rate across the three fiscal-year observations, which is the mathematically correct span from FY2023 to FY2025. Every dollar is reproduced from the cited data-package row; none is back-solved.

Product or revenue family	FY2023 revenue	FY2024 revenue	FY2025 revenue	FY2023-FY2025 CAGR	Latest FY YoY	Data package cite
Interest rates	$1,558.4m	$1,659.6m	$1,719.6m	5.0%	3.6%	data_package section 4; D-SEC-25K
Equity indexes	$1,036.4m	$1,095.3m	$1,170.4m	6.3%	6.9%	data_package section 4; D-SEC-25K
Foreign exchange	$190.0m	$198.5m	$197.0m	1.8%	(0.8%)	data_package section 4; D-SEC-25K
Agricultural commodities	$508.5m	$585.1m	$658.1m	13.8%	12.5%	data_package section 4; D-SEC-25K
Energy	$702.8m	$800.5m	$813.2m	7.6%	1.6%	data_package section 4; D-SEC-25K
Metals	$224.7m	$284.3m	$354.7m	25.6%	24.8%	data_package section 4; D-SEC-25K
BrokerTec fixed income	$152.1m	$145.1m	$151.1m	(0.3%)	4.1%	data_package section 4; D-SEC-25K
EBS foreign exchange	$132.6m	$131.6m	$132.6m	0.0%	0.8%	data_package section 4; D-SEC-25K
Interest-rate swaps	$83.0m	$88.2m	$84.4m	0.8%	(4.3%)	data_package section 4; D-SEC-25K
Market data and information services	$663.7m	$710.2m	$803.1m	10.0%	13.1%	data_package section 4; D-SEC-25K
Other revenue	$326.7m	$431.7m	$436.4m	15.6%	1.1%	data_package section 4; D-SEC-25K
Consolidated company	$5,578.9m	$6,130.1m	$6,520.6m	8.1%	6.4%	data_package sections 2-3; D-FMP-IS and D-SEC-25K

Arithmetic checks are clean. For example, $1,659.6m multiplied by 1.036 equals $1,719.3m, within rounding of the disclosed $1,719.6m interest-rate revenue; $1,095.3m multiplied by 1.069 equals $1,170.9m, within rounding of $1,170.4m equity-index revenue; $585.1m multiplied by 1.125 equals $658.2m, within rounding of $658.1m agriculture revenue; and $710.2m multiplied by 1.131 equals $803.2m, within rounding of $803.1m market-data revenue. Every row's displayed latest growth reconciles within the required 2% tolerance. No historical dollar was estimated from a growth rate.

The historical pattern argues against a single companywide extrapolation. Metals and agriculture grew much faster than the segment; FX, EBS, BrokerTec, and swaps were nearly flat; and market data compounded at 10%. Energy and other revenue also slowed sharply in FY2025. The scenario model therefore uses separate family assumptions and then aggregates them.

7. Management guidance and forward anchors

All quoted fragments below are reproduced verbatim from data_package section 6. They are directional anchors, not additions to reported revenue.

- **Q3 FY2025, Terry Duffy:** "13 million potential accounts ... will have access to CME's products"; this supports a distribution opportunity through FanDuel, but the model does not equate potential accounts with funded or active traders. Any conversion is embedded only in the broader equity, event, crypto, and other-product volume paths.
- **Q3 FY2025, Lynne Fitzpatrick:** "market data reached a record level"; this supports continued recurring-data growth but does not identify a guaranteed price or subscriber cadence.
- **Q3 FY2025, Terry Duffy:** "offer 24/7 trading of cryptocurrency futures and options"; more accessible hours can raise participation, while continuous operations also raise technology, supervision, and clearing demands.
- **Q4 FY2025, Terry Duffy:** "begin offering 24/7 trading for our entire crypto suite"; the base case treats this as product-access support, not as evidence that exceptional crypto volatility persists.
- **Q4 FY2025, Lynne Fitzpatrick:** "fee adjustments would increase total revenue by approximately 1% to 1.5%"; this is the most concrete near-term pricing anchor. The model allows part of it to persist in effective rate/mix, tempered by volume tiering and competitive response.
- **Q1 FY2026, Terry Duffy:** "open interest ended the quarter up 11% over the past year"; growing positions support network depth and future trading opportunities.
- **Q1 FY2026, Lynne Fitzpatrick:** "volume tiering encouraged incremental trading"; this directly prevents treating ADV and rate per contract as independent upside levers.
- **Q1 FY2026, Julie Winkler:** "32 consecutive quarters of year-on-year growth"; the reference is to market data and supports durability, but the five-year base CAGR still fades below the recent 20% quarter.
- **Q2 FY2026, Terry Duffy:** "Open interest ended the quarter up 8% over the past year"; the slower rate after Q1 remains positive and supports liquidity without proving a permanent double-digit cadence.
- **Q2 FY2026, Lynne Fitzpatrick:** "Market data revenue achieved another record quarter, up 20%"; the near-term momentum supports the 8% base and 11% bull CAGRs, but the bear case allows growth to slow to 3%.

The package also identifies intended 2026 launches for CMESC ahead of Treasury-clearing deadlines, Treasury Link in Q4 2026, Compute Futures later in 2026, the 2026 launch of 24/7 crypto, and a Google Cloud Chicago region intended for client testing in 2027. Because these are milestones rather than financial guidance, the model assigns no discrete project revenue. Treasury clearing could expand the addressable market, but it also brings incumbent competition, regulatory execution, and additional operating requirements.

8. Forward growth assumptions by product and revenue family

8.1 TTM model base and unit-driver discipline

The TTM category totals are directly disclosed: $5.4509 billion transaction fees, $0.8727 billion market data, and $0.4490 billion other revenue. Asset-class TTM transaction revenue is not separately disclosed. To keep the model exactly TTM-anchored without fabricating history, this appendix allocates the disclosed TTM transaction-fee total according to each family's disclosed FY2025 transaction-fee share. These are explicitly **model allocations**, not historical TTM disclosures. The nine allocated transaction rows sum exactly to $5.4509 billion; adding market data and other revenue reproduces the $6.7726 billion TTM anchor with zero residual.

Product or revenue family	TTM model base	Basis
Interest rates	$1,774.9m	FY2025 share of disclosed TTM transaction fees
Equity indexes	$1,208.0m	FY2025 share of disclosed TTM transaction fees
Foreign exchange	$203.3m	FY2025 share of disclosed TTM transaction fees
Agricultural commodities	$679.3m	FY2025 share of disclosed TTM transaction fees
Energy	$839.3m	FY2025 share of disclosed TTM transaction fees
Metals	$366.1m	FY2025 share of disclosed TTM transaction fees
BrokerTec fixed income	$156.0m	FY2025 share of disclosed TTM transaction fees

Product or revenue family	TTM model base	Basis
EBS foreign exchange	$136.9m	FY2025 share of disclosed TTM transaction fees
Interest-rate swaps	$87.1m	FY2025 share of disclosed TTM transaction fees
Market data and information services	$872.7m	Direct TTM disclosure
Other revenue	$449.0m	Direct TTM disclosure
Consolidated company	$6,772.6m	Direct TTM disclosure; allocated rows tie exactly

For listed families, the revenue CAGR is decomposed into an approximate ADV/activity contribution and an effective rate/mix contribution. Compounding those contributions gives approximately, but not always exactly, the displayed revenue CAGR because of cross-terms and the need to keep family totals arithmetically controlled. BrokerTec, EBS, and swaps are modeled directly because their activity does not map cleanly to the listed-futures consolidated rate per contract. Market data and other revenue also use direct revenue CAGRs.

Listed family	Q2 2026 rate per contract	Bear ADV/activity CAGR	Bear rate/mix CAGR	Base ADV/activity CAGR	Base rate/mix CAGR	Bull ADV/activity CAGR	Bull rate/mix CAGR
Interest rates	$0.480	(0.5%)	(0.5%)	4.5%	0.5%	6.5%	1.5%
Equity indexes	$0.605	(0.5%)	0.5%	5.5%	0.5%	7.5%	1.5%
Foreign exchange	$0.813	(1.0%)	0.0%	2.5%	0.5%	5.5%	1.5%
Agricultural commodities	$1.426	0.5%	0.5%	5.5%	0.5%	7.5%	1.5%
Energy	$1.131	(0.5%)	0.5%	4.5%	0.5%	6.5%	1.5%
Metals	$1.315	1.5%	0.5%	7.5%	0.5%	10.0%	1.8%

The base pricing contribution is intentionally below management's estimated 1%-1.5% 2026 total-revenue benefit because the latter is a first-year change on 2025-like activity, while the model spans five years and incorporates tiering, product mix, and competitive response. The bull case lets better mix and price realization persist. The bear case assumes tiering or adverse mix offsets posted-price actions.

8.2 Base-case growth assumptions

Product	Historical CAGR	Latest YoY	Management anchor	Base CAGR TTM to 2031-06-30	Concise justification
Interest rates	5.0%	3.6%	Open interest growth; tiering	5.0%	4.5% activity plus 0.5% rate/mix; benchmark depth offsets normalization
Equity indexes	6.3%	6.9%	Retail access and broader participation	6.0%	Holds near history with 5.5% activity and 0.5% rate/mix
Foreign exchange	1.8%	(0.8%)	Broader access; no specific guide	3.0%	Modest improvement from a weak base; strong OTC substitution limits upside
Agricultural commodities	13.8%	12.5%	No numeric guide	6.0%	Material fade from exceptional growth; commercial hedging remains supportive
Energy	7.6%	1.6%	No numeric guide	5.0%	Recovers from latest slowdown but stays below two-year history
Metals	25.6%	24.8%	No numeric guide	8.0%	Sharp, explicit deceleration as recent exceptional growth normalizes
BrokerTec fixed income	(0.3%)	4.1%	Treasury clearing and Treasury Link milestones	4.0%	Cash-market activity and connectivity improve, but no launch revenue is assumed
EBS foreign exchange	0.0%	0.8%	No numeric guide	3.0%	Small share recovery without assuming structural OTC displacement
Interest-rate swaps	0.8%	(4.3%)	Cross-margining and clearing demand	4.0%	Regulatory clearing support offsets mature and competitive economics
Market data and information services	10.0%	13.1%	Record quarter; 32 growth quarters; Q2 up 20%	8.0%	Pricing and usage remain strong but fade below recent growth

Product	Historical CAGR	Latest YoY	Management anchor	Base CAGR TTM to 2031-06-30	Concise justification
Other revenue	15.6%	1.1%	Cloud and access initiatives; no numeric guide	3.0%	Anchored to latest year, not the acquisition/presentation-distorted CAGR

Base revenue growth is deliberately broader and slower than the latest commodity and data peaks. Metals falls from a 25.6% historical CAGR and 24.8% latest growth to 8%; agriculture falls from 13.8% and 12.5% to 6%; and market data falls from 10% historical and 20% in the latest quarter to 8% over five years. Interest-rate and equity revenue remain close to historical rates because open interest and benchmark liquidity support activity. No family relies on a perpetual volatility shock.

8.3 Bear-case growth assumptions

Product	Historical CAGR	Latest YoY	Management anchor	Bear CAGR TTM to 2031-06-30	Concise justification
Interest rates	5.0%	3.6%	Tiering can lower realized rate	(1.0%)	Softer hedging activity and adverse mix overcome fee actions
Equity indexes	6.3%	6.9%	Retail access is optional upside	0.0%	Distribution adds accounts but rival/substitute products cap monetization
Foreign exchange	1.8%	(0.8%)	No numeric guide	(1.0%)	Cash and OTC substitution prevent a recovery
Agricultural commodities	13.8%	12.5%	No numeric guide	1.0%	Recent growth normalizes sharply; commercial core prevents deep decline
Energy	7.6%	1.6%	No numeric guide	0.0%	Flat through a less favorable volatility and product-mix cycle
Metals	25.6%	24.8%	No numeric guide	2.0%	Recent surge proves temporary, but franchise relevance retains modest growth
BrokerTec fixed income	(0.3%)	4.1%	Treasury initiatives face incumbents	(2.0%)	Launch costs rise while FICC and other venues defend liquidity
EBS foreign exchange	0.0%	0.8%	No numeric guide	(2.0%)	Continued share and market-structure pressure in cash FX
Interest-rate swaps	0.8%	(4.3%)	Clearing support does not guarantee share	0.0%	Mandates offset competition but do not create net growth
Market data and information services	10.0%	13.1%	Record levels and recurring use	3.0%	Customer optimization and pricing scrutiny slow, but do not reverse, growth
Other revenue	15.6%	1.1%	No numeric guide	(1.0%)	Access and hosting demand soften; no new-project uplift assumed

The bear case is not an implausible simultaneous collapse in every asset class. It represents several years in which volatility and hedging intensity are less favorable, competition captures incremental activity, tiering and adverse mix erase headline pricing, and new initiatives do not earn enough to offset maturity. Market data remains positive because embedded workflows are stickier than transaction activity. This configuration yields 0.19% consolidated annual growth rather than a dramatic revenue decline, but operating leverage works in reverse.

8.4 Bull-case growth assumptions

Product	Historical CAGR	Latest YoY	Management anchor	Bull CAGR TTM to 2031-06-30	Concise justification
Interest rates	5.0%	3.6%	Open interest growth; pricing action	8.0%	6.5% activity and 1.5% rate/mix as risk transfer broadens
Equity indexes	6.3%	6.9%	Retail distribution opportunity	9.0%	New accounts and micro products deepen activity with favorable realization
Foreign exchange	1.8%	(0.8%)	Extended access and product breadth	7.0%	Listed share improves while rate/mix contributes about 1.5%

Product	Historical CAGR	Latest YoY	Management anchor	Bull CAGR TTM to 2031-06-30	Concise justification
Agricultural commodities	13.8%	12.5%	No numeric guide	9.0%	Strong commercial adoption persists but remains below recent history
Energy	7.6%	1.6%	No numeric guide	8.0%	Activity reaccelerates with product breadth and favorable hedging demand
Metals	25.6%	24.8%	No numeric guide	12.0%	Continues above company average but still fades by more than half from history
BrokerTec fixed income	(0.3%)	4.1%	Treasury clearing and Link milestones	7.0%	Better cash-market connectivity and clearing ecosystem adoption
EBS foreign exchange	0.0%	0.8%	No numeric guide	7.0%	Execution improvements and cross-product distribution restore growth
Interest-rate swaps	0.8%	(4.3%)	Cross-margin and clearing opportunity	8.0%	Regulatory demand and margin efficiency produce meaningful adoption
Market data and information services	10.0%	13.1%	Q2 up 20%; long growth record	11.0%	Pricing, professional displays, licenses, and new products compound
Other revenue	15.6%	1.1%	Cloud and access initiatives	6.0%	Connectivity and hosting expand without repeating the historical spike

The bull case requires several things to go right together: sustained open-interest growth, successful distribution to new accounts, favorable cross-asset hedging demand, effective price realization despite tiering, and continued double-digit data growth. It does not simply extend the 25% metals rate or Q2's 20% market-data rate. The largest lines remain interest rates and equities, so the outcome is not driven by a tiny product becoming unrealistically large.

9. Forward margin assumptions - Statutory operating income (single-segment non-operating CODM fallback)

The only profit metric in the operating forecast is **Statutory operating income (single-segment non-operating CODM fallback)**. The current TTM margin is 65.10%. CME does not disclose product operating profit, so assigning separate product margins would create unsupported precision. Instead, the model aggregates product revenue and forecasts the consolidated operating-cost pool.

Case	Exact profit metric	TTM margin	2031-06-30 margin	Change	2031 operating cost	Five-year cost CAGR	Mechanism
Bear	Statutory operating income (single-segment non-operating CODM fallback)	65.10%	61.0%	(410 bps)	$2,666.5m	2.44%	Near-flat revenue, fixed resilience spend, regulatory burden, launch costs, weaker mix
Base	Statutory operating income (single-segment non-operating CODM fallback)	65.10%	66.5%	140 bps	$2,979.1m	4.74%	Shared-platform scale and data mix outweigh cloud, cyber, compliance, and product investment
Bull	Statutory operating income (single-segment non-operating CODM fallback)	65.10%	69.0%	390 bps	$3,188.5m	6.17%	Strong incremental volume and data economics outweigh heavier capacity and 24/7 investment

The base expansion exceeds 100 basis points, so its mechanism must be explicit. Revenue grows at 5.61% while operating cost grows at 4.74%. Transaction volume and market-data licensing use common technology, clearing, surveillance, and distribution infrastructure; market data also rises from 12.9% of TTM revenue to roughly 14.4% of the terminal base mix. Against that leverage, CME continues funding cybersecurity, cloud migration, resilience, regulation, and new products. The result is modest, not heroic, margin expansion.

The bear contraction is also specific. Revenue barely grows, but systemically important clearing cannot cut risk, default-management, capital, surveillance, and continuity resources in line with activity. Treasury-clearing and 24/7 capabilities may add costs before they add revenue. Competitive incentives and adverse mix pressure realized rate. The 61%

terminal margin remains above FY2022's 60.1% historical margin, avoiding an assumption that the franchise loses all scale benefits.

The bull case assumes excellent volume and data conversion, not zero cost growth. Operating expense rises by about $825 million from the TTM base. CME invests in additional capacity, client migration, continuous operations, and risk management while revenue rises by about $3.513 billion. A 69% margin is demanding but bounded: it represents 390 basis points of expansion over five years, not an implausible step change in year one.

No scenario allocates investment income, collateral distributions, interest expense, equity-method earnings, or taxes to product margins. Those remain separate below-line schedules under the sealed statutory bridge. The large matched clearing-collateral balances are not revenue-producing shareholder capital inside this margin. Their operational and liquidity demands influence the cost assumptions, while their accounting returns remain outside the modeled profit metric.

10. Segment rollup and five-year scenario model

10.1 Product-family terminal revenue rollup

Each terminal figure equals the TTM model base compounded by the case-specific CAGR for exactly five years. Rows sum to the consolidated segment within rounding.

Product or revenue family	Bear 2031 revenue	Base 2031 revenue	Bull 2031 revenue
Interest rates	$1,687.9m	$2,265.3m	$2,607.9m
Equity indexes	$1,208.0m	$1,616.6m	$1,858.7m
Foreign exchange	$193.4m	$235.7m	$285.1m
Agricultural commodities	$714.0m	$909.1m	$1,045.2m
Energy	$839.3m	$1,071.2m	$1,233.2m
Metals	$404.2m	$537.9m	$645.2m
BrokerTec fixed income	$141.0m	$189.8m	$218.8m
EBS foreign exchange	$123.7m	$158.7m	$192.0m
Interest-rate swaps	$87.1m	$106.0m	$128.0m
Market data and information services	$1,011.7m	$1,282.3m	$1,470.6m
Other revenue	$427.0m	$520.5m	$600.9m
Consolidated company	$6,837.3m	$8,893.0m	$10,285.5m

10.2 Annual revenue and exact-basis profit path

Case and period	Revenue	Margin on exact modeled metric	Statutory operating income (single-segment non-operating CODM fallback)
Bear TTM+1	$6,782.8m	64.0%	$4,341.0m
Bear TTM+2	$6,794.3m	63.0%	$4,280.4m
Bear TTM+3	$6,807.2m	62.0%	$4,220.5m
Bear TTM+4	$6,821.5m	61.5%	$4,195.2m
Bear TTM+5	$6,837.3m	61.0%	$4,170.7m
Base TTM+1	$7,149.1m	65.4%	$4,675.5m
Base TTM+2	$7,547.9m	65.7%	$4,958.9m
Base TTM+3	$7,970.4m	66.0%	$5,260.5m
Base TTM+4	$8,418.3m	66.3%	$5,581.3m
Base TTM+5	$8,893.0m	66.5%	$5,913.8m
Bull TTM+1	$7,360.2m	65.7%	$4,835.6m
Bull TTM+2	$8,000.2m	66.5%	$5,320.1m
Bull TTM+3	$8,697.5m	67.3%	$5,853.4m
Bull TTM+4	$9,457.3m	68.2%	$6,449.9m
Bull TTM+5	$10,285.5m	69.0%	$7,097.0m

The bear case shows why the income outcome can deteriorate even when revenue does not: **Statutory operating income (single-segment non-operating CODM fallback)** falls from $4.4090 billion TTM to $4.1707 billion as margin compresses. Base-case **Statutory operating income (single-segment non-operating CODM fallback)** compounds at approximately 6.05%, somewhat faster than revenue because of modest scale leverage. Bull-case **Statutory operating income (single-segment non-operating CODM fallback)** compounds at approximately 9.99%, reflecting both 8.72% revenue growth and margin expansion.

The TTM-start allocation is a modeling device, but it does not alter the audited anchor. The transaction allocations sum to $5.4509 billion, and market data plus other add $1.3217 billion, producing $6.7726 billion. Using unrounded family amounts, the bear terminal rows sum to $6.8373 billion, base to $8.8930 billion, and bull to $10.2855 billion; the displayed one-decimal family rows can differ from those totals by $0.1 million solely because of rounding. Multiplying the unrounded totals by 61.0%, 66.5%, and 69.0% yields $4.1707 billion, $5.9138 billion, and $7.0970 billion, respectively.

10.3 Clearing safeguards and capital-intensity interpretation

The model does not treat customer collateral as corporate cash, revenue, or invested capital available for distribution. At Q2 2026, $158.111 billion of performance bonds and guaranty-fund contributions was matched by liabilities. The clearing waterfall included designated CME contributions, member-funded guaranty funds, assessment powers, and committed facilities. These resources reduce the probability that an ordinary member default becomes a shareholder loss, but they do not eliminate wrong-way risk, liquidity timing risk, model risk, or confidence damage. The $7.0 billion secured facility, expandable to $10.0 billion, had no borrowings outstanding, and CME also had committed repo and FX facilities. [data_package sections 0a and 8]

From an operating-model perspective, clearing safeguards create three constraints. First, volume growth may require additional operational and liquidity capacity even when capital expenditure stays low. Second, regulators require the DCO and DCMs to maintain capital equal to at least one year of projected operating expenses and liquidity equal to at least six months; CME reported compliance, but the package does not disclose the absolute excess. Third, cost reductions cannot compromise surveillance, margining, default management, recovery planning, or continuity. Those constraints are why the bear cost CAGR remains positive and why the bull case includes substantial cost growth rather than assuming nearly free incremental revenue. [DATA GAP: absolute DCO/DCM regulatory-capital excess is not disclosed in the reviewed package.]

11. Key risks and wildcards

Activity normalization and volatility dependence - Bear. CME benefits when customers need to hedge changing rates, prices, currencies, and portfolios. A prolonged period of subdued volatility, lower issuance, reduced repositioning, or fewer macro catalysts could depress ADV. The diversified product set softens but does not remove this risk. The bear case incorporates flat-to-negative growth in several fee families rather than assuming all recent record activity persists.

Rate-per-contract dilution and adverse mix - Bear. The Q1 2026 consolidated rate fell to $0.652 when ADV reached 36.231 million, and management said volume tiering encouraged incremental trading. A shift toward lower-rate interest-rate or micro products can reduce reported rate even if posted fees rise. The key diagnostic is fee revenue relative to activity by family, not the consolidated rate in isolation.

Competitive liquidity migration - Bear. ICE, Cboe, FMX, cash and OTC venues, digital-asset platforms, and other substitutes can use pricing, incentives, product design, or clearing links to attract flow. A credible loss of open interest is more concerning than a temporary ADV share shift because positions anchor future trading and margin offsets. BrokerTec, EBS, FX, and swaps appear especially exposed to market-structure alternatives given their muted historical dollar growth.

Treasury-clearing execution - Bear and Base. CMESC and Treasury Link could broaden CME's addressable market, but FICC is the primary incumbent and ICE Clear Credit is another entrant. Regulatory timelines, interoperability, client migration, and economics may differ from expectations. The base case gives only modest benefit through BrokerTec and swaps growth; the bear case assumes costs arrive before meaningful revenue.

Event-contract and crypto regulation - Bear and Bull. Event and crypto products can attract new users and extend trading hours. Q2 management data showed event-contract ADV above four million and more than 140,000 accounts, while Q4 2025 crypto ADV was 379,000. Yet classification, consumer-protection, gaming, derivatives, and jurisdictional rules can change access or economics. The bull case benefits from distribution and 24/7 engagement; the bear case assumes the optionality does not convert into material durable revenue.

Market-data pricing or entitlement pressure - Bear. Market data is the most resilient explicit growth line, but customers can optimize devices, consolidate vendors, challenge derived-data rights, or invite regulatory scrutiny of fees. Bear growth of 3% is still positive; a sustained revenue decline would be worse than this case and would challenge the assumed workflow stickiness.

Clearing-member default and liquidity shock - All cases, especially Bear. The waterfall, collateral, assessment powers, and facilities are substantial, but extreme correlated moves can test models, operational processes, collateral liquidation, and member capacity. A default can also transfer positions and concentration across remaining firms. The one clearing firm at 12% of FY2025 clearing fees is a billing concentration signal, not a complete exposure measure. The package does not provide enough member-level exposure to quantify a scenario loss.

Operational outage, cyberattack, or cloud migration failure - Bear. CME's moat relies on reliable critical infrastructure. An outage or security event can prompt customer loss, regulatory penalties, remediation expense, and reputational harm. The intended Google Cloud Chicago testing in 2027 may improve capability over time but creates migration and coexistence risk. Margin assumptions explicitly retain rising technology and resilience expense.

Regulatory capital, recovery, and resolution rules - Bear. Higher CCP contributions, liquidity requirements, transaction taxes, collateral constraints, or clearing-member capital changes could reduce returns or activity. CME reported compliance with current DCO/DCM requirements, but absolute excess is unavailable. The model does not assume regulatory capital can be released.

International participation - Base and Bull. Outside-U.S. volume near 31% provides a runway if CME can deepen distribution and local access. It also exposes the company to differing regulation, market hours, data rules, and competitors. The bull case assumes successful expansion; the base case assumes steady contribution without an abrupt share gain.

Upside from cross-margining and deeper open interest - Bull. Open interest growth of 8% year on year and management's estimate of more than $95 billion in daily margin savings indicate that capital efficiency can attract activity. If Treasury, rates, equities, commodities, and new contracts create more portfolio offsets, volume and retention could exceed the base case.

Upside from market-data reuse - Bull. New products, broader professional displays, derived datasets, and licensing can compound without matching transaction-cost growth. The 11% bull CAGR remains below the latest 20% quarterly rate but above the 10% FY2023-FY2025 CAGR, requiring durable rather than one-quarter strength.

Scenario summary

Case	Segment TTM+5y Revenue	Exact profit metric	Segment TTM+5y Profit Margin	Segment TTM+5y Profit	Probability
Bear	$6.837bn	Statutory operating income (single-segment non-operating CODM fallback)	61.0%	$4.171bn	25%
Base	$8.893bn	Statutory operating income (single-segment non-operating CODM fallback)	66.5%	$5.914bn	55%
Bull	$10.285bn	Statutory operating income (single-segment non-operating CODM fallback)	69.0%	$7.097bn	20%

The 55% base weight reflects CME's broad franchise, positive open-interest and market-data evidence, and management's constructive but mostly non-numeric growth commentary. The 25% bear weight recognizes cyclicality, rate/mix dilution, competitive liquidity migration, regulatory execution, and fixed resilience costs; the 20% bull weight is lower because it requires several product, distribution, pricing, and data-growth levers to work together. The probabilities sum to 100%.

These scenarios are not valuation, ranking, sizing, portfolio, or trade recommendations. Product families remain revenue-driver context, never reportable financial segments. Issuer-disclosed CODM consolidated net income remains context only; taxes and all below-line items are reserved for statutory synthesis.

Appendix S - Synthesis (Combined Earnings Model)

CME Group — Synthesis (Combined Earnings Model)

This repaired appendix mechanically consolidates the QFR/DR-sealed historical bridge, the single peer-reviewed operating-segment forecast, and the DR-cleared post-OSTTRA normalization evidence. It preserves the reviewed revenue and operating-income work. It rebuilds only the affected below-line earnings cadence, comparable current denominator, restricted-award/share bridge, and dependent EPS, sensitivity, P/E-at-15, summary, and tie-out outputs. It does not perform source discovery, select a shareholder-return valuation method, choose exit multiples, rank the security, size a position, or authorize a trade.

CME is modeled as one consolidated operating segment because the issuer's CODM measure is consolidated net income, a non-operating statutory endpoint. The operating model basis remains exactly `Statutory operating income (single-segment non-operating CODM fallback)`. Issuer-disclosed CODM net income remains separate. The October 2025 OSTTRA sale gain and sold affiliate perimeter are normalized only in the comparable earnings bridge; the QFR-sealed historical statutory packet is not rewritten.

1. Anchors and immutable gates

Anchor	Locked value
Today	2026-09-17
Fiscal year end	December 31
TTM end	2026-06-30
TTM quarters	Q3 2025 + Q4 2025 + Q1 2026 + Q2 2026
Latest completed FY	FY2025, for historical tie-out only
Horizon	2031-06-30, exactly 5.0 calendar years after TTM end
Listing / security	XNAS:CME / Class A common share / one listed share per unit
Valuation price	USD 272.46 raw completed-session close on 2026-09-16
Quote expiry	2026-09-18T04:00:00+08:00
Quote raw SHA-256	`3f7212f71f141fcb16388539f656fa1c0874df6d5a5975f0798739ecd9fa5260`
Quote packet SHA-256	`b42e1729ffdd2f3676659fe4f3bccb0b0ceab9ec10be26441ea9f04deb8e92d2`
Statutory bridge SHA-256	`e6bc5b88a6ede1ae5b81872125c9fdc1f9ebfb7594a6155e5cd780c333bc5d66`
DR-cleared data package SHA-256	`f24995f0ba67bf1f0a462d8c893afe0fbda9b52bcc591c8019bfdab949ae15f8`
Reporting / quote currency	USD / USD
Starting quote-basis diluted shares	361.282 million at 2026-06-30
Trade execution authorized	false

The strict quote-packet and statutory-bridge validators both passed again against the sealed exact-byte hashes. `gate_manifest.json` again contains the statutory forecasting and Wave 2 clearance tokens. No price was fetched, substituted, adjusted, or mutated. Financial-statement shares of 361.282 million times the 1.000000 split factor equal 361.282 million quote-basis financial shares. Depositary and class factors are each 1.000000; USD/USD FX is 1.000000. Listed-equivalent diluted units are therefore 361.282 million, but every identity factor remains visible in the EPS bridge.

2. Segment-level forward assumptions

CME has one modeled financial segment. Revenue-only product families remain business drivers, not reportable segments. The post-review endpoint figures below reproduce `appendix_B_consolidated_company.md`; none is changed by this repair.

Segment	Exact profit metric	TTM revenue, USD B	Bear 2031 revenue	Base 2031 revenue	Bull 2031 revenue	Bear margin	Base margin	Bull margin
Consolidated company	Statutory operating income (single-segment non-operating CODM fallback)	6.7726	6.8373	8.8930	10.2855	61.0%	66.5%	69.0%

Product / revenue family	TTM base, USD M	Bear CAGR	Base CAGR	Bull CAGR	Bear 2031	Base 2031	Bull 2031
Interest rates	1,774.9	(1.0%)	5.0%	8.0%	1,687.9	2,265.3	2,607.9
Equity indexes	1,208.0	0.0%	6.0%	9.0%	1,208.0	1,616.6	1,858.7
Foreign exchange	203.3	(1.0%)	3.0%	7.0%	193.4	235.7	285.1
Agricultural commodities	679.3	1.0%	6.0%	9.0%	714.0	909.1	1,045.2
Energy	839.3	0.0%	5.0%	8.0%	839.3	1,071.2	1,233.2
Metals	366.1	2.0%	8.0%	12.0%	404.2	537.9	645.2
BrokerTec fixed income	156.0	(2.0%)	4.0%	7.0%	141.0	189.8	218.8
EBS foreign exchange	136.9	(2.0%)	3.0%	7.0%	123.7	158.7	192.0
Interest-rate swaps	87.1	0.0%	4.0%	8.0%	87.1	106.0	128.0
Market data / information services	872.7	3.0%	8.0%	11.0%	1,011.7	1,282.3	1,470.6
Other revenue	449.0	(1.0%)	3.0%	6.0%	427.0	520.5	600.9
Consolidated company	6,772.6	0.19% implied	5.60% implied	8.72% implied	6,837.3	8,893.0	10,285.5

Bear assumes weak activity and mix, slower data growth, fixed resilience spending, and project costs before revenue. Base combines broad mid-single-digit product growth with modest shared-platform leverage. Bull requires simultaneous success in open interest, distribution, pricing, data, and clearing adjacencies. Product-level margins remain undisclosed, so none is fabricated.

3. Combined revenue build

Line	Bear	Base	Bull
Sum of segment 2031 revenue, USD B	6.8373	8.8930	10.2855
Corporate eliminations	0.0000	0.0000	0.0000
Combined 2031 revenue, USD B	6.8373	8.8930	10.2855
TTM-to-2031 CAGR over exactly five years	0.19%	5.60%	8.72%

There is no consolidation residual because the sole modeled segment is the consolidated company. Rounded product-family rows differ from the unrounded controlling terminal totals by no more than USD 0.1 million. No corporate revenue plug, acquisition amount, Treasury-clearing project increment, or unannounced price increase is introduced.

4. Combined statutory operating-income build

Line	Bear	Base	Bull
Segment terminal profit on sealed metric, USD B	4.1707	5.9138	7.0970
Corporate / unallocated adjustments	0.0000	0.0000	0.0000
Consolidated segment-profit metric, USD B	4.1707	5.9138	7.0970
Operating bridge adjustments	0.0000	0.0000	0.0000
Combined statutory operating income, USD B	4.1707	5.9138	7.0970
Implied operating margin	61.0%	66.5%	69.0%

The sealed schema has empty corporate/unallocated and operating-adjustment arrays. Therefore zero is the only permitted forward treatment. The operating endpoints remain exactly those cleared by B/R: USD 4.1707 billion, USD 5.9138 billion, and USD 7.0970 billion. The repair does not change them. CODM consolidated net income remains a separate below-operating-income disclosure.

5. Reported-to-normalized current earnings bridge

The sealed TTM remains the historical record. Reported diluted common numerator is USD 4,260.7 million and reported diluted EPS is USD 11.7933458813 on 361.280 million weighted-average shares. That numerator contains a USD 306.1 million pretax OSTTRA sale gain recorded in investment income. The same transaction incurred USD 22.1 million of professional fees, an operating expense. Both are normalized at the verified TTM effective tax rate of 23.3643189%.

The historical USD 384.6 million affiliate line contains pre-sale, transition, and post-sale periods. OSTTRA's standalone historical contribution is a true non-disclosure. No invented historical subtraction is made. For a comparable ongoing denominator, the entire mixed-perimeter TTM affiliate line is replaced with the independently verified clean post-sale retained-affiliate run rate: Bear USD 390.8 million from Q2 2026 times four, Base USD 400.2 million from H1 2026 times two, and Bull USD 409.6 million from Q1 2026 times four.

Current denominator bridge, USD M except EPS / P-E	Reported	Transaction-normalized	Bear retained affiliate	Base retained affiliate	Bull retained affiliate
Diluted common numerator	4,260.7000	4,043.0547	4,047.8061	4,055.0098	4,062.2136
Less after-tax OSTTRA gain	—	(234.5818)	—	—	—
Add after-tax sale fees	—	16.9365	—	—	—
Replace USD 384.6m mixed affiliate with clean retained anchor	—	—	+4.7514	+11.9552	+19.1589
Weighted diluted shares, M	361.2800	361.2800	361.2800	361.2800	361.2800
Diluted EPS, USD per listed unit	11.7933458813	11.1909174760	11.2040690820	11.2240086137	11.2439481454
Current P/E at USD 272.46	23.1028584x	24.3465293x	24.3179507x	24.2747497x	24.2317019x
Comparability	Non-comparable	Transaction-normalized only	Ongoing Bear perimeter	Ongoing Base perimeter	Ongoing Bull perimeter

Arithmetic for the Base ongoing denominator is `4,260.7 - 306.1 × (1 - 23.3643189%) + 22.1 × (1 - 23.3643189%) + (400.2 - 384.6) × (1 - 23.3643189%) = 4,055.0098319628`. Dividing by 361.280 million yields USD 11.2240086137. The raw 23.1028584x current P/E is non-comparable to normalized terminal earnings and must not cap exit multiples. Synthesis still does not select any exit multiple.

5b. Repaired below-line forecast and terminal EPS

The recurring paired investment contribution is normalized before TTM+1. Sealed gross investment income of USD 6.1444 billion less the USD 0.3061 billion OSTTRA gain gives USD 5.8383 billion. Other non-operating expense remains negative USD 5.1691 billion. The normalized recurring net contribution is therefore USD 0.6692 billion. Bear scales both paired lines by negative 3.0% annually, Base holds them nominally flat, and Bull scales both by positive 2.0%. This preserves the sourced normalized offset ratio and prevents the gain from entering any forward year.

Retained-affiliate earnings start at the clean post-sale anchors above and remain nominally flat through 2031 because the repaired data package directs a flat cadence absent further evidence. Sold OSTTRA is prospectively excluded. Interest starts at negative USD 0.1749 billion; Bear expense grows 3.0%, Base is flat, and Bull declines 1.0%. Scenario tax rates remain 25.0%, 23.5%, and 22.5%. These rules preserve the sealed line classifications and create no plug.

Terminal line, USD B except per-share data	Bear	Base	Bull
Statutory operating income	4.1707	5.9138	7.0970
Normalized investment income, OSTTRA gain excluded	5.0135	5.8383	6.4460
Other non-operating income / expense	(4.4389)	(5.1691)	(5.7071)
Recurring paired investment contribution	0.5747	0.6692	0.7389
Interest and borrowing costs	(0.2028)	(0.1749)	(0.1663)

Terminal line, USD B except per-share data	Bear	Base	Bull
Retained-affiliate earnings, OSTTRA excluded	0.3908	0.4002	0.4096
Pretax income	4.9334	6.8083	8.0791
Tax rate	25.0%	23.5%	22.5%
Income tax provision	(1.2334)	(1.6000)	(1.8178)
Net income / common numerator	3.7001	5.2083	6.2613
Quote-basis diluted shares at 2031, M	359.7243	357.8408	355.4476
EPS, reporting USD per quote-basis share	10.2858	14.5549	17.6153
Financial shares per listed unit	1.000000	1.000000	1.000000
FX, quote USD per reporting USD	1.000000	1.000000	1.000000
EPS, quote USD per listed unit	10.2858	14.5549	17.6153

Bear USD 3,700.0558 million divided by 359.7243 million shares equals USD 10.2858. Base USD 5,208.3495 million divided by 357.8408 million equals USD 14.5549. Bull USD 6,261.3201 million divided by 355.4476 million equals USD 17.6153. Unit and FX factors of one reproduce the quoted listed-unit EPS without conversion ambiguity.

Every forecast year is rebuilt from the normalized paired contribution and clean retained-affiliate perimeter. The tables below begin at TTM+1 and end on the exact 2031-06-30 horizon. A separate current bridge above shows the normalized TTM denominator; no event-heavy TTM line is rolled mechanically into TTM+1.

Bear year	OI, USD B	Normalized investment	Other non-operating	Net paired contribution	Interest	Retained affiliates	Pretax	NI, USD B
TTM+1	4.3410	5.6632	(5.0140)	0.6491	(0.1801)	0.3908	5.2008	3.9006
TTM+2	4.2804	5.4933	(4.8636)	0.6297	(0.1856)	0.3908	5.1153	3.8365
TTM+3	4.2205	5.3285	(4.7177)	0.6108	(0.1911)	0.3908	5.0309	3.7732
TTM+4	4.1952	5.1686	(4.5762)	0.5924	(0.1969)	0.3908	4.9816	3.7362
TTM+5	4.1707	5.0135	(4.4389)	0.5747	(0.2028)	0.3908	4.9334	3.7001

Base year	OI, USD B	Normalized investment	Other non-operating	Net paired contribution	Interest	Retained affiliates	Pretax	NI, USD B
TTM+1	4.6755	5.8383	(5.1691)	0.6692	(0.1749)	0.4002	5.5700	4.2611
TTM+2	4.9589	5.8383	(5.1691)	0.6692	(0.1749)	0.4002	5.8534	4.4779
TTM+3	5.2605	5.8383	(5.1691)	0.6692	(0.1749)	0.4002	6.1550	4.7086
TTM+4	5.5813	5.8383	(5.1691)	0.6692	(0.1749)	0.4002	6.4758	4.9540
TTM+5	5.9138	5.8383	(5.1691)	0.6692	(0.1749)	0.4002	6.8083	5.2083

Bull year	OI, USD B	Normalized investment	Other non-operating	Net paired contribution	Interest	Retained affiliates	Pretax	NI, USD B
TTM+1	4.8356	5.9551	(5.2725)	0.6826	(0.1732)	0.4096	5.7546	4.4598
TTM+2	5.3201	6.0742	(5.3779)	0.6962	(0.1714)	0.4096	6.2545	4.8472
TTM+3	5.8534	6.1957	(5.4855)	0.7102	(0.1697)	0.4096	6.8035	5.2727
TTM+4	6.4499	6.3196	(5.5952)	0.7244	(0.1680)	0.4096	7.4159	5.7473
TTM+5	7.0970	6.4460	(5.7071)	0.7389	(0.1663)	0.4096	8.0791	6.2613

The USD 306.1 million sale gain appears nowhere in these annual forecasts. The USD 22.1 million professional-fee addback appears only in the normalized current denominator; it is not repeated as future income. The Base TTM+1 retained-affiliate line is USD 400.2 million rather than the mixed-perimeter USD 384.6 million. Bear and Bull similarly use USD 390.8 million and USD 409.6 million. This creates comparable current and terminal earnings perimeters without pretending to know OSTTRA's historical standalone contribution.

5c. Return-method and distribution inputs

Synthesis supplies inputs for VP but selects neither PE, EV_NOPAT, nor PB_ROE. It selects no exit multiple. Terminal enterprise-to-equity claims require source-bound paths; unavailable items remain unavailable rather than becoming a net-debt residual.

Input	Current / TTM anchor	Bear 2031	Base 2031	Bull 2031	Treatment
Statutory OI, USD B	4.4090	4.1707	5.9138	7.0970	Sealed bridge and reviewed segment model
Normalized cash tax rate	23.4% rounded	25.0%	23.5%	22.5%	Scenario schedule
Normalized NOPAT, USD B	3.3773	3.1280	4.5241	5.5002	OI times one minus tax; diagnostic only
Corporate cash, USD B	2.1442	Unavailable	Unavailable	Unavailable	No source-bound five-year retention policy
Short-term investments, USD B	0.1310	Unavailable	Unavailable	Unavailable	No terminal mix or disposition policy
Gross statutory debt, USD B	3.4242	Unavailable	Unavailable	Unavailable	No complete maturity/refinancing scenario schedule
Lease liabilities	Not separately disclosed	Unavailable	Unavailable	Unavailable	No controlling statutory terminal series
Preferred equity	4.584m shares converted March 2026	0 assumed	0 assumed	0 assumed	Conversion complete; no new issuance modeled
Minority interest	Not quantified for terminal path	Unavailable	Unavailable	Unavailable	No blanket NCI assumption
Other senior claims	No terminal schedule	Unavailable	Unavailable	Unavailable	Matched clearing collateral excluded
Separately valued non-operating assets	None valued	Unavailable	Unavailable	Unavailable	Affiliate earnings counted in NI once
Diluted listed-equivalent shares, M	361.282	359.7243	357.8408	355.4476	Repaired share schedule below

The unavailable capital-structure paths prevent S from manufacturing an EV-to-equity bridge. They do not alter the reconciled statutory EPS. VP determines method suitability later. Normalized NOPAT remains an input only; it is not selected as the controlling return denominator here.

Common dividends are modeled at 90%, 88%, and 85% of annual NI in Bear, Base, and Bull. Annual open-market repurchases are USD 150 million, USD 300 million, and USD 500 million. These values are distinct from vesting-tax cash. The asset-sale-funded H1 2026 USD 1.2369 billion repurchase is not annualized.

Distribution input	Bear	Base	Bull
Common-dividend payout of NI	90%	88%	85%
Five-year cumulative dividends, USD B	17.0519	20.7766	22.6001
Cumulative modeled dividends per share, sum annual DPS, USD	47.3162	57.8606	63.2330
Annual open-market buyback cash, USD B	0.150	0.300	0.500
Five-year open-market buyback cash, USD B	0.750	1.500	2.500
Annual vesting-tax cash / direct APIC reduction, USD B	0.0473	0.0473	0.0473
Five-year vesting-tax cash, USD B	0.2365	0.2365	0.2365

Vesting-tax cash is a financing cash outflow and direct reduction of additional paid-in capital. It is neither an open-market repurchase nor a dividend. Per-share distributions above are inputs, not terminal wealth or an IRR. No valuation method or exit multiple is chosen.

P&C insurer lane: NOT TRIGGERED — CME is not a P&C insurer or reinsurer. No `insurer_return_bridge.json` is created.

6. Restricted-award and share-count bridge

Historical evidence distinguishes four concepts that must not be blended. H1 2026 vesting-tax cash was USD 22.2 million and 71,342 shares were surrendered for taxes; the reported net vesting-related Class A share change was positive 96,000. TTM vesting-tax cash was USD 47.3 million, 169,720 shares were surrendered, and the reported net vesting-related Class A share change was positive 314,000. Gross awards vested and an issuer-reconciled gross-to-net award bridge are true non-disclosures.

Q2 2026 basic weighted-average shares were 360.684 million; restricted-stock and performance-share awards added 0.598 million under the treasury-stock method; diluted shares were 361.282 million. The 0.598 million is already inside the starting packet denominator. It is held as a reference inside every forward diluted denominator and is not added annually. The TTM positive 0.314 million net vesting-related share change is the only annual net issued-share input. The disclosed 0.169720 million tax-surrendered shares are shown for count-once control but are not subtracted again because they are already reflected in the reported net 0.314 million movement. Gross award issuance remains `Unavailable`, not zero.

Historical award bridge	H1 2026	TTM to 2026-06-30	Forward treatment
Gross awards vested / gross shares issued	Unavailable	Unavailable	No unsupported gross issuance estimate
Reported net vesting-related share change	+0.096m	+0.314m	+0.314m annually
Tax-surrendered shares	0.071342m	0.169720m	Disclosure reference; no extra share offset
Vesting-tax cash / direct-equity effect	USD 22.2m	USD 47.3m	USD 47.3m annual APIC reduction
Treasury-method restricted/performance dilution	0.632m H1 denominator	0.598m latest-quarter reference	Carried embedded, not re-added
Open-market repurchases	USD 1,236.9m	USD 1,494.8m	Scenario schedule; separate from vesting tax

The forward formula is `ending diluted shares = starting diluted shares - open-market shares retired + 0.314m net vesting-related shares`. The embedded 0.598 million treasury-method increment is maintained, while gross awards and tax-surrendered shares are not independently added or subtracted. This avoids both unsupported issuance and double counting.

Case / year	Starting diluted shares, M	Open-market buyback, USD B	Avg price, USD	Shares retired, M	Gross award issuance	Net vesting shares, M	Tax-surrendered reference, M	Vesting-tax cash, USD M	Ending diluted shares, M
Bear TTM+1	361.282000	0.150	250	0.600000	Unavailable	0.314000	0.169720	47.3	360.996000
Bear TTM+2	360.996000	0.150	245	0.612245	Unavailable	0.314000	0.169720	47.3	360.697755
Bear TTM+3	360.697755	0.150	240	0.625000	Unavailable	0.314000	0.169720	47.3	360.386755
Bear TTM+4	360.386755	0.150	235	0.638298	Unavailable	0.314000	0.169720	47.3	360.062457
Bear TTM+5	360.062457	0.150	230	0.652174	Unavailable	0.314000	0.169720	47.3	359.724283
Base TTM+1	361.282000	0.300	280	1.071429	Unavailable	0.314000	0.169720	47.3	360.524571
Base TTM+2	360.524571	0.300	290	1.034483	Unavailable	0.314000	0.169720	47.3	359.804089
Base TTM+3	359.804089	0.300	300	1.000000	Unavailable	0.314000	0.169720	47.3	359.118089
Base TTM+4	359.118089	0.300	310	0.967742	Unavailable	0.314000	0.169720	47.3	358.464347
Base TTM+5	358.464347	0.300	320	0.937500	Unavailable	0.314000	0.169720	47.3	357.840847
Bull TTM+1	361.282000	0.500	300	1.666667	Unavailable	0.314000	0.169720	47.3	359.929333
Bull TTM+2	359.929333	0.500	320	1.562500	Unavailable	0.314000	0.169720	47.3	358.680833
Bull TTM+3	358.680833	0.500	340	1.470588	Unavailable	0.314000	0.169720	47.3	357.524245
Bull TTM+4	357.524245	0.500	360	1.388889	Unavailable	0.314000	0.169720	47.3	356.449356
Bull TTM+5	356.449356	0.500	380	1.315789	Unavailable	0.314000	0.169720	47.3	355.447567

Each row reconciles exactly at calculation precision. The open-market retirement line reduces shares and consumes the scenario buyback cash. Vesting-tax cash reduces APIC but creates no second share-retirement credit. The tax-surrendered count is shown solely to demonstrate that it has not been lost or double counted. This structure replaces the prior unsupported SBC `expense / assumed price` gross-issuance proxy.

7. Binary P/E-at-15 entry-price gate

Required 2031 EPS at the immutable packet price is USD 272.46 divided by 15, or USD 18.1640 per listed unit.

Case	Repaired 2031 EPS, USD	EPS times 15	Packet price, USD	Cushion	Pass?
Bear	10.2858	154.2872	272.46	(43.37%)	FAIL
Base	14.5549	218.3240	272.46	(19.87%)	FAIL
Bull	17.6153	264.2297	272.46	(3.02%)	FAIL

P/E 15 gate: FAIL. Base controls the binary decision with a negative 19.87% cushion. After the OSTTRA gain and sold-affiliate perimeter are removed from forward earnings, even Bull falls short. This is an entry-price gate only. It is not a terminal valuation method, and 15x is not selected as an exit multiple.

8. Latest-FY and TTM reflexivity

Anchor / line	Segment or product sum, USD M	Corporate / operating bridge	Consolidated reported, USD M	Residual	Result
FY2025 revenue	6,520.6	0.0	6,520.6	0.0	PASS
FY2025 statutory OI	4,229.5	0.0	4,229.5	0.0	PASS
TTM revenue	6,772.6	0.0	6,772.6	0.0	PASS
TTM statutory OI	4,409.0	0.0	4,409.0	0.0	PASS

The historical anchor remains reported statutory accounting. FY2025 CODM net income is USD 4,072.2 million; TTM CODM net income is USD 4,287.0 million. Both remain below-line endpoints and are not relabeled operating income. The current normalized denominator is a separate comparability schedule and does not mutate the sealed bridge. All reported anchors tie exactly within the USD 0.1 million packet tolerance and the 2% reflexivity requirement.

9. FY2025 minus H1 2025 plus H1 2026 bridge

The cumulative interim bridge uses identical January 1 through June 30 periods and has no overlap. Shares are independently day-weighted rather than added or subtracted.

Line, USD M	FY2025	Less H1 2025	Plus H1 2026	TTM	Residual
Revenue	6,520.6	(3,334.3)	3,586.3	6,772.6	0.0
Statutory operating income	4,229.5	(2,237.3)	2,416.8	4,409.0	0.0
Pretax income	5,330.5	(2,575.1)	2,838.6	5,594.0	0.0
Net income	4,072.2	(1,981.3)	2,196.1	4,287.0	0.0
Diluted common numerator	4,021.0	(1,956.4)	2,196.1	4,260.7	0.0

Q3 2025 360.422 million shares for 92 days, Q4 2025 360.251 million for 92 days, Q1 2026 363.208 million for 90 days, and Q2 2026 361.282 million for 91 days produce 361.280268 million TTM weighted shares. USD 4,260.7 million divided by 361.280 million equals reported USD 11.7933458813 diluted EPS. The preferred conversion is already inside Q1/Q2 denominators and is not added again.

10. Sensitivity

The sensitivity holds all untested Base variables fixed. CME has one modeled segment, so the requested second-segment margin test is not applicable. The valid substitute is the sole consolidated segment margin on the sealed exact basis.

Variable	Down case EPS	Base EPS	Up case EPS	Change down / up	P/E-15 result
Sole-segment revenue CAGR minus / plus 200 bps	13.4023	14.5549	15.7985	(1.1526) / +1.2436	Both fail
Sole-segment OI margin minus / plus 200 bps	14.1748	14.5549	14.9353	(0.3801) / +0.3803	Both fail
Terminal share count minus / plus 5%	15.3210	14.5549	13.8618	+0.7660 / (0.6931)	Both fail
Tax rate minus / plus 300 bps	15.1257	14.5549	13.9842	+0.5708 / (0.5708)	Both fail

Revenue growth remains the largest tested driver, followed by the diluted denominator. Even the favorable end of each one-variable sensitivity remains below required EPS of USD 18.1640. The repair makes clear that a transaction gain and

sold-affiliate perimeter cannot supply the missing cushion. Monitoring should emphasize product-level revenue, market-data durability, open interest, actual diluted-share retirement, and retained-affiliate earnings after each clean post-sale quarter.

11. Combined earnings summary

Case	Revenue, USD B	OI, USD B	OI margin	NI, USD B	EPS, USD per listed unit	Probability	EPS times 15	Versus USD 272.46
Bear	6.8373	4.1707	61.0%	3.7001	10.2858	25%	154.2872	(43.37%)
Base	8.8930	5.9138	66.5%	5.2083	14.5549	55%	218.3240	(19.87%)
Bull	10.2855	7.0970	69.0%	6.2613	17.6153	20%	264.2297	(3.02%)
Probability-weighted	8.6576	5.7147	66.0% diagnostic	5.0419	14.0997	100%	211.4959	(22.38%)

The 25% / 55% / 20% probabilities remain those cleared in the reviewed segment appendix. They sum to 100%. Base carries the greatest weight because CME's benchmark franchise and current operating evidence support continued compounding; Bear remains material because activity, mix, competition, and fixed resilience cost can reverse leverage; Bull is lower because multiple growth levers must work together. The probability-weighted row is an operating diagnostic, not a fourth scenario, terminal value, or IRR.

12. Eleven tie-out checks

1. Reported-financial and statutory-bridge tie-out — PASS

FY2025 revenue / OI are USD 6,520.6 million / USD 4,229.5 million. TTM revenue / OI are USD 6,772.6 million / USD 4,409.0 million. The sole segment equals each consolidated endpoint, corporate and operating arrays are empty, and all residuals are zero. The normalized current denominator is kept separate and does not mutate reported history.

2. NI / shares / listed-unit / FX equals EPS — PASS

Bear: 3,700.0558308 / 359.7242833 = 10.2858106. Base: 5,208.3495000 / 357.8408467 = 14.5549329. Bull: 6,261.3201032 / 355.4475667 = 17.6153129. Multiplying each by the 1.000000 listed-unit factor and 1.000000 FX factor reproduces quoted EPS. The current Base normalized bridge separately ties 4,055.0098320 / 361.280 = 11.2240086.

3. Segment sum at horizon — PASS

There is one modeled segment. Combined / segment revenue is 6.8373 / 6.8373, 8.8930 / 8.8930, and 10.2855 / 10.2855, or 100.000% in every case. Corporate eliminations are zero.

4. Product-to-segment rollup — PASS

The eleven reviewed product-family rows tie to terminal segment totals at unrounded precision. Display rounding creates at most a USD 0.1 million presentation difference. The controlling totals remain USD 6,837.3 million, USD 8,893.0 million, and USD 10,285.5 million. No operating endpoint was altered in repair.

5. Weighted margin check — PASS, scope condition satisfied

CME does not disclose product operating profit. Under the permitted one-segment fallback, product margins must not be invented. Consolidated exact-basis OI / revenue is 61.0%, 66.5%, and 69.0%, matching the reviewed endpoints. The multi-product profit-margin rollup is not triggered.

6. Share count and security-unit path — PASS

Financial shares 361.282 million times split factor one, divided by depositary and class factors of one, equal 361.282 million listed equivalents. Each forward row satisfies starting diluted shares minus open-market shares retired plus 0.314 million reported net vesting-related shares equals ending diluted shares. The embedded 0.598 million treasury-method increment is not re-added. Tax-surrendered shares are disclosed but not subtracted again. Vesting-tax cash reduces APIC and is not a repurchase. Gross issuance remains unavailable rather than estimated.

7. Growth plausibility — PASS

No Base product CAGR exceeds 1.2 times its historical rate without explicit reviewed justification. Metals falls from 25.6% historical to 8.0%; agriculture falls from 13.8% to 6.0%; market data uses 8.0% against 10.0% historical. Low-growth families

use explicit recovery or clearing rationales. No repair changes these assumptions.

8. Historical arithmetic — PASS

For every product and case, `TTM base × (1 + CAGR)^5` reproduces terminal revenue within 1%. The maximum error from rounded displayed inputs is about 0.038%, on EBS Bear. Every exponent is exactly five. Below-line annual rows now start from the normalized paired contribution and clean affiliate anchors rather than the event-heavy reported TTM lines.

9. Recency anchor — PASS

Base TTM+1 revenue of USD 7,149.1 million is 5.56% above TTM USD 6,772.6 million. Base TTM+1 OI of USD 4,675.5 million is 6.04% above TTM USD 4,409.0 million. Both are inside the 10% threshold. The repaired TTM+1 Base retained-affiliate line of USD 400.2 million equals the clean H1 2026 annualization and the recurring investment contribution excludes the sale gain.

10. Period and horizon integrity — PASS

FY2025 minus like-for-like H1 2025 plus H1 2026 ties revenue, OI, pretax income, NI, and diluted common numerator with zero residual. Quarterly denominators are day-weighted from four non-overlapping quarters. Forecasts begin at normalized TTM / TTM+1 and end 2031-06-30, exactly five years after 2026-06-30. No six-year or FY2025-based compounding is used.

11. Valuation, normalization, unit bridge, packet hash, and probability arithmetic — PASS

Exact packet hashes recomputed to `b42e1729ffdd2f3676659fe4f3bccb0b0ceab9ec10be26441ea9f04deb8e92d2` and `e6bc5b88a6ede1ae5b81872125c9fdc1f9ebfb7594a6155e5cd780c333bc5d66`; repaired data package hash is `f24995f0ba67bf1f0a462d8c893afe0fbda9b52bcc591c8019bfdab949ae15f8`. Listing, price, split, share, listed-unit, and FX identities all reproduce. Reported EPS 11.7933458813 and P/E 23.1028584x are explicitly non-comparable; Base ongoing normalized EPS 11.2240086137 and P/E 24.2747497x use the clean retained perimeter. Scenario EPS times 15 equals USD 154.2872, USD 218.3240, and USD 264.2297. Probabilities sum to 100%; weighted EPS is `0.25 × 10.2858106 + 0.55 × 14.5549329 + 0.20 × 17.6153129 = 14.0997283`. Base cushion is negative 19.87% and controls FAIL.

13. Synthesis conclusion

All eleven mechanical checks pass after the bounded repair. Operating segment and OI work remain unchanged. The current reported numerator is bridged transparently to a clean post-sale denominator without inventing OSTTRA's historical affiliate contribution. The USD 306.1 million sale gain is excluded from all future years, USD 22.1 million sale fees are normalized only in current comparability, and retained affiliates use the verified USD 390.8 million / USD 400.2 million / USD 409.6 million anchors, nominally flat through 2031.

Base 2031 revenue is USD 8.8930 billion, statutory OI is USD 5.9138 billion, NI is USD 5.2083 billion, diluted shares are 357.8408 million, and EPS is USD 14.5549. Required EPS at USD 272.46 and 15x is USD 18.1640. Base cushion is negative 19.87%; Bear, Base, and Bull all fail the binary P/E-at-15 gate.

The repaired award bridge uses reported net vesting-related shares, preserves treasury-method dilution, discloses surrendered shares and cash/direct-equity effects separately, and makes no unsupported gross issuance estimate or extra share offset. Terminal capital-structure fields without source-bound paths remain unavailable. No valuation method, exit multiple, ranking, sizing, portfolio action, or trade instruction is supplied. `trade_execution_authorized=false`.

Appendix CS - Compounder Score

CME Group - Compounder Score

Analysis date: 2026-09-17 **Security:** XNAS:CME Class A common share **Reporting / quote currency:** USD / USD **Price anchor:** USD 272.46, raw completed-session close on 2026-09-16 **TTM / horizon:** 2026-06-30 / 2031-06-30, exactly 5.0 years **Primary valuation method:** P/E **Valuation-preflight binding:** `C:\Users\Admin\OneDrive\GPT\ER 2.0\CME Group\valuation_preflight.json`, SHA-256 `bcee32e9206752d86af33eb22a9efb79cf10d2b4be202ad2ae67704e28b6feab` **Preflight status:** CLEARED; validator passed with all five foundations locked and no blockers.

1. Executive Verdict

Compounder Score: 61/100. Business Quality Score: 57/80. 20% Return Underwriting/Stretch Score: 4/20. Score-implied classification: Reject. CIO actionability status: PASS.

CME is an unusually profitable, durable market-infrastructure franchise, but the evidence does not support the dream-investment standard at USD 272.46. Benchmark liquidity, integrated clearing, cross-margin benefits, authoritative market data and regulatory trust create a real moat. The moat appendix passes both the current test and the explicit 2046 test. Revenue compounded 8.59% and statutory operating NOPAT compounded 11.81% from FY2021 to FY2025, while the operating margin rose from 56.4% to 64.9%. Free cash flow conversion is excellent and physical capital needs are low.

The score is capped for three reasons. First, the audited goodwill-inclusive operating ROIC series rises but remains modest: its FY2021-FY2025 median is 9.77% and FY2025 reaches 11.85%. A credible acquisition-inclusive ROIIC denominator is not available, so the rubric does not permit a heroic incremental-return score based on the tiny physical capital base. Second, management is YELLOW, not PASS: succession is untested, Terry Duffy remains Executive Chairman after the planned CEO transition, Class B governance reform failed, compensation does not directly reward ROIC or per-share FCF, and TTM aggregate dividends plus repurchases exceeded FCF during the OSTTRA-proceeds period. Third, valuation overwhelms otherwise good business evidence. Under the locked P/E method, Bear/Base/Bull gross USD IRRs are -3.13% / 6.77% / 13.07%; probability-weighted gross return is 6.13%. None approaches the 20% stretch hurdle.

The portfolio conclusion is also negative, but for a different reason. A conservative net-SGD overlay produces Bear/Base/Bull IRRs of **-5.95% / 5.19% / 12.81%** and a probability-weighted net-SGD IRR of **4.69%**. The Base and probability-weighted outcomes fail the owner's 10% mandate and the matrix's 8% minimum for avoiding PASS. A hypothetical 2% whole-NAV substitution from VLUE would improve modeled bear resilience because CME's net-SGD Bear is less negative than VLUE's -13.3%, but it would reduce Base return from VLUE's 10.1% to CME's 5.19%. Against signed cash at 4.1%, CME adds only about 1.09 points in Base and 0.59 point probability-weighted while accepting equity, clearing, regulatory and valuation risk. This is research only and neither proposes nor ranks a trade.

2. Data Source Map

Evidence need	Controlling source	Period / role	Confidence
Price, listing and share-unit bridge	`quote_packet.json`, SHA-256 `b42e1729ffdd2f3676659fe4f3bccb0b0ceab9ec10be26441ea9f04deb8e92d2`	2026-09-16 close; XNAS:CME; one listed share per financial share	High
Income, balance sheet and cash flow	`quant_foundation.md`; `statutory_bridge.json`, SHA-256 `e6bc5b88a6ede1ae5b81872125c9fdc1f9ebfb7594a6155e5cd780c333bc5d66`	FY2021-FY2025 and TTM ended 2026-06-30	High
Revenue, KPIs and capital allocation	`data_package.md`	Official SEC/CME evidence plus live FMP cross-checks	High
Operating forecast	`appendix_B_consolidated_company.md`	One-segment statutory-operating-income model	High
Management and governance	`appendix_management.md`	Proxy, filings, releases and eight calls; gate YELLOW	High
Moat and 2046 durability	`appendix_moat.md`	Competitive, clearing, pricing and disruption tests; gate PASS	High

Evidence need	Controlling source	Period / role	Confidence
Terminal EPS, shares and distributions	`appendix_synthesis.md`, SHA-256 `3cfb82bcb4818d831ad2df0349293090c62b938bea39e638d70d5c35b947b441`	Repaired Bear/Base/Bull schedules; 11/11 tie-outs	High
Method, denominator and exit multiples	`valuation_preflight.json`	Validator-cleared P/E method and 18x/22x/25x exits	High
Current portfolio comparison	`C:\Users\Admin\OneDrive\GPT\pulse\output\pulse_summary_codex_gpt55_brief.md`; `pulse_cio_data.json`; `pulse_summary_evidence.json`	Stable 2026-09-16 Pulse memo/evidence	High for stated snapshot; not security authority

No stale warehouse data is introduced. Core financials are drawn from the completed ER2 chain. Provider-computed ratios are not relabeled. The raw reported P/E remains attached to reported EPS and is disclosed as non-comparable; the normalized comparable denominator controls all current-to-terminal multiple analysis.

3. Key Financial and Quality Metrics

Metric	1-year / latest	3-year	5-year / available span	Interpretation
Revenue growth	FY2025 +6.4%	FY2023-FY2025 8.1% CAGR	FY2021-FY2025 8.59% CAGR	Healthy but volume/mix sensitive
Statutory NOPAT growth	FY2025 +5.8%	FY2023-FY2025 10.0% CAGR	FY2021-FY2025 11.81% CAGR	Benefits from operating leverage
Free-cash-flow growth	FY2025 +16.6%	FY2023-FY2025 11.4% CAGR	FY2021-FY2025 16.52% CAGR	Strong cash generation
Goodwill-inclusive operating ROIC	FY2025 11.85%	FY2023-FY2025 median 11.29%	FY2021-FY2025 median 9.77%	Improving, below elite threshold
Credible ROIIC	Insufficient evidence	Insufficient evidence	Insufficient evidence	Acquisition and working-capital denominator not complete
FCF / operating NOPAT	FY2025 129.8%	123.9% aggregate	122.96% aggregate FY2021-FY2025	High because FCF includes material below-line economics
TTM FCF / net income	98.27%	n/a	n/a	Earnings convert into cash
Operating margin	TTM 65.10%	FY2023-FY2025 +3.3 pp	FY2021-FY2025 +8.5 pp	Strong scale economics
Diluted-share CAGR	FY2025 +0.10%	FY2023-FY2025 +0.11%	FY2021-FY2025 +0.10%	Mild dilution before 2026 preferred conversion
SBC / revenue	TTM 1.47%	n/a	n/a	Modest, but economically real
SBC / FCF	TTM 2.36%	n/a	n/a	Not a material cash-quality distortion
Net debt / TTM EBITDA	0.24x	n/a	n/a	Conservative corporate leverage
FCF yield	TTM 4.28%	n/a	n/a	Low relative to 20% target
Declared annualized dividend yield	4.17%	n/a	n/a	USD 5.20 regular run rate plus USD 6.15 variable dividend

Standard industrial ROIC requires adaptation. CME's matched USD 158.1 billion clearing collateral and liabilities are not shareholder capital. Conversely, stripping goodwill and acquired intangibles from invested capital would make an exchange with acquired benchmark assets look artificially capital-light. The controlling score therefore uses goodwill-inclusive operating capital and refuses to award points from a mechanically huge ex-goodwill ratio. The same discipline limits ROIIC. Physical capex is only 1%-3% of revenue, but product licenses, technology, regulation, acquisitions and liquidity-building are economically important investments that cannot be reconstructed completely from disclosed statements. The evidence supports excellent incremental unit economics; it does not support a precise 35%-plus acquisition-inclusive ROIIC claim.

4. Rubric Scorecard

Category	Score	Maximum	Evidence-led judgment
Incremental Returns on Capital	12	25	Improving ROIC and excellent cash conversion; credible ROIIC unavailable

Category	Score	Maximum	Evidence-led judgment
Reinvestment Runway	16	20	Broad product/data/clearing runway, but mature core and mixed acquired returns
Durability of Moat	14	15	Benchmark liquidity, clearing offsets, data and trust pass 2046 test
Accounting and Financial Quality	9	10	Reconciled statements, real cash flow, modest SBC, low leverage
Capital Allocation Discipline	6	10	Strong dividend architecture; NEX mixed, buyback price and governance unresolved
Price and 20% Return Underwriting	4	20	Independent exits and distributions help; modeled returns remain far below 20%
Business Quality Score	**57/80**	**80**	Credible high-quality franchise, not proven elite ROIIC compounder
Compounder Score	**61/100**	**100**	Below 70; score-implied classification is Reject

Sub-item scoring is conservative. Category 1 assigns 1/5 to normalized ROIC, 0/8 to ROIIC, 3/3 to non-deterioration, 3/3 to unit economics, 3/3 to cash conversion and 2/3 to the accounting-artifact test. Category 2 assigns 4/5 to market opportunity, 3/5 to reinvestment at scale, 3/4 to organic growth, 3/3 to the expansion playbook, 2/2 to market structure and 1/1 to avoiding an assumed ROIC collapse. Category 3 loses one point for low disruption risk because clearing interoperability, substitutes, forced access, cyber/operational failure and liquidity migration are not negligible. Category 4 loses one point because gross award issuance and an issuer-reconciled vesting bridge are not disclosed. Category 5 loses points for the mixed NEX record, repurchases near USD 281 after two years without buybacks, non-ROIC incentives, governance concentration and an untested succession.

5. ROIIC and Reinvestment Analysis

FY2021-FY2025 statutory operating NOPAT rises from USD 2.067 billion to USD 3.231 billion. Goodwill-inclusive operating ROIC rises every year: 7.39%, 8.40%, 9.77%, 11.29% and 11.85%. That progression is real and favorable. It reflects revenue growth, margin expansion and a broadly stable operating-capital base. However, the five-year median is only 9.77%, below the rubric's 10% threshold for even 2/5 on the high-ROIC item.

An ex-goodwill calculation would be misleading. At 2026-06-30, goodwill and intangibles total USD 30.176 billion, while tangible book value is negative USD 3.655 billion. Those intangibles largely represent acquired venues, products, customer relationships and benchmark franchises that are economically central. Treating the acquisition capital as if it never existed would turn CME's low physical capital requirement into an accounting windfall. The score therefore retains goodwill for the controlling assessment and explicitly marks adjusted/ex-goodwill ROIC as non-controlling.

ROIIC cannot be calculated credibly from the available evidence. The dispatch formula requires cumulative net capex, non-cash working capital, justified growth opex, capitalized software/R&D and acquisition spend net of disposals. CME does not separately disclose R&D, and the 2025 M&A cash-flow line is dominated by OSTTRA sale proceeds. A denominator built only from capex would be artificially tiny and award an absurd return. A denominator built from retained NOPAT would ignore the variable-dividend architecture. Accordingly, 3-year, 5-year and acquisition-inclusive ROIIC are marked insufficient rather than invented. This is a substantive score cap, not a claim that incremental economics are poor.

Cash conversion is demonstrably strong. FY2021-FY2025 aggregate FCF is 122.96% of operating NOPAT, and TTM FCF is 98.27% of net income. The difference between operating NOPAT and FCF reflects affiliate and investment economics below operating income as well as working-capital timing; it does not justify treating FCF/NOPAT above 100% as a repeatable industrial conversion ratio. TTM SBC is USD 99.5 million, only 1.47% of revenue and 2.36% of FCF. Stock awards remain a real cost and the 0.314 million annual net vesting-share input remains in every scenario.

6. Runway Analysis

The runway is broad but not unconstrained. CME can deepen established interest-rate, equity, commodity, FX and digital-asset benchmarks; increase options and micro-contract participation; extend hours; grow international distribution; license more real-time, historical and derived data; integrate cash and derivatives workflows; and compete for expanded Treasury clearing. Market data achieved 32 consecutive quarters of year-on-year growth, and Q2 2026 revenue grew 20%,

supporting a durable recurring layer. The Base model deliberately fades market-data growth to 8% rather than extrapolating the latest quarter.

The core listed franchise benefits from self-reinforcing liquidity. More participants improve execution, which attracts more flow and produces more useful prices and data. Integrated clearing and cross-margining add a customer-capital advantage; management estimates more than USD 95 billion of daily margin efficiencies. This supports organic growth with little physical capital.

The limits matter. Roughly 80% of TTM revenue remains clearing and transaction fees, so activity, product mix and volume tiers can reverse operating leverage. Treasury clearing, Google Cloud migration, 24/7 operations and new products require resilience spending before revenue is proven. BrokerTec and EBS compete in more fragmented markets. NEX is strategically useful but cannot yet be called an unambiguous high-return acquisition. The Base terminal revenue CAGR of 5.60% is plausible; the Bull's 8.72% requires several growth levers simultaneously and is not used to justify a higher quality score.

7. Moat Analysis

The moat evidence is the strongest part of the case. CME concentrates benchmark order books, open interest, clearing risk management, default resources, collateral offsets, regulatory permissions and authoritative data. Customers cannot reproduce those benefits by copying software. Commercial hedgers, banks, asset managers, market makers and governments care about total execution and capital efficiency, settlement finality and trusted default management. Market data is generated by the same liquidity network, reinforcing the ecosystem.

Pricing power is observable but bounded. The February 2025 fee change contributed to average rate per contract, and management estimated April 2026 changes could add 1%-1.5% to revenue on constant activity. Yet record volume can reduce realized rate per contract through product mix and tiering. That is healthy price/volume optimization, not unlimited tariff power.

The 2046 test passes. Customers should still pay for neutral two-sided liquidity, legal novation, collateral movement, benchmark settlement and authoritative price data. AI can improve interfaces and surveillance but cannot supply regulated clearing capital or manufacture trusted open interest. The main falsifiers are sustained benchmark-liquidity loss, forced commoditization or interoperability of clearing, margin-efficiency stagnation relative to competitors, a material clearing loss, repeated outage, cyber failure, or Treasury-clearing costs without economically relevant activity. One clearing firm represented 12% of 2025 clearing/transaction revenue, and two data resellers represented roughly 30% of data revenue, so concentration and operational tail risk prevent a perfect score.

8. Accounting and Capital Allocation Analysis

Accounting quality is high. The historical chain reconciles FY2025 and TTM revenue, statutory operating income, pretax income, net income, diluted common numerator, cash flow, debt and diluted shares to official filings. The repaired synthesis removes the USD 306.1 million OSTTRA sale gain, adds back USD 22.1 million of sale fees only in the normalized current denominator, and replaces the mixed affiliate line with a clean post-sale retained-affiliate run rate. Reported TTM EPS of USD 11.7933458813 and raw P/E of 23.1028584x are preserved but marked non-comparable. Normalized Base current EPS of USD 11.2240086137 and P/E of 24.2747497x use the same ongoing perimeter as terminal EPS.

Capital allocation is mixed. The dividend architecture is owner-friendly: regular quarterly dividends target 50%-60% of prior-year cash earnings, and an annual variable dividend distributes excess cash after operating and strategic needs. Corporate leverage is low. But NEX has produced mixed evidence, and OSTTRA was later sold. FY2023 and FY2024 had no open-market Class A repurchases; vesting-tax cash was correctly separated from buybacks. Repurchases accelerated to USD 1.237 billion in H1 2026 at USD 280.87 per share using OSTTRA proceeds. That price exceeds this report's probability-weighted 20% max-buy price by 90% and is even above the current quote. The program may still reduce diluted shares and return surplus cash, but it does not earn top marks for value discipline.

Management is YELLOW. Lynne Fitzpatrick's planned March 2027 CEO succession is credible but untested; Duffy's continuing Executive Chair role leaves decision-rights uncertainty. Compensation emphasizes cash earnings, margins, EPS and TSR rather than ROIC or per-share FCF. Class B holders retain special board-election rights after reform failed. Upgrade requires four quarters of independent CEO operation, a credible CFO successor, clearer CEO/Chair authority, rolling payout at or below FCF after sale proceeds, and governance reform or equivalent remedy.

9. 20% Return Underwriting

Security return underwriting

Measure	Result	Notes
Primary valuation method	P/E	Locked by VP and used for all scenarios, weighting, reverse return and net-SGD
Current price / exact horizon	USD 272.46 / 5.0 years	2026-06-30 to 2031-06-30; price is 2026-09-16 close
Gross USD Bear / Base / Bull IRR	-3.13% / 6.77% / 13.07%	Finite CAGR from terminal wealth; 25% / 55% / 20% probabilities
Probability-weighted gross USD IRR	6.13%	CAGR of USD 366.77638029 expected terminal wealth, not average scenario IRRs
Return bridge	EPS x exit P/E + distributions	No net-cash/debt adjustment under P/E; double-count check passed

The tables below show gross USD underwriting. Net-SGD costs, withholding and FX appear separately in CIO actionability. Current annual dividend is the USD 5.20 regular run rate plus the USD 6.15 declared variable dividend, or USD 11.35. Scenario terminal annual dividends equal terminal net income times the locked payout ratio divided by terminal diluted shares. Cumulative distributions are copied from the repaired S schedule and are not added anywhere else.

Bear-case operating and return bridge

Bear case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 6.7726B	USD 6.8373B	0.19%	Weak activity/mix and fixed resilience spend offset only modest data growth
Operating margin	65.10%	61.00%	-4.10 pp	Revenue stagnates while critical clearing, regulatory and technology costs persist
Operating earnings	USD 4.4090B	USD 4.1707B	-1.11%	Statutory operating income under one-segment fallback
Diluted share count	361.282000M	359.7242833M	-0.09%	USD 150M annual buybacks plus 0.314M annual net vesting shares
EPS	USD 11.2040690820	USD 10.2858106	-1.70%	Ongoing Bear normalized current perimeter to statutory diluted terminal EPS
Valuation denominator	Ongoing normalized EPS	Same recurring statutory EPS	Comparable	Raw reported EPS/P-E is non-comparable and not used as a cap
Valuation	24.3179507x normalized	18.0x exit	-6.3179507x	Discount for declining EPS, activity, regulation and weaker leverage
Share value	USD 272.46	USD 185.1445908	-7.44%	USD 10.2858106 x 18.0x; zero net-cash/debt adjustment
Annual dividend	USD 11.35	USD 9.2572295	-3.99%	90% terminal payout; current combines regular run rate and declared variable
Dividend yield	4.17%	5.00%	+0.83 pp	Annual dividend divided by endpoint share value
Five-year dividends	-	USD 47.3162	cumulative	Repaired S schedule; distribution counted once
Total ending value	USD 272.46	USD 232.4607908	-3.13% gross USD IRR	Terminal share value plus cumulative distributions

Base-case operating and return bridge

Base case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 6.7726B	USD 8.8930B	5.60%	Broad mid-single-digit products, data growth and distribution expansion
Operating margin	65.10%	66.50%	+1.40 pp	Moderate shared-platform leverage after resilience investment

Base case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Operating earnings	USD 4.4090B	USD 5.9138B	6.05%	Statutory operating income under one-segment fallback
Diluted share count	361.282000M	357.8408467M	-0.19%	USD 300M annual buybacks plus 0.314M annual net vesting shares
EPS	USD 11.2240086137	USD 14.5549329	5.33%	Base ongoing normalized current perimeter to statutory diluted terminal EPS
Valuation denominator	Ongoing normalized EPS	Same recurring statutory EPS	Comparable	Sold OSTTRA perimeter and transaction gain removed at both endpoints
Valuation	24.2747497x normalized	22.0x exit	-2.2747497x	Near low end of recent CME range and peer median for mature growth
Share value	USD 272.46	USD 320.2085238	3.28%	USD 14.5549329 x 22.0x; zero net-cash/debt adjustment
Annual dividend	USD 11.35	USD 12.8083409	2.45%	88% terminal payout; current combines regular run rate and declared variable
Dividend yield	4.17%	4.00%	-0.17 pp	Annual dividend divided by endpoint share value
Five-year dividends	-	USD 57.8606	cumulative	Repaired S schedule; distribution counted once
Total ending value	USD 272.46	USD 378.0691238	6.77% gross USD IRR	Terminal share value plus cumulative distributions

Bull-case operating and return bridge

Bull case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 6.7726B	USD 10.2855B	8.72%	Open interest, data, pricing, international and clearing adjacencies all succeed
Operating margin	65.10%	69.00%	+3.90 pp	Revenue growth outpaces capacity, 24/7, cyber and distribution costs
Operating earnings	USD 4.4090B	USD 7.0970B	9.99%	Statutory operating income under one-segment fallback
Diluted share count	361.282000M	355.4475667M	-0.33%	USD 500M annual buybacks plus 0.314M annual net vesting shares
EPS	USD 11.2439481454	USD 17.6153129	9.39%	Bull ongoing normalized current perimeter to statutory diluted terminal EPS
Valuation denominator	Ongoing normalized EPS	Same recurring statutory EPS	Comparable	Raw reported multiple remains disclosure only
Valuation	24.2317019x normalized	25.0x exit	+0.7682981x	Supported by high end of peers but below CME's older 31x-34x regime
Share value	USD 272.46	USD 440.3828225	10.08%	USD 17.6153129 x 25.0x; zero net-cash/debt adjustment
Annual dividend	USD 11.35	USD 14.9730160	5.70%	85% terminal payout; current combines regular run rate and declared variable
Dividend yield	4.17%	3.40%	-0.77 pp	Annual dividend divided by endpoint share value
Five-year dividends	-	USD 63.2330	cumulative	Repaired S schedule; distribution counted once
Total ending value	USD 272.46	USD 503.6158225	13.07% gross USD IRR	Terminal share value plus cumulative distributions

The P/E bridge has no terminal cash, debt, lease, NCI or other senior-claim addition or subtraction. Those claims already affect statutory EPS and the equity multiple. Terminal diluted shares are 359.7242833 million / 357.8408467 million / 355.4475667 million. The matched clearing collateral is excluded from shareholder value. Affiliates enter earnings once; no affiliate asset is added. Dividends enter terminal shareholder wealth once and do not modify terminal EPS or share value. The double-count check passes.

Exit-multiple integrity

Bear 18x is below CME's recent 22.69x-24.43x range and current peers at 21.08x-25.88x, reflecting declining EPS and adverse activity/mix while retaining going-concern value for the moat. Base 22x sits near the low end of recent CME and the peer median, balancing mature growth against high margins and franchise quality. Bull 25x is near NDAQ's 25.88x and CME FY2025 at 24.43x, but remains below CME's older 31x-34x regime because the terminal business is larger and the operating scenario already embeds strong execution. Both excessive-optimism and excessive-bearishness challenges passed in VP. The raw 23.1028584x P/E is non-comparable and not a cap; normalized Base current P/E is 24.2747497x.

Method-matched 20% reverse return

At USD 272.46, 20% annual compounding for five years requires terminal shareholder wealth of USD 677.9676672 per share. Probability-weighted modeled distributions are USD 56.29898 and probability-weighted terminal equity value is USD 310.47740029, for modeled wealth of USD 366.77638029. Holding the VP-locked scenario probabilities, exit P/Es and S distributions fixed, the maximum starting price that earns 20% is **USD 147.39920118**, 45.90% below the current price. Conversely, the required probability-weighted terminal equity value is USD 621.6686872, 2.0023 times the modeled value. Applying that scale to the terminal EPS schedule would require Bear/Base/Bull EPS of approximately USD 20.5953 / USD 29.1433 / USD 35.2711 without raising the locked exit multiples. That is not supported by the segment model. The 20% case is therefore not beatable at today's price.

CIO actionability

Net-SGD is a diagnostic, not investor-specific tax advice. Initial cost is USD 272.46 times spot USD/SGD 1.2727641 times a conservative 0.50% entry cost. Each scenario applies a 0.50% exit cost to terminal equity value, 30% U.S. withholding to dividends, and terminal USD/SGD of 1.18 / 1.25 / 1.32 in Bear/Base/Bull. The same P/E terminal values and distributions control; no method or multiple changes in translation.

Measure	Result	Notes
Status	PASS	Base net-SGD IRR is below 8%; this is separate from ER2 verdict
Bear / Base / Bull net-SGD IRR	**-5.95% / 5.19% / 12.81%**	After costs, dividend withholding and scenario FX
Probability-weighted net-SGD IRR	**4.69%**	CAGR of probability-weighted terminal SGD wealth, not average IRRs
10% mandate hurdle	FAIL	Base 5.19% and weighted 4.69% both fail
15% stretch hurdle	FAIL	Even Bull is 12.81% net SGD
Downside and portfolio fit	FAIL	Better Bear than VLUE, but no return improvement versus VLUE and little premium to cash
Proposed sizing ceiling	None	Research-only comparison; no sizing, ranking or trade proposal

The 2% whole-NAV comparison equals SGD 55,005.038, approximately USD 43,216.994 or 158.618 CME shares before costs; those figures merely normalize the question and are not an order. Replacing a 2% NAV slice of VLUE with CME reduces annual Base contribution by roughly 0.098 whole-NAV percentage point: 2% times 5.19% minus 10.1%. In Bear, it improves modeled whole-NAV contribution by roughly 0.147 point: 2% times -5.95% minus -13.3%. Against cash, CME adds only about 0.022 whole-NAV point in Base and about 0.012 point probability-weighted, while introducing equity downside. CME's risk drivers differ from broad value, but the current book already has CBOE/PSH exchange-and-data exposure and financial/cyclical exposures. Diversification alone does not overcome the return shortfall.

Trade execution authorized: NO. `trade_execution_authorized=false`; `portfolio_mutation_authorized=false`; `owner_action_authorized=false`.

10. Hard Veto Checklist

Hard veto	Result	Evidence
ROIIC below cost of capital with no path	Insufficient evidence	Goodwill ROIC improves, but defensible ROIIC denominator is unavailable
High ROIC only because capital is tiny/negative	Watch	Ex-goodwill capital is distorted; controlling score keeps acquisition goodwill
Growth requires external financing	Pass	Low leverage and strong FCF support organic investment
Share count rises without value creation	Watch	Historical dilution mild; 2026 preferred conversion and net vesting require monitoring
Large acquisitions without disclosed returns	Watch	NEX is mixed and no clean acquisition ROIIC is disclosed
FCF structurally lags earnings	Pass	TTM FCF/net income 98.27%; multi-year cash conversion strong
Cyclicality, regulation or clearing can impair equity	Watch	Low-probability, very-high-severity clearing and operational tail risk
20% case requires multiple expansion	**Fail**	Even 25x Bull returns only 13.07% gross; 20% requires far higher EPS/value or lower entry
Flawless execution needed at today's price	Watch	Bull requires several levers and still misses 20%
Moat cannot be explained	Pass	Benchmark liquidity, clearing offsets, data and trust are explicit
Accounting/governance impairs trust	Watch	Accounting strong; Class B structure and succession remain unresolved
Balance sheet can wipe out equity	Pass	0.24x net debt/EBITDA; clearing tail risk remains separately monitored

The failed valuation veto means `no_hard_vetoes=false` under this diagnostic. It does not allege financial distress; it says the 20% return proposition at the current price is not plausible under the audited operating model.

11. Final Decision

Score-implied classification: Reject. The evidence supports a high-quality, moat-protected exchange and clearing franchise. It does not support dream-investment status under this rubric because goodwill-inclusive returns are below the elite threshold, acquisition-inclusive ROIIC cannot be proven, management/governance remain YELLOW, and today's price produces only mid-single-digit Base and probability-weighted returns.

Compounder Score note: 61/100 implies the evidence does not support dream-investment status; valuation is the decisive weakness and one hard veto fails.

Business Quality Score note: 57/80 implies a strong franchise with credible moat and cash conversion, but incomplete ROIIC proof, mixed acquisition history and unresolved management/governance prevent dream-business classification.

20% Return UW Score note: 4/20 implies today's price does not support the 20% stretch hurdle; Base gross USD IRR is 6.77%, and the probability-weighted 20% max-buy price is USD 147.40.

The main monitoring conditions are measurable: sustained core open-interest loss to a named competitor; successive price actions with weaker net transaction revenue and rising incentives; market-data growth or license resistance deteriorating; a material clearing loss, assessment, outage or regulatory capital action; diluted shares failing to decline despite repurchases; rolling dividends plus repurchases remaining above FCF after sale proceeds; or succession/governance controls failing. Positive triggers would require both better economics and a much lower price; valuation alone cannot repair a clearing or governance failure.

12. Machine-Readable JSON

The full-precision companion artifact is `C:\Users\Admin\OneDrive\GPT\ER 2.0\CME Group\compounder_score.json`. It binds the VP hash, locked PE inputs, gross and net-SGD wealth bridges, CIO status, max-buy calculation, score notes, authority flags, scenario shares/distributions, and `material_red_team_objection_status=PENDING`. Reader-facing net-SGD returns above are rendered to exactly two decimals; JSON retains calculation precision.

Appendix CSA - Scoring Audit

CME Group - Scoring Audit

Analysis date: 2026-09-17 Current price: USD 272.46 TTM end: 2026-06-30 Return horizon: 2031-06-30, exactly 5.0 years
Audit status: **CLEARED WITH A NON-BLOCKING FIELD-LABEL NOTE** `trade_execution_authorized=false`

1. Original vs Audited Scores

The original score is conservative and survives independent audit. The sealed valuation preflight validates with all five foundations passed and zero blockers. Its SHA-256 is `bcee32e9206752d86af33eb22a9efb79cf10d2b4be202ad2ae67704e28b6feab`, exactly the hash copied into the scorer artifacts. The P/E method, 18x/22x/25x scenario exit multiples, share treatment, no-terminal-net-debt convention, denominator bridge, and scenario probabilities all match the sealed packet.

Item	Original	Audited	Notes
Business Quality Score / 80	57	57	Evidence supports a strong franchise, but missing ROIIC and mixed capital allocation prevent an elite score
Valuation / 20% Return UW Score / 20	4	4	Return math clears; Base and weighted returns remain far below 20%
Total Score / 100	61	61	No inflation found that warrants a score reduction
Classification	Reject	Reject	Below 70 and the 20% hard veto fails

Original and audited gross USD IRRs are Bear **-3.1255183512%**, Base **6.7710937735%**, Bull **13.0731062187%**, with a probability-weighted gross USD IRR of **6.1254932018%**. The audited probability-weighted result is the CAGR of USD 366.77638029 expected terminal wealth, not an average of scenario IRRs. The audited 20% max-buy price is USD 147.39920118. The Base case does not clear the hurdle, and even the Bull case falls materially short.

2. Score Reductions and Reasons

No further score reduction is required. That conclusion is not a rubber stamp: the original scorer already applied the material caps that the evidence demands.

- Incremental returns on capital remain **12/25**. Category 1B is correctly zero because neither three-year, five-year nor acquisition-inclusive ROIIC can be calculated from a complete reinvestment denominator. Category 1A is only 1/5 because the five-year median goodwill-inclusive operating ROIC is 9.77%, below the rubric's 10% threshold for 2 points. The remaining 11 points rest on improving ROIC, strong unit economics, multi-year cash conversion and a sensible refusal to erase economically central acquired intangible capital.
- Reinvestment runway remains **16/20**. Product extensions, market data, international participation and clearing adjacencies provide evidence beyond management TAM claims. The discount from full marks correctly recognizes a mature core, limited clean acquisition-return evidence and the possibility that new adjacency economics are weaker than the established benchmark franchises.
- Moat durability remains **14/15**. Liquidity, open interest, integrated clearing, cross-margin savings, trusted benchmarks and authoritative data are independently observable. The missing point for disruption risk is appropriate because interoperability, cyber/operational failure, substitute products and regulatory access remain real threats.
- Accounting and financial quality remain **9/10**. The historical statements reconcile, TTM FCF/net income is 98.27%, SBC is explicitly treated as a cost, dilution is modeled, and corporate leverage is low. One point is withheld for incomplete gross-award disclosure and unresolved gross-to-net vesting detail.
- Capital allocation remains **6/10**. The distribution architecture and low leverage are positives; the mixed NEX record, repurchases near USD 281, lack of explicit ROIC incentives, succession uncertainty and Class B governance justify the discount.

- Return underwriting remains **4/20**. Base IRR earns zero, Bear earns zero, the reverse hurdle earns zero, and pricing perfection earns zero. Two points for independently justified exit multiples and two points for meaningful cash distributions are supportable. Those four points do not obscure the failed 20% proposition.

3. Unsupported Claims

The evidence does not support a precise ROIIC, acquisition-inclusive ROIIC or average reinvestment rate. CS correctly records those metrics as null rather than converting low reported capex into a fictitiously high incremental return. CME does not separately disclose all R&D/software investment, non-cash working-capital needs, growth operating expense, and acquisition/disposal capital on a clean comparable basis. OSTTRA also distorts the observed acquisition/disposal cash-flow line.

The evidence does not support an ex-goodwill ROIC as the controlling quality metric. At 2026-06-30, goodwill and intangibles of USD 30.176 billion are economically linked to acquired venues, benchmarks, customer relationships and products. Removing them would make the franchise look artificially capital-free. CS appropriately uses goodwill-inclusive operating ROIC and labels ex-goodwill output non-controlling.

Gross awards vested, exact gross issuance and a complete issuer-prepared gross-to-net award bridge remain undisclosed. The model uses the reported 0.314 million annual net vesting-related share input and separately tracks the 0.169720 million TTM tax-surrendered shares without taking a second share-count offset. That is conservative and count-once, but it cannot substitute for missing gross-award evidence.

Investor-specific tax treatment and broker costs are also unavailable. The net-SGD overlay is therefore a conservative diagnostic using 30% dividend withholding and 0.50% one-way costs, not personal tax advice.

4. Calculation Errors

No return arithmetic error was found. Under the locked P/E method, terminal equity value per share is terminal statutory diluted EPS multiplied by the sealed exit P/E, with no second cash, debt, lease, affiliate or matched-collateral adjustment. The independently replayed bridges are:

Scenario	Terminal EPS	Exit P/E	Terminal equity value/share	Distributions/share	Terminal wealth/share	Gross USD IRR
Bear	10.2858106	18.0x	185.1445908	47.3162	232.4607908	-3.1255183512%
Base	14.5549329	22.0x	320.2085238	57.8606	378.0691238	6.7710937735%
Bull	17.6153129	25.0x	440.3828225	63.2330	503.6158225	13.0731062187%

The weighted wealth calculation is `25% x 232.4607908 + 55% x 378.0691238 + 20% x 503.6158225 = USD 366.77638029`. Annualizing that wealth against USD 272.46 for five years gives 6.1254932018%.

The same P/E values and distributions drive the net-SGD replay. Initial SGD outlay is `272.46 x 1.2727641 x 1.005 = SGD 348.51119321943`. Terminal equity receives a 0.50% exit-cost haircut, distributions receive a 30% withholding haircut, and the result is translated at scenario USD/SGD. Audited Bear/Base/Bull terminal SGD wealth is SGD 256.46144525828 / 448.88737647625 / 636.82609107150, producing net-SGD IRRs of **-5.9495081986% / 5.1923439244% / 12.8134351111%**. Probability-weighted terminal SGD wealth is SGD 438.3686365908075; its five-year CAGR is **4.6946643109%**. The method is consistent and distributions are counted once.

One structured-label issue deserves explicit treatment. Inside `scenario_return_bridges`, CS names USD 11.2040690820 / 11.2240086137 / 11.2439481454 as each scenario's `normalized_current_eps`. The sealed VP's `earnings_normalization.normalized_anchor_label` explicitly locks those same Bear/Base/Bull comparable anchors, while VP's `denominator_integrity.normalized_current_denominator` separately defines USD 11.2240086137 as the single Base ongoing normalized denominator. Thus there is no changed input, no hash mismatch and no effect on the terminal valuation or IRRs. The scenario field would be clearer if labeled `scenario_comparable_current_eps`; the authoritative normalized-current anchor remains USD 11.2240086137 and 24.2747497x. This is a semantic labeling note, not a blocking VP mismatch.

5. Missing Data

The most important missing evidence is a complete economic reinvestment denominator. Without it, ROIIC and acquisition-inclusive ROIIC remain null and Category 1B must remain zero. Also missing are a clean multi-year gross-award bridge, issuer-disclosed returns on NEX and other acquired capital, and investor-specific tax/cost facts. Current portfolio covariance is not recomputed, so CIO fit remains a comparative diagnostic rather than an authority-bearing conclusion. EV/NOPAT is intentionally absent because the sealed VP rejects it for lack of a source-bound terminal enterprise-to-equity claim path; that omission is appropriate under the P/E method.

6. Hard-Veto and Threshold Test Audit

The hard-veto screen is internally consistent. External financing, structurally weak cash conversion, opaque moat and corporate leverage do not trigger vetoes. Dilution, acquisition disclosure, cyclicality/clearing risk, succession and governance remain Watch or insufficient-evidence items. The decisive failure is valuation: the modeled 20% return case is not plausible at USD 272.46. Required five-year terminal shareholder wealth is USD 677.9676672, versus modeled expected wealth of USD 366.77638029. Required probability-weighted terminal equity value is 2.0023 times the model's value after holding distributions fixed.

Thresholds fail at every controlling point: total 61 is below 80, Business Quality 57 is below 65, Return Underwriting 4 is below 15, ROIIC plus runway 28 is below 35, Base IRR is below 20%, Bear IRR is below the 8%-10% acceptable range, and a hard veto remains. The score-implied classification is therefore Reject.

7. Final 20% Hurdle Pass/Fail

FAIL. Base gross USD IRR is 6.77%, weighted gross USD IRR is 6.13%, Base net-SGD IRR is 5.19%, and weighted net-SGD IRR is 4.69%. The 20% max-buy price is USD 147.40, 45.90% below USD 272.46. The calculation breaks the investment proposition at starting valuation, not in the operating quality assessment.

8. Dream Business / Dream Investment Classification

Neither under this diagnostic rubric. CME is a high-quality business with a durable moat, but the 57/80 quality score remains below the dream-business threshold because acquisition-inclusive ROIIC cannot be proven and management/governance remain unresolved. It is not a dream investment because the current price produces only mid-single-digit Base and weighted returns. The single biggest reason it does not qualify is that terminal wealth under independently justified P/E scenarios is far below the wealth required for 20% annual compounding.

9. Stage 7 Scorecard Notes

- **Compounder Score note:** 61/100 indicates a strong franchise but not a dream investment; valuation and missing ROIIC proof are decisive.
- **Business Quality Score note:** 57/80 indicates durable moat and strong cash generation, tempered by unproven acquisition-inclusive ROIIC and unresolved stewardship issues.
- **20% Return UW Score note:** 4/20 indicates today's price fails the 20% hurdle; Base gross USD IRR is 6.77% and max-buy price is USD 147.40.

10. Auditor JSON

The full-precision companion artifact is `C:\Users\Admin\OneDrive\GPT\ER 2.0\CME Group\compounder_score_audit.json`. It records the validated VP hash, audited scores, exact gross and net-SGD returns, method-consistency controls, exit-multiple integrity, labeling note, data gaps and `material_red_team_objection_status=PENDING` for the next independent gate.

Appendix RT - Red Team

CME Group — Independent Red Team

Analysis date: 2026-09-17 **Security:** XNAS:CME Class A common share **Price anchor:** USD 272.46 at 2026-09-16 **Return horizon:** 2031-06-30, exactly 5.0 years **Authority:** `trade_execution_authorized=false`; `portfolio_mutation_authorized=false`; `owner_action_authorized=false`

Gate integrity and return replay

The red team read and hash-checked all four mandatory artifacts. `valuation_preflight.json` is SHA-256 `bcee32e9206752d86af33eb22a9efb79cf10d2b4be202ad2ae67704e28b6feab`; that exact hash appears in both `compounder_score.json` and `compounder_score_audit.json`. `compounder_score.json`, `appendix_scoring_audit.md`, and `compounder_score_audit.json` hash to `2d049e6a2ce158822e91dce64165e6c0b81e57b39ebb9314712b44d4dfafa738`, `a5b0974c70506b7286656c843857467bef9ade449e65fdb2bfa428cffed5c4fe`, and `32b33d226040c8cda2dae0b7fe5b4616a66145fd9b5695749e931b94eb0fe1cd`. The preflight's bound synthesis, reviewed-segment, data-package, quote-packet, and statutory-bridge hashes also match the files on disk. The method is locked as P/E in all three scenarios; no cash, debt, lease, affiliate, NCI, or clearing-collateral claim is added after EPS times P/E.

The arithmetic reproduces exactly. Bear terminal value is `10.2858106 x 18 = 185.1445908`; adding USD 47.3162 of distributions gives USD 232.4607908 and a five-year gross USD IRR of **-3.1255%**. Base is `14.5549329 x 22 = 320.2085238`; plus USD 57.8606 gives USD 378.0691238 and **6.7711%**. Bull is `17.6153129 x 25 = 440.3828225`; plus USD 63.2330 gives USD 503.6158225 and **13.0731%**. The 25%/55%/20% weighted terminal wealth is USD 366.77638029, whose CAGR is **6.1255%**, not an average of scenario IRRs. The net-SGD replay also matches: initial outlay is SGD 348.5111932, and the 30% dividend-withholding, 0.5% entry/exit-cost, and scenario-FX bridge produces Bear/Base/Bull/PW IRRs of **-5.9495% / 5.1923% / 12.8134% / 4.6947%**.

The scoring auditor's naming observation is real but non-economic. The scenario fields called `normalized_current_eps` contain USD 11.2040690820 / 11.2240086137 / 11.2439481454, exactly the VP-locked Bear/Base/Bull comparable anchors. Only USD 11.2240086137 is the authoritative Base normalized-current denominator and 24.2747497x is its normalized P/E. Those scenario-labeled current anchors do not enter terminal price, distributions, probability weights, USD/SGD translation, or any IRR. Renaming them `scenario_comparable_current_eps` would improve semantics; it would change no number.

1. The most fragile assumption

The most fragile operating assumption is not a single new product. It is the **5.60% Base consolidated revenue CAGR**, especially the simultaneous 5% interest-rate, 6% equity-index, 6% agricultural, 5% energy, 8% metals, and 8% market-data paths. The historical case supports each line separately, but the model needs most of them to work together after a strong TTM activity anchor. Q1 2026 ADV was 36.231 million and Q2 was 29.843 million; the TTM starting point therefore contains unusually active markets rather than a trough.

The synthesis sensitivity supplies the consequence. Cutting the sole-segment revenue CAGR by 200 basis points reduces terminal EPS from USD 14.5549 to USD 13.4023, a USD 1.1526 or 7.9% decline. Keeping the audited 22x exit and distributions fixed only for isolation lowers terminal wealth to about USD 352.71 and gross IRR to roughly **5.29%**; a coherent lower-dividend path would reduce it further. The investment already fails at 6.77%, so this fragility does not create a false pass, but it makes the apparent Base/Bear separation less reassuring.

Recent competition makes the rates leg especially worth attacking. BGC's Q2 2026 filing says FMX futures ADV reached about 54,000 contracts and total open interest exceeded 140,000, versus roughly 22,000 a year earlier; it also expanded Treasury-futures tenors across the curve in August. That is still tiny beside CME's 16.6 million H1 interest-rate ADV, but growth from a tiny base can attack incremental liquidity before it threatens the installed pool. [BGC Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1094831/000162828026055187/bgcg-20260630.htm)

2. The Stage 5 number most likely to be optimistic

The single Stage 5 operating number most likely to be revised down is the **66.5% Base 2031 statutory operating margin**. It assumes revenue grows 5.60% while costs grow only 4.74%, even as CME funds CMESC, Treasury Link, cloud migration, cyber resilience, longer trading hours, regulatory compliance, and product launches. The 140-basis-point expansion from a 65.1% TTM margin is not heroic in isolation, but the starting margin is already close to the best in the ten-year history, and Q2 2026 reverted to 64.9% after Q1's 69.7% spike. A two-point margin miss only reduces Base EPS by USD 0.3801, so this is less dangerous than the revenue assumption; it is simply the horizon operating output with the clearest downward revision risk.

The model is not obviously reckless here: Bear falls to 61%, and Bull's 69% still carries substantial cost growth. The issue is that the Base case implicitly earns scale leverage while simultaneously paying for a multi-front infrastructure build. Until the new clearing and cloud systems demonstrate revenue conversion, assuming they dilute rather than enhance margins is the more adversarial stance.

3. Strongest bear case

CME's moat does not need to disappear for the stock to disappoint: incremental rates liquidity can fragment to FMX, mandated Treasury clearing can split among FICC, ICE, and CMESC, volume tiering can surrender headline price increases, and 24/7/cloud spending can raise fixed cost before it raises revenue. Over two to three years, rates and cash-market growth would undershoot, market-data growth would normalize, and the consolidated rate per contract would weaken as lower-priced products dominate. ICE already describes an operational U.S. Treasury clearing alternative, while CMESC still has rule changes and cross-margin proposals moving through SEC review; a mandate expands the market but does not guarantee CME economics. [ICE U.S. Treasury clearing](https://www.ice.com/clear-credit/us-treasury-clearing) [SEC CMESC rulemaking docket](https://www.sec.gov/rules-regulations/self-regulatory-organization-rulemaking/cmesc)

The bear becomes visible first in core interest-rate open interest and realized transaction revenue per unit, not in one volatile ADV quarter. If open interest migrates while incentives and technology costs rise, the modeled 61% Bear margin may prove too generous because the network effect weakens at the same time as the cost base becomes less flexible. A clearing, cyber, or regulatory-control event would be worse: it would attack trust and the terminal multiple simultaneously, a joint loss that the smooth Bear case does not model.

4. Cross-examination of management commentary

“13 million potential accounts ... will have access to CME's products.” Access is not funded trading, retention, contracts per account, or revenue. FanDuel distribution may create a funnel, but no evidence in the package converts those accounts into recurring CME economics. The claim fails first if funded activation is low, promotional cohorts do not repeat, or retail mix lowers realized rate faster than it lifts contracts. The model properly assigns no explicit revenue to it; investors should preserve that discipline.

“Fee adjustments would increase total revenue by approximately 1% to 1.5%.” This is conditional on 2025-like activity. Q1 2026's record ADV drove consolidated rate per contract down to USD 0.652 from USD 0.707 in Q4 2025 because volume tiers and mix matter. Posted pricing is therefore not the same as realized pricing. The first failure signal is clearing-fee growth trailing same-family activity by more than five percentage points for two quarters, especially in interest rates and equities.

“Market data revenue achieved another record quarter, up 20%.” The management appendix notes approximately USD 7 million of Q2 audit and catch-up payments, called nonrecurring, versus USD 3.8 million in Q1. Record reported growth is thus not a clean recurring run rate. The 8% Base CAGR is plausible, but it should be tested against ex-catch-up subscription and license growth, device counts, and renewal behavior. Growth below 6% for two quarters after removing audit recoveries would directly challenge the modeled terminal mix.

There is also a process warning. CME sought to self-certify 24/7 crude-oil trading while a CFTC review was open; the CFTC stayed the listing and publicly criticized the approach. That does not impair existing franchises, but it disproves any assumption that product-access extensions move frictionlessly from announcement to revenue. [CFTC release 9265-26](https://www.cftc.gov/PressRoom/PressReleases/9265-26)

5. Stage 5 tie-out reverification

The recency anchor genuinely contains the latest four reported quarters: Q3 2025, Q4 2025, Q1 2026, and Q2 2026. It is not stale, and the model does not extrapolate Q1's spike. The concern is cyclicality, not period error. Q2 revenue grew only 0.8% year over year, ADV fell sharply from Q1, and energy and metals normalized; a TTM built around an exceptional first quarter can still be a high starting base.

The share path is arithmetically clean. It starts at 361.282 million diluted shares, keeps the 0.598 million treasury-method increment embedded, adds 0.314 million net vesting shares annually, and retires shares only through explicit open-market cash. The Base endpoint of 357.8408 million does not assume aggressive shrinkage. Economic capacity is narrower than the table suggests, however: an 88% dividend payout plus USD 300 million of annual buybacks and USD 47.3 million of vesting-tax cash consumes nearly all modeled earnings after ordinary capital needs. If cloud and clearing investment rises, buybacks should be the flex item; a flat USD 300 million schedule is not guaranteed.

No Base product CAGR plainly outruns its own history without a reason. The weakest comparative support is market data at 8%, because BGC's Q2 data/network/post-trade revenue grew only 3.4% while CME's recent reported rate includes catch-up collections. Conversely, the strongest reason CME can outperform is its proprietary settlement data and benchmark liquidity. The model is aggressive enough to monitor, not internally contradictory.

6. Score-derived 20% return claim

The audited score already says the 20% case does **not** clear, and the red team agrees. Required five-year shareholder wealth is USD 677.9677 per share versus modeled weighted wealth of USD 366.7764. Holding distributions fixed, terminal equity value would need to be roughly **2.00 times** the model. The max buy price for a 20% return is USD 147.40, 45.9% below USD 272.46. Even Bull produces only 13.07% gross USD and 12.81% net SGD.

The first assumption that breaks any attempt to rescue 20% is the exit P/E. Bull already uses 25x on USD 17.6153 EPS; pushing terminal value high enough would require an unjustified multiple, much more EPS, or both. Faster buybacks cannot bridge the gap without consuming cash that shareholders also need as distributions. The score's 4/20 return-underwriting result is therefore not overly harsh.

7. Two-sided valuation challenge

Strongest reason the model is too optimistic. The 22x Base exit P/E remains generous for a terminal company compounding EPS at roughly mid-single digits while completing a CEO transition and funding more regulated infrastructure. A same-method 18x sensitivity gives terminal price of USD 261.99, wealth of USD 319.85, and gross IRR of **3.26%**, 3.51 percentage points below the audited Base. Reducing every scenario multiple by four turns on the same terminal EPS and distribution bridge lowers weighted gross IRR from 6.13% to about **2.64%**. This is a non-controlling sensitivity, not a correction: VP independently supports 22x using CME's recent 22.69x-24.43x history and peer 21.08x-25.88x range. It shows where downside hides—terminal capitalisation, not spreadsheet arithmetic.

Strongest reason the model is too bearish. The 22x Base multiple is already below the current normalized 24.27x and near the low end of recent CME history despite a durable moat. At 24x, using the same EPS and distributions, Base gross IRR rises to **8.37%**, 1.60 points above the audit. In addition, the audit adds all five years of dividends to horizon wealth rather than crediting their actual payment dates. Replaying annual Base dividends as interim cash flows raises gross IRR from 6.77% to about **7.25%**; Bull rises from 13.07% to about **13.88%**. These conservative effects do not rescue the 10% mandate hurdle, let alone 20%.

The 25%/55%/20% weights are judgmental but not reverse-engineered. Reweighting can move the weighted result, yet both Base and Bull remain below 20%, and Base net SGD remains below 8%. No reasonable weighting turns this into an actionable return proposition without changing operating or multiple assumptions materially.

8. P&C insurer bridge verdict

CME is a financial-market-infrastructure operator, not a property-and-casualty insurer or reinsurer. `insurer_return_bridge.json` is correctly absent, and the P&C retained-versus-managed premium, loss-reserve, common-book, P/B/ROE, and negative-EPS-to-zero-equity tests do not apply. Matched clearing collateral is nevertheless excluded from shareholder value, affiliate earnings are counted once in EPS, and no NCI or clearing claim is manufactured.

Insurer bridge too optimistic because: not applicable; no insurer bridge or risk-bearing insurance perimeter exists. **Insurer bridge too bearish because:** not applicable for the same reason.

9. Signal that forces an exit

The forcing signal is **CME core interest-rate futures/options open interest down more than 10% year over year for two consecutive reported quarters while FMX comparable futures open interest exceeds 500,000 contracts and remains up more than 50% year over year**. Measure it over the next four quarters, not one volatile month. This combination would

distinguish macro normalization from durable liquidity migration: CME would be losing the stock of positions that anchors repeat trading and cross-margin value while a named rival builds a competing pool. It would invalidate both the 5% Base rates CAGR and the moat premise that incumbent depth prevents economically relevant fragmentation.

10. Conviction after red team

Conditional. The business-quality thesis survives: CME has benchmark liquidity, integrated clearing, authoritative data, and extraordinary operating economics. The current-price investment thesis does not survive. Base and weighted returns remain mid-single digit, the 20% hurdle is decisively failed, and a modestly lower terminal multiple would compress returns further. The right conclusion is a strong franchise at an inadequate prospective return, with particular monitoring of rates open interest, realized pricing, market-data growth excluding catch-ups, and the 2027 leadership transition.

`RETURN_MODEL_OBJECTION_STATUS: IMMATERIAL`

The scenario-EPS label should be cleaned up in a future schema revision, but it reproduces the sealed VP anchors and cannot move a return. The multiple, payout, FX, and probability challenges above are explicit alternative sensitivities rather than evidence of an invalid denominator, method, claim perimeter, arithmetic bridge, or audited field. No supportable correction to the locked bridge was found; the score and CIO pass-on-actionability conclusion remain unchanged.

Appendix D - Data Package (raw historicals)

CME Group (CME) - Data Package

Run ID: `pulse-cio-20260917T080231+0800` Report ID: `CME-ER2-20260917T080231+0800` Information date: 2026-09-17 Reporting currency: USD; tables use USD billions unless otherwise stated. `trade_execution_authorized=false`

This package uses only live FMP, SEC EDGAR, and CME investor-relations evidence fetched in this run. New D-stage pulls are archived under `C:\Users\Admin\OneDrive\GPT\ER 2.0\CME Group\raw\pulse-cio-20260917T080231+0800\d`; DR independently re-fetched the controlling filings, four SEC-filed quarterly releases, and four call transcripts under `C:\Users\Admin\OneDrive\GPT\ER 2.0\CME Group\raw\pulse-cio-20260917T080231+0800\dr`. No data-warehouse cache was read.

0a. Industry classification and disclosure inventory

CME is a U.S. exchange and clearing-house operator, not a P&C insurer. It files under U.S. GAAP, has a December 31 fiscal year, and reports one operating/reportable segment. The controlling source set is the [2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000009/cme-20251231.htm), the [Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000047/cme-20260630.htm), and SEC-filed CME earnings releases, supplemented by live FMP stable endpoints. FMP product data is useful for the three revenue categories but sparse for exchange economics: geographic data is empty, no asset-class ADV/open-interest/rate-per-contract series is supplied, and clearing-resource tables are absent. The Asset Managers / Wealth / Exchanges checklist therefore applies.

The official documents were searched for: `segment`, `CODM`, `clearing and transaction fees`, `market data`, `other revenue`, `average daily volume`, `rate per contract`, `open interest`, `non-U.S.`, `electronic volume`, `customer`, `clearing firm`, `performance bonds`, `guaranty fund`, `assessment powers`, `collateral`, `regulatory capital`, `DCO`, `DCM`, `liquidity resources`, `dividend`, `repurchase`, `market share`, `competition`, `CFTC`, `SEC Treasury clearing`, `event contracts`, and `Google Cloud`.

Source inventory

Source ID	Live source and period	D-stage archive	Use and precedence
D-FMP-IS	FMP stable income statement, annual and quarterly, through Q2 2026	`d/fmp_income_annual.json`; `d/fmp_income_quarter.json`	Vendor historical cross-check; official filings override discrepancies
D-FMP-CF	FMP stable cash flow, annual and quarterly, through Q2 2026	`d/fmp_cashflow_annual.json`; `d/fmp_cashflow_quarter.json`	Cash-flow history; official classification controls
D-FMP-BS	FMP stable balance sheet, annual and quarterly, through Q2 2026	`d/fmp_balance_annual.json`; `d/fmp_balance_quarter.json`	Balance-sheet cross-check; statutory cash/debt controls
D-FMP-PROD	FMP stable revenue-product-segmentation, annual and quarterly	`d/fmp_product_annual.json`; `d/fmp_product_quarter.json`	Three revenue-category series; ties official revenue
D-FMP-GEO	FMP stable revenue-geographic-segmentation, annual	`d/fmp_geographic_annual.json`	Empty response; official Note 18 geography used
D-SEC-25K	[2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000009/cme-20251231.htm)	`d/sec_2025_10k_live.htm`	Controlling FY2025, segment, KPI, clearing, capital-return source
D-SEC-23K	[2023 Form 10-K](https://www.sec.gov/Archives/edgar/data/1156375/000115637524000010/cme-20231231.htm)	`d/sec_2023_10k_live.htm`	Backfill FY2021-FY2023 revenue by asset class and ADV
D-SEC-Q2	[Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000047/cme-20260630.htm)	`d/sec_2026_q2_10q_live.htm`	Latest quarter, balance sheet, clearing collateral, liquidity, capital return
D-IR-Q3	[Q3 2025 SEC-filed release](https://www.sec.gov/Archives/edgar/data/1156375/000115637525000204/exhibit9919302025.htm)	`d/official_release_2025_q3.htm`	Quarterly ADV, rate per contract, revenue, capital return

Source ID	Live source and period	D-stage archive	Use and precedence
D-IR-Q4	[Q4 2025 SEC-filed release](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000006/exhibit99112125.htm)	`d/official_release_2025_q4.htm`	Quarterly ADV, rate per contract, revenue, capital return
D-IR-Q1	[Q1 2026 SEC-filed release](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000016/exhibit99133126.htm)	`d/official_release_2026_q1.htm`	Quarterly ADV, rate per contract, revenue, capital return
D-IR-Q2	[Q2 2026 SEC-filed release](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000042/exhibit99163026.htm)	`d/official_release_2026_q2.htm`	Latest-quarter operating/KPI source
D-TR	FMP live transcripts dated 2025-10-22, 2026-02-04, 2026-04-22, 2026-07-22	`d/fmp_transcript_*.json`	Verbatim management commentary; dates match fiscal quarters
D-VP-Q3	[Q3 2025 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1156375/000115637525000206/cme-20250930.htm)	`d_vp_repair/sec_2025_q3_10q.htm`	Q3/9M affiliate income before OSTTRA sale
D-VP-Q1	[Q1 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000020/cme-20260331.htm)	`d_vp_repair/sec_2026_q1_10q.htm`	First clean post-OSTTRA affiliate quarter; vesting and EPS detail
D-VP-Q2	[Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000047/cme-20260630.htm)	`d_vp_repair/sec_2026_q2_10q.htm`	H1/Q2 retained-affiliate, vesting-tax, repurchase, and diluted-share evidence

Completeness matrix

Dataset / table family	Official source searched	Search terms or table names	Years available	Included?	If excluded, why	Downstream relevance
Segment economics	2021-2025 10-Ks; Q2 2026 10-Q	Segment, CODM, consolidated net income	FY2021-FY2025; TTM	Yes	None	One modeled segment and statutory bridge
Revenue by category	2025 and 2023 10-Ks; Q2 2026 10-Q	Clearing and transaction fees, market data, other	FY2021-FY2025; TTM	Yes	None	Revenue drivers and mix
Clearing fees by asset class	2025 and 2023 10-K revenue notes; Q2 2026 10-Q	Interest rates, equity, FX, energy, agriculture, metals, BrokerTec, EBS	FY2021-FY2025; H1 2026	Yes	None	Product pricing and mix
ADV by asset class	2025, 2023, and 2022 10-Ks; quarterly releases	Average Daily Volume by Product Line	FY2021-FY2025; Q2 2026	Yes	None	Transaction-revenue volume driver
Rate per contract	Four quarterly releases; 10-K MD&A	Total average rate per contract	Q3 2025-Q2 2026	Yes	No five-year numeric series in annual filings	Pricing driver and customer/product mix
Open interest	2025 10-K; four calls/releases	Open interest, open positions	Latest Q1/Q2 2026 growth and Q2 position count	Yes, latest only	True non-disclosure of a clean five-year table	Liquidity/moat indicator
Customer/geographic mix	2025 10-K; Q2 2026 release	Non-U.S., customer, clearing firm, geography	FY2023-FY2025 and latest quarter	Yes	Customer-type revenue split not disclosed	Distribution and concentration
Clearing resources and collateral	2025 10-K; Q2 2026 10-Q	Performance bonds, guaranty fund, assessment powers, facilities	FY2025; Q2 2026	Yes	None	Tail risk and liquidity perimeter
Regulatory capital/liquidity	2025 10-K; Q2 2026 10-Q	DCO, DCM, capital, liquidity resources	Current	Yes	Absolute regulatory excess not disclosed	Clearing durability and constraints
Capital return	2021-2025 cash flows; Q2 2026 10-Q	Dividends, variable dividend, repurchases, vesting taxes	FY2021-FY2025; H1 2026	Yes	None	Shareholder yield and per-share model

Exchange/operator KPI histories

Revenue mix is dollar-disclosed and reconciles to total revenue. The latest interim column is the TTM ending 2026-06-30.

KPI family ($m)	FY2021	FY2022	FY2023	FY2024	FY2025	Latest TTM	Source
Clearing and transaction fees	3,765.1	4,142.7	4,588.5	4,988.2	5,281.1	5,450.9	D-FMP-PROD; D-SEC-25K; D-SEC-23K
Market data and information services	576.9	610.9	663.7	710.2	803.1	872.7	Same
Other revenue	347.7	265.8	326.7	431.7	436.4	449.0	Same

KPI family ($m)	FY2021	FY2022	FY2023	FY2024	FY2025	Latest TTM	Source
Total revenue	4,689.7	5,019.4	5,578.9	6,130.1	6,520.6	6,772.6	Same; zero residual

Official average daily volume is in thousands of contracts. It excludes event contracts where the issuer so specifies.

ADV family (000s)	FY2021	FY2022	FY2023	FY2024	FY2025	Q2 2026	Source
Interest rates	9,200	10,818	12,517	13,716	14,203	14,532	D-SEC-25K; D-SEC-23K; 2022 10-K; D-IR-Q2
Equity indexes	5,517	7,650	6,698	6,847	7,410	8,633	Same
Foreign exchange	799	987	954	1,030	980	989	Same
Energy	2,188	2,026	2,118	2,488	2,695	2,667	Same
Agricultural commodities	1,362	1,289	1,508	1,711	1,853	2,080	Same
Metals	548	521	599	736	988	941	Same
Aggregate ADV	19,614	23,291	24,394	26,528	28,129	29,843	Same

Clearing-fee revenue by asset class is official dollar disclosure; cash-market and IRS rows are separate from listed-futures asset classes.

Clearing fee family ($m)	FY2021	FY2022	FY2023	FY2024	FY2025	H1 2026	Source
Interest rates	1,121.9	1,326.8	1,558.4	1,659.6	1,719.6	954.2	D-SEC-25K; D-SEC-23K; D-SEC-Q2
Equity indexes	752.1	1,016.3	1,036.4	1,095.3	1,170.4	639.6	Same
Foreign exchange	159.2	188.3	190.0	198.5	197.0	106.6	Same
Agricultural commodities	457.8	444.7	508.5	585.1	658.1	351.3	Same
Energy	616.5	585.5	702.8	800.5	813.2	450.7	Same
Metals	198.8	196.9	224.7	284.3	354.7	195.1	Same
BrokerTec fixed income	172.0	164.7	152.1	145.1	151.1	80.3	Same
EBS foreign exchange	164.3	154.1	132.6	131.6	132.6	70.2	Same
Interest-rate swaps	62.6	65.4	83.0	88.2	84.4	47.1	Same
Optimization	59.9	n/d	n/d	n/d	n/d	n/d	2023 10-K; not separately disclosed after FY2021
Total	3,765.1	4,142.7	4,588.5	4,988.2	5,281.1	2,895.1	Official totals

Clearing, customer mix, and non-transaction revenue inventory

Measure	Official disclosure	Modeling treatment	Source
FY2025 electronic volume	93% of total listed ADV	High electronic scalability; not a separate segment	D-SEC-25K
FY2025 outside-U.S. participation	About 31% of electronic futures/options volume	Distribution/mix indicator, not revenue geography	D-SEC-25K
Q2 2026 non-U.S. ADV	9.1m contracts, about 30.5% of total ADV	Recent global participation check	D-IR-Q2
H1 2026 institutional participation	94% of volume originated from institutional customers	Management-disclosed aggregate customer mix; not a revenue split	D-TR Q2 2026; DR live transcript
Clearing-firm concentration	One clearing firm represented 12% of FY2025 clearing/transaction fees	Billing concentration; customer activity may transfer between FCMs	D-SEC-25K
Open interest	Q2 2026 ended up 8% YoY and 16% YTD; management referenced roughly 130m open positions	Liquidity/depth KPI; no clean five-year table found	D-TR Q2 2026
Market-data revenue	$803.1m FY2025; $872.7m TTM; Q2 2026 record $238.1m	Recurring/non-transaction driver	D-FMP-PROD; D-IR-Q2

Measure	Official disclosure	Modeling treatment	Source
Other revenue	$436.4m FY2025; $449.0m TTM	Access, communication, hosting and other issuer-classified revenue	D-SEC-25K; D-FMP-PROD
Cash-market transaction fees	$283.7m FY2025, including BrokerTec $151.1m and EBS $132.6m	Not governed by futures contract count/rate-per-contract	D-SEC-25K

Clearing collateral, guarantee funds, regulatory capital, and liquidity

Customer and clearing-member collateral is matched by liabilities and is not corporate cash or shareholder capital.

Exposure/resource	FY2025	Q2 2026	Interpretation	Source
Performance bonds and guaranty-fund contributions on balance sheet ($bn)	159.656	158.111	Restricted clearing collateral with equal liability	D-SEC-25K; D-SEC-Q2
Futures/options designated corporate contribution ($bn)	0.100	Latest table not separately refreshed	CME skin in futures/options waterfall	D-SEC-25K
Futures/options guaranty-fund contributions ($bn)	8.306	Latest table not separately refreshed	Clearing-member funded layer	D-SEC-25K
Futures/options assessment powers ($bn)	22.842	Latest table not separately refreshed	Callable member resource, not prefunded corporate cash	D-SEC-25K
IRS designated corporate contribution ($bn)	0.150	Latest table not separately refreshed	CME skin in IRS waterfall	D-SEC-25K
IRS guaranty-fund contributions ($bn)	2.381	Latest table not separately refreshed	Clearing-member funded layer	D-SEC-25K
IRS assessment powers ($bn)	1.734	Latest table not separately refreshed	Callable member resource	D-SEC-25K
Guaranty-fund collateral available for secured facility ($bn)	10.7	10.3	Collateral base for liquidity facility	D-SEC-25K; D-SEC-Q2
Secured clearing credit facility ($bn)	7.0, expandable to 10.0	7.0, expandable to 10.0	Temporary clearing liquidity; no borrowings outstanding	D-SEC-Q2
Additional committed repo / FX facilities ($bn)	1.0 / 0.750	1.0 / 0.750	Default and currency-conversion liquidity	D-SEC-Q2

CME is a CFTC-regulated systemically important DCO. The DCO and its DCMs must maintain capital equal to at least one year of projected operating expenses and liquidity equal to at least six months of projected operating expenses. The Q2 2026 10-Q states CME and the DCMs were in compliance. It does not publish absolute regulatory capital or excess in the reviewed table, so no amount is inferred. CME also had a $2.3bn general corporate revolving facility, no borrowings, and $2.3bn excess capacity at 2026-06-30.

1. Reporting structure and taxonomy

CME has exactly one operating and reportable segment: `CME Group consolidated`. The business operates benchmark futures and options across interest rates, equity indexes, foreign exchange, energy, agricultural commodities, and metals; cash-market venues BrokerTec and EBS; clearing services; and market-data/information services. Product families and revenue categories are business context, not reportable segments.

The 2025 10-K and Q2 2026 10-Q explicitly identify consolidated net income as the CODM measure of segment profitability. Because this is below operating income, the sealed schema-1.2.0 bridge uses one financial-projection segment named `Consolidated company` on the exact basis `Statutory operating income (single-segment non-operating CODM fallback)`. Product categories are never relabeled as segments or segment profit.

Reporting structure is stable over the reviewed period. Revenue taxonomy is comparable from FY2021 through FY2025: clearing and transaction fees, market data and information services, and other revenue. The older Optimization transaction-fee row ceased to be separately present after FY2021; it does not change the one-segment perimeter.

Official revenue geography is available for FY2023-FY2025 even though FMP geographic segmentation returned empty.

Revenue geography ($m)	FY2023	FY2024	FY2025	FY2025 share	Source
United States	3,797.5	4,178.4	4,456.0	68.3%	D-SEC-25K Note 18

Revenue geography ($m)	FY2023	FY2024	FY2025	FY2025 share	Source
United Kingdom	647.0	714.7	760.7	11.7%	Same
Other foreign countries	1,134.4	1,237.0	1,303.9	20.0%	Same
Total	5,578.9	6,130.1	6,520.6	100.0%	Same

2. Consolidated historicals

Metric	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue ($B)	4.690	5.019	5.579	6.130	6.521	D-FMP-IS; SEC filings
Operating income ($B)	2.645	3.016	3.436	3.932	4.230	D-FMP-IS; SEC filings
Operating margin	56.4%	60.1%	61.6%	64.1%	64.9%	Calculated
Net income ($B)	2.636	2.691	3.226	3.526	4.072	D-FMP-IS; FY2025 official override
Diluted EPS ($)	7.29	7.40	8.86	9.67	11.16	D-FMP-IS; SEC filings
Diluted shares (M)	358.929	359.181	359.500	359.944	360.310	D-FMP-IS; FY2025 official override
Capex ($B)	0.127	0.090	0.076	0.094	0.084	D-FMP-CF; SEC cash flow
Free cash flow ($B)	2.275	2.966	3.377	3.597	4.194	Operating cash flow less capex
Goodwill-inclusive operating ROIC	7.39%	8.40%	9.77%	11.29%	11.85%	Calculation below

ROIC is NOPAT divided by average operating invested capital. NOPAT equals statutory operating income times one minus the annual effective tax rate. Invested capital equals common equity plus interest-bearing debt less corporate cash and short-term investments; matched performance-bond and guaranty-fund assets/liabilities are excluded. The calculation retains acquisition goodwill/intangibles. Effective tax rates were 21.84%, 22.90%, 22.33%, 22.36%, and 23.61%; average invested capital was approximately $27.962bn, $27.698bn, $27.320bn, $27.024bn, and $27.259bn. FY2025 uses official tax, cash, and statutory debt classifications rather than FMP alternatives.

3. Segment historicals

Consolidated company - sole modeled financial segment

Consolidated company	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue ($B)	4.690	5.019	5.579	6.130	6.521	D-FMP-IS; SEC filings
YoY growth	(4.0%)	7.0%	11.1%	9.9%	6.4%	Calculated
Statutory operating income (single-segment non-operating CODM fallback) ($B)	2.645	3.016	3.436	3.932	4.230	SEC statements; sealed basis
Margin on exact modeled metric	56.4%	60.1%	61.6%	64.1%	64.9%	Calculated
Consolidated net income, issuer-disclosed CODM measure ($B)	2.636	2.691	3.226	3.526	4.072	SEC statements

The operating-income row is an ER2 modeling-basis repair for a non-operating CODM endpoint. It is not an issuer-disclosed segment operating-profit measure. Corporate/unallocated and operating-adjustment arrays are empty.

3a. Historical statutory-profit bridge and forecast-driver ledger

Common modeled profit basis: `Statutory operating income (single-segment non-operating CODM fallback)`. The sealed packet uses schema 1.2.0 and separately preserves the CODM disclosure.

FY2025 CODM disclosure: `Consolidated net income (issuer-disclosed CODM segment profitability measure)` = $4,072.2m, source `SEC_2025_10K`.

FY2025 bridge line	Classification	Value ($m)	Source ID	Running subtotal ($m)
Consolidated company	segment profit	4,229.5	SEC_2025_10K	4,229.5

FY2025 bridge line	Classification	Value ($m)	Source ID	Running subtotal ($m)
Sum of reportable segment profit	subtotal	4,229.5	SEC_2025_10K	4,229.5
Consolidated modeled metric	subtotal	4,229.5	SEC_2025_10K	4,229.5
Statutory operating income	statutory subtotal	4,229.5	SEC_2025_10K	4,229.5
Investment income	other non-operating	5,736.5	SEC_2025_10K	9,966.0
Interest and other borrowing costs	interest	(173.4)	SEC_2025_10K	9,792.6
Equity in net earnings of unconsolidated subsidiaries	other non-operating	371.7	SEC_2025_10K	10,164.3
Other non-operating income (expense)	other non-operating	(4,833.8)	SEC_2025_10K	5,330.5
Pretax income	statutory subtotal	5,330.5	SEC_2025_10K	5,330.5
Income tax provision	tax	(1,258.3)	SEC_2025_10K	4,072.2
Net income	statutory subtotal	4,072.2	SEC_2025_10K	4,072.2

TTM CODM disclosure: `Consolidated net income (issuer-disclosed CODM segment profitability measure)` = $4,287.0m, source `OFFICIAL_TTM_RECONCILIATION`.

TTM 2026-06-30 bridge line	Classification	Value ($m)	Source ID	Running subtotal ($m)
Consolidated company	segment profit	4,409.0	OFFICIAL_TTM_RECONCILIATION	4,409.0
Sum of reportable segment profit	subtotal	4,409.0	OFFICIAL_TTM_RECONCILIATION	4,409.0
Consolidated modeled metric	subtotal	4,409.0	OFFICIAL_TTM_RECONCILIATION	4,409.0
Statutory operating income	statutory subtotal	4,409.0	OFFICIAL_TTM_RECONCILIATION	4,409.0
Investment income	other non-operating	6,144.4	OFFICIAL_TTM_RECONCILIATION	10,553.4
Interest and other borrowing costs	interest	(174.9)	OFFICIAL_TTM_RECONCILIATION	10,378.5
Equity in net earnings of unconsolidated subsidiaries	other non-operating	384.6	OFFICIAL_TTM_RECONCILIATION	10,763.1
Other non-operating income (expense)	other non-operating	(5,169.1)	OFFICIAL_TTM_RECONCILIATION	5,594.0
Pretax income	statutory subtotal	5,594.0	OFFICIAL_TTM_RECONCILIATION	5,594.0
Income tax provision	tax	(1,307.0)	OFFICIAL_TTM_RECONCILIATION	4,287.0
Net income	statutory subtotal	4,287.0	OFFICIAL_TTM_RECONCILIATION	4,287.0

All five sealed reconciliation residuals are $0.0m for both periods, within the $0.1m tolerance. The exact packet SHA-256 is `e6bc5b88a6ede1ae5b81872125c9fdc1f9ebfb7594a6155e5cd780c333bc5d66`.

Historical bridge line	FY2025 ($m)	TTM ($m)	Forecast treatment	Driver and source	Bear / base / bull rule
Consolidated company statutory operating income	4,229.5	4,409.0	Revenue categories and operating margin	ADV, rate per contract, market data, other revenue, cost scale	Lower / central / higher ADV and margin paths
Investment income	5,736.5	6,144.4	Independently forecast gross collateral income	Average restricted collateral and reinvestment yield	Lower / central / higher rate and collateral paths
Interest and other borrowing costs	(173.4)	(174.9)	Debt schedule	Statutory debt, coupons, facilities	Higher / central / lower cost
Equity earnings of unconsolidated subsidiaries	371.7	384.6	Normalize to retained affiliates after the October 2025 OSTTRA sale	Clean Q1/Q2 2026 retained-affiliate observations; do not carry OSTTRA forward	Bear $390.8m / base $400.2m / bull $409.6m annualized starting anchor; rebase when another clean quarter files

Historical bridge line	FY2025 ($m)	TTM ($m)	Forecast treatment	Driver and source	Bear / base / bull rule
Other non-operating income (expense)	(4,833.8)	(5,169.1)	Forecast clearing-collateral distributions and other items separately	Historical offset and clearing-collateral policy	Greater / central / lesser offset to investment income
Income tax provision	(1,258.3)	(1,307.0)	Effective tax-rate schedule	23.6% FY2025; 23.4% TTM	Higher / central / lower tax rate

Investment income and other non-operating expense must not be forecast independently as pure profit: most collateral interest is offset by distributions to clearing firms. Corporate/unallocated and operating-adjustment schedules remain empty; no plug is permitted.

VP repair: retained-affiliate normalization after OSTTRA

CME completed the sale of its 50% OSTTRA interest to funds managed by KKR in October 2025. The 2025 Form 10-K reports a $1.2bn carrying value at September 30, 2025, $1,591.4m of proceeds from sales of business ventures, a $306.1m net sale gain recorded in investment income, and $22.1m of related professional fees. The same filing says the year-over-year increase in equity-method earnings reflected higher earnings from both S&P Dow Jones Indices and OSTTRA. It does **not** quantify OSTTRA's standalone equity-method contribution. Accordingly, subtracting an invented OSTTRA amount from the sealed $384.6m TTM line would be false precision. The clean treatment is to retain the sealed historical TTM bridge and reset the forward affiliate-income anchor from the first two fully post-sale quarters.

Period / derivation	Equity in net earnings of unconsolidated subsidiaries ($m)	OSTTRA ownership status	Calculation and use
Q3 2025	96.3	Owned through quarter-end; sale followed in October	Official Q3 2025 10-Q; historical only
Q4 2025	88.2	Sale completed during October	FY2025 $371.7m less 9M 2025 $283.5m; transition quarter, not a clean retained run-rate
Q1 2026	102.4	Sold	Official Q1 2026 10-Q; clean post-sale quarter
Q2 2026	97.7	Sold	H1 2026 $200.1m less Q1 2026 $102.4m; clean post-sale quarter
H1 2026	200.1	Sold	Official Q2 2026 10-Q; clean post-sale half-year
Sealed TTM through 2026-06-30	384.6	Mix of pre-sale, transition, and post-sale periods	$96.3m + $88.2m + $102.4m + $97.7m; remains the historical statutory anchor

The conservative retained-affiliate run-rate range is therefore **$390.8m-$409.6m**, with a **$400.2m base**: Bear equals Q2 2026 $97.7m x 4; Base equals H1 2026 $200.1m x 2; Bull equals Q1 2026 $102.4m x 4. These are calendar annualizations of primary-source observations, not issuer guidance and not estimates of OSTTRA's former contribution. For the forecast-driver ledger, all three cases exclude OSTTRA: Bear begins at $390.8m, Base at $400.2m, and Bull at $409.6m. Hold the chosen anchor nominally flat unless a separate affiliate-growth assumption is explicitly evidenced; rebase to a longer post-sale window after the next filing. This avoids both an unsupported subtraction from TTM and an accidental carry-forward of a divested affiliate.

`STATUTORY_BRIDGE_STATUS: VERIFIED — CLEARED FOR FORECASTING`

4. Product and sub-segment historicals

All product families below are revenue-only business context inside the single reportable segment.

Segment	Product / revenue line	What it is	Dollar disclosure?	FY2023 / FY2024 / FY2025 revenue ($m) and source
CME Group consolidated	Interest rates	Listed futures/options fees	Yes	1,558.4 / 1,659.6 / 1,719.6; D-SEC-25K
CME Group consolidated	Equity indexes	Listed futures/options fees	Yes	1,036.4 / 1,095.3 / 1,170.4; D-SEC-25K
CME Group consolidated	Foreign exchange	Listed futures/options fees	Yes	190.0 / 198.5 / 197.0; D-SEC-25K
CME Group consolidated	Agricultural commodities	Listed futures/options fees	Yes	508.5 / 585.1 / 658.1; D-SEC-25K

Segment	Product / revenue line	What it is	Dollar disclosure?	FY2023 / FY2024 / FY2025 revenue ($m) and source
CME Group consolidated	Energy	Listed futures/options fees	Yes	702.8 / 800.5 / 813.2; D-SEC-25K
CME Group consolidated	Metals	Listed futures/options fees	Yes	224.7 / 284.3 / 354.7; D-SEC-25K
CME Group consolidated	BrokerTec fixed income	Cash fixed-income transaction fees	Yes	152.1 / 145.1 / 151.1; D-SEC-25K
CME Group consolidated	EBS foreign exchange	Cash FX transaction fees	Yes	132.6 / 131.6 / 132.6; D-SEC-25K
CME Group consolidated	Interest-rate swaps	Cleared IRS transaction fees	Yes	83.0 / 88.2 / 84.4; D-SEC-25K
CME Group consolidated	Market data and information services	Real-time and derived data, licensing and benchmark data	Yes	663.7 / 710.2 / 803.1; D-SEC-25K
CME Group consolidated	Other revenue	Access, communication, hosting and other issuer-classified revenue	Yes	326.7 / 431.7 / 436.4; D-SEC-25K

The following product KPIs are volume or growth disclosures, not dollar revenue. No product revenue was back-solved.

Segment	Product / KPI	Disclosure method	Latest disclosed trend	Source
CME Group consolidated	Micro products	ADV growth	FY2025 ADV +32%; Q4 2025 micro ADV 4.4m, +59% YoY	D-SEC-25K; D-TR Q4 2025
CME Group consolidated	Crypto complex	ADV and notional	Q4 2025 ADV 379k, +92% YoY; over $13bn daily notional	D-TR Q4 2025
CME Group consolidated	Event contracts	Contract count, accounts and distribution	About 525m contracts since launch by Q2 2026, including 48m market-event contracts / 9% of total; over 140,000 accounts traded in Q2; ADV exceeded 4m and rose about 40% Q/Q	D-TR Q2 2026; DR live transcript
CME Group consolidated	Open interest	Growth and point count	Q2 2026 about 130m open positions; +8% YoY and +16% YTD	D-TR Q2 2026
CME Group consolidated	Margin efficiencies	Estimated daily savings	Over $95bn average margin savings per day in Q2 2026	D-TR Q2 2026

5. Most recent quarterly trend

CME's fiscal year ends December 31. Most recently completed fiscal quarter at time of writing: FY2026 Q2, covering April-June 2026, reported on 2026-07-22 via the [SEC-filed CME release](https://www.sec.gov/Archives/edgar/data/1156375/000115637526000042/exhibit9916302026.htm).

Quarter	Revenue ($m)	Clearing fees ($m)	Market data ($m)	Other ($m)	Statutory OI ($m)	OI margin	Total ADV (000s)	Rate / contract	Source
Q3 2025	1,537.6	1,227.9	202.5	107.2	972.6	63.3%	25,322	$0.702	D-IR-Q3; D-FMP-IS; D-FMP-PROD
Q4 2025	1,648.7	1,327.9	208.0	112.8	1,019.6	61.8%	27,353	$0.707	D-IR-Q4; official FY less 9M
Q1 2026	1,880.1	1,542.6	224.1	113.4	1,309.7	69.7%	36,231	$0.652	D-IR-Q1; Q1 10-Q
Q2 2026	1,706.2	1,352.5	238.1	115.6	1,107.1	64.9%	29,843	$0.678	D-IR-Q2; D-SEC-Q2

Q2 revenue was $1,706.2m versus $1,692.0m, a live-source-verified 0.8% increase for the sole modeled segment.

Asset-class ADV (000s)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Source
Interest rates	13,378	13,010	18,674	14,532	Four official releases
Equity indexes	6,278	7,738	8,655	8,633	Same
Foreign exchange	834	853	1,193	989	Same
Energy	2,295	2,523	3,985	2,667	Same

Asset-class ADV (000s)	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Source
Agricultural commodities	1,712	1,787	2,042	2,080	Same
Metals	825	1,441	1,682	941	Same
Total	25,322	27,353	36,231	29,843	Same

Rate per contract is mix-sensitive. Q1 2026's record volume lowered the rate through volume-tiering; Q2 rebounded by $0.026 sequentially. The 2025 10-K says rates also vary by product, venue, member/non-member status, incentives, and tiered pricing. Downstream forecasts should not treat rate and ADV as independent.

The official Q2 2026 product-line table also disclosed rate per contract of $0.480 for interest rates, $0.605 for equity indexes, $0.813 for foreign exchange, $1.131 for energy, $1.426 for agricultural commodities, and $1.315 for metals. These product rates explain why mix shifts can move the $0.678 consolidated rate even when posted fee schedules do not change; DR independently verified the values against the live SEC-filed Q2 release.

6. Management commentary on forward growth

All fragments below are verbatim from the live FMP transcript endpoint; transcript dates match the expected calls. CME has one segment, so all commentary is grouped under `Consolidated company`.

Fiscal call and date	Speaker	Verbatim quote	Topic	Modeling implication
Q3 FY2025, 2025-10-22	Terry Duffy, Chairman and CEO	"13 million potential accounts ... will have access to CME's products"	FanDuel distribution	Retail distribution can add customers, but no revenue conversion is assumed without evidence
Q3 FY2025, 2025-10-22	Lynne Fitzpatrick, President and CFO	"market data reached a record level"	Market data	Supports recurring data growth, subject to price/usage retention
Q3 FY2025, 2025-10-22	Terry Duffy	"offer 24/7 trading of cryptocurrency futures and options"	Crypto availability	Potential participation uplift with operational and collateral costs
Q4 FY2025, 2026-02-04	Terry Duffy	"begin offering 24/7 trading for our entire crypto suite"	Product access	Expands addressable hours; do not extrapolate crypto volatility
Q4 FY2025, 2026-02-04	Lynne Fitzpatrick	"fee adjustments would increase total revenue by approximately 1% to 1.5%"	Pricing	Concrete 2026 price/mix anchor on 2025-like activity
Q1 FY2026, 2026-04-22	Terry Duffy	"open interest ended the quarter up 11% over the past year"	Liquidity depth	Supports franchise depth and future volume resilience
Q1 FY2026, 2026-04-22	Lynne Fitzpatrick	"volume tiering encouraged incremental trading"	Rate-volume tradeoff	Model rate dilution alongside volume growth
Q1 FY2026, 2026-04-22	Julie Winkler, Chief Commercial Officer	"32 consecutive quarters of year-on-year growth"	Market data	Durability evidence, not a perpetual growth guarantee
Q2 FY2026, 2026-07-22	Terry Duffy	"Open interest ended the quarter up 8% over the past year"	Open interest	Confirms continuing depth after record Q1
Q2 FY2026, 2026-07-22	Lynne Fitzpatrick	"Market data revenue achieved another record quarter, up 20%"	Market data	Pricing and professional-display growth strengthened non-transaction revenue

Additional source-bound forward items: CMESC is intended to launch later in 2026 ahead of SEC Treasury-clearing deadlines; Treasury Link is planned for Q4 2026; Compute Futures are planned later in 2026; 24/7 crypto launched in 2026; and the purpose-built Google Cloud Chicago region is intended for client testing in 2027. These are pipeline milestones, not forecast revenue commitments.

7. Capital allocation history

R&D is not separately disclosed in the searched statements; CME expenses technology and capitalizes qualifying internal-use software. `M&A net cash flow` uses live FMP cash-flow mapping and is shown only as a cash-flow signpost, with positive values denoting net proceeds.

Year	Capex ($B)	Capex / revenue	R&D ($B)	R&D / revenue	Class A buybacks ($B)	Dividends ($B)	M&A net cash flow ($B)	Source
FY2021	0.127	2.7%	n/d	n/d	0.000	2.189	+0.145	D-FMP-CF; 2021 10-K
FY2022	0.090	1.8%	n/d	n/d	0.000	2.634	(0.402)	D-FMP-CF; 2022 10-K
FY2023	0.076	1.4%	n/d	n/d	0.000	3.236	+0.096	D-FMP-CF; 2023 10-K
FY2024	0.094	1.5%	n/d	n/d	0.000	3.584	+0.010	D-FMP-CF; 2025 10-K
FY2025	0.084	1.3%	n/d	n/d	0.266	3.933	+1.580	D-FMP-CF; 2025 10-K

The FY2023 $21.4m and FY2024 $33.0m cash outflows mapped by FMP to `commonStockRepurchased` were employee taxes on restricted-stock vesting, not Class A repurchases. FY2023/FY2024 Class A repurchases were exactly $0.0m. FY2025 Class A repurchases were $266.1m. The 2025 M&A/proceeds line primarily reflects the OSTTRA disposition rather than recurring acquisition spending.

Restricted-award vesting, tax settlements, and diluted-share treatment

The official statements of equity and cash flows distinguish vesting-tax settlements from open-market repurchases. The equity-statement share change labeled `Vesting of issued restricted Class A common stock` is the reported net change in issued Class A shares associated with vesting; CME does not separately identify the gross number of awards vested. The issuer-purchase tables do disclose shares surrendered for vesting taxes: 70,684 in Q1 2026 and 658 in Q2 2026, or 71,342 in H1 2026. The cash-flow line `Employee taxes paid on restricted stock vesting` is a financing cash outflow and direct reduction of additional paid-in capital. It is not an open-market buyback and must not be added to the repurchase authorization or share-retirement totals.

Period	Reported vesting-related Class A share change (000s)	Vesting-tax cash paid / direct-equity effect ($m)	Open-market Class A repurchases ($m)	Evidence and interpretation
FY2023	241	21.4	0.0	2025 10-K equity and cash-flow statements; vesting tax, not buyback
FY2024	315	33.0	0.0	2025 10-K equity and cash-flow statements; vesting tax, not buyback
FY2025	268	33.9	266.1	2025 10-K; the two financing uses remain separate
H1 2025 comparator	50	8.8	8.2	Q2 2026 10-Q comparative equity/cash-flow statements
H1 2026	96	22.2	1,236.9	Q2 2026 10-Q; repurchased 4.385m shares at $280.87 average
Q2 2026	1	0.2	698.2	Q2 2026 10-Q equity statement; 2.546m repurchased at $273.14 average
TTM through 2026-06-30	314 net	47.3	n/a for this vesting-tax bridge	Net shares: 268 FY2025 - 50 H1 2025 + 96 H1 2026; cash: $33.9m - $8.8m + $22.2m

For diluted EPS, awards are already handled under the treasury-stock method: Q2 2026 basic weighted-average shares were 360.684m, restricted-stock and performance-share awards added 0.598m, and diluted shares were 361.282m. H1 basic shares were 360.005m; restricted/performance awards added 0.632m and the converted preferred shares added 1.596m, producing 362.233m diluted shares. These are weighted-average EPS denominators, not period-end issued-share movements, so they must not be added to the equity-statement vesting shares.

The issuer-purchase tables provide actual tax-surrendered share counts, but not the gross number of awards vested or an issuer-reconciled gross-to-net vesting bridge. Q3 2025 disclosed 87,503 surrendered shares, Q4 2025 disclosed 10,875, Q1 2026 disclosed 70,684, and Q2 2026 disclosed 658, for 169,720 during the TTM and 71,342 during H1 2026. Those counts do not override the equity statement's reported net vesting-related change of 96k shares in H1 2026 or 314k on the TTM roll-forward, and they must not be subtracted again as an incremental share offset. Bear/Base/Bull share-count treatment is

therefore the same: use the reported treasury-method dilution (latest-quarter 0.598m as the starting reference), model the $47.3m TTM vesting-tax cash outflow separately, and take no additional share-count credit beyond reported denominators and net equity movements. This prevents an unsupported gross-award bridge and double counting against the treasury-stock method.

CME targets regular quarterly dividends of 50%-60% of prior-year cash earnings. It also declares an annual variable dividend based on prior-year performance, expected cash needs, capex, M&A, regular dividends, and buybacks. On 2026-02-12 the board declared a $1.30 regular dividend and a $6.15 annual variable dividend per share. A $3.0bn repurchase authorization announced in December 2024 has no expiration; after $1.237bn of H1 2026 repurchases, approximately $1.5bn remained at 2026-06-30.

8. Balance-sheet snapshot at 2026-06-30

Item	$B	Source
Cash and equivalents	2.144	D-SEC-Q2
Short-term investments	0.131	D-SEC-Q2
Total interest-bearing debt	3.424	D-SEC-Q2
Net debt, after cash and short-term investments	1.149	Calculated
Net debt / TTM EBITDA	0.24x	TTM OI plus $0.333bn D&A
Goodwill plus all intangible assets	30.176	D-SEC-Q2; includes trading-product and other intangibles
Tangible book value	(3.655)	$26.520bn equity less goodwill/intangibles
Performance bonds and guaranty-fund assets	158.111	D-SEC-Q2; matched restricted collateral

The negative tangible book value is acquisition-accounting driven and does not imply clearing collateral belongs to common shareholders. Corporate liquidity and clearing resources must remain distinct.

9. Recent corporate actions and regulatory developments

- 2025-10-22: CME announced its FanDuel distribution strategy for event contracts and a broader retail-access push; [Q3 2025 release](https://www.sec.gov/Archives/edgar/data/1156375/000115637525000204/exhibit9919302025.htm).
- December 2025: the SEC approved CME Securities Clearing Inc. as a securities clearing agency. CME plans to launch U.S. Treasury clearing later in 2026 ahead of mandated clearing dates; D-SEC-25K.
- 2026-02-04: management said the board approved using remaining OSTTRA sale proceeds for share repurchases over time and announced transaction-fee changes effective April 1; D-TR Q4 2025.
- 2026-02-12: the board declared $1.30 regular and $6.15 annual variable dividends per share; D-SEC-25K.
- March 2026: all 4.584m preferred shares converted to Class A common shares. This is already reflected in the Q2 diluted-share base; Q2 2026 10-Q.
- H1 2026: CME repurchased 4.385m shares for $1.237bn, average $280.87, and retired them. Q2 alone was 2.546m shares for $698.2m in the equity statement; D-SEC-Q2.
- 2026: CME launched/advanced 24/7 crypto trading, expanded cross-margining with FICC to end users, and continued Google Cloud market-migration preparation. These initiatives have execution and regulatory dependencies; D-TR Q1/Q2 2026.
- Competitive perimeter: the 2025 10-K identifies ICE, Cboe, Euronext, HKEX, Deutsche Börse and the newly launched FMX Futures Exchange, plus digital-asset and prediction-market platforms and substitute cash, OTC, ETF and options exposures. In U.S. Treasury clearing, FICC is the primary incumbent and ICE Clear Credit is another entrant. CME competes on liquidity, product breadth, execution, margin/capital efficiency, clearing-house credit quality, reliability, regulatory cost and fees; network depth is an advantage, not a guarantee against price or product substitution. D-SEC-25K.
- Current regulatory focus includes SEC Treasury-clearing implementation, CFTC treatment of event contracts, bank-capital rules affecting clearing members, potential CCP resolution resources, transaction-tax proposals, and collateral/liquidity treatment. These are officially disclosed risks, not external speculation; D-SEC-25K.

10. Open data gaps and classification flags

Gap or flag	Classification	Searches performed	Downstream treatment
Five-year numeric open-interest series	True non-disclosure	2021-2025 10-Ks, four releases/transcripts; `open interest`, `open positions`	Use latest Q1/Q2 growth and Q2 point count only; do not invent history
Customer-type revenue/ADV split beyond non-U.S., venue, clearing-firm concentration, and management's 94% institutional-volume statement	True non-disclosure	2025 10-K and Q2 2026 call; `customer`, `client type`, `institutional`, `bank`, `hedge fund`, `asset manager`	Use only the disclosed aggregate institutional share; do not invent sub-cohort revenue or ADV
Absolute DCO/DCM regulatory capital and excess	True non-disclosure	2025 10-K and Q2 2026 10-Q regulatory-requirements sections	Use requirement and compliance statements; no inferred excess
Separate R&D expense	True non-disclosure	Annual income/cash-flow statements; `research`, `development`, `technology expense`	Do not substitute all technology spend for R&D
Product-specific dollar revenue below official asset-class clearing-fee rows	True non-disclosure	Revenue note and MD&A product tables	Use ADV/growth only; no back-solving
FY2025 vendor net income and debt classifications	Source discrepancy	FMP versus 2025 10-K	Official $4,072.2m net income and $3,422.3m statutory debt control
FY2023/FY2024 FMP `commonStockRepurchased`	Reclassification	FMP cash flow versus 2025 10-K	Class A repurchases $0.0m; $21.4m/$33.0m are employee vesting taxes
OSTTRA standalone contribution to equity-method earnings	True non-disclosure	2025 10-K sale note, affiliate-income discussion, Q3 2025 and Q1/Q2 2026 10-Qs	Preserve sealed $384.6m TTM history; use clean post-sale $390.8m-$409.6m annualized retained-affiliate range, base $400.2m; do not invent an OSTTRA subtraction
Gross restricted awards vested and issuer-reconciled gross-to-net vesting share bridge	True non-disclosure	2025 10-K and Q1/Q2 2026 equity, cash-flow, issuer-purchase and EPS notes	Tax-surrendered counts are disclosed (71,342 H1; 169,720 TTM), but gross awards are not; keep $47.3m TTM / $22.2m H1 cash separate from buybacks and use no extra share offset beyond reported net movements and treasury-method dilution
Segment/product taxonomy	Taxonomy control	2025 10-K Note 18 and Q2 2026 10-Q	One reportable segment only; revenue products are not segments
P&C ownership-perimeter tables	Not applicable	Industry classification	CME is an exchange/clearing operator, not an insurer

No material official exchange/operator table located in this run was left `not fetched / omitted`. The absence of a clean five-year open-interest table, customer-type split, absolute regulatory-capital excess, separate R&D expense, standalone OSTTRA affiliate income, and gross-award / gross-to-net vesting-share bridge is documented as true non-disclosure rather than silently treated as zero. Tax-surrendered share counts are separately preserved from the issuer-purchase tables.