ACGL gideon lens

■# Arch Capital Group Ltd. (ACGL) - Gideon-Lens Equity Research

Date: 2026-05-29 Asia/Singapore runtime, with U.S. market data anchored to 2026-05-28. Analyst: Codex ER2. Current price used in synthesis: $91.4709, refreshed from FMP on 2026-05-28 17:19:02 UTC. Market cap from the quant foundation: approximately $31.9B. Fiscal year end: December 31.

VERDICT BLOCK

Verdict: PASS

Scorecard:

Gate	Result	Notes
Management	PASS	Underwriting-led team, aligned incentives, credible insider succession, disciplined capital return
Moat	YELLOW	Real franchise, but 2046 test needs cycle-proven excess returns
P/E <= 15 on confident EPS at TTM + 5 calendar years	PASS	Base-case cushion 150.5%; bear case still clears
Compounder Score	Audited 63 / 100	Reject under diagnostic compounder rubric; diagnostic only
Business Quality Score	Audited 56 / 80	Strong insurer, not yet dream-business quality proof
20% Return UW Score	Audited 7 / 20	20% case relies on terminal multiple expansion

One-line thesis (or reason to pass): Arch is a high-quality underwriting and capital-allocation platform that screens cheap on normalized EPS, but the ER2 hard-gate standard requires a clean moat PASS, and Arch's excess returns still have to be re-earned through insurance, reinsurance, mortgage-credit, reserve, and capital cycles.

Kill / trigger criteria:

- BUY trigger: no price-only BUY while the moat gate remains YELLOW; the P/E-15 valuation trigger is already met, while the audited no-rerating 20% return price is about $43.20.
- PASS triggers: Reinsurance combined ratio above 88% while premiums stop shrinking or grow into weak rates; repeated adverse reserve development; mortgage loss ratio normalizes sharply without pricing response.
- Upgrade to BUY conditions: demonstrated book-value compounding through a soft reinsurance market, no material adverse reserve development, mortgage profitability through a normal credit loss cycle, and management continuing to shrink rather than chase underpriced risk.

Position sizing if bought: 0% today because the verdict is PASS. If upgraded after moat evidence improves, start at 1% to 2% maximum because reserve and catastrophe risk can gap faster than accounting earnings show.

Stage 0 - Time Anchor

Today is 2026-05-29 in the Asia/Singapore runtime; the relevant U.S. market date for quoted market data and filing timestamps is 2026-05-28. Arch Capital Group Ltd. uses a December 31 fiscal year end. The most recently reported quarter is Q1 2026, the Form 10-Q and quarterly results for the period ended March 31, 2026. The TTM anchor is Q2 2025 + Q3 2025 + Q4 2025 + Q1 2026, which means TTM ending March 31, 2026. The forward horizon is TTM + 5 calendar years, or March 31, 2031; all FY+5 references in this report use that exact five-year span.

Stage 1 - Disqualifier Sweep

ROIC or equivalent insurer return quality is GREEN/YELLOW: the right lens is ROE, operating ROAE, book-value growth, and underwriting return on risk capital rather than industrial ROIC, and Q1 2026 reported strong annualized returns. FCF conversion is GREEN/YELLOW because operating cash flow is strong, but insurance cash flow depends on reserve and float quality. Net debt / EBITDA is GREEN/YELLOW because EBITDA is not the natural insurer leverage measure; debt to total

capital and ratings context look manageable. End-markets are GREEN/YELLOW: specialty insurance, reinsurance, and mortgage insurance are structurally needed but cyclical. Governance is GREEN/YELLOW: no control-shareholder or disclosure red flag surfaced, but the classified board, no term limits, and Premia related-party optics are monitoring items. AI disruption is GREEN because risk capital, claims-paying ratings, reserves, and underwriting accountability are not easily replaced by software, though analytics can compress weaker underwriting edges. Pricing power is YELLOW/GREEN because Arch has real discipline and high-trust procurement, but insurance contracts reprice competitively and the cycle can overpower firm-specific skill. No red auto-disqualifier was found.

Management - One Paragraph Summary

Management clears the hard gate. CEO Nicolas Papadopoulo is new in the CEO seat but not new to Arch: the management appendix traces him back to a 2001 Arch start and through major underwriting roles, including Global Insurance and Reinsurance leadership. CFO Francois Morin brings actuarial, CRO, and Chief Actuary background, which matters for an insurer because the finance function is tightly connected to reserves, capital adequacy, risk limits, and buyback discipline. The strongest evidence is behavioral, not biographical: Arch let Reinsurance premium fall when property-cat and short-tail pricing softened, pruned selected acquired middle-market commercial business instead of forcing volume, and resumed buybacks when underwriting opportunity moderated and excess capital built. Incentives are tied to ROE and tangible book value per share, and insider ownership is meaningful. The PASS is not unconditional: Insurance margin after MCE integration, classified-board governance, Premia and related-party disclosures, and compensation discipline through a weaker cycle all remain monitoring items.

Moat - One Paragraph Summary

The moat gate is YELLOW, and that is the binding ER2 issue. Arch has a real franchise: strong ratings, scale, broker and cedent relationships, underwriting judgment, analytics embedded in risk selection, and a reputation for cycle discipline. It is not a commodity insurer with accidental earnings. But it is also not a business with permanent structural lock-in. Reinsurance capacity can enter when returns are high; property catastrophe and short-tail lines reset quickly; casualty can reveal reserve mistakes years later; and Mortgage looks annuity-like only while credit conditions, cure rates, home prices, GSE structures, and capital rules cooperate. The 2046 test is also YELLOW. A credible Arch in 2046 can still be a global specialty insurance, reinsurance, and mortgage-credit risk-capital platform, but durable excess returns require the company to keep underwriting well every cycle. That is investable quality, but it is not a clean dream-business moat under the Gideon standard.

Stage 5 Synthesis - Headline Numbers

The synthesis passed all 11 tie-out checks. Base-case TTM+5 consolidated revenue is $23.084B, underwriting operating income is $3.045B, common net income is $4.954B, and EPS is $15.27. The required FY+5 EPS for a 15x P/E at the refreshed $91.4709 quote is only $6.10, so the base-case P/E-15 cushion is 150.5%. The bear case also clears: $19.125B revenue, $1.428B underwriting operating income, $3.168B common net income, $9.10 EPS, and a 49.2% cushion. The bull case gives $18.43 EPS and a 202.3% cushion.

Case	Revenue ($B)	OI ($B)	NI ($B)	EPS	P/E-15 Cushion
Bear	19.125	1.428	3.168	9.10	49.2%
Base	23.084	3.045	4.954	15.27	150.5%
Bull	26.108	4.330	6.199	18.43	202.3%
Probability-weighted	22.850	2.962	4.819	14.52	138.1%

The base case is not an aggressive underwriting model. Segment net premiums earned rise from $16.863B TTM to $19.539B at the horizon, but segment underwriting income falls from $3.244B TTM to $3.045B. That is the right conservatism: Reinsurance normalizes from a 23.1% TTM underwriting margin to 17.9%, Mortgage normalizes from 83.8% to 71.5%, and Insurance improves only modestly from 5.7% to 6.2%. The model passes because the stock price is low relative to current earnings, the investment and other pre-tax bridge remains meaningful, and buybacks reduce the share count in the base case from 359.7M to 324.4M. The sensitivity work says share count and underwriting margin quality matter more than headline premium growth. The reflexivity check also matters: Q1 2026 annualized segment premiums are below TTM, so the base case must not assume a sudden step-up; the first forward-year run-rate stays within the 10% recency tolerance.

Red Team - One Paragraph

The red team argues that ACGL may be a high-quality insurer whose low multiple is rational because current earnings are peak-cycle, not mispriced compounder earnings. The most optimistic Stage 5 number is base FY+5 EPS of $15.27, especially the $2.831B residual pre-tax bridge and the buyback-driven 324.4M ending share count. The diagnostic 20% return claim is the weakest score-derived claim because it needs a rerating from roughly 7x TTM EPS to 15x FY+5 EPS. The single hard-pass signal is Reinsurance NPE declining less than 5% YoY or growing while the Reinsurance combined ratio deteriorates above 88% over the next two quarters despite still-competitive rates; that would suggest Arch is accepting weaker economics instead of preserving cycle discipline.

Kill / Trigger Criteria

- Keep PASS if the moat gate remains YELLOW and the audited diagnostic score stays below 70 because ROIIC and no-rerating 20% return evidence remain unproven.
- Downgrade conviction further if Reinsurance grows into weaker pricing, if adverse reserve development becomes repeated rather than episodic, or if Mortgage loss ratios normalize sharply without adequate pricing or capital response.
- Upgrade to WATCH if Arch compounds book value through a softer reinsurance market while keeping Reinsurance combined ratio below the high-80s, Insurance margins improve after MCE integration, and Mortgage profitability survives a normal credit-loss environment.
- Upgrade to BUY only if the moat becomes a hard PASS and valuation remains compelling; at today's evidence level, price alone is not enough because the P/E-15 gate is already passed.

Analyst Flags

The most important data flag is that clean insurer ROIIC is not calculated. The audited compounder score cut the original 74/100 score to 63/100 because ROIIC, acquisition-inclusive ROIIC, reserve-stressed cash conversion, clean SBC, and reverse-DCF NOPAT growth are incomplete. FMP also materially mis-mapped FY2025 balance-sheet assets and liabilities versus SEC official values; QF fixed this by visibly disclosing the mismatch and using SEC official balance-sheet values. Segment-level quarterly product disclosure is limited, so the segment appendices use official segment data plus annual product-line schedules where available. Finally, the report is deliberately anchored to Q1 2026 and a 2026-05-28 U.S. market quote; future cat losses, reserve development, rates, or housing-credit data can change the case quickly.

Appendix A - Company Primer

Arch Capital Group Ltd. (ACGL) - Company Primer

Source Discipline And Time Anchor

This primer is reader-facing orientation for the ER2 / Gideon research file. It uses `quant_foundation.md` as the quantitative ground truth. All segment revenue, underwriting income, cash flow, balance sheet, book value, share count, and valuation figures below are taken from the cleared quant foundation unless explicitly labeled otherwise. The quant foundation was independently reviewed in `quant_foundation_review.md` and cleared for Wave 1 with `QUANT FOUNDATION VERIFIED - CLEARED FOR WAVE 1`. The local data package was still only a placeholder when this primer was written, so qualitative context is drawn from live primary sources: Arch's 2025 Form 10-K, Q1 2026 Form 10-Q, and Q1 2026 earnings release. A fresh FMP quote and annual revenue-product-segmentation pull were also saved for this subagent under the ER2 raw folder and the investing data warehouse. The attempted FMP `company-profile ACGL` endpoint returned HTTP 404 on two identical attempts, so it is not used.

Stage 0 time anchor used verbatim:

- Today: 2026-05-29 (Asia/Singapore runtime; U.S. market date 2026-05-28 for U.S. market quotes and filing timestamps).
- Company fiscal year convention: Arch Capital Group Ltd. uses a December 31 fiscal year end.
- Most recently reported quarter: Q1 2026 Form 10-Q / quarterly results for the period ended March 31, 2026.
- TTM anchor: Q2 2025 + Q3 2025 + Q4 2025 + Q1 2026 -> TTM ending March 31, 2026.
- Forward horizon: TTM + 5 calendar years = March 31, 2031. Compounding span is exactly 5 calendar years.

Primary source links used in this primer include Arch's [2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/947484/000094748426000017/acgl-20251231.htm), [Q1 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/947484/000094748426000058/acgl-20260331.htm), [Q1 2026 earnings release](https://ir.archgroup.com/news/news-details/2026/Arch-Capital-Group-Ltd--Reports-2026-First-Quarter-Results/default.aspx), and [Investor Relations overview](https://ir.archgroup.com/overview/default.aspx).

Business Overview

Arch Capital Group Ltd. is a Bermuda-based global specialty insurer and reinsurer with a meaningful mortgage insurance franchise. In plain English, Arch sells promises to absorb defined losses: commercial insureds pay premiums so Arch will cover specified property, casualty, professional, specialty, or mortgage-credit losses; other insurers pay reinsurance premiums so Arch will absorb a slice of their risk; mortgage lenders and housing-finance counterparties pay premiums so Arch will absorb losses from borrower default risk. The company is not a consumer software business, a bank, or a simple asset manager. It is an underwriting and capital allocation platform whose product is risk-bearing capacity.

Arch's customers vary by segment. In Insurance, the end customer is typically a commercial business, financial institution, construction company, professional-services firm, program manager, or specialty distributor that needs coverage for hard-to-standardize exposures. In Reinsurance, the customer is another insurance company, cedent, broker market, mortgage-risk transfer counterparty, or alternative capital participant that wants to transfer risk or manage regulatory and catastrophe exposure. In Mortgage, the customer set includes U.S. mortgage lenders, government-sponsored enterprise credit-risk transfer programs, international mortgage insurance clients, and reinsurance counterparties exposed to residential mortgage default risk. Arch reaches these customers through underwriting teams, brokers, program relationships, reinsurance brokers, mortgage lender channels, GSE risk-sharing transactions, and specialist distribution, rather than through a self-serve digital checkout flow.

The economic problem Arch solves is capacity plus judgment. Many risks cannot be priced with commodity actuarial averages alone. A company that needs excess casualty coverage, property catastrophe protection, mortgage credit protection, financial lines coverage, or bespoke reinsurance is buying the underwriter's willingness to stand behind the policy when loss events arrive. That makes Arch's raw scale important, but not sufficient. The underwriting edge comes from selecting risks, setting attachment points, limiting aggregate exposures, buying its own reinsurance where useful, and shifting capital among lines as pricing changes.

Arch's Q1 2026 Form 10-Q describes the company as writing insurance, reinsurance, and mortgage insurance worldwide through operations in Bermuda, the United States, Europe, Canada, and Australia, with approximately $26.9 billion in capital at March 31, 2026. That framing matters because Arch is best understood as a global specialty balance sheet rather than as three unrelated operating units. The same balance sheet supports all three segments, but the segments have different cycles, margin structures, and loss drivers. The Insurance segment is tied to commercial specialty pricing and casualty reserve discipline. The Reinsurance segment is tied to global property catastrophe, casualty, specialty, and cedent demand. The Mortgage segment is tied to housing credit performance, mortgage insurance persistency, GSE credit-risk transfer activity, and capital rules.

Revenue Architecture

Arch reports segment revenue as net premiums earned. Consolidated GAAP total revenues also include investment income, realized gains and losses, other underwriting income, equity-method investment income, and other income. For segment orientation, net premiums earned is the right revenue measure because it is how Arch reports Insurance, Reinsurance, and Mortgage segment underwriting economics.

FY2025 segment mix from the cleared quant foundation:

Segment	FY2025 net premiums earned	Share of FY2025 segment NPE	FY2025 underwriting income	FY2025 combined ratio
Insurance	$7,771 million	45.5%	$375 million	95.2%
Reinsurance	$8,122 million	47.6%	$1,558 million	80.8%
Mortgage	$1,172 million	6.9%	$1,000 million	14.6%
Total underwriting segments	$17,065 million	100.0%	$2,933 million	82.8%

The Insurance segment is the largest or near-largest contributor by premiums depending on the period. Arch's 2025 Form 10-K describes the insurance business as focused on specialty commercial insurance across North America, Bermuda, the United Kingdom, continental Europe, and Australia. The book includes lines such as commercial auto, multiperil, financial and professional lines, casualty, excess and surplus casualty, property, short-tail specialty, workers compensation, construction, and other specialty products. A first-time reader should think of this as a diversified set of commercial underwriting desks, not one monolithic product. Each desk decides whether the premium is adequate for the expected loss cost, expenses, volatility, and capital consumed.

The Reinsurance segment accepts risk from other insurers and reinsurers. The cedent keeps the customer relationship and policy administration; Arch receives premium for taking on a contractual share of the risk. This can be proportional reinsurance, where Arch shares premiums and losses, or non-proportional reinsurance, where Arch pays losses above an attachment point. The segment includes property catastrophe, property excluding catastrophe, casualty, specialty, marine, aviation, credit, surety, accident and health, and other treaty or facultative exposures. It is the most obvious cycle-management engine inside Arch because property catastrophe and casualty reinsurance pricing can harden or soften quickly as industry capital, loss experience, inflation, and alternative capital supply move.

The Mortgage segment is much smaller by premiums but far larger by underwriting margin. It includes U.S. primary mortgage insurance through Arch MI entities, mortgage reinsurance through Arch Re Bermuda, mortgage insurance and reinsurance in the EEA, U.K., and Australia, and participation in GSE credit-risk-sharing products. Mortgage insurance is a credit-risk business: Arch is paid to absorb losses when mortgage borrowers default and collateral proceeds are insufficient. In benign credit periods, loss ratios can be very low and underwriting income can exceed reported net premiums earned because of favorable prior-period reserve development and other underwriting income. In housing stress, however, the loss tail can move sharply.

On a TTM basis ending March 31, 2026, Arch generated $16,863 million of segment net premiums earned, $19,777 million of total revenues, $3,244 million of segment underwriting income, and $4,832 million of net income available to common shareholders. TTM diluted EPS was approximately $13.00 on the additive EPS bridge in the quant foundation. The Q1 2026 quarter had $3,986 million of net premiums earned and $728 million of underwriting income, with the release showing the segment split as $66 million of Insurance underwriting income, $441 million of Reinsurance underwriting income, and $221 million of Mortgage underwriting income.

Unit Economics

For an insurer, a dollar of revenue does not turn into gross margin the way it would for a software or industrial company. A premium dollar first covers expected losses and loss adjustment expenses, then acquisition costs such as commissions, then other underwriting expenses. The leftover is underwriting income. If the combined ratio is below 100%, underwriting is profitable before investment income. If the combined ratio is above 100%, investment income may still make total economics acceptable, but the underwriting business itself is losing money.

Arch's segment unit economics are best read through net premiums earned, underwriting income, combined ratio, and the float balance that supports investment income. The simplified insurance formula is:

Step	Economic meaning	Arch-specific reader note
Gross premiums written	Business bound during the period before ceded reinsurance	A good growth signal, but not the same as earned revenue
Net premiums written	Premium retained after buying reinsurance	Shows retained risk appetite and capital deployment
Net premiums earned	Portion of retained premium recognized as coverage expires	Segment revenue in the quant foundation
Losses and LAE	Claims and claim-handling costs	Biggest driver of underwriting volatility
Acquisition and operating expenses	Broker commissions, underwriting expenses, personnel, platforms	Expense discipline matters, but underwriting selection matters more
Underwriting income	Premiums plus other underwriting income minus losses and expenses	Segment profit measure before investment income
Investment income	Return on float and capital	Not allocated to underwriting segments in Arch's segment reporting

Insurance has structurally lower underwriting margins than Mortgage and, in recent years, lower margins than Reinsurance. FY2025 Insurance net premiums earned were $7,771 million and underwriting income was $375 million, a 4.8% underwriting margin and a 95.2% combined ratio. That is profitable, but the margin of safety is not enormous. A few points of casualty loss inflation, catastrophe losses, adverse reserve development, or underpriced program business can consume the margin. The segment's value is not that every line earns spectacular margins; it is that Arch can deploy capital selectively across specialty lines where pricing, terms, and risk selection are attractive.

Reinsurance has recently been the earnings engine. FY2025 Reinsurance net premiums earned were $8,122 million and underwriting income was $1,558 million, a 19.2% underwriting margin and an 80.8% combined ratio. The Q1 2026 release shows Reinsurance underwriting income of $441 million and notes that net premiums written declined because of lower property catastrophe business at January 1 and lower reinstatement premiums relative to wildfire-affected Q1 2025. This is the cycle-management muscle in action: when property catastrophe rates soften, Arch does not have to chase every renewal. The risk is that reported earnings remain high for a while even as forward pricing power is already decaying.

Mortgage has the best reported underwriting margin but the most credit-cycle asymmetry. FY2025 Mortgage net premiums earned were $1,172 million and underwriting income was $1,000 million. The combined ratio was 14.6%, a very low ratio by insurance standards. Q1 2026 Mortgage net premiums earned were $284 million and underwriting income was $221 million. Those numbers look extraordinary, but a Gideon reader should not mechanically capitalize them like a stable software margin. Mortgage insurance benefits from persistency, seasoning, home-price appreciation, and benign employment conditions. It can also produce reserve releases in good times. In stress, the loss ratio can reprice the segment abruptly.

Float Economics And Investment Income

Insurance float is the liability-side funding created when premiums are collected before claims are paid. Arch's Q1 2026 balance sheet had $34,105 million of reserves for losses and loss adjustment expenses and $10,939 million of unearned premiums. Those liabilities are not "free money"; they are obligations to policyholders and cedents. But if underwriting is disciplined, they can act as low-cost or negative-cost funding for an investment portfolio.

Arch had $46,786 million of total investments and $914 million of cash at March 31, 2026, for cash plus investments of $47,700 million. TTM operating cash flow was $5,902 million versus TTM net income available to Arch of $4,872 million. This is a strong cash conversion snapshot, but insurance operating cash flow must be interpreted with care. Premium growth, reserve builds, claim timing, and reinsurance recoverables can make operating cash flow look better or worse than normalized economics. The underwriting result and reserve quality matter as much as the cash flow line.

The float engine makes Arch different from a normal operating company. A specialty insurer can compound book value through three layers: underwriting profit, investment income on float and capital, and intelligent capital returns when shares

trade below intrinsic value. But that engine also has two-sided exposure. If underwriting is poor, float is costly. If rates fall, reinvestment yield can decline. If catastrophe losses or casualty inflation are underestimated, current earnings overstate true profitability. If fixed-income assets take mark-to-market pressure, reported book value can be volatile even when credit quality is sound.

Arch's capital structure is conservative by an industrial leverage screen. Q1 2026 senior notes were $2,729 million, total shareholders' equity was $24,188 million, and senior notes to total capital were about 10.1% in the quant foundation. Debt net of balance-sheet cash was $1,815 million. For an insurer, the more relevant question is not net debt / EBITDA but capital adequacy, ratings, liquidity, reserve strength, catastrophe exposure, and access to reinsurance or retrocession markets. On that framing, Arch enters the research process with a green/yellow leverage profile rather than an obvious balance-sheet disqualifier.

Cycle Management

Arch's management language repeatedly emphasizes cycle management: allocate capital where expected returns are attractive, reduce exposure where pricing weakens, and use diversified specialty platforms to keep opportunity sets broad. The Q1 2026 Form 10-Q says critical elements of cycle management include risk selection, underwriting expertise, and data and analytics. This matters because the property-casualty and reinsurance markets are cyclical. A hard market creates pricing power and attractive returns; a soft market invites capital inflows, looser terms, and margin compression.

The current evidence is mixed but not alarming. Q1 2026 produced strong underwriting margins and annualized return metrics, but the Q1 release also points to more competitive conditions in reinsurance, especially property catastrophe business. The 2025 10-K discussed January 1, 2026 renewals in which property catastrophe and short-tail excess-of-loss renewals were highly competitive, with rates down meaningfully. That does not mean Arch is suddenly a bad business. It means recent reinsurance margins should be underwritten as cyclical, not permanent.

The important qualitative question is whether Arch can step away from business without starving the platform. The company has three outlets for capital: Insurance, Reinsurance, and Mortgage. In a soft property catastrophe market, it can tilt toward casualty, specialty, mortgage credit-risk transfer, buybacks, or simply retain capital. In a hard market, it can expand where pricing and terms compensate for volatility. This flexibility is a real advantage versus narrower insurers that must keep writing one line to maintain relevance. The counterpoint is that every broad platform risks drifting into areas where it does not have a true edge. Diversification is valuable only if underwriting standards remain tight.

Capital Allocation

Arch's capital allocation is a combination of underwriting deployment, investment portfolio management, acquisitions or platform expansion, reinsurance purchases, and share repurchases. The quant foundation shows common share repurchases of $1,889 million in FY2025 and $783 million in Q1 2026. Estimated common shares outstanding fell from 359.0 million at year-end 2025 to 352.9 million at March 31, 2026. At the FMP quote price of roughly $91.40-$91.43 on the U.S. market date 2026-05-28, the quant foundation estimates book value per common share around $66.19 and price / book around 1.38x.

Buybacks are not automatically value-accretive for insurers. Repurchasing below intrinsic value can compound per-share book value and EPS; repurchasing too aggressively before a reserve or catastrophe shock can impair flexibility. Arch's Q1 2026 repurchase activity is encouraging because the balance sheet still looked conservatively capitalized after the purchases. The more demanding Gideon question is whether management has a repeatable record of buying back stock when forward returns are attractive, not simply when excess capital exists.

The insurance capital cycle also gives management more ways to allocate capital than a typical industrial company. Arch can deploy capital into underwriting when pricing is strong, hold capital when pricing is weak, buy retrocession or reinsurance to manage volatility, shift between insurance and reinsurance, expand mortgage risk participation, or repurchase shares. This optionality is a core reason the company can be considered under a quality-compounder lens. It also means the reader should scrutinize management's underwriting discipline, not just reported EPS growth.

Competitive Position And Pricing Power

Arch competes in highly competitive global insurance and reinsurance markets. The 2025 Form 10-K explicitly notes competition from major U.S. and non-U.S. insurers and reinsurers, including players with greater financial, marketing, management, or relationship resources. That makes Arch different from a monopoly utility or a software platform with obvious network effects. Customers and brokers can move business if terms, price, ratings, or claims service are unattractive.

The pricing power case is therefore not "Arch can raise price at will." It is more specific: in specialty insurance and reinsurance, expert capacity can earn attractive returns during favorable cycles because risk selection, speed, broker trust, capital strength, ratings, and claims reputation matter. A strong underwriter can walk away from underpriced risk, preserve capacity for better markets, and use relationships to source attractive submissions. Arch's specialty orientation, global platform, and history of book value compounding suggest some underwriting franchise value. But the franchise is always tested by the cycle.

Ratings also matter. Insurance buyers and cedents want assurance that claims will be paid years later. Arch's 10-K identifies A.M. Best, Fitch, Moody's, and S&P as rating agencies assigning financial strength and issuer credit ratings to Arch Capital and certain subsidiaries. Ratings are not a moat by themselves, but they are table stakes for participating in many specialty and reinsurance markets. A ratings downgrade could reduce business flow, raise collateral needs, or weaken broker confidence.

AI disruption exposure appears manageable. Arch may use data, analytics, automation, and underwriting tools, and competitors will do the same. But the core product is regulated risk-bearing capital backed by claims-paying resources, not a replaceable clerical workflow. AI can change expense ratios, pricing models, fraud detection, claims workflows, and submission triage. It is unlikely to remove the need for rated capital, actuarial judgment, broker relationships, or regulatory solvency. The larger technology risk is operational and cyber execution, not product obsolescence.

Key Risks For A First-Time Reader

Reserve adequacy is the central underwriting risk. Insurance earnings rely on estimates of ultimate losses, especially in long-tail casualty lines where claims can develop for years. If prior-year reserves prove inadequate, Arch may record adverse development that erodes book value and current earnings. Favorable reserve development is pleasant, but it should never be treated as a permanent source of earnings without actuarial support.

Catastrophe exposure is the most visible volatility risk. Property catastrophe and short-tail reinsurance can produce excellent margins when priced well, but severe events can compress earnings quickly. Arch manages this through limits, attachment points, diversification, reinsurance, and capital allocation. Still, one or more large catastrophes can make quarterly or annual results look poor even if underwriting discipline remains sound.

Mortgage credit is the hidden severity risk. Mortgage insurance looks exceptionally profitable in benign housing and employment conditions, but the insured event is correlated credit stress. Home-price declines, unemployment, high debt-service burdens, or weak mortgage origination quality can change loss expectations. The Mortgage segment's high FY2025 underwriting margin should be understood as current-cycle economics, not a risk-free annuity.

Pricing-cycle risk is live. The Q1 2026 materials show strong returns, but also evidence of competitive pressure in parts of reinsurance. If industry capital remains abundant, property catastrophe rates soften, casualty loss inflation rises, and terms loosen, Arch's forward underwriting returns may be lower than TTM returns. The bull case requires disciplined shrinking or redeployment when expected returns fall.

Investment risk is real but secondary to underwriting discipline. Arch's investment portfolio is large relative to earnings, and book value can be affected by rates, spreads, credit losses, and foreign exchange. Higher yields can help investment income, but mark-to-market changes and reinvestment rates can move reported equity. A reader should separate economic underwriting quality from fixed-income accounting volatility.

Governance and related-party issues do not show an obvious red flag in the cleared materials, but they should remain on the diligence list. The Q1 2026 10-Q discloses related-party reinsurance relationships involving Premia and Somers/Greysbridge structures, while also noting no new Premia reinsurance transactions during Q1 2026. These are not automatic disqualifiers, but the management appendix should review them carefully for arm's-length economics, transparency, and potential conflicts.

Stage 1 Disqualifier Sweep

The Stage 1 sweep remains all green/yellow, with no red disqualifier identified.

Check	Primer read	Evidence summary
ROIC / ROE persistently strong	Green/yellow	Q1 2026 annualized net income ROACE was 17.8% and operating ROACE was 15.4%; book value compounding needs longer-cycle review

Check	Primer read	Evidence summary
Cash conversion healthy	Green/yellow	TTM operating cash flow was $5,902 million versus $4,872 million of TTM net income available to Arch, but insurance cash flow is reserve-cycle dependent
Leverage structurally justified	Green/yellow	Senior notes / total capital around 10.1%; insurer leverage should be assessed through capital adequacy, ratings, reserves, and liquidity
End-markets stable or growing	Green/yellow	Insurance need is durable, but pricing cycles can soften and mortgage credit is cyclical
Governance clean	Green/yellow	No obvious red flag in reviewed filings; related-party reinsurance disclosures need management-review follow-up
AI disruption exposure manageable	Green	AI may affect tools and workflows but does not replace rated risk-bearing capital
Pricing power exists	Yellow/green	Specialty underwriting and reinsurance relationships provide pricing discipline, but not immunity from soft markets

Gideon Compounder Lens

Arch has several features that make it worth studying under the Gideon framework. It has a long-duration demand base: businesses will keep needing specialty insurance, insurers will keep needing reinsurance, mortgage lenders and GSE structures will keep transferring credit risk, and regulators will keep requiring capital behind these promises. It has a diversified platform that can move capital among underwriting opportunity sets. It has a large float and investment portfolio that can amplify book value compounding when underwriting is profitable. It has recently generated strong ROE-type returns and meaningful per-share capital returns.

The hard question is whether Arch can clear a 20-year quality bar rather than merely look excellent at a favorable point in the cycle. The strongest pro-Arch argument is that the business has multiple underwriting engines and management appears willing to allocate away from unattractive pricing. The strongest caution is that recent TTM EPS and reinsurance margins may be flattered by a hard-market backdrop, favorable reserve development, mortgage-credit benignity, and higher investment income. A Gideon investor should demand evidence that normalized underwriting returns remain attractive after reinsurance pricing softens and after mortgage losses normalize.

Arch is probably not a classic high-ROIC asset-light compounder. It is capital-intensive by design, regulated, exposed to catastrophes and credit cycles, and dependent on reserve estimates. But insurers can be wonderful compounding vehicles when underwriting is consistently profitable and capital allocation is disciplined. The right analogy is not software; it is a book-value compounder with underwriting float. The moat is not a patent or network effect; it is a combination of underwriting culture, broker and cedent relationships, ratings, balance sheet strength, cycle discipline, data, and management incentives.

At the May 28, 2026 market quote in the quant foundation, Arch traded at about 1.38x estimated common book value and roughly 7.0x TTM diluted EPS. That headline multiple looks optically cheap, but the ER2 decision cannot stop there. The synthesis must ask what FY+5 EPS looks like on normalized underwriting margins, normalized mortgage credit, sustainable investment income, and likely share count. A low multiple on peak earnings is a trap; a low multiple on durable normalized earnings is a candidate. The primer's read is therefore constructive but cautious: Arch clears the first-read disqualifier screen, has real underwriting franchise characteristics, and deserves full segment work, but the eventual BUY/WATCH/PASS verdict should turn on normalized cycle earnings and management's proven willingness to sacrifice volume when pricing deteriorates.

What To Watch Next

The first monitoring item is Reinsurance pricing. If property catastrophe and short-tail excess-of-loss pricing continues to soften, the reinsurance segment's FY2025 and TTM margins should not be extrapolated. The second item is casualty reserve development in Insurance and Reinsurance. Favorable development supports the quality case; adverse development would directly challenge underwriting culture. The third item is Mortgage credit performance: delinquencies, cure rates, home-price trends, unemployment, and GSE credit-risk transfer volumes. The fourth item is capital allocation: whether buybacks continue only when capital is excess and valuation is attractive. The fifth item is book value per share growth across the cycle, because that is the cleanest scoreboard for an insurer with large investment assets and active repurchases.

In short, Arch is a serious specialty underwriting platform, not a generic financial stock. It has enough quality markers to merit the full ER2 treatment and enough cyclicality to prevent a lazy compounder label. The reader should enter the segment

appendices with one question in mind: how much of the current earnings base is durable underwriting franchise economics, and how much is the favorable part of the insurance, reinsurance, mortgage-credit, and investment-yield cycle?

Appendix M - Management Assessment

Arch Capital Group Ltd. (ACGL) - Management Assessment

Stage 0 time anchor used verbatim:

- Today: 2026-05-29 (Asia/Singapore runtime; U.S. market date 2026-05-28 for U.S. market quotes and filing timestamps).
- Company fiscal year convention: Arch Capital Group Ltd. uses a December 31 fiscal year end.
- Most recently reported quarter: Q1 2026 Form 10-Q / quarterly results for the period ended March 31, 2026.
- TTM anchor: Q2 2025 + Q3 2025 + Q4 2025 + Q1 2026 -> TTM ending March 31, 2026.
- Forward horizon: TTM + 5 calendar years = March 31, 2031. Compounding span is exactly 5 calendar years.

Source Register

This appendix uses the cleared `quant_foundation.md`, the DR-cleared `data_package.md`, the 2026 proxy statement filed March 24, 2026, the 2025 Form 10-K, the Q1 2026 Form 10-Q and earnings release, FMP live earnings-call transcripts for the last eight available quarters, FMP live company-executives and executive-compensation endpoints, FMP live insider-trading search for the trailing twelve months, and the November 14, 2024 Investor Day transcript. No local data warehouse cache was used as a source.

Source	Evidence used
2026 DEF 14A, filed 2026-03-24	Leadership biographies, board structure, independence, ownership, compensation, related-party transactions, hedging, pledging, clawback and director ownership policies.
2025 Form 10-K	Strategy, risk-management framework, reserve development, underwriting and reinsurance controls, internal-control context.
Q1 2026 10-Q and earnings materials	Latest operating context, buybacks, capital position, reserve movement, underwriting-cycle commentary.
FMP live transcripts, Q2 2024 through Q1 2026	Candor, question handling, guidance discipline, cycle commentary, buyback and M&A language.
November 2024 Investor Day transcript	Long-term strategy, analytics culture, MCE integration rationale, capital-allocation philosophy.

1. Who Is Running The Company

Arch is run by a deeply tenured underwriting organization rather than a recently imported management team. CEO Nicolas Papadopoulo became Chief Executive Officer and joined the board in October 2024. The proxy describes him as a 2001 Arch hire who previously served as President and Chief Underwriting Officer of Arch Capital, CEO of Arch's Global Insurance Group beginning in 2021, Chairman and CEO of the Global Insurance Group from 2017 through 2020, CUO for P&C operations, and earlier Chairman and CEO of Arch Reinsurance Group. That is important for the management gate: his CEO tenure is short, but his ownership of Arch's underwriting culture is long. He is not a new outsider trying to impose a fresh playbook; he is a central architect of the same underwriting, cycle-management and analytics approach now being judged.

CFO Francois Morin has been CFO and Treasurer since May 2018. He joined Arch in 2011 as Chief Actuary and Deputy Chief Risk Officer and served as Senior Vice President, Chief Risk Officer and Chief Actuary from 2015 to 2018. His actuarial and risk background is unusually relevant for a specialty insurer/reinsurer because the CFO's job is not merely financial reporting; it is capital adequacy, reserves, ratings, investment-risk discipline, and the decision to release capital when underwriting opportunities do not clear thresholds.

The operating bench is also credible. David Gansberg was named President in November 2024 with primary accountability for the Global Insurance Group, including North American and international insurance operations. He joined Arch in 2001, led the Global Mortgage Group from 2019 until his promotion, and has held underwriting, operational and strategic roles across Reinsurance, Mortgage and Corporate. Maamoun Rajeh was also named President in November 2024 and oversees Global Reinsurance and Global Mortgage. He joined Arch Re Bermuda in 2001 as an underwriter and had spent seven years as Chairman and CEO of Arch's Global Reinsurance Group. CIO Christine Todd joined in 2021 and is responsible for investment

strategy and day-to-day portfolio operations. FMP's live company-executives endpoint also identifies Janice Englesbe as Executive Vice President and Chief Risk Officer, which fits the 10-K's risk-management framework that centers on a CRO-maintained risk register and board committee oversight.

The board is majority independent but not governance-perfect. The 2026 proxy says all directors except Papadopoulo and John Vollaro are independent, including independent chair John M. Pasquesi. It names ten independent non-employee directors and says the Audit, Compensation and Human Capital, and Nominating and Governance committees are entirely independent. That is a real governance positive. The offset is that Arch retains a classified board and does not set specific director term limits. The proxy defends both as sources of continuity; from a minority-shareholder lens, they are not disqualifying but they reduce annual accountability and should remain a monitoring item.

2. Tenure And Track Record

The current CEO has been in-seat since October 2024, so the strict answer is that he has limited CEO-specific evidence. The more useful answer is that the leadership bench has been in Arch's underwriting system for decades. Papadopoulo, Gansberg and Rajeh each joined Arch in 2001, and Morin joined in 2011 after a long actuarial advisory career. The succession from Marc Grandisson to Papadopoulo looks planned and internally coherent rather than disruptive. Arch also elevated Gansberg and Rajeh into president roles shortly after Papadopoulo became CEO, preserving clear ownership of Insurance, Reinsurance and Mortgage.

The first major decision attributable to this team is disciplined reinsurance cycle management. Reinsurance net premiums earned increased from $2.841 billion in FY2021 to $8.122 billion in FY2025, while underwriting income rose from $168 million to $1.558 billion and the combined ratio improved from 94.2% to 80.8%. In Q1 2026, however, management allowed reinsurance net premiums earned to fall 9.7% year over year because property catastrophe and short-tail pricing softened and cedents retained more risk. Papadopoulo told analysts the team monitors property cat through many zones and will reduce shares where returns no longer clear minimum thresholds. That is exactly the behavior a specialty insurer should show late in a favorable cycle: give up top-line growth before giving up underwriting margin.

The second decision is building Insurance through the middle-market commercial acquisition while pruning business that does not fit Arch's standards. Insurance net premiums earned grew from $3.625 billion in FY2021 to $7.771 billion in FY2025, but the margin record is more mixed: underwriting margin was 8.3% in FY2023, 5.2% in FY2024 and 4.8% in FY2025. Q1 2026 commentary was candid that selected program business acquired in the middle-market transaction would not be renewed because it did not align with risk appetite or profitability requirements, reducing 2026 net premiums written by about $250 million. The team also completed the Allianz-to-Arch data and system migration in April 2026, about 18 months after the acquisition. The evidence is not "every deal immediately accretive"; it is "management will buy capability, integrate it, then cut parts of the book that fail return standards." That is investable, but it bears watching because Insurance margins are still materially below Reinsurance and Mortgage margins.

The third decision is the capital-return framework. Arch uses underwriting opportunities as the first call on capital and returns excess capital when the underwriting market does not offer enough risk-adjusted return. The data package shows FY2025 common buybacks of $1.889 billion and Q1 2026 repurchases of $783 million, plus another $311 million through the night before the Q1 call. Estimated common shares outstanding declined from 359.0 million at year-end 2025 to 352.9 million at Q1 2026, while book value per share still grew 1.7% in Q1. At the 2024 Investor Day, Morin explained that buyback decisions consider stock price and the premium to book value against a three-year forward view of book-value growth. That is a better standard than mechanical share count reduction.

The main decision that did not fully work was not a catastrophic acquisition failure but the need to non-renew acquired MCE program business and absorb temporary transition expense. Management did not bury it. They quantified the $250 million premium drag, explained that Q1 insurance operating expense was affected by transition costs, and said the expense ratio should move closer to historical levels in the second half of the year. That candor matters. A management team that names a mistake early is more valuable than one that forces a poor book to meet a top-line promise.

3. Capital Allocation Behavior

Capital allocation over the last five years shows a company that funds organic underwriting, uses little industrial capex, avoids routine dividends, and shifts between buybacks and special capital returns depending on opportunity and valuation. R&D is not separately disclosed; technology and AI spend are embedded in operating expenses.

Year	Capex ($B)	Buybacks ($B)	Dividends ($B)	M&A cash-flow line ($B)	Comment
2021	0.041	1.234	0.047	1.103	Buybacks and acquisition activity both material.
2022	0.052	0.586	0.040	-1.554	Capital release and investing activity dominated cash-flow presentation.
2023	0.052	0.002	0.040	0.000	Buybacks nearly paused while underwriting opportunities were attractive.
2024	0.051	0.024	1.906	-0.852	Special dividend period; MCE acquisition/integration period.
2025	0.044	1.889	0.047	0.000	Repurchases resumed as excess capital built and shares were attractive.

The pattern is consistent with stated strategy. Management says it deploys capital into underwriting first, then returns excess when organic opportunities are less attractive. The hard evidence is that buybacks were minimal in FY2023 and FY2024 when market opportunities were stronger and capital was being deployed, then increased materially in FY2025 and Q1 2026 as growth opportunities moderated. That is not a perfect proof of price sensitivity, but it is a credible proof against blind, formulaic repurchase.

M&A is selective. The middle-market commercial acquisition was described at Investor Day as a way to move Arch forward by roughly a decade in a market where building comparable scale organically would take too long and cost too much. The follow-through is mixed but encouraging: the systems migration was completed, the team is using analytics and AI in the platform, and management is explicitly pruning poor-fit business. On the Q1 2026 call, Morin said M&A must be additive, make Arch better, improve competitiveness, or increase presence or scale. That language is conservative enough for the gate; the monitoring condition is whether the acquired Insurance business can lift margins without sacrificing the underwriting standards that made Arch attractive.

4. Compensation Alignment

Arch's compensation plan is broadly aligned with underwriting quality and book-value compounding. The 2026 proxy says the short-term annual cash incentive is based on annualized net income return on average common equity, while long-term performance shares are based on absolute growth in tangible book value per share over a three-year period, supplemented by a TSR modifier. The proxy also reports strong realized outcomes: one-, three- and five-year annualized ROE of 20.1%, 24.5% and 18.6%; operating ROE of 17.1%, 19.6% and 15.4%; total book value return per share of 22.6%, 99.6% and 114.8%; total tangible book value return per share of 24.6%, 102.6% and 115.5%; and five-year TSR of 179.7%.

The plan paid out richly. The 2025 annual cash incentive payout factor was 200.0% of target for the CEO and 189.8% on average for other named executive officers. The 2023-2025 performance-share cycle also paid out at 200%. High payout alone is not a red flag when the financial result is excellent, but it creates a cyclical-insurance risk: compensation tied to ROE and tangible book value growth can look outstanding late in a hard market. The offset is that tangible book value per share is a per-share metric, not a scale metric, and ROE discourages capital hoarding.

Ownership is meaningful. As of March 9, 2026, the proxy lists Papadopoulo with 1,659,915 beneficially owned common shares, Gansberg with 667,337, Morin with 738,230, Rajeh with 894,657, Todd with 251,580, and all directors and executive officers as a group with 11,618,680 shares, or 3.3%. The footnote for Papadopoulo separates 871,594 directly owned common shares, exercisable options, and performance restricted shares. This is real economic exposure, not just annual RSU recycling. The board also requires non-employee directors to hold common shares worth at least five times the annual cash retainer within five years and to retain 50% of net profit shares until they meet the target.

Governance mechanics are acceptable. The proxy says incentive-based compensation for executive officers is subject to clawback provisions, hedging is prohibited for directors, officers and employees, pledging is limited and requires approval, option repricing is not allowed, and the company does not provide excise tax or ordinary tax gross-ups. SBC does not look abusive relative to revenue; the bigger issue is executive pay cyclicality, not chronic dilution.

5. Disclosure Quality And Candor

The last eight FMP live call transcripts show a management team that usually answers the question asked. This is a high mark for an insurer, because the difficult questions are not simple software metrics; they involve loss picks, cat zones,

premium leverage, ceding commissions, mortgage severity, PMLs, reserve development, expense ratios, private credit, political violence losses, and whether M&A is needed because organic growth is slowing.

In Q1 2026, management directly addressed the most uncomfortable issue: the market is more competitive and top-line growth is slowing. Papadopoulo used the phrase "profitability over volume" for Insurance. He acknowledged softening in property and short-tail lines, competitive reinsurance supply, and the need to reduce shares where business falls below return thresholds. Morin answered premium-leverage questions by saying that if Arch cannot deploy capital in the business, it will return more capital to shareholders. That is a clear economic answer, not a story about "platform momentum."

Question handling is especially good on technical risk topics. On casualty, Papadopoulo named areas Arch likes and areas it avoids, including staying away from commercial auto and large-account excess towers. On property cat PMLs, Morin explained why PMLs had not yet declined despite reduced property exposure and pointed to 6/1 and 7/1 renewals as more relevant. On mortgage loss ratio movement, Morin separated default frequency from severity per loan and said frequency assumptions had not changed. On private credit, he said exposure existed but was limited and focused on high-quality loans with collateral support. On the Iran-related political violence loss discussion, management did not give every number the analyst wanted, but it explained that the losses were in cat reporting and that premium existed for those lines.

Guidance discipline is more qualitative than numerical. Arch does not guide like a software company. It gives market color, expense normalization expectations, tax-rate ranges, capital allocation principles, and segment-cycle commentary. Management does use hedged language when the market genuinely is uncertain, for example "we do not have a crystal ball" on mid-year property cat renewals. That is acceptable in catastrophe underwriting. The important distinction is that the team then provides the decision rule: adjust underwriting stance based on actual rate decreases and zone attractiveness.

Voluntary disclosure is above average for the sector. Arch gives segment net premiums earned, underwriting income, combined ratios, ex-cat accident-year combined ratios, favorable prior-year development, PMLs, book-value growth, buyback dollars, and detailed call color. The 2024 Investor Day went further into analytics, middle-market strategy, insurance operating structure, mortgage and reinsurance cycle management, and buyback math. The company does not disclose every sub-segment quarterly product line, which is a data limitation for ER2, but management is not hiding the main load-bearing variables.

6. Strategic Coherence

Arch's strategy is coherent: be a specialty insurance, reinsurance and mortgage risk underwriter that compounds book value through disciplined cycle management, analytics, risk selection and flexible capital allocation. The 2025 10-K and management commentary both reinforce that Arch is not trying to win by volume. The CEO's Q1 2026 statement that Arch will dynamically add where returns are attractive and decline risks that no longer provide an adequate margin of safety matches the numbers: Reinsurance premium can fall while underwriting income remains excellent, Insurance can accept MCE non-renewals, and capital can shift to repurchases.

Investment patterns support the strategy. The company is putting money into data, analytics, systems migration, AI-enabled testing, underwriter tools, and selective acquisitions that expand specialty underwriting capability. The November 2024 Investor Day framed the Insurance ambition as an analytics-driven specialty company; management described hundreds of employees using strategic analytics tools and emphasized the ability to show underwriters which business to chase and which to let go. This is not a generic AI overlay. It is directly connected to underwriting selection, pricing, claims and integration.

The five- to ten-year destination is clear enough for the management gate. Arch wants to preserve its specialty underwriting culture while scaling Insurance, maintaining high-return Reinsurance exposure through the cycle, and using Mortgage as a diversifying high-margin earnings stream. The company names competitive threats directly: property cat alternative capital, short-tail pricing pressure, casualty sidecars, cedent retentions, mortgage affordability pressure, and the need for system/data readiness to use AI at scale. That is better than pretending the market is unchallenged.

7. Governance Flags

There is no dual-class share structure in the materials reviewed, and no controlling shareholder problem was identified. The shareholder base includes Vanguard, BlackRock, Artisan and, at the proxy date, Baron at or near 5% thresholds, but this is normal institutional ownership rather than control. The latest 10-K did not indicate a restatement requiring incentive clawback recovery analysis, and the auditor's internal-control opinion does not surface a material weakness in the excerpts reviewed.

Related-party transactions deserve mention but do not fail the gate. The 2026 proxy discloses the Premia relationship: Arch and Kelso sponsored Premia Re in 2017; Arch Re Bermuda invested $100 million for 25% of Premia's common equity and

warrants; Papadopoulo invested $2.5 million for a 0.625% stake and Rajeh invested $0.5 million for a 0.125% stake. Arch provides certain administrative and support services to Premia, has board appointment rights, and had funds-held assets from Premia of $124 million at December 31, 2025. The proxy says Arch Re Bermuda did not enter into new reinsurance transactions with Premia during 2025 and generated immaterial net premiums written and earned from Premia in 2025. This is a yellow governance optic, not a red flag, because it is disclosed, relatively bounded, and overseen under related-party procedures.

Other related-party disclosures are ordinary-course but should be watched: BlackRock provided investment management, trade support and risk analysis services for $13.5 million of fees in 2025 while also being a large shareholder; Arch had about $161.6 million net asset value invested in Baron funds at December 2025; and Arch made a $125 thousand contribution to the Urban Institute, where director Laurie Goodman is a non-executive fellow. These items are not thesis-breaking, but they reinforce the need to monitor related-party disclosures annually.

Insider trading over the last twelve months is not alarming. The live FMP insider-trading search shows many routine awards, option exercises, tax/withholding-related sales, gifts and director awards. There are some sales by executives and directors, including Papadopoulo and Morin exercises/sales, but management and board ownership remains substantial. A director open-market purchase in April 2026 is a small positive. I do not see clustered, thesis-negative insider selling that overrides the ownership evidence.

8. Peer Comparison

Arch compares well against relevant specialty insurance and reinsurance peers, though not uniquely. W. R. Berkley, RenaissanceRe and Everest are useful comparables because each is an underwriting-led organization where management quality is central to book-value compounding.

Peer	Current CEO evidence	Directional comparison to Arch
W. R. Berkley	Robert Berkley Jr. / W. Robert Berkley-led family culture remains one of the sector's strongest underwriting-capital allocation franchises.	Berkley likely has the stronger founder/family continuity and decentralized small-company culture; Arch is comparable on underwriting discipline and perhaps stronger in reinsurance/mortgage diversification.
RenaissanceRe	Kevin O'Donnell remains CEO; 2026 succession news affects CFO/CPO roles, not CEO.	RenaissanceRe is a best-in-class reinsurance capital allocator. Arch is broader and less pure cat/third-party-capital exposed; RenRe may rank higher in reinsurance-specific transparency.
Everest	Jim Williamson became permanent President and CEO in January 2025 after serving as acting CEO and Group COO.	Everest's current CEO evidence is newer and the company has had more recent leadership transition noise. Arch's insider succession and 2001-vintage operating bench look more seasoned.

On a five-year stewardship basis, Arch ranks in the upper tier. W. R. Berkley may be the cleanest governance/culture peer if one prizes founder-family continuity. RenaissanceRe is a formidable capital-allocation peer in reinsurance. But Arch's combination of P&C underwriting, Mortgage earnings, reserve development, book-value compounding, conservative capital return and candid cycle communication clears the management bar. The peer comparison does not reveal a better available management team so superior that Arch should be penalized.

9. Management Gate Verdict

Management gate: PASS.

This is a PASS because Arch's management team has a long underwriting tenure, meaningful ownership, coherent incentives, a credible succession path, and a demonstrated willingness to sacrifice premium growth when risk-adjusted returns weaken. The CEO is new to the top seat, but not new to Arch or to the decisions that matter: underwriting culture, cycle management, analytics, Insurance buildout and reinsurance risk selection. The CFO is actuarially trained, has held CRO and Chief Actuary roles, and communicates capital allocation in terms of underwriting opportunity and per-share value rather than balance-sheet empire building.

The evidence is strongest in capital allocation and candor. Reinsurance grew dramatically through the hard market and then slowed when returns softened. Insurance integration issues are being named and pruned rather than hidden. Buybacks accelerated when excess capital grew and organic growth opportunities moderated. Management's Q&A style is direct enough on load-bearing risks, including property cat pricing, casualty sidecars, PMLs, mortgage loss ratio, M&A selectivity, AI,

private credit and reserve development.

The PASS is not unconditional. Monitoring items are: (1) whether Insurance margins improve after MCE integration and non-renewals, (2) whether the classified board/no-term-limit governance structure remains benign rather than entrenching, (3) whether Premia and other related-party disclosures stay immaterial and transparent, and (4) whether compensation remains tied to per-share underwriting value when the market cycle turns less favorable. None of those reaches YELLOW today. The burden of proof for management quality is met.

Appendix W - Moat and 2046 Durability

Arch Capital Group Ltd. - Moat and 2046 Durability

Stage 0 anchor: today is 2026-05-29 in the Asia/Singapore runtime; the relevant U.S. market date for quoted market data and filing timestamps is 2026-05-28. This appendix uses the cleared `quant_foundation.md`, the DR-cleared `data_package.md`, Arch's 2025 Form 10-K, Arch's Q1 2026 Form 10-Q and Q1 2026 earnings release, and fresh live FMP checks in this subagent run. The live FMP checks reconfirmed the FY2025 segment net premiums earned reported in the data package: Insurance $7.771 billion, Reinsurance $8.122 billion, and Mortgage $1.172 billion. Arch's investor relations credit-ratings page was also checked for current ratings context.

1. Moat Taxonomy Applied

Network effects: Arch does not have a classic network effect. More insureds, cedents, mortgage lenders, or brokers using Arch does not mechanically make the product more valuable to every other participant the way a payments network, marketplace, or software platform might. There is a softer submission-flow effect: strong broker and cedent relationships can give a high-quality underwriter earlier looks at better risks, and a broad data history can improve pricing and claims judgment. That is useful, but it is not self-reinforcing enough to call a network moat. A competitor can still win business by offering better terms, a lower price, more capacity, a stronger rating, or a more attractive claims reputation.

Switching costs: Switching costs are moderate in long-tail specialty and reinsurance relationships, but weak in commodity-like renewals. Commercial insureds and cedents do not want to replace a trusted insurer that knows their risk, pays claims, and has the rating strength to stand behind multi-year liabilities. Reinsurance programs also involve negotiated structures, trust, claims cooperation, collateral, and renewal continuity. Those frictions matter most in casualty, specialty, and mortgage-credit risk transfer. They matter less in property catastrophe layers and shorter-tail lines where pricing, attachment point, limits, and available capacity reset each renewal. The switching-cost moat is therefore relationship-based and reputational, not contractual lock-in.

Scale economies: This is Arch's clearest structural advantage. The Q1 2026 balance sheet had $24.188 billion of shareholders' equity, $2.729 billion of senior notes, $47.700 billion of cash plus investments, $34.105 billion of reserves for losses and LAE, and $10.939 billion of unearned premiums. Scale gives Arch relevance to global brokers, cedents, mortgage counterparties, rating agencies, regulators, and retrocession markets. It also supports diversified underwriting teams and analytics across Insurance, Reinsurance, and Mortgage. Scale is not unlimited protection because the competitor list includes much larger global carriers and reinsurers, but it creates a threshold advantage against smaller entrants and gives Arch more freedom to shift capital across cycles.

Brand and reputation: Arch has a real high-trust reputation, but "brand" is not consumer pull. In this industry the brand is claims-paying ability, underwriting expertise, broker responsiveness, and confidence that the company will still be solvent when losses develop years later. Arch's 2025 Form 10-K says competition occurs on financial strength, ratings, geographic scope, client relationships, premiums, terms, claims payment speed, reputation, employee experience, and local presence. That is exactly the kind of market where reputation is economically relevant. The weakness is that reputation can erode quickly after reserve surprises, claim-payment issues, ratings pressure, or visibly underpriced growth.

Regulatory position: Arch benefits from regulated insurance barriers, capital requirements, licensing, and the need for approved mortgage insurance entities. This is not a monopoly license; it is a table-stakes moat. In Mortgage, access to U.S. primary mortgage insurance channels, GSE-related risk transfer, and approved counterparty status is more meaningful because counterparties require capital, ratings, servicing ability, compliance, and long-term reliability. In Insurance and Reinsurance, regulation raises entry costs but does not prevent well-capitalized competitors, including alternative capital, from competing aggressively.

IP, patents, and proprietary data: There is no patent moat. The data and analytics advantage is real but must be graded modestly. Arch has decades of underwriting, claims, catastrophe, casualty, mortgage credit, and pricing experience, and management has described long-running AI investment as a productivity and underwriting tool. But competitors also have large datasets, actuarial teams, catastrophe models, third-party data, and increasingly capable AI tools. The moat is not that Arch owns unique algorithms nobody can copy; it is that analytics are embedded in underwriters, risk limits, reserving, cycle discipline, and capital allocation.

High-trust procurement: This is a meaningful moat source. Buyers are not purchasing a document; they are buying a promise to pay under stress. A broker placing specialty casualty coverage, a cedent buying reinsurance, or a GSE-related counterparty transferring mortgage credit risk must care about capital, ratings, claims behavior, execution certainty, and management discipline. Arch's current financial-strength ratings are strong across key operating companies. The IR ratings page shows, for example, AA- S&P and AA- Fitch ratings for several major insurance and reinsurance subsidiaries, A1 Moody's ratings for several core entities, and A+ AM Best ratings for many insurance entities. Ratings can be revised or withdrawn, so this is a monitored moat, not a permanent entitlement.

2. Per-Segment Moat

Insurance: The Insurance segment's moat is underwriting specialization plus broker distribution plus rated capital. It writes commercial specialty lines across North America and international markets, not a homogeneous product. Durability is credible over five years and plausible over ten years if reserve quality holds, but the 20-year moat is thinner because specialty insurance remains competitive and casualty loss-cost inflation can expose weak underwriting after the premium is earned. What would break it: adverse reserve development in casualty or acquired program business, sustained combined ratios above peers after normalizing for cats, or management chasing top-line growth into softening rates. Earliest observable signs are net written premium growth despite management admitting weak rates, reserve charges, and deterioration in accident-year combined ratios excluding catastrophe and prior-year development.

Reinsurance: The Reinsurance segment has the strongest current underwriting evidence but the most visible cycle exposure. FY2025 Reinsurance net premiums earned were $8.122 billion and underwriting income was $1.558 billion, a 19.2% underwriting margin and 80.8% combined ratio. Q1 2026 net premiums earned fell 9.7% year over year, but underwriting income rose to $441 million and the combined ratio was 75.9%. That is excellent execution, and the willingness to shrink where property catastrophe pricing weakens is a positive moat signal. The durability is strong over five years if Arch preserves discipline through the soft market, yellow over ten years because third-party capital and strong industry results can compress pricing, and uncertain over twenty years because reinsurance capacity is mobile. What would break it: a soft market in which Arch writes for volume, a major cat year combined with underpriced retained aggregate risk, or casualty reinsurance reserve deterioration. Earliest observable signs are falling renewal rates, rising exposure-adjusted probable maximum loss, and net premiums written growing into admitted rate declines.

Mortgage: Mortgage has the highest reported margin but should not be treated as the strongest moat. FY2025 Mortgage net premiums earned were $1.172 billion and underwriting income was $1.000 billion, an 85.3% underwriting margin; Q1 2026 underwriting income was $221 million on $284 million of net premiums earned. The segment benefits from approved counterparties, lender relationships, GSE risk-transfer participation, underwriting data, and regulatory capital rules. However, private mortgage insurance is cyclical, exposed to housing credit, unemployment, home prices, interest-rate-driven origination volume, FHA/VA competition, and GSE program design. Durability is good over five years if credit remains benign, yellow over ten years because the regulatory and housing cycles can change, and weaker over twenty years because the product mix could migrate toward capital markets, government programs, or different credit-risk-transfer structures. Earliest warning signs are rising delinquencies, weaker cure rates, FHA premium cuts, reduced GSE CRT demand, or loss ratios moving up without adequate pricing response.

Blended company view: Arch's blended moat is weaker than the Reinsurance segment's recent margin would suggest. In FY2025, Reinsurance was 47.6% of segment NPE, Insurance was 45.5%, and Mortgage was only 6.9%. Yet Mortgage contributed $1.000 billion of underwriting income, about 34% of segment underwriting income, while Insurance contributed only $375 million. The company is therefore not one pure moated profit pool. It is a portfolio of underwriting engines: one high-margin but cyclical reinsurance book, one large specialty insurance book with narrower margins, and one small but very high-margin mortgage credit book with macro and regulatory sensitivity. The equity moat must be priced off that blend, not off the best current line.

3. Margin Persistence Evidence

Consolidated operating margin has improved materially through the recent hard market. The data package shows operating margin of 19.5% in FY2021, 14.2% in FY2022, 23.4% in FY2023, 25.7% in FY2024, and 25.0% in FY2025. This is good evidence that Arch can earn attractive returns, but it is not a clean proof of enduring pricing power because the period includes a favorable reinsurance cycle, benign mortgage credit, and higher investment income.

Segment margins show the real story. Insurance underwriting margin was 3.2% in FY2021, 4.9% in FY2022, 8.3% in FY2023, 5.2% in FY2024, and 4.8% in FY2025. That is profitable but not dominant. Reinsurance underwriting margin was 5.9%, 8.0%,

18.8%, 16.9%, and 19.2% over the same years, which shows powerful recent margin expansion but also a clear cycle break after 2022. Mortgage underwriting margin was 74.4%, 108.4%, 91.9%, 88.9%, and 85.3%, which is spectacular but partly reflects low current losses, favorable reserve development, and benign housing-credit conditions.

The TTM bridge ending March 31, 2026 shows $16.863 billion of net premiums earned and $3.244 billion of segment underwriting income, a 19.2% underwriting margin across the underwriting segments. Segment TTM underwriting income was Insurance $443 million, Reinsurance $1.832 billion, and Mortgage $969 million. The evidence supports a real underwriting franchise, but the margin mix is too cycle-sensitive for a clean PASS. A true 20-year moat should show profitability through bad reserve, cat, credit, and pricing conditions. The current five-year evidence is strong but not fully cycle-tested for the post-hard-market reinsurance environment and a normalized mortgage credit environment.

4. AI Disruption Stress Test

Insurance is partly workflow and partly chokepoint economics. AI can improve submission triage, policy comparison, claims handling, fraud detection, code migration, actuarial analysis, and expense productivity. A foundation model with access to similar submissions, loss data, and external data could replicate parts of the underwriting workflow, especially in more standardized commercial lines. That means the moat cannot live in the workflow alone. It must live in broker trust, rated capital, claims-paying reputation, underwriting judgment, local market knowledge, risk appetite, and reserve discipline. The most exposed parts are standardized small commercial or program-like underwriting; the most protected are complex specialty risks where terms, exclusions, limits, claims behavior, and loss emergence require judgment and capital commitment.

Reinsurance is more protected from direct AI disintermediation because the economic product is rated balance-sheet capacity against low-frequency, high-severity risks. AI can improve catastrophe modeling, exposure aggregation, cedent data quality checks, contract wording analysis, and scenario testing. It can also reduce informational advantages because cedents, brokers, reinsurers, and alternative capital providers will all use better models. Still, a model cannot by itself post capital, satisfy regulators, pay claims, maintain ratings, or absorb a multi-year loss-development tail. AI is more likely to compress weak underwriting advantages than eliminate the need for reinsurers.

Mortgage is the most AI-exposed workflow because mortgage credit scoring, fraud detection, borrower analytics, collateral valuation, and servicing behavior can become more automated and more widely available. But the value pool is still tied to regulated capital, approved counterparty status, and the willingness to absorb mortgage-credit losses. AI could help Arch price loans and manage delinquencies, while also helping lenders, GSEs, FHA/VA, and capital-market alternatives compete. The most protected segment is Reinsurance because the product is closest to chokepoint economics: scarce, rated, regulated risk capital in stressed scenarios. The most exposed is Mortgage because standardized credit analytics and policy/regulatory changes can redirect economics away from private mortgage insurers.

5. The 2046 Test

Twenty years after 2026-05-29 is 2046-05-29. In a credible 2046 description, Arch Capital Group Ltd. is still a global specialty insurance, reinsurance, and mortgage-credit risk company. It sells rated promises to absorb complex commercial, catastrophe, casualty, specialty, and mortgage-credit risks. Its buyers are global brokers, commercial insureds, cedents, mortgage lenders, GSE-like housing-finance platforms, and institutional counterparties that need claims-paying capacity and underwriting judgment. Insurance and Reinsurance still exist; Mortgage likely exists, but with a changed mix across U.S. primary MI, CRT, international mortgage reinsurance, and capital-market-linked credit products. The 2046 operating margin is likely lower than the FY2023-FY2026 peak period but still attractive if underwriting culture, ratings, and capital allocation remain intact. The intact moat would be a high-trust procurement moat: ratings, capital strength, broker and cedent relationships, accumulated underwriting data, reserve discipline, and the ability to shift capital away from underpriced risks.

That description is specific enough to avoid a 2046 FAIL, but it is not strong enough for a 2046 PASS. The reason is that the core moat depends on repeated execution in cyclical markets rather than on structural lock-in. A software network with embedded workflows can survive mediocre management for a while; a specialty insurer cannot. If Arch under-reserves casualty, chases catastrophe volume in a soft market, misprices mortgage credit, or loses rating strength, the franchise can weaken quickly. The moat has to be re-earned every cycle.

The 2046 bear case is straightforward. Alternative capital, better modeling, and abundant industry capacity compress reinsurance margins; commercial insurance brokers and insureds use AI-enabled placement tools to make price and terms more transparent; casualty inflation and social inflation reveal under-reserved accident years; mortgage insurance economics migrate toward GSE balance sheets, FHA/VA, funded credit investors, or securitized CRT structures; and a major reserve or

catastrophe event pressures ratings. In that world Arch still exists, but it earns commodity insurer returns on a larger balance sheet and buys back stock to offset low organic opportunity. Probability: material but not base case. The base case is durable relevance; the unresolved question is durable excess returns.

6. Competitive Threat Inventory

Threat	Mechanism	Segment(s) affected	Earliest observable signal	Plausibility
Reinsurance soft market	Traditional and third-party capital push rates and terms below adequate returns	Reinsurance	Falling renewal rates plus Arch growing net premiums written anyway	High
Reserve/casualty inflation	Loss costs emerge above booked reserves after premiums are earned	Insurance, Reinsurance	Adverse prior-year development and rising accident-year combined ratios	Medium-high
Mortgage credit/regulatory reset	Housing stress, FHA/VA pricing, GSE CRT changes, or funded-credit alternatives reduce private MI economics	Mortgage	Rising delinquencies, lower cure rates, FHA premium cuts, reduced CRT demand	Medium
Ratings or capital shock	Catastrophe, reserve, investment, or credit event weakens claims-paying confidence	All	Negative rating outlook, higher collateral demands, broker flow loss	Medium
AI-enabled commoditization	Better analytics reduce underwriting differentiation and make submissions more price-transparent	Insurance, Mortgage	Higher hit rates for lower-priced competitors and expense-ratio pressure without margin offset	Medium

7. Pricing Power Verification

Pricing power is observable, but not absolute. The strongest evidence is not that Arch can always raise price; it is that management is willing to sacrifice volume when pricing weakens. Q1 2026 Reinsurance net premiums earned fell 9.7% year over year, and the company attributed lower net premiums written partly to reduced property catastrophe business at January 1. Q1 2026 Insurance net premiums written were down 1.4% year over year, with management calling out non-renewal of certain programs related to the middle-market commercial acquisition. The data package also cites management's phrase "profitability over volume" for Insurance and describes a competitive reinsurance environment. That is pricing discipline, which is the right form of pricing power for insurance.

Segment margin stability is mixed. Reinsurance combined ratios around 80% in FY2025 and 75.9% in Q1 2026 show very strong current profitability, but Q1 2026 benefited from lower catastrophe activity and favorable prior-year development. Insurance's FY2025 combined ratio was 95.2% and Q1 2026 was 96.5%, profitable but not a wide cushion. Mortgage's Q1 2026 combined ratio of 22.3% and FY2025 combined ratio of 14.6% are excellent, but the Q1 release says favorable prior-year reserve development reduced the mortgage loss ratio by 19.2 points, mainly due to better than expected cure rates. That is not a recurring price increase; it is favorable credit behavior.

Contract structure provides some protection but not software-like escalators. Insurance and reinsurance contracts renew, repricing depends on market conditions, and cedents can change shares, retentions, or counterparties. Mortgage insurance has policy persistency and regulatory/counterparty structure, but new insurance written is exposed to origination volume, competition, premium rates, and capital rules. Therefore pricing power should be graded yellow/green: visible in discipline and high-trust procurement, weak if interpreted as unilateral price control.

8. Moat Verdict

Moat gate: YELLOW. Arch has a real underwriting franchise built on high-trust procurement, ratings, scale, broker and cedent relationships, analytics, and cycle discipline, but the evidence is not strong enough for a hard PASS because the largest profit pools remain cyclical and competition is intense.

2046 test: YELLOW. A specific 2046 Arch can be described as a global rated risk-capital platform selling specialty insurance, reinsurance, and mortgage-credit protection, but durable excess returns require continued underwriting discipline, reserve adequacy, ratings strength, and avoidance of commodity growth.

The best moat evidence is Reinsurance's recent margins combined with management's willingness to shrink in a softer market, plus Mortgage's approved-counterparty and credit-risk-transfer position. The main caution is that Insurance margins are narrow, Reinsurance margins are cycle-aided, and Mortgage margins are credit-cycle aided. Arch looks more like an

excellent, disciplined underwriter in cyclical insurance markets than a company with a permanently protected profit pool. Observable upgrade signals would be continued book-value compounding through a soft reinsurance market, no meaningful adverse reserve development, and mortgage profitability through a normal credit loss cycle. Downgrade signals would be growth into weak rates, ratings pressure, repeated adverse reserve development, or mortgage loss ratios normalizing sharply without adequate pricing response.

Sources used include the cleared quant foundation and data package in `C:\Users\Admin\OneDrive\GPT\ER 2.0\Arch Capital`, fresh live FMP calls to `quote`, `revenue-product-segmentation`, and `ratios` for ACGL, Arch's 2025 Form 10-K at https://www.sec.gov/Archives/edgar/data/947484/000094748426000017/acgl-20251231.htm, Arch's Q1 2026 Form 10-Q at https://www.sec.gov/Archives/edgar/data/947484/000094748426000058/acgl-20260331.htm, Arch's Q1 2026 earnings release at https://ir.archgroup.com/news/news-details/2026/Arch-Capital-Group-Ltd--Reports-2026-First-Quarter-Results/default.aspx, and Arch's current credit-ratings page at https://ir.archgroup.com/financials/credit-ratings/default.aspx.

Appendix B1 - Reinsurance

Reinsurance - Segment Deep Dive

All dollar amounts are USD billions unless stated otherwise. Segment revenue means net premiums earned, and segment profit means underwriting income. Investment income is not allocated to Arch Capital Group Ltd.'s underwriting segments, so "operating income" in this appendix means segment underwriting income for modeling consistency with the cleared quantitative foundation and data package.

0. Segment Boundary And Taxonomy Note

Arch's current Reinsurance segment writes reinsurance products on a worldwide basis and is part of the stable three-segment current taxonomy used for FY2023 through FY2025. The data package states that the current reportable segments are Insurance, Reinsurance, and Mortgage, and that the current three-segment structure was stable across FY2023-FY2025, while FY2021 included an "Other / discontinued presentation" line and is not a perfect current-taxonomy comparison [data_package Section 1]. For this appendix, FY2023-FY2025 product-line dollar comparisons use the current taxonomy only. FY2021-FY2022 segment totals are useful cycle context, but I do not force the old FY2021 "Other" presentation into Reinsurance.

1. What This Segment Actually Is

Reinsurance is the part of Arch that sells insurance to insurers. The customer is not a homeowner or a manufacturer buying a primary policy; it is a cedent, usually a primary insurer, specialty insurer, mutual, or other insurance carrier that wants to transfer part of its underwriting risk to Arch. The cedent may want to protect its own balance sheet against a large hurricane, earthquake, wildfire, aviation loss, marine event, casualty reserve shock, or accumulation of attritional losses. Arch receives premium, accepts a defined share of risk, and earns underwriting income if the premium and investment float compensate for expected losses, acquisition costs, operating expenses, retrocession costs, capital consumed, and tail risk.

Arch discloses six Reinsurance product lines in the SEC 2025 Form 10-K product table reproduced in the data package: Other specialty, Property excluding property catastrophe, Casualty, Property catastrophe, Marine and aviation, and Other products [data_package Section 4, SEC 2025 10-K XBRL PremiumsEarnedNet]. Other specialty was the largest FY2025 product line at $2.906 billion, or roughly 35.8% of Reinsurance FY2025 net premiums earned. Property excluding property catastrophe was second at $2.252 billion, or 27.7%. Casualty contributed $1.432 billion, property catastrophe contributed $1.065 billion, marine and aviation contributed $0.317 billion, and other products contributed $0.150 billion [data_package Section 4, SEC 2025 10-K XBRL PremiumsEarnedNet].

The pricing model varies by treaty and line. Property catastrophe business is typically priced around modeled event losses, occurrence probability, attachment point, limit, reinstatement terms, aggregate exposure, and the market price of capital at renewal. Property excluding catastrophe has more attritional and non-cat volatility, but still carries event risk and requires attention to terms, exclusions, inflation, and valuation. Casualty reinsurance is longer-tail: the premium is earned well before the final claim cost is known, so pricing power depends heavily on loss-cost inflation, social inflation, cedent underwriting quality, reserving discipline, and contract wording. Specialty, marine, and aviation can carry very lumpy single-risk or event exposures, so Arch's advantage comes from line expertise, aggregation control, and willingness to shrink when risk-adjusted pricing is not adequate.

Go-to-market is relationship-driven and renewal-cycle driven. Arch sells through reinsurance brokers and direct cedent relationships, and capacity is allocated at key January, April, June, and July renewal points. The product is capital, underwriting judgment, claims credibility, and speed of execution. That is why the segment cannot be judged simply by premium growth. A high-quality reinsurer can create value by writing less premium when prices soften, by moving up in attachment points, by tightening terms, by buying retrocession, or by shifting toward lines where expected risk-adjusted return is still attractive. The Q1 2026 data package commentary says management expects the reinsurance market to remain competitive, while also saying Arch still sees selected catastrophe zones that are "still green" [data_package Section 6, Reinsurance table]. That is the right frame: Reinsurance is a capital allocation business, not a pure volume business.

2. Current Economics

Reinsurance is Arch's largest underwriting segment by FY2025 net premiums earned. The data package handoff identifies FY2025 Reinsurance net premiums earned of $8.122 billion, or 47.6% of Arch's $17.065 billion segment net premiums earned

[data_package Data handoff, sourced to SEC 2025 10-K / FMP annual segment endpoint]. Insurance was $7.771 billion, or 45.5%, and Mortgage was $1.172 billion, or 6.9% [data_package Section 1, SEC 2025 10-K / FMP annual segment endpoint]. Reinsurance also generated the largest underwriting income of the three operating segments in FY2025: $1.558 billion, a 19.2% underwriting margin, versus Insurance at $0.375 billion and Mortgage at $1.000 billion [data_package Section 3, 2025 and 2023 10-K segment tables].

On a TTM basis ending March 31, 2026, the segment is smaller in revenue but more profitable in margin. The quant foundation constructs TTM Reinsurance net premiums earned as FY2025 $8.122 billion less Q1 2025 $2.028 billion plus Q1 2026 $1.831 billion, for $7.925 billion [quant_foundation P4]. TTM underwriting income is FY2025 $1.558 billion less Q1 2025 $0.167 billion plus Q1 2026 $0.441 billion, for $1.832 billion [quant_foundation P4]. That is a TTM underwriting margin of 23.1%, materially above the FY2025 margin of 19.2%. The most recent quarter shows the tension in the model: Q1 2026 Reinsurance net premiums earned declined 9.7% year over year to $1.831 billion, but underwriting margin was still 24.1% [data_package Section 5].

The current economic picture is therefore not "growth broke." It is "premium volume is being rationed while underwriting margins remain excellent." The product-level 2023-2025 data supports this interpretation. From FY2023 to FY2025, Reinsurance net premiums earned grew from $5.836 billion to $8.122 billion, a two-year CAGR of 18.0% [data_package Section 3]. But growth slowed sharply: FY2023 revenue was up 47.4%, FY2024 was up 24.1%, and FY2025 was up 12.2% [data_package Section 3]. The latest quarterly trend then moved negative. At the same time, margins expanded from 18.8% in FY2023 to 19.2% in FY2025 and 23.1% on the TTM bridge [data_package Section 3; quant_foundation P4].

Capital intensity is insurance capital intensity, not fixed-asset intensity. The data package shows FY2025 capex of only $0.044 billion at the company level, or 0.2% of consolidated revenue, with R&D not separately disclosed [data_package Section 7]. Reinsurance's true capital cost sits in required equity, rating-agency capital, risk-based capital, retrocession purchases, liquidity for claims, and the risk that reserves or modeled catastrophe losses prove inadequate. Arch had $47.700 billion of cash plus investments at Q1 2026 and $34.105 billion of reserves for losses and LAE [data_package Data handoff; data_package Section 8]. Reinsurance can be a very high-return business when underwriting is disciplined, but it is not capital-light in the software sense. The underwriting margin should be read together with catastrophe exposure, reserving tail, balance-sheet quality, and management's willingness to walk away from softening business.

3. Unit Economics

The Reinsurance income statement begins with ceded premiums from other insurers and ends with underwriting income after losses, loss adjustment expenses, acquisition expenses, and other underwriting expenses. Unlike an industrial business, the largest "cost of goods sold" is not known when the sale is made. Arch books expected losses and LAE, then adjusts reserves as claims develop. That means a strong underwriting margin can reflect both current accident-year pricing and favorable prior-year development. Conversely, weak pricing may not fully show up until later reserve years, especially in casualty.

Property catastrophe has the clearest unit economics but the harshest volatility. A treaty may have low expected loss in a normal year and a very high loss in an event year. Attractive pricing requires the cedent to pay enough premium for expected modeled loss, uncertainty around the model, operating expense, retrocession cost, and a high capital charge. Attachment point matters: business written higher in the tower can have less attritional loss but more binary event risk, while lower layers can be hit more frequently. Retrocession can reduce net volatility, but it also reduces retained economics, and the cost of retrocession often rises when Arch most wants it.

Casualty reinsurance has different unit economics. It can look stable in premium and combined ratio, but the reserve tail is longer and more sensitive to social inflation, litigation funding, medical inflation, and judicial trends. The underwriting profit is not proven in the year of sale. Arch's casualty product line grew from $1.005 billion in FY2023 to $1.432 billion in FY2025, with FY2025 up 31.6% year over year [data_package Section 4]. That growth can be attractive if Arch is being paid adequately and has confidence in cedent underwriting, but the forward model should not capitalize recent casualty growth at the same margin as short-tail property. In my base case, casualty remains a growth line but carries a below-segment normalized underwriting margin because reserve risk is harder to validate at the current point in the cycle.

Specialty, marine, aviation, and non-cat property sit between those extremes. Other specialty is the largest product line and grew from $2.097 billion in FY2023 to $2.906 billion in FY2025 [data_package Section 4]. It has attractive niches, but it is not immune to capital inflows. Marine and aviation is small, at $0.317 billion in FY2025, but can generate idiosyncratic large losses [data_package Section 4]. Property excluding property catastrophe grew only 4.8% in FY2025 after strong FY2024 growth, which is consistent with a market moving from hard to more competitive [data_package Section 4].

Margins break upward when pricing exceeds loss-cost inflation, attachment points improve, terms tighten, retrocession is available at reasonable cost, catastrophe frequency is benign, and prior-year reserves develop favorably. Margins break downward when cedents retain more profitable layers, alternative capital compresses property-cat pricing, casualty loss trends outrun booked assumptions, secondary perils are under-modeled, or Arch accepts too much premium volume to defend market share. The most important positive evidence is that Q1 2026 Reinsurance underwriting margin was 24.1% even with net premiums earned down 9.7% year over year [data_package Section 5]. The most important caution is that a softening cycle often first shows up in lower volume and then later in lower margin, not always simultaneously.

4. Competitive Dynamics

Reinsurance is a global market with sophisticated competitors and a relatively transparent renewal process. Arch competes with dedicated global reinsurers such as Munich Re, Swiss Re, Hannover Re, RenaissanceRe, Everest, PartnerRe, SCOR, Axis, and Validus-type platforms, as well as large insurers that write assumed reinsurance opportunistically. It also competes with third-party capital through insurance-linked securities, catastrophe bonds, sidecars, collateralized reinsurance, and other alternative capital vehicles. The practical competitor is not only another rated reinsurer; it is any capital provider willing to accept the same risk at a lower required return.

Pricing power is cyclical rather than absolute. Reinsurers had strong pricing power after years of catastrophe losses, inflation pressure, and capital-market losses tightened supply. That hard-market tailwind is visible in Arch's Reinsurance growth: net premiums earned rose 39.4% in FY2022, 47.4% in FY2023, 24.1% in FY2024, and 12.2% in FY2025 [data_package Section 3]. However, management's Q1 2026 commentary describes a market that is now competitive, helped by strong industry results, traditional capital, and third-party capital [data_package Section 6]. The model should therefore assume Arch gives back some growth as market capital returns.

Entry barriers are real but not impregnable. Rated balance sheet, broker relationships, actuarial data, underwriting teams, claims reputation, licensing, and cedent trust create barriers. Arch's advantage is not that no one else can write reinsurance; many can. The advantage is that Arch has the scale, franchise credibility, and underwriting culture to be shown attractive business and to choose where it wants to deploy capital. That choice is valuable because poor reinsurers can grow quickly at the wrong price. The largest danger is not loss of access to business; it is overconfidence in modeled risk when the market offers too much premium volume.

Substitution risk is highest in property catastrophe. Cat bonds and collateralized structures can replace rated balance-sheet reinsurance in some layers, particularly when investors are willing to accept modeled catastrophe risk for attractive spreads. That can pressure price in peak zones and upper layers. It can also benefit Arch if the company uses third-party capital or retrocession to manage net exposure. Casualty is less easily substituted by cat bonds because the tail is long and loss emergence is less parametric. Specialty risk varies by line. The more bespoke the exposure and the more important claims and contract wording are, the more value a rated, experienced reinsurer can retain.

5. Segment-Level Moat

The Reinsurance segment has a moderate moat, but it is a discipline moat rather than a monopoly moat. The durable advantages are underwriting culture, risk selection, data, broker and cedent relationships, capital strength, rating credibility, global licensing, and the ability to deploy capacity across cycles. The data package's management commentary supports this discipline-oriented moat: Arch is not balance-sheet constrained, but return thresholds control growth [data_package Section 6]. That is exactly what a good reinsurer's moat should look like in a softer market.

The moat is strongest where underwriting judgment and portfolio construction matter more than generic capacity. Specialty, casualty selection, non-cat property terms, and zone-by-zone catastrophe appetite can reward a franchise that knows when to say no. The moat is weaker where pricing is commoditized and third-party capital can underwrite modeled peak risk with lower friction. Catastrophe reinsurance is still attractive in the right layers and zones, but it should not be modeled as permanently high-growth and high-margin simply because FY2023-FY2025 were strong years.

Durability over five to ten years depends on cycle behavior. Arch's Reinsurance margin history is striking: underwriting margin rose from 5.9% in FY2021 to 8.0% in FY2022, 18.8% in FY2023, 16.9% in FY2024, and 19.2% in FY2025 [data_package Section 3]. That is not a normal steady-state industrial margin expansion. It reflects a powerful hard-market period, favorable underwriting execution, and likely benign enough loss experience in the periods measured. A moat view that simply extrapolates 20%+ underwriting margins would be fragile. A more durable view is that Arch can normalize above many peers through cycle, but the current TTM margin of 23.1% should fade in base and bear cases unless the hard market unexpectedly persists.

My segment-level conclusion is that Reinsurance is high quality but cyclical. It deserves a premium to average insurance underwriting because management has shown restraint and the business is diversified across specialty, property, casualty, and catastrophe. It does not deserve a software-like multiple of current margin. The base case assumes Arch protects profitability by letting premium shrink in weaker lines and grow only where returns remain adequate.

6. Historical Growth Rates

The table below reproduces current-taxonomy Reinsurance historicals from the data package. Product-line dollars are disclosed for FY2023-FY2025 only, so the product CAGR shown is the FY2023-to-FY2025 two-year CAGR across the three disclosed fiscal-year observations. No product-level back-solving is used. Segment FY2021-FY2022 history exists in Section 3, but the required product table below uses the dollar-disclosed product rows from Section 4. Every revenue cell cites the data-package row source.

Product / sub-segment	FY-3 rev	FY-2 rev	FY-1 rev	FY2023-FY2025 CAGR	Most recent YoY	Data package cite
Reinsurance total	$5.836 [data_package Section 3, Reinsurance revenue row]	$7.242 [data_package Section 3, Reinsurance revenue row]	$8.122 [data_package Section 3, Reinsurance revenue row]	18.0% [calc from Section 3 row]	12.2% [data_package Section 3, Reinsurance YoY row]	data_package Section 3; 2025 and 2023 10-K segment tables; FMP annual segment endpoint
Other specialty	$2.097 [data_package Section 4, Reinsurance Other specialty row]	$2.619 [data_package Section 4, Reinsurance Other specialty row]	$2.906 [data_package Section 4, Reinsurance Other specialty row]	17.7% [calc from Section 4 row]	11.0% [calc from Section 4 row]	data_package Section 4; SEC 2025 10-K XBRL PremiumsEarnedNet
Property excluding property catastrophe	$1.645 [data_package Section 4, Reinsurance Property excluding property catastrophe row]	$2.148 [data_package Section 4, Reinsurance Property excluding property catastrophe row]	$2.252 [data_package Section 4, Reinsurance Property excluding property catastrophe row]	17.0% [calc from Section 4 row]	4.8% [calc from Section 4 row]	data_package Section 4; SEC 2025 10-K XBRL PremiumsEarnedNet
Casualty	$1.005 [data_package Section 4, Reinsurance Casualty row]	$1.088 [data_package Section 4, Reinsurance Casualty row]	$1.432 [data_package Section 4, Reinsurance Casualty row]	19.4% [calc from Section 4 row]	31.6% [calc from Section 4 row]	data_package Section 4; SEC 2025 10-K XBRL PremiumsEarnedNet
Property catastrophe	$0.742 [data_package Section 4, Reinsurance Property catastrophe row]	$0.959 [data_package Section 4, Reinsurance Property catastrophe row]	$1.065 [data_package Section 4, Reinsurance Property catastrophe row]	19.8% [calc from Section 4 row]	11.1% [calc from Section 4 row]	data_package Section 4; SEC 2025 10-K XBRL PremiumsEarnedNet
Marine and aviation	$0.229 [data_package Section 4, Reinsurance Marine and aviation row]	$0.276 [data_package Section 4, Reinsurance Marine and aviation row]	$0.317 [data_package Section 4, Reinsurance Marine and aviation row]	17.7% [calc from Section 4 row]	14.9% [calc from Section 4 row]	data_package Section 4; SEC 2025 10-K XBRL PremiumsEarnedNet
Other products	$0.118 [data_package Section 4, Reinsurance Other products row]	$0.152 [data_package Section 4, Reinsurance Other products row]	$0.150 [data_package Section 4, Reinsurance Other products row]	12.7% [calc from Section 4 row]	-1.3% [calc from Section 4 row]	data_package Section 4; SEC 2025 10-K XBRL PremiumsEarnedNet

Arithmetic tie-out: Reinsurance total FY2024 to FY2025 is $7.242B x 1.122 = $8.126B, which rounds to the disclosed $8.122B. Other specialty is $2.619B x 1.110 = $2.907B, tying to $2.906B after rounding. Property excluding property catastrophe is $2.148B x 1.048 = $2.251B, tying to $2.252B. Casualty is $1.088B x 1.316 = $1.432B. Property catastrophe is $0.959B x 1.111 = $1.065B. Marine and aviation is $0.276B x 1.149 = $0.317B. Other products is $0.152B x 0.987 = $0.150B. All rows satisfy the dispatch arithmetic check within 2%.

The historical lesson is that FY2023-FY2025 were unusually strong. Every disclosed product line except Other products grew at a double-digit FY2023-to-FY2025 CAGR. But the most recent quarterly segment trend is already negative, with Q1 2026 Reinsurance net premiums earned down 9.7% year over year [data_package Section 5]. The base case therefore uses the product table as evidence of franchise strength but not as a straight-line growth algorithm.

7. Management Guidance

The data package includes four Reinsurance-specific management comments from the Q1 2026 call. I treat these as the main management anchor because the latest reported quarter is Q1 2026.

First, Nicolas Papadopoulo said he expects the "market to remain competitive" regarding mid-year renewals [data_package Section 6, Reinsurance table]. The modeling interpretation is that recent Reinsurance growth rates should not be extrapolated. The explicit risk is property catastrophe and short-tail reinsurance, where capital supply can re-enter quickly after strong industry results.

Second, management cited the "fourth straight quarter of sub 80% combined ratios" [data_package Section 6, Reinsurance table]. That supports the current quality of the book and argues against an immediate collapse in margin. It also means the bear case should be driven by normalized losses and pricing pressure, not by assuming Arch is already writing bad business.

Third, management said there are "a bunch of them that are still green" when discussing catastrophe zone selection [data_package Section 6, Reinsurance table]. The interpretation is selective appetite, not blanket retreat. Arch can still write cat risk where model loss, attachment, terms, and price clear the return hurdle. This is why the base case does not assume property catastrophe disappears; it assumes a smaller, more selective book.

Fourth, Francois Morin said the "balance sheet remains in excellent health" [data_package Section 6, Reinsurance table]. The interpretation is that growth is not capital-constrained. If Reinsurance premium declines, it is more likely because management sees weaker returns than because Arch lacks capacity. That matters for the bull case: if pricing stays attractive, Arch has the capital credibility to deploy.

[DATA GAP: The data package does not include explicit FY2026 segment-level premium guidance or product-level growth guidance for Reinsurance. It provides qualitative cycle commentary and quarterly actuals, so the forward model uses those qualitative anchors rather than a company-provided numeric guide.]

8. Forward Growth Assumptions

The TTM product starting point is a model allocation, not a disclosed quarterly product table. The official control total is TTM Reinsurance net premiums earned of $7.925 billion [quant_foundation P4]. Because quarterly product-line revenue below segment level is not consistently disclosed, I allocate that TTM total using FY2025 product mix from the 2025 10-K product-line table in the data package. The resulting modeled TTM starts are: Other specialty $2.836 billion, Property excluding property catastrophe $2.197 billion, Casualty $1.397 billion, Property catastrophe $1.039 billion, Marine and aviation $0.309 billion, and Other products $0.146 billion. [DATA GAP: Quarterly product-level Reinsurance revenue below segment level is not disclosed consistently in the data package.]

Base Case Growth

Product	FY2023-FY2025 CAGR	Latest YoY	Mgmt FY+1 guide	Base CAGR TTM to TTM+5y	Justification
Other specialty	17.7%	11.0%	Competitive market, selective growth	4.0%	Specialty remains the largest line, but base growth fades as cycle pricing normalizes and Arch prioritizes return over volume.
Property excluding property catastrophe	17.0%	4.8%	Competitive market	1.0%	Latest YoY already slowed to mid-single digits, and non-cat property faces rate pressure after hard-market expansion.
Casualty	19.4%	31.6%	No numeric guide	5.0%	Arch can grow selected casualty, but long-tail reserve risk and social inflation justify a sharp slowdown from FY2025.
Property catastrophe	19.8%	11.1%	Selective zones still green	-2.0%	Cat capacity is more competitive, so Arch shrinks net exposure while retaining attractive zones.
Marine and aviation	17.7%	14.9%	No numeric guide	3.0%	Niche specialty growth continues, but the line is small and loss volatility limits appetite.
Other products	12.7%	-1.3%	No numeric guide	0.0%	This line is small and already flat to down, so base assumes no meaningful growth contribution.

Base case segment revenue CAGR is 2.5% from TTM to TTM+5y. That is much lower than the FY2023-FY2025 product CAGRs because the starting point includes Q1 2026's 9.7% year-over-year decline and management's competitive-market commentary. The base case does not assume Arch loses relevance. It assumes Arch deliberately sacrifices growth in the most price-sensitive lines while casualty and specialty provide modest expansion.

Bull Case Growth

Product	FY2023-FY2025 CAGR	Latest YoY	Mgmt FY+1 guide	Bull CAGR TTM to TTM+5y	Justification
Other specialty	17.7%	11.0%	Selective opportunities remain	7.0%	Arch keeps access to profitable specialty treaties and benefits from cedents valuing rated capacity.

Product	FY2023-FY2025 CAGR	Latest YoY	Mgmt FY+1 guide	Bull CAGR TTM to TTM+5y	Justification
Property excluding property catastrophe	17.0%	4.8%	Competitive but not broken	4.0%	Pricing softens less than feared, and Arch holds share in better-structured non-cat property layers.
Casualty	19.4%	31.6%	No numeric guide	8.0%	Casualty growth persists where terms reflect loss-cost inflation and Arch trusts cedent quality.
Property catastrophe	19.8%	11.1%	Some zones still green	3.0%	Alternative capital does not fully compress returns, allowing modest cat growth from a reduced risk appetite.
Marine and aviation	17.7%	14.9%	No numeric guide	5.0%	Specialty demand remains firm and Arch uses expertise to grow without stretching limits.
Other products	12.7%	-1.3%	No numeric guide	2.0%	Small lines recover slightly but remain immaterial.

The bull case is not a return to 18% segment growth. It is a scenario where the market stays rational enough for Arch to compound Reinsurance NPE at 5.7% for five years while maintaining attractive risk-adjusted returns. The main drivers are continued cedent demand, disciplined alternative capital, and Arch finding enough specialty and casualty business at adequate terms.

Bear Case Growth

Product	FY2023-FY2025 CAGR	Latest YoY	Mgmt FY+1 guide	Bear CAGR TTM to TTM+5y	Justification
Other specialty	17.7%	11.0%	Market competitive	0.0%	Specialty pricing normalizes and Arch refuses unattractive volume, leaving the book flat.
Property excluding property catastrophe	17.0%	4.8%	Market competitive	-3.0%	Cedents retain more risk and price competition reduces Arch's acceptable share.
Casualty	19.4%	31.6%	No numeric guide	1.0%	Arch slows long-tail growth as loss-cost uncertainty and reserve risk rise.
Property catastrophe	19.8%	11.1%	Selectivity required	-8.0%	Alternative capital and cedent retention compress returns, forcing a meaningful cat pullback.
Marine and aviation	17.7%	14.9%	No numeric guide	0.0%	Arch keeps the niche book but does not press growth into weaker terms.
Other products	12.7%	-1.3%	No numeric guide	-2.0%	Small residual lines decline with portfolio pruning.

Bear case segment revenue declines at a 1.6% CAGR from TTM to TTM+5y. This is not a distress case for Arch Capital as a company; it is a soft-reinsurance-cycle case where the correct decision is to shrink risk rather than write for volume. The downside is that fixed underwriting talent and franchise infrastructure still need to be supported, while loss volatility can hit a smaller premium base.

9. Forward Operating Margin Assumptions

Arch's current Reinsurance margin is excellent. FY2025 underwriting margin was 19.2%, Q1 2026 was 24.1%, and TTM margin was 23.1% using the official bridge [data_package Section 3; data_package Section 5; quant_foundation P4]. The product-level underwriting margins are not disclosed. I therefore model product-level TTM+5 margins based on line economics and force the weighted average to reconcile to the segment rollup. [DATA GAP: Product-level Reinsurance underwriting income and margin are not disclosed in the data package.]

Product	Current product margin	Base TTM+5 margin	Bull TTM+5 margin	Bear TTM+5 margin	Margin mechanism
Other specialty	N/D	20.0%	24.0%	14.0%	Specialty remains profitable, but competition and normal losses reduce margin from TTM segment peak.

Product	Current product margin	Base TTM+5 margin	Bull TTM+5 margin	Bear TTM+5 margin	Margin mechanism
Property excluding property catastrophe	N/D	16.0%	21.0%	10.0%	Non-cat property loses some hard-market pricing power and faces inflation in repair and replacement costs.
Casualty	N/D	15.0%	20.0%	8.0%	Long-tail reserve risk earns a lower normalized margin despite growth opportunity.
Property catastrophe	N/D	22.0%	30.0%	5.0%	Cat can be highly profitable in good years, but the bear case embeds soft pricing and event losses.
Marine and aviation	N/D	17.0%	22.0%	11.0%	Niche underwriting remains attractive but has large-loss volatility.
Other products	N/D	12.0%	16.0%	6.0%	Small residual lines carry lower confidence and less scale benefit.
Reinsurance weighted average	23.1% TTM segment	17.9%	22.9%	10.7%	Weighted rollup from product revenue and margin assumptions.

The base margin of 17.9% is below FY2025 and TTM, despite positive mix discipline. The mechanism is normalization: lower property-cat rate adequacy, lower short-tail pricing power, less favorable loss experience than the recent sub-80% combined-ratio run, and a more cautious casualty reserve margin. This is a reduction of roughly 520 bps from the TTM 23.1% margin, which is intentionally material because the TTM figure includes an exceptionally strong Q1 2026 underwriting result.

The bull margin of 22.9% is close to the current TTM margin but does not exceed it materially. To justify a higher number, the model would need explicit evidence that recent sub-80% combined ratios are sustainable across a full softening cycle. The data package does not provide that. Bull instead assumes Arch keeps the book near current quality through risk selection, disciplined retrocession, and continued favorable specialty and cat terms.

The bear margin of 10.7% is not a catastrophe wipeout year. A single major event year could be worse. It is a normalized five-year endpoint in which property pricing softens, casualty reserve confidence fades, and one or more loss years reduce underwriting profitability. Because the endpoint is March 31, 2031 rather than a one-year stress test, I do not set the bear margin to zero. The segment remains profitable but much less so.

10. Segment Rollup

The rollup starts from the official TTM Reinsurance net premiums earned of $7.925 billion and allocates that total to product lines using FY2025 product mix, because product-level quarterly data is not disclosed. Each case then compounds product revenue for exactly five years to the March 31, 2031 forward horizon and multiplies by the product margin from Section 9. Totals reconcile to the product-level assumptions within rounding.

Base Case Rollup

Product	Modeled TTM revenue	Base CAGR	TTM+5 revenue	TTM+5 margin	TTM+5 underwriting income
Other specialty	$2.836	4.0%	$3.450	20.0%	$0.690
Property excluding property catastrophe	$2.197	1.0%	$2.309	16.0%	$0.370
Casualty	$1.397	5.0%	$1.783	15.0%	$0.267
Property catastrophe	$1.039	-2.0%	$0.939	22.0%	$0.207
Marine and aviation	$0.309	3.0%	$0.359	17.0%	$0.061
Other products	$0.146	0.0%	$0.146	12.0%	$0.018
Reinsurance total	$7.925	2.5%	$8.987	17.9%	$1.612

Bull Case Rollup

Product	Modeled TTM revenue	Bull CAGR	TTM+5 revenue	TTM+5 margin	TTM+5 underwriting income
Other specialty	$2.836	7.0%	$3.977	24.0%	$0.954
Property excluding property catastrophe	$2.197	4.0%	$2.673	21.0%	$0.561

Product	Modeled TTM revenue	Bull CAGR	TTM+5 revenue	TTM+5 margin	TTM+5 underwriting income
Casualty	$1.397	8.0%	$2.053	20.0%	$0.411
Property catastrophe	$1.039	3.0%	$1.205	30.0%	$0.361
Marine and aviation	$0.309	5.0%	$0.395	22.0%	$0.087
Other products	$0.146	2.0%	$0.162	16.0%	$0.026
Reinsurance total	$7.925	5.7%	$10.464	22.9%	$2.401

Bear Case Rollup

Product	Modeled TTM revenue	Bear CAGR	TTM+5 revenue	TTM+5 margin	TTM+5 underwriting income
Other specialty	$2.836	0.0%	$2.836	14.0%	$0.397
Property excluding property catastrophe	$2.197	-3.0%	$1.887	10.0%	$0.189
Casualty	$1.397	1.0%	$1.469	8.0%	$0.117
Property catastrophe	$1.039	-8.0%	$0.685	5.0%	$0.034
Marine and aviation	$0.309	0.0%	$0.309	11.0%	$0.034
Other products	$0.146	-2.0%	$0.132	6.0%	$0.008
Reinsurance total	$7.925	-1.6%	$7.318	10.7%	$0.779

The base rollup produces TTM+5 Reinsurance revenue of $8.987 billion and underwriting income of $1.612 billion. That underwriting income is below the current TTM $1.832 billion even though revenue is higher, because the model assumes margins normalize from 23.1% to 17.9%. This is the central forecast tension: Arch's Reinsurance franchise can be excellent while current earnings are still above normalized through-cycle economics.

The bull rollup produces $10.464 billion of TTM+5 revenue and $2.401 billion of underwriting income. This requires a still-attractive market, continued specialty and casualty growth, and property-cat pricing that remains adequate despite alternative capital. The bear rollup produces $7.318 billion of revenue and $0.779 billion of underwriting income. That case is driven more by margin compression than by revenue decline, which is consistent with reinsurance cycles where a smaller book can still generate poor economics if loss assumptions and pricing reset unfavorably.

11. Key Risks And Wildcards

Bear case risk: property catastrophe pricing can soften faster than modeled. Management already expects the market to remain competitive [data_package Section 6]. If alternative capital expands aggressively, Arch may either shrink faster than the bear case or retain business at lower expected returns. The right economic choice may be to shrink, but the reported segment would lose premium scale.

Bear case risk: casualty reserves can be wrong for a long time before the error is obvious. Casualty was the fastest-growing major Reinsurance product in FY2025, up 31.6% year over year [data_package Section 4]. If social inflation, litigation severity, medical costs, or cedent underwriting quality deteriorate, current accident-year margins could be overstated. The bear margin for casualty is deliberately low for this reason.

Bear and base risk: secondary perils may be under-modeled. Wildfire, convective storm, flood, and other non-peak perils can generate loss activity that is less cleanly captured than traditional hurricane and earthquake models. This matters for property excluding catastrophe as well as property catastrophe.

Base case wildcard: retrocession cost and availability can either protect or dilute returns. If retrocession remains available at rational prices, Arch can manage volatility while preserving attractive net returns. If retrocession becomes expensive after loss events, Arch's net risk appetite may need to shrink even if gross pricing improves.

Bull case wildcard: cedent behavior may support demand even in a competitive market. Insurers may continue buying more reinsurance because inflation, capital models, rating-agency pressure, or regulatory concerns make earnings volatility less acceptable. If demand remains structurally higher, Arch could sustain more premium than the base case assumes.

Bull case wildcard: Arch's underwriting technology and data may improve selection. The data package notes that management has invested in AI for years and used it in systems migration, although R&D is not separately disclosed [data_package Section 6; data_package Section 7]. I do not assign a separate AI uplift in the segment model, but better data

and workflow could widen the gap between Arch and weaker underwriters.

Cross-case risk: reserve and capital adequacy are the real constraints. The quant foundation flags reserve quality as requiring actuarial review, with Q1 2026 reserves for losses and LAE of $34.105 billion [quant_foundation P6]. A reserve review outside this appendix could change the appropriate normalized margin for Reinsurance more than any small premium-growth adjustment.

Summary Table

Case	Segment TTM+5y Revenue	Segment TTM+5y Op Margin	Segment TTM+5y Op Income	Probability
Bear	$7.318	10.7%	$0.779	25%
Base	$8.987	17.9%	$1.612	55%
Bull	$10.464	22.9%	$2.401	20%

Probability-weighted TTM+5 Reinsurance underwriting income is approximately $1.561 billion. The base case is the modal case because Arch has a strong franchise and current underwriting evidence is excellent, but the segment is moving from a hard market into a more competitive renewal environment. The appendix therefore treats Reinsurance as Arch's most important earnings engine, while normalizing away some of the current TTM margin peak.

Appendix B2 - Insurance

Insurance - Segment Deep Dive

Arch Capital Group Ltd. (ACGL)

Stage 0 anchor: Today is 2026-05-29 in the Asia/Singapore runtime. U.S. market data and filing timestamps use 2026-05-28 where relevant. Arch's fiscal year ends December 31. The latest reported quarter is Q1 2026, ended March 31, 2026. The TTM anchor is Q2 2025 plus Q3 2025 plus Q4 2025 plus Q1 2026, so the forward horizon is March 31, 2031.

Historical-source discipline: all Arch historical segment, product-line, margin, and management-commentary figures below come from `data_package.md` and `quant_foundation.md`, not from re-derived filings. Live-source checks used in this subagent pass were limited to current confirmation and external market context: FMP `quote`, FMP `profile`, FMP `revenue-product-segmentation ACGL --param period=annual`, the SEC Q1 2026 release and supplement, Arch IR, Marsh Q1 2026 U.S. insurance market rates, Aon Q1 2026 global insurance market insights, CIAB Q1 2026 P&C market survey, and AM Best surplus-lines commentary.

0. Segment boundary and taxonomy note

Insurance is one of Arch's three current reportable underwriting segments. The current three-segment taxonomy - Insurance, Reinsurance, and Mortgage - was stable across FY2023-FY2025, according to `data_package.md` Section 1. The boundary caution is FY2021: the cleared quant foundation includes an "Other / discontinued presentation" line in FY2021, so FY2021 segment comparisons are not a perfect current-taxonomy comparison. This appendix uses current-taxonomy FY2022-FY2025 segment totals and 2023-2025 10-K product-line disclosures for dollar product comparisons. For Insurance specifically, the data package says FY2025 net premiums earned were $7.771 billion, equal to 45.5% of segment net premiums earned. The latest TTM bridge in `quant_foundation.md` P4 gives Insurance TTM net premiums earned of $7.782 billion and TTM underwriting income of $443 million.

1. What this segment actually is

Arch's Insurance segment is a specialty commercial property and casualty platform. It writes coverage directly for insureds through licensed independent retail and wholesale brokers, not as a consumer direct insurer. The business is not a single homogeneous book. It includes North America property and short-tail specialty, occurrence casualty, claims-made casualty and professional liability, commercial multi-peril, commercial automobile, workers compensation, other North American products, international property and short-tail specialty, and international casualty and other insurance. In FMP's live `profile ACGL` pull, Arch describes the Insurance segment as offering primary and excess casualty, loss-sensitive casualty programs, financial and professional lines, medical professional and general liability, workers compensation, umbrella, commercial auto, inland marine, property, energy, marine, aviation, travel, accident, captive programs, employer's liability, and surety, distributed through retail and wholesale brokers.

The customer is usually a business, a program partner, a captive or alternative-risk buyer, or a brokered specialty placement rather than an individual household. The insured wants balance-sheet protection for risks that are too complex, volatile, large, litigation-sensitive, or customized for plain standard-market underwriting. The broker wants a carrier that can give a credible quote, attach meaningful capacity, customize terms, handle claims, and remain stable through cycles. Arch earns revenue as net premiums earned. It books gross written premiums first, cedes part of the risk to reinsurers, earns the retained premiums over the policy term, recognizes acquisition and operating costs, and ultimately absorbs covered losses net of ceded recoveries.

Pricing is risk based and cycle dependent. Property and short-tail specialty pricing is sensitive to catastrophe capacity, insured values, attachment points, loss history, and reinsurance costs. Casualty and professional lines are more sensitive to social inflation, court awards, claim reporting tails, legal-cost trends, policy wording, and whether claims are occurrence or claims-made. Workers compensation depends heavily on payrolls, medical severity, wage inflation, and state-level benefit rules. Commercial auto is driven by claim frequency, repair severity, medical costs, vehicle technology, litigation, and fleet discipline. Multi-peril pricing bundles property and liability exposures for commercial accounts, so its margin quality depends on whether each coverage component is separately underwritten rather than subsidized.

Arch's go-to-market model matters because specialty insurance is not simply capacity sold at a market-clearing price. Distribution relationships give access to submissions, but the real advantage is risk selection. Brokers have many markets for

clean risks in soft lines, so Arch must be fast and relevant. For hard-to-place, high-severity, emerging, or complex risks, the carrier's underwriting judgment and claims reputation matter more. That is why the segment can grow strongly in favorable cycles, but also why management's Q1 2026 message of "profitability over volume" is central to the forward case. A disciplined specialty insurer often maximizes long-term value by not writing premium when the market becomes too generous to buyers.

2. Current economics

The Insurance segment is large but lower margin than Arch's Reinsurance and Mortgage segments. `data_package.md` Section 3 shows FY2025 Insurance net premiums earned of $7.771 billion, FY2025 underwriting income of $0.375 billion, and FY2025 underwriting margin of 4.8%, sourced to the 2025 and 2023 10-K segment tables and the FMP annual segment endpoint. It was 45.5% of FY2025 segment net premiums earned. `quant_foundation.md` P4 gives TTM Insurance net premiums earned of $7.782 billion and TTM underwriting income of $443 million from the SEC FY2025 minus Q1 2025 plus Q1 2026 segment bridge, implying a 5.7% TTM underwriting margin. That TTM margin improved versus FY2025 because the Q1 2025 underwriting loss of $2 million was replaced by Q1 2026 underwriting income of $66 million, while the earned-premium base was almost unchanged.

The latest quarter is the cleanest warning against extrapolating FY2023-FY2025 growth. `data_package.md` Section 5 shows Insurance quarterly earned-premium growth decelerating from 33.2% in Q2 2025 to 11.6% in Q3 2025, 2.1% in Q4 2025, and only 0.6% in Q1 2026, sourced to the SEC Q2 2025, Q3 2025, Q4 2025, and Q1 2026 financial supplements. The SEC Q1 2026 release exhibit confirms that Insurance net premiums earned were $1.871 billion in Q1 2026 versus $1.860 billion in Q1 2025, up 0.6%, and that net premiums written were down 1.4% as reported. The same release says net premiums written would have increased 1.1% after adjusting for the non-renewal of certain programs related to the Allianz middle-market commercial acquisition. That is not a demand collapse, but it is a clear cycle-management message.

The segment's FY2025 product mix is weighted to North America. `data_package.md` Section 1 says FY2025 Insurance net premiums earned were $5.735 billion in North America and $2.036 billion international excluding North America, sourced to the 2025 10-K Insurance product schedule. Product-line detail in Section 4 shows FY2025 North America property and short-tail specialty at $1.373 billion, North America other liability occurrence at $1.321 billion, North America other liability claims-made at $0.786 billion, North America commercial multi-peril at $0.792 billion, commercial automobile at $0.581 billion, workers compensation at $0.591 billion, North America other products at $0.291 billion, international property and short-tail specialty at $1.099 billion, and international casualty and other insurance at $0.937 billion, each sourced to the SEC 2025 10-K.

Insurance is not capital intensive in the industrial sense. Capex is not allocated by segment, and consolidated capex was only $44 million in FY2025 per `data_package.md` Section 7. The real capital intensity is underwriting capital, ratings capital, reserve risk, reinsurance purchasing, operational expertise, and the equity buffer needed to tolerate catastrophe and casualty volatility. Insurance cash flow can look attractive when premiums are collected before losses are paid, but that float is not free if reserves prove inadequate. For this segment, margin quality should be judged by combined ratios, current accident-year loss ratio excluding catastrophe and prior-year development, reserve development, and whether top-line growth is coming from rate adequacy rather than loosened terms.

[DATA GAP: quarterly product-line net premiums earned below the Insurance segment are not consistently disclosed in the data package or supplements. Product-level TTM bases in the forward rollup therefore use FY2025 product mix applied to the official Insurance TTM net premiums earned of $7.782 billion.]

3. Unit economics

Insurance unit economics start with submission flow and underwriting selection. A broker brings Arch a risk; Arch decides whether it understands the exposure, whether policy wording can confine the risk, what limit and attachment point it is willing to offer, what price is needed, and how much of the gross risk it wants to keep net of reinsurance. Gross written premium is the top-of-funnel figure, but net premiums earned is the revenue base that matters for the segment model. The segment's underwriting income is net premiums earned plus other underwriting income, less losses, loss adjustment expenses, acquisition costs, and underwriting expenses.

The segment's underwriting margin has been positive but modest. `data_package.md` Section 3 shows Insurance underwriting margins of 3.2% in FY2021, 4.9% in FY2022, 8.3% in FY2023, 5.2% in FY2024, and 4.8% in FY2025 from the 2025 and 2023 10-K segment tables. The TTM margin is 5.7% using `quant_foundation.md` P4's SEC segment bridge. This is not a software-style margin structure. Even strong specialty insurers can see reported margin compressed by

catastrophe losses, commission expense, integration expense, business mix, and the lag between written-rate action and earned-premium recognition. The economic question is whether Arch can sustain a sub-95 combined ratio through the cycle without under-reserving long-tail lines.

Loss ratio is the first lever. Property and short-tail specialty lines can reprice faster, but they can also suffer sudden catastrophe or severity losses. Casualty, commercial auto, professional liability, and claims-made lines have more latent reserve risk. Occurrence casualty is particularly important because FY2025 North America other liability occurrence was already $1.321 billion in the SEC 2025 10-K product-line schedule and was the second-largest disclosed product line. A carrier can appear profitable while writing occurrence casualty if the initial loss pick is optimistic; the ultimate margin is known only as claims mature. Arch's edge has to come from conservative loss picks, disciplined limits, reinsurance protection, and a willingness to walk away when price is insufficient.

Expense ratio is the second lever. The Q1 2026 release shows Insurance underwriting expense ratio of 36.3%, up from 34.1% in Q1 2025. The data package's management commentary says the Q1 2026 acquisition expense ratio is "more representative of long-term expectations" than the unusual prior-year benefit. The SEC release explains that Q1 2025 was flattered by the fair-value accounting effect of the Allianz middle-market commercial acquisition, while Q1 2026 included higher compensation costs and transitional expenses associated with that acquisition. This matters for the model: a forward margin improvement cannot rely on the Q1 2025 expense ratio repeating. Any bull-case margin expansion must come from better mix, cleaner integration, pricing adequacy, and technology/operating leverage rather than a mechanical reversion to a one-off favorable acquisition accounting period.

Reinsurance purchasing is a third lever. Insurance net premium growth can be lower than gross premium growth if Arch cedes more risk, raises retentions selectively, or changes its reinsurance structure. In Q1 2026, Insurance gross premiums written were up 2.0%, net premiums written were down 1.4%, and net premiums earned were up 0.6%, according to the SEC Q1 release. This is consistent with management choosing risk-adjusted profitability over gross volume. In a softening market, disciplined cessions and lower line sizes can protect loss ratio at the cost of growth. In a hard market, Arch can retain more attractive risk if capital, aggregate exposures, and ratings support it.

The main margin breakers are adverse casualty development, social inflation, catastrophe frequency, inadequate property pricing as capacity returns, over-rapid program growth, acquisition integration cost, and ceded-reinsurance cost. The main margin builders are rate adequacy, better attachment points, non-renewal of underpriced programs, claims-made lines where policy-year exposure is constrained, reduced catastrophe impact, lower transitional expense, and better use of data and AI in underwriting workflows. Management's Q1 comment that the Allianz data and system migration was completed in April 2026 is helpful because it removes one operational overhang. It does not remove underwriting risk.

4. Competitive dynamics

Arch competes with other global specialty insurers and diversified commercial P&C platforms, including Chubb, AIG, AXIS Capital, W. R. Berkley, Travelers in selected commercial lines, Markel, Fairfax-related specialty platforms, Lloyd's syndicates, and E&S-focused underwriting units backed by both traditional and alternative capital. In brokered specialty insurance, competition can come from admitted markets, E&S markets, Lloyd's, program administrators, captives, fronting carriers, and reinsurer-backed capacity. The competitor set changes by line: commercial auto has different margin pressure than D&O, and catastrophe-exposed property has different capital-cycle dynamics than workers compensation.

The current market backdrop is mixed and increasingly buyer-friendly outside selected casualty lines. Marsh's Q1 2026 U.S. insurance market update says U.S. composite commercial insurance rates decreased in the first quarter, with property rates down 10% and financial and professional lines down 2%. The same Marsh page notes that casualty pressure persisted in areas affected by nuclear verdicts, large settlements, higher attachment points, PFAS, privacy, AI, and cyber-related underwriting scrutiny. CIAB's Q1 2026 P&C Market Survey, released May 20, 2026, says respondents reported an average premium decrease of 1.2% across all account sizes, the first average decrease since Q3 2017, while commercial auto still rose 5.8% and remained problematic. Aon's Q1 2026 market overview similarly describes abundant or ample capacity across major regions, but flags automobile and U.S.-exposed casualty as areas that continue to seek rate increases or tighter terms.

That market pattern maps well to Arch's disclosed product lines. International property and North America property and short-tail specialty should not be modeled at 2023-2025 growth rates because capacity has returned and property rates are softer. Financial and professional claims-made lines face soft pricing in D&O and cyber-related capacity, although privacy, AI, geopolitical exclusions, and claim complexity preserve underwriting value. Commercial auto can still produce price increases, but those increases may simply match loss-cost inflation rather than expand margin. Occurrence casualty may have the best nominal pricing support, yet it also carries the largest reserve risk because social inflation and litigation severity can emerge

after premiums have already been earned.

The E&S and specialty channel remains structurally attractive but no longer has the same easy growth impulse as 2021-2024. AM Best reported on January 28, 2026 that E&S premium growth rose 9.7% through the first nine months of 2025 versus 13.5% for the same prior-year period, with tapering flow from admitted carriers into E&S and rising competition in certain classes. AM Best also notes that surplus-lines carriers remain relevant for complex risks in property, commercial auto, and high-hazard casualty. That is a good description of the opportunity and the risk. Specialty expertise remains valuable, but premium growth is moderating because the market has attracted new capacity and some admitted carriers are becoming more willing to write risks they had previously avoided.

Arch's competitive position is therefore not "pricing power everywhere." It is better described as disciplined access to specialty risks, a broad broker network, a diversified underwriting platform, and a culture that can shrink or slow when price is inadequate. The segment can win by being selective, by offering meaningful capacity in complex lines, by using data and claims feedback better than peers, and by allocating capital to the best pockets. It can lose if it chases growth in soft property, underestimates casualty trend, or allows acquisition-driven middle-market programs to dilute underwriting quality.

5. Moat at the segment level

The Insurance segment has a real but cyclical moat. It is not a monopoly and does not control distribution. Brokers can and will move accounts to markets that provide better price, broader terms, or faster service. The moat is underwriting judgment, risk appetite discipline, balance-sheet credibility, claims reputation, broker relationships, product breadth, and the ability to deploy and withdraw capital across lines. This is a "capability moat" rather than a structural toll road.

The strongest moat element is underwriting culture. The data package's management commentary repeatedly points to return thresholds rather than premium growth. The Q1 2026 quote "profitability over volume" is not decorative; it is the operating principle that determines whether the segment's growth should be capitalized at a high multiple. The Insurance segment grew NPE from $5.446 billion in FY2023 to $7.771 billion in FY2025 in the 2025 and 2023 10-K segment tables, but the model cannot assume Arch will keep compounding high-teens earned premiums while U.S. commercial insurance pricing turns softer. The moat is the option to say no.

The second moat element is specialty breadth. A carrier with property, casualty, professional, auto, workers compensation, international, and program capabilities has more ways to redeploy underwriters and capital than a monoline insurer. When property softens, casualty may still be attractive; when D&O softens, high-hazard casualty or selected E&S risks may still clear hurdle; when an acquisition produces non-core programs, the platform can non-renew them. Breadth is valuable only if capital allocation is disciplined. Otherwise, breadth becomes a way to hide underperforming pockets inside a big segment.

The third moat element is distribution and service. Specialty brokers value carriers that have consistent appetite, quick decision-making, and claims credibility. Arch's 2025 and Q1 2026 materials show a global platform with North America and international Insurance scale. That scale supports relevance with brokers and reinsurers. It also creates integration and governance complexity. The Allianz middle-market commercial acquisition gave Arch more U.S. middle-market scale, but the 2026 non-renewal drag shows that acquired premium is not automatically franchise value.

The durability of the moat over five to ten years is moderate to good, not invulnerable. New capacity can enter attractive lines through E&S, fronting, delegated authority, Lloyd's, or reinsurer-backed structures. AI can lower some underwriting process costs for competitors as well as for Arch. Brokers can use placement data to pressure carriers. But reserve discipline, claims handling, risk selection, and capital-cycle judgment are hard to copy quickly. For the segment, the moat should show up as above-average underwriting profitability through the cycle and fewer reserve surprises than peers, not as perpetual volume growth.

6. Historical growth rates

The table below reproduces Arch Insurance historical dollar disclosures from `data_package.md` Section 3 and Section 4. Product-line dollars are disclosed only for FY2023-FY2025, so product rows show a two-year annualized CAGR based on the available product history. The Insurance total row has a true FY2022-FY2025 three-year CAGR of 19.4% from Section 3; the table also shows FY2023-FY2025 to align with the product rows. No product-line figures are back-solved.

Product or sub-segment	FY2023 rev	FY2024 rev	FY2025 rev	Annualized CAGR	Most recent YoY	Specific source trail
Insurance total	$5.446B	$6.627B	$7.771B	19.4%	17.3%	SEC 2025/2023 10-K segment tables; FMP annual segment endpoint; DP Section 3
North America property and short-tail specialty	$0.976B	$1.165B	$1.373B	18.6%	17.9%	SEC 2025 10-K product-line schedule; DP Section 4 row 1
North America other liability occurrence	$0.618B	$0.942B	$1.321B	46.2%	40.2%	SEC 2025 10-K product-line schedule; DP Section 4 row 2
North America other liability claims-made	$0.866B	$0.843B	$0.786B	-4.7%	-6.8%	SEC 2025 10-K product-line schedule; DP Section 4 row 3
North America commercial multi-peril	$0.193B	$0.435B	$0.792B	102.6%	82.1%	SEC 2025 10-K product-line schedule; DP Section 4 row 4
North America commercial automobile	$0.343B	$0.459B	$0.581B	30.1%	26.6%	SEC 2025 10-K product-line schedule; DP Section 4 row 5
North America workers compensation	$0.495B	$0.549B	$0.591B	9.3%	7.7%	SEC 2025 10-K product-line schedule; DP Section 4 row 6
North America other products	$0.290B	$0.309B	$0.291B	0.2%	-5.8%	SEC 2025 10-K product-line schedule; DP Section 4 row 7
International property and short-tail specialty	$0.885B	$1.061B	$1.099B	11.4%	3.6%	SEC 2025 10-K product-line schedule; DP Section 4 row 8
International casualty and other insurance	$0.780B	$0.864B	$0.937B	9.6%	8.4%	SEC 2025 10-K product-line schedule; DP Section 4 row 9

Arithmetic check: the FY2025/FY2024 YoY calculations above tie within 2% for every row. Examples: Insurance total $6.627B times 1.173 equals $7.773B, essentially the reported $7.771B after rounding. North America other liability occurrence $0.942B times 1.402 equals $1.321B. North America commercial multi-peril $0.435B times 1.821 equals $0.792B. No product row uses a back-solved historical figure, so no back-solved row tie-out is required. The product-line table sums to $7.771B in FY2025, matching Section 3 Insurance total.

The historical table tells two stories. First, the segment had a remarkable growth burst in 2023-2025, especially in occurrence casualty, commercial multi-peril, and commercial auto. Second, the product mix is already changing: claims-made liability shrank, international property growth decelerated sharply in FY2025, and North America other products were effectively flat over two years. The forward model therefore treats the historical CAGR as a cycle and acquisition-affected starting point, not as a steady-state growth rate.

7. Management guidance

The data package's management-commentary table for Insurance includes four short Q1 2026 quotes and one operating issue around the Allianz middle-market commercial integration. These are the management anchors used in the forward model.

Q1 2026 call, Nicolas Papadopoulo: "profitability over volume" (`data_package.md` Section 6, Insurance row 1). Interpretation: management is willing to let premium growth slow or even decline in unattractive pockets. This is the central reason the base case does not extend FY2023-FY2025 growth.

Q1 2026 call, Nicolas Papadopoulo: "rates and terms and conditions in aggregate still support strong returns" (`data_package.md` Section 6, Insurance row 2). Interpretation: management is not calling the Insurance market broken. It is softer, but Arch still sees aggregate underwriting returns above hurdle if it selects correctly.

Q1 2026 call, Francois Morin: "more representative of long-term expectations" (`data_package.md` Section 6, Insurance row 3). Interpretation: the Q1 2026 acquisition expense ratio should be considered closer to normal than the unusually favorable Q1 2025 comparison. This prevents the margin model from assuming a large automatic expense-ratio snapback.

Q1 2026 call, Nicolas Papadopoulo: "Growth was offset by softening rates in a few areas" (`data_package.md` Section 6, Insurance row 4). Interpretation: headline premium growth is already being reduced by rate pressure. Product lines tied to

property, D&O, cyber, and other competitive lines deserve lower forward growth assumptions.

Allianz middle-market commercial integration: `data_package.md` Section 6 says management expected selected acquired program non-renewals to reduce 2026 net premiums written by about $250 million, while the data and system migration from Allianz to Arch systems was completed in April 2026. Interpretation: the near-term top-line drag is real and should depress FY2026 written-premium momentum, but completed systems migration lowers execution risk and may support better expense and underwriting productivity after the transition year.

[DATA GAP: the data package does not provide product-line-specific management guidance for each Insurance product line. Product-level forward assumptions below allocate management's segment-level commentary to product lines based on their disclosed market exposure.]

8. Forward growth assumptions

The forward horizon is exactly five calendar years from the TTM end date, from March 31, 2026 to March 31, 2031. Product-level TTM bases are FY2025 product-line shares applied to the official Insurance TTM NPE of $7.782 billion because quarterly product splits are not disclosed. That allocation is a modeling convention, not a newly disclosed historical fact.

Base case: Insurance grows at a 3.8% weighted CAGR from TTM to TTM+5. The base case assumes 2026 absorbs non-renewal drag and softening in property and claims-made financial/professional lines, while casualty and selected specialty lines still grow because pricing remains adequate in high-severity and complex risks. This produces TTM+5 revenue of $9.362 billion.

Product	Historical CAGR	FY2025 YoY	Mgmt FY+1 guide	Base CAGR TTM to TTM+5	Justification
North America property and short-tail specialty	18.6%	17.9%	Profitability over volume; softening in a few areas	4.0%	Property pricing is softer per Marsh and CIAB, so growth normalizes sharply, but Arch retains specialty short-tail opportunities and broker relevance.
North America other liability occurrence	46.2%	40.2%	Rates and terms still support strong returns	5.5%	U.S. casualty remains firmer than property, but occurrence-tail reserve risk and social inflation require slower growth and stricter attachment discipline.
North America other liability claims-made	-4.7%	-6.8%	Profitability over volume	1.0%	D&O, cyber, and professional lines are more competitive, so base growth is minimal despite potential privacy and AI exposure demand.
North America commercial multi-peril	102.6%	82.1%	$250M acquired-program NPW non-renewal drag	6.0%	The historical growth rate is acquisition and mix affected; base assumes integration cleans the book but middle-market scale still supports moderate growth.
North America commercial automobile	30.1%	26.6%	Rates support returns in aggregate	4.5%	Commercial auto still gets rate increases, but much of that rate offsets repair, medical, and litigation severity rather than pure exposure growth.
North America workers compensation	9.3%	7.7%	Profitability over volume	1.5%	Workers comp pricing is soft to modestly down, so growth mainly follows payroll and selected accounts.
North America other products	0.2%	-5.8%	No specific guide	2.0%	Small mixed book grows slowly as Arch reallocates capacity to better risk-adjusted returns.
International property and short-tail specialty	11.4%	3.6%	Softening in a few areas	2.5%	Global property capacity is abundant, but specialty international risk selection still supports modest expansion.
International casualty and other insurance	9.6%	8.4%	Rates and terms still support returns in aggregate	4.0%	International casualty grows faster than property but remains below history because capacity and buyer leverage have improved.

Bull case: Insurance grows at a 6.2% weighted CAGR. This case assumes Arch finds enough attractive specialty casualty, international, and middle-market opportunities after integration cleanup to resume growth without sacrificing underwriting discipline. It also assumes property softening stabilizes after the first two years and that Arch's completed systems migration improves throughput and data-driven selection. TTM+5 revenue is $10.522 billion.

Product	Historical CAGR	FY2025 YoY	Mgmt FY+1 guide	Bull CAGR TTM to TTM+5	Justification
North America property and short-tail specialty	18.6%	17.9%	Rates still support returns in aggregate	7.0%	Bull assumes short-tail specialty pockets remain profitable despite broader property softness and Arch gains share from less consistent markets.
North America other liability occurrence	46.2%	40.2%	Rates and terms still support strong returns	8.0%	Persistent social inflation keeps casualty pricing firm, and Arch writes more excess and high-hazard risks at adequate attachments.
North America other liability claims-made	-4.7%	-6.8%	Profitability over volume	3.0%	Bull assumes D&O and cyber softness moderates and emerging privacy, AI, and professional exposures create selective growth.
North America commercial multi-peril	102.6%	82.1%	Allianz system migration completed April 2026	9.0%	Integration cleanup works, non-core programs roll off, and the retained middle-market platform compounds from a cleaner base.
North America commercial automobile	30.1%	26.6%	Rates support returns in aggregate	7.0%	Pricing keeps ahead of severity in chosen fleets, allowing Arch to write attractive commercial auto rather than merely matching loss inflation.
North America workers compensation	9.3%	7.7%	Profitability over volume	3.0%	Employment and payroll exposure grow, and Arch avoids the weakest pricing pockets.
North America other products	0.2%	-5.8%	No specific guide	4.0%	Small products benefit from cross-sell and broker channel momentum.
International property and short-tail specialty	11.4%	3.6%	Rates still support returns in aggregate	5.0%	International specialty demand remains resilient even as commodity property softens.
International casualty and other insurance	9.6%	8.4%	Rates and terms still support returns in aggregate	6.0%	Bull assumes Arch expands in specialty international casualty without a reserve-quality tradeoff.

Bear case: Insurance is roughly flat over five years, with a -0.1% weighted CAGR from TTM to TTM+5. This is not a catastrophe-loss scenario; it is a softer-market and reserve-discipline scenario in which Arch voluntarily slows written premium, non-renews underpriced business, and sees claims-made, property, and workers compensation pressure offset casualty and auto nominal rate.

Product	Historical CAGR	FY2025 YoY	Mgmt FY+1 guide	Bear CAGR TTM to TTM+5	Justification
North America property and short-tail specialty	18.6%	17.9%	Softening in a few areas	-1.0%	Property capacity returns faster than exposure growth, and Arch gives up premium rather than follow softer terms.
North America other liability occurrence	46.2%	40.2%	Profitability over volume	1.0%	Rate remains positive, but Arch reins in occurrence casualty because reserve risk and litigation severity look underpriced.
North America other liability claims-made	-4.7%	-6.8%	Profitability over volume	-2.0%	D&O, cyber, and professional lines remain soft, with competition pressuring both rate and terms.
North America commercial multi-peril	102.6%	82.1%	$250M acquired-program NPW non-renewal drag	1.5%	Acquisition cleanup removes more premium than expected and retained middle-market growth is muted.

Product	Historical CAGR	FY2025 YoY	Mgmt FY+1 guide	Bear CAGR TTM to TTM+5	Justification
North America commercial automobile	30.1%	26.6%	Rates support returns in aggregate	1.0%	Commercial auto rate increases persist but are consumed by claim severity, so Arch limits exposure growth.
North America workers compensation	9.3%	7.7%	Profitability over volume	-1.0%	Soft pricing and severity monitoring lead to modest shrinkage.
North America other products	0.2%	-5.8%	No specific guide	0.0%	Mixed products are held flat until better opportunities emerge.
International property and short-tail specialty	11.4%	3.6%	Softening in a few areas	-1.0%	International property follows global softening and Arch protects margin by reducing volume.
International casualty and other insurance	9.6%	8.4%	Rates and terms support returns in aggregate	1.0%	Some casualty rate remains, but broader buyer-friendly conditions limit growth.

The main thesis-consistency point is deceleration. A fall from 17.3% FY2025 Insurance growth and 0.6% Q1 2026 earned-premium growth to a base 3.8% five-year CAGR is not abrupt when the five-year path is viewed from the TTM base. Earned premiums lag written premiums, the Allianz program non-renewal is already pressuring 2026 written premium, and external market data show broad commercial P&C softening. The base case assumes FY2026-FY2027 are muted, then growth normalizes as the cleaned book and specialty casualty pockets compound. The bear case assumes the soft market lasts longer and reserve risk forces more restraint. The bull case assumes underwriting productivity and casualty adequacy let Arch compound faster without compromising margin.

9. Forward operating margin assumptions

Arch discloses Insurance underwriting income and underwriting margin at the segment level, not by product line. FY2025 Insurance underwriting margin was 4.8% in `data_package.md` Section 3. TTM Insurance underwriting margin is 5.7% using `quant_foundation.md` P4. Q1 2026 reported Insurance underwriting margin was 3.5%, while the Q1 release also showed a combined ratio excluding catastrophic activity and prior-year development of 92.7%, equivalent to a 7.3% ex-cat and ex-PYD underwriting margin. That spread is exactly why the model uses normalized margin ranges rather than a single-point extrapolation.

[DATA GAP: product-level underwriting income, loss ratio, expense ratio, and combined ratio are not disclosed for the Insurance product lines in the data package. Product margin assumptions below are forward modeling estimates used to compute the segment rollup, not historical disclosures.]

The base margin view is 6.2% at TTM+5. This is above FY2025's 4.8% and TTM's 5.7%, but below the Q1 2026 ex-cat and ex-PYD run-rate of 7.3%. The mechanism is a cleaner post-Allianz book, completed systems migration, lower transition expense, and disciplined non-renewals, partly offset by acquisition-expense normalization and casualty loss-cost pressure. The bear margin is 2.7% because adverse casualty trend, commercial auto severity, and soft property pricing compress underwriting profitability even if Arch keeps the book roughly flat. The bull margin is 8.4% because rate adequacy persists in casualty, the integration cleanup works, catastrophe activity is manageable, and expense productivity improves.

Product	Current disclosed product margin	Base TTM+5 margin	Bull TTM+5 margin	Bear TTM+5 margin	Specific mechanism
North America property and short-tail specialty	N/D	7.0%	9.0%	3.5%	Short-tail repricing helps, but property capacity and cat volatility cap the base margin.
North America other liability occurrence	N/D	6.0%	8.5%	2.0%	Casualty rate is supportive, but long-tail reserve risk prevents a high base margin.
North America other liability claims-made	N/D	8.0%	10.5%	4.5%	Claims-made structure and professional underwriting can be attractive, while soft D&O and cyber limit growth.
North America commercial multi-peril	N/D	5.0%	7.5%	1.5%	Integration cleanup improves quality, but bundled property and liability exposure creates leakage risk.

Product	Current disclosed product margin	Base TTM+5 margin	Bull TTM+5 margin	Bear TTM+5 margin	Specific mechanism
North America commercial automobile	N/D	3.5%	6.0%	-0.5%	Rate is still positive, yet severity and litigation can consume margin.
North America workers compensation	N/D	8.0%	9.5%	5.0%	Workers comp is lower-growth but can be profitable if wage and medical severity are controlled.
North America other products	N/D	5.0%	7.0%	2.0%	Small mixed book modeled below the segment average due to limited visibility.
International property and short-tail specialty	N/D	6.5%	8.5%	3.5%	International property is also softening, but specialty selection supports mid-single-digit margin.
International casualty and other insurance	N/D	6.0%	8.0%	2.5%	Casualty margin depends on loss trend discipline and policy wording.

The >100 bps margin change versus FY2025 is intentional in all cases. Base improves by roughly 140 bps from FY2025 because FY2025 included integration and mix noise, and management is actively non-renewing underpriced programs. Bull improves by roughly 360 bps because underwriting actions and benign loss emergence compound together. Bear declines by roughly 210 bps because long-tail reserve pressure and commercial auto severity outweigh expense improvements. The bear case is not a reserve disaster; it is a normal-cycle adverse outcome for a large specialty insurance platform.

10. Segment rollup

The rollup starts from official TTM Insurance NPE of $7.782 billion. Product-level TTM bases use FY2025 product shares from `data_package.md` Section 4 applied to the official TTM base. The scale factor is 1.0014x, so the product bases are essentially FY2025 dollars adjusted to the TTM segment total.

Product	TTM base	Bear CAGR	Bear TTM+5 revenue	Base CAGR	Base TTM+5 revenue	Bull CAGR	Bull TTM+5 revenue
North America property and short-tail specialty	$1.375B	-1.0%	$1.308B	4.0%	$1.673B	7.0%	$1.928B
North America other liability occurrence	$1.323B	1.0%	$1.390B	5.5%	$1.729B	8.0%	$1.944B
North America other liability claims-made	$0.787B	-2.0%	$0.711B	1.0%	$0.827B	3.0%	$0.912B
North America commercial multi-peril	$0.793B	1.5%	$0.854B	6.0%	$1.061B	9.0%	$1.220B
North America commercial automobile	$0.582B	1.0%	$0.612B	4.5%	$0.725B	7.0%	$0.816B
North America workers compensation	$0.592B	-1.0%	$0.563B	1.5%	$0.638B	3.0%	$0.686B
North America other products	$0.291B	0.0%	$0.291B	2.0%	$0.322B	4.0%	$0.355B
International property and short-tail specialty	$1.101B	-1.0%	$1.047B	2.5%	$1.245B	5.0%	$1.405B
International casualty and other insurance	$0.938B	1.0%	$0.986B	4.0%	$1.142B	6.0%	$1.256B
Segment total	$7.782B	-0.1%	$7.762B	3.8%	$9.362B	6.2%	$10.522B

The next table applies the product margin assumptions from Section 9. Segment operating income means underwriting income, consistent with Arch's segment reporting. Segment margin is the revenue-weighted average, so totals reconcile to product-level revenue and margin assumptions.

Case	Product revenue sum	Product underwriting income sum	Segment underwriting margin	Reconciliation check
Bear	$7.762B	$0.211B	2.7%	Product sum equals segment total within rounding
Base	$9.362B	$0.582B	6.2%	Product sum equals segment total within rounding
Bull	$10.522B	$0.885B	8.4%	Product sum equals segment total within rounding

The base case is the underwriting-quality case: Insurance does not need to grow at double digits to be valuable. A 3.8% five-year CAGR and 6.2% underwriting margin would generate $582 million of underwriting income, up from TTM $443 million. That is only a $139 million underwriting-income increase over five years despite a $1.580 billion revenue increase, which is deliberately conservative for a platform of this scale. It recognizes that management is trading some growth for quality and that expense normalization offsets part of the underwriting gain.

The bear case is a flat-revenue, low-margin case. TTM+5 revenue of $7.762 billion is slightly below the TTM base and underwriting income falls to $211 million. This would likely be viewed poorly by the market if consolidated Reinsurance and Mortgage did not offset it, but it would not necessarily prove that Arch's Insurance franchise is broken. It could be the right decision if the alternative was writing underpriced long-tail risk. The key bear question is whether the lower margin comes from voluntary restraint or from reserve deterioration on already written business. The latter is far more damaging.

The bull case is a quality-growth case, not a volume-at-any-price case. TTM+5 revenue of $10.522 billion and underwriting income of $885 million require both mid-single-digit growth and better-than-FY2025 margins. It is achievable only if the retained Allianz middle-market book performs, casualty pricing remains adequate, property capacity does not crush terms, and Arch converts technology and scale into underwriting and expense productivity. It is not the default because Q1 2026 has already shown that management is more focused on pruning than growth.

11. Key risks and wildcards

Bear risk - long-tail casualty reserve inadequacy. The largest model risk is not slower premium growth; it is an apparently profitable occurrence casualty book later proving under-reserved. North America other liability occurrence grew from $0.618 billion in FY2023 to $1.321 billion in FY2025 in the SEC 2025 10-K product-line schedule. If social inflation, litigation funding, nuclear verdicts, PFAS, abuse claims, privacy claims, or other latent exposures exceed loss picks, the underwriting margin can reverse years after the premium was earned.

Bear risk - commercial auto severity. CIAB and Aon both flag commercial auto as a problem line despite softer conditions elsewhere. If rate increases merely chase repair costs, medical severity, distracted driving, fleet litigation, and large verdicts, Arch may have to shrink the book or accept thin margins. The bear model assigns commercial auto a negative 0.5% underwriting margin at TTM+5 to reflect this.

Bear risk - property and short-tail capacity cycle. Marsh, Aon, and CIAB all describe property pricing relief or softness in Q1 2026. If capacity keeps entering catastrophe-exposed and non-cat property, Arch's property and short-tail lines may face lower rates, broader terms, and weaker attachment points. The rational response is slower growth, but the market may pressure revenue expectations.

Base risk - integration drag lasts longer. The Allianz middle-market commercial system migration was completed in April 2026 according to the data package, but the underwriting cleanup may take longer. Non-renewals are expected to reduce 2026 net premiums written by about $250 million. If the retained book has worse loss experience or higher expense needs than expected, base margin improvement is delayed.

Base risk - expense ratio normalizes upward. The Q1 2026 management quote that acquisition expense ratio is "more representative of long-term expectations" means investors should not model an expense-ratio windfall. Compensation, underwriting talent, claims systems, data infrastructure, and broker commissions all matter. Scale does not automatically convert to margin.

Bull wildcard - specialty casualty remains rational. If social inflation keeps standard markets cautious and Arch can price casualty at adequate returns without overextending limits, occurrence casualty and international casualty can compound faster than base. This is the main bull growth engine because property and D&O are not attractive enough to carry the case alone.

Bull wildcard - underwriting technology and system migration. The data package notes that Arch used AI to accelerate code writing and testing in the Allianz migration and that management has been investing in AI for years. The likely benefit is not replacing underwriters, but faster data ingestion, triage, claims pattern recognition, submission prioritization, policy wording review, and portfolio monitoring. If this shows up as better hit ratios and lower expense leakage, the bull margin becomes more plausible.

Wildcard - reinsurance availability and cost. Insurance segment economics depend on ceded protection. If reinsurance costs fall with property softness, Arch may protect downside at lower cost. If a catastrophe year tightens reinsurance, Arch may have to raise prices, retain more risk, or cede margin. The segment model assumes no structural reinsurance shock; a major reinsurance repricing event would affect both revenue and margin.

Summary table

Case	Segment TTM+5y Revenue	Segment TTM+5y Op Margin	Segment TTM+5y Op Income	Probability
Bear	$7.762B	2.7%	$0.211B	25%
Base	$9.362B	6.2%	$0.582B	55%
Bull	$10.522B	8.4%	$0.885B	20%

The Insurance segment should be modeled as a large specialty platform with a credible underwriting moat but modest through-cycle underwriting margins. FY2025 NPE of $7.771 billion and TTM NPE of $7.782 billion make it nearly as large as Reinsurance, but its profit contribution is much smaller because the underwriting margin is mid-single-digit rather than high-teens. The key investment question is not whether Arch can find premium. It can. The question is whether it can keep rejecting inadequate premium while still growing book value and underwriting income. The base case answers yes, but with a far slower growth trajectory than FY2023-FY2025.

Appendix B3 - Mortgage

Mortgage - Segment Deep Dive

Stage 0 anchor: Today is 2026-05-29 in the Asia/Singapore runtime. For U.S. market and filing recency, the working U.S. market date is 2026-05-28. Arch Capital Group Ltd. has a December 31 fiscal year end. The latest reported quarter is Q1 2026, ended March 31, 2026. TTM means Q2 2025 plus Q3 2025 plus Q4 2025 plus Q1 2026, ending March 31, 2026. The forward horizon used below is March 31, 2031, exactly five calendar years from the TTM anchor.

0. Segment Boundary And Taxonomy Note

Mortgage is one of Arch Capital's three current underwriting segments. The data package states that the three-segment taxonomy was stable across FY2023-FY2025, while FY2021 includes an old "Other / discontinued presentation" line and therefore should not be forced into the current taxonomy [data_package section 1, taxonomy finding]. For this appendix, all dollar comparisons use the current Mortgage segment boundary for FY2022-FY2025 and the 2023-2025 product-line disclosures. Mortgage includes U.S. primary mortgage insurance, U.S. credit risk transfer and other mortgage risk, and international mortgage insurance/reinsurance [data_package section 1, reporting structure]. Segment revenue is net premiums earned, and segment profit is underwriting income because Arch does not allocate investment income to underwriting segments [data_package section 3, segment historicals note].

1. What This Segment Actually Is

Arch's Mortgage segment is a credit insurance business embedded in the residential housing finance system. The core customer is not the borrower in the everyday consumer sense. The economic customer is the lender, the GSE, or another mortgage credit-risk counterparty that wants private capital standing in front of a mortgage default loss. The underlying borrower pays or indirectly funds the premium on many primary mortgage insurance policies, but the policy protects the lender or GSE against loss if the borrower defaults and foreclosure proceeds are insufficient. That distinction matters because demand is tied to mortgage origination mix, GSE eligibility rules, loan-to-value ratios, lender relationships, and counterparty capital requirements, not only to consumer willingness to pay an insurance charge.

The main product is U.S. primary mortgage insurance. This is generally used on conventional mortgages with original loan-to-value ratios above 80%, especially loans sold to Fannie Mae and Freddie Mac. The FHFA summary of the Private Mortgage Insurer Eligibility Requirements explains the basic market structure: when the GSEs acquire loans with unpaid principal balances above 80% of the property's value, their charters require an acceptable credit enhancement; mortgage insurance is the most common form; and primary mortgage insurance absorbs first losses on high-LTV loans in a foreclosure scenario. That makes the product a regulated, counterparty-approved, capital-intensive credit enhancement rather than a discretionary consumer add-on. The official FHFA PMIERs page is here: https://www.fhfa.gov/fannie-mae-freddie-mac-private-mortgage-insurer-eligibility-requirements-pmiers.

The second line, U.S. credit risk transfer and other, is related but not identical. In these arrangements, Arch takes mortgage credit exposure from GSEs or other counterparties through reinsurance, risk-sharing transactions, or underwriting-related services. The revenue base is smaller than primary MI, but it links Arch to the broader GSE credit risk transfer ecosystem. The third line, international mortgage insurance/reinsurance, gives Arch exposure to non-U.S. mortgage credit systems and reinsures or writes mortgage insurance risk outside the U.S. The data package's product table shows FY2025 net premiums earned of $0.802 billion from U.S. primary MI, $0.207 billion from U.S. CRT and other, and $0.163 billion from international mortgage insurance/reinsurance [data_package section 4, Mortgage product rows]. That mix means the segment is mostly a U.S. primary MI business, but not a pure-play U.S. private MI monoline.

Pricing is driven by expected claim frequency, expected claim severity, loan characteristics, capital cost, reinsurance cost, and competitive dynamics. The variables that matter most are credit score, loan-to-value, debt-to-income and borrower quality, loan age and vintage, house price path, unemployment, and the level of external reinsurance or insurance-linked note protection. Premiums are earned over time as policies remain in force. Therefore, the segment has a stock and flow profile: new insurance written refreshes the book, while persistency keeps older, seasoned policies earning premium. Lower mortgage rates can help new originations, but they can also reduce persistency by accelerating refinancings and cancellations. Higher mortgage rates can constrain new originations, but they can preserve persistency on in-force policies because fewer borrowers refinance out of their existing loans.

The go-to-market is institutional. Arch MI competes for approved lender and GSE relationships against other private mortgage insurers. The U.S. market is concentrated around six large private MI providers: Arch, Enact, Essent, MGIC, National MI, and Radian. A Milliman market update frames the private MI market around those six providers and tracks new insurance written, insurance in force, performance, and delinquency trends across them: https://www.milliman.com/en/insight/pmi-market-trends-2q-2025. That provider set creates a rational but competitive oligopoly. Product differentiation is limited at the policy form level because GSE eligibility and master policy requirements create common standards. Differentiation instead comes from pricing models, risk selection, lender service, underwriting tools, delegated underwriting trust, capital strength, reinsurance execution, and the willingness to trade volume for risk-adjusted return.

2. Current Economics

Mortgage is small by premium volume but large by contribution to Arch's underwriting profit. FY2025 Mortgage net premiums earned were $1.172 billion, or 6.9% of total segment net premiums earned of $17.065 billion [data_package section 1, FY2025 segment mix]. FY2025 underwriting income was $1.000 billion, a reported underwriting margin of 85.3%, compared with 4.8% for Insurance and 19.2% for Reinsurance [data_package section 3, Segment historicals]. In TTM ended March 31, 2026, Mortgage net premiums earned were $1.156 billion and underwriting income was $0.969 billion, implying an 83.8% underwriting margin [quant_foundation P4, Segment TTM construction].

The most important current-economics point is the mix of small revenue and outsized profit. Mortgage represented less than 7% of FY2025 underwriting segment NPE, but $1.000 billion of underwriting income was roughly 34% of the $2.933 billion total underwriting income of the three segments [quant_foundation P2, FY2025 segment table]. That is why Mortgage should not be dismissed as a rounding error. It is a high-margin, capital-sensitive credit book. If the benign credit environment continues, it can keep producing substantial income relative to premium volume. If housing credit turns, the segment's premium base is not large enough to absorb a major loss-cycle shock without materially lower underwriting income.

The annual trend is mature rather than growthy. Mortgage NPE fell from $1.283 billion in FY2021 to $1.160 billion in FY2022, was roughly flat at $1.158 billion in FY2023, rose to $1.231 billion in FY2024, and declined to $1.172 billion in FY2025 [data_package section 3, Mortgage table]. The FY2025 decline was 4.8%. The data package's latest quarterly trend shows Q2 2025 Mortgage NPE down 8.5% YoY, Q3 down 3.8%, Q4 down 5.2%, and Q1 2026 down 5.3% [data_package section 5, quarterly trend]. The Q1 2026 decline is explicitly part of the model anchor: earned premiums were still high margin, but the revenue base was drifting lower.

Product mix also matters. FY2025 U.S. primary MI generated $0.802 billion, or 68.4% of Mortgage NPE. U.S. CRT and other generated $0.207 billion, or 17.7%. International mortgage insurance/reinsurance generated $0.163 billion, or 13.9% [data_package section 4, Mortgage product rows]. There is a data gap for product-level TTM revenue in the cleared data package: annual product dollars are disclosed for 2023-2025, and segment-level quarterly Mortgage NPE is disclosed for Q2 2025 through Q1 2026, but quarterly product-line dollars below the segment level are not consistently disclosed in the data package [data_package section 10, open data gaps]. For the bottoms-up model, I allocate TTM segment revenue to products using FY2025 product mix and label that allocation as a model estimate, not a company-disclosed product TTM figure. [DATA GAP: product-level TTM NPE by Mortgage sub-segment is not in the data package.]

Capital intensity is unusual. The segment is not capex intensive in the industrial sense. Arch's consolidated capex was only $0.044 billion in FY2025, or 0.2% of revenue [data_package section 7, capital allocation history]. Mortgage capital intensity instead comes from required claims-paying resources and capital standards. Arch's Q1 2026 10-Q states that Arch MI U.S. must comply with PMIERs and that eligible available assets must meet or exceed minimum required assets each quarter. It also disclosed an estimated PMIERs sufficiency ratio of 175% at March 31, 2026, or 173% pro forma for the fully implemented 2024 investment-risk updates: https://www.sec.gov/Archives/edgar/data/947484/000094748426000058/acgl-20260331.htm. That capital cushion is a meaningful segment moat and a constraint. Excess capital supports lender confidence and GSE approval, but capital that has to sit behind mortgage risk lowers the apparent economic profitability versus a simple underwriting-margin view.

3. Unit Economics

Mortgage insurance unit economics start with an insured loan, not an annual policy sale. A new policy creates insurance in force and risk in force. Premiums are earned as long as the policy remains active. Losses are realized only when a borrower defaults and the claim is paid after foreclosure, short sale, or another resolution process. The gap between premium collection and claim emergence can be long. That makes recent loss ratios powerful but potentially deceptive. A benign period with

strong employment, rising home prices, and favorable reserve development can produce underwriting margins that look almost impossible in normal industrial terms. The data package correctly warns that Mortgage underwriting margins can exceed 100% when current losses are low and prior-period development is favorable [data_package section 3, segment historicals note].

The historical margin series shows the point. Mortgage underwriting margin was 74.4% in FY2021, 108.4% in FY2022, 91.9% in FY2023, 88.9% in FY2024, and 85.3% in FY2025 [data_package section 3, Mortgage table]. The five-year average is far above the margin of most insurance lines because mortgage credit losses have been unusually favorable relative to premiums and because prior-period reserves developed favorably. But the margin path is also declining from the extraordinary FY2022 level. The Q1 2026 segment margin was 77.8% per the data package's quarterly table, versus 84.7% in Q2 2025, 86.4% in Q3 2025, and 86.2% in Q4 2025 [data_package section 5, quarterly trend]. That does not prove the credit cycle has turned, but it is consistent with gradual normalization.

The revenue side is driven by three variables: new insurance written, persistency, and premium yield. New insurance written depends on purchase mortgage volume, refinance volume, home prices, low-down-payment borrower demand, and Arch's market share. Persistency is the percentage of beginning insurance in force that remains in force after twelve months. High persistency keeps the earned-premium base alive even if new originations are weak. However, persistency is a double-edged macro variable. When mortgage rates fall, origination volume can rise, but borrowers with older higher-rate loans may refinance and cancel MI. When rates stay elevated, borrowers are locked in, which preserves older policies but suppresses new purchase affordability and refinance volumes.

The cost side has three main components. First, losses and loss adjustment expenses depend on default frequency and severity. Frequency is tied closely to unemployment and borrower cash-flow stress. Severity is tied to house prices, the foreclosure timeline, property disposition costs, loan-to-value at default, and the attachment point of reinsurance or CRT structures. Second, acquisition expenses include ceding commissions and costs associated with lender production. Third, other operating expenses are personnel, systems, underwriting infrastructure, risk modeling, compliance, and servicing support. Because the segment's premium base is only a little above $1 billion, fixed operating expenses matter, but losses dominate the downside distribution.

Arch's latest Q1 2026 10-Q gives useful operational context even though the data package controls the historical model figures. The Q1 2026 filing disclosed that U.S. primary MI risk in force had a weighted average credit score of 750 and weighted average LTV of 93.2% at March 31, 2026. It also disclosed an ending default rate of 2.06% for U.S. primary MI, total RIF net of external reinsurance of $62.366 billion, and a risk-to-capital ratio of approximately 8.4 to 1 for Arch MI U.S. The same filing showed Q1 2026 paid claims of $15.6 million and average paid claim of $44,700. Source: https://www.sec.gov/Archives/edgar/data/947484/000094748426000058/acgl-20260331.htm. These metrics support management's comment that credit quality remains excellent, but they also show why the downside is nonlinear: a small change in default frequency on a very large risk-in-force base can matter more than a few percentage points of premium growth.

For normalized underwriting income, I do not carry forward the 85% FY2025 margin indefinitely. The base case assumes a still-excellent but more normal 72% TTM+5y underwriting margin. The margin decline is not because the franchise suddenly weakens; it is because the current-period loss ratio and favorable development environment are too benign to use as a permanent run-rate. The bear case assumes a 45% margin, still profitable but materially damaged by higher defaults, lower reserve releases, and worse severity. The bull case assumes an 80% margin, which requires the current high-quality book, strong employment, and disciplined pricing to persist with no major housing drawdown.

4. Competitive Dynamics

The U.S. primary mortgage insurance market is concentrated but not monopolistic. Arch competes against Enact, Essent, MGIC, National MI, and Radian. The GSE framework standardizes many parts of the product, and lenders can compare pricing across carriers. That creates periodic price competition, especially for cleaner credit risk where every carrier wants share. MGIC's FY2025 10-K language, visible in public SEC search snippets, says price has become a key competitive factor and that customers increasingly prioritize the lowest premium rate for a particular loan. That is not Arch-specific evidence, but it reflects the broader market's commodity pressure.

Still, this is not a simple race to the bottom. The market has meaningful entry barriers. A private mortgage insurer needs GSE approval, PMIERs compliance, state insurance licenses, claims-paying ratings, lender integrations, master policy acceptance, underwriting and fraud controls, analytics, and a balance sheet that counterparties trust through a housing downturn. The FHFA history of PMIERs is a direct response to the financial crisis, when mortgage insurers and GSEs suffered losses and

some insurers lacked enough capital to fully meet obligations. PMIERs were designed to align eligibility requirements and ensure approved MIs have financial and operational capacity to withstand severe downturns. That history is central to the moat because it means a new entrant cannot simply offer a lower price without capital and operating infrastructure.

Arch's position is defensible but not invulnerable. It benefits from scale, a large in-force book, established lender relationships, a parent with strong specialty insurance and reinsurance capabilities, and internal reinsurance/capital markets know-how. The parent matters because mortgage insurance can be managed as part of a broader risk portfolio. Arch can use reinsurance, insurance-linked notes, and group capital allocation to manage tail risk. It can also treat Mortgage as a diversifying earnings source rather than as the whole company. That is an advantage versus smaller or more monoline peers when the cycle becomes volatile.

The industry backdrop is mature. U.S. Mortgage Insurers reported that private MI helped more than 800,000 borrowers obtain mortgage financing in 2024 and supported nearly $300 billion of mortgage originations, with approximately 96% of those mortgages being purchase loans and around 65% of private-MI purchasers being first-time homebuyers. It also said the industry protected more than $1.4 trillion in GSE mortgages: https://www.usmi.org/press-release-despite-market-challenges-private-mortgage-insurers-helped-more-than-800000-borrowers-in-2024-become-homeowners/. That data points to a large, useful, but fundamentally tied-to-housing market. A private MI carrier is unlikely to compound premiums at double-digit rates for long unless the overall low-down-payment purchase market grows, its market share improves, or it expands into adjacent mortgage credit risk.

Competition also comes from substitute credit enhancement. FHA insurance competes for lower-credit-score borrowers. Piggyback seconds, lender-paid structures, GSE pricing changes, and GSE credit risk transfer alternatives can all shift the economics around private MI. The most important structural risk is policy-driven: if GSE capital rules, loan-level price adjustments, PMIERs, FHA pricing, or housing finance reform change the relative attractiveness of private MI, industry volume and pricing can shift quickly. The most important cyclical risk is unemployment: default frequency is usually manageable when jobs are plentiful and house prices are flat-to-up, but it can move sharply when income shock and negative home equity arrive together.

5. Segment-Level Moat

Mortgage has a real but narrow moat. It is not a brand moat in the consumer sense. Most borrowers do not choose Arch by brand. It is also not a patent or network-effect moat. The moat is institutional: approval status, capital strength, risk analytics, lender relationships, operating reliability, and the ability to survive stress without losing GSE or lender confidence. That moat protects participation in the market more than it protects premium pricing on every loan. Arch can be a preferred counterparty and still have to meet competitive pricing for commoditized prime loans.

The strongest moat element is risk selection and risk management across cycles. A mortgage insurer that underprices new vintages in a benign credit period can look excellent for several years, then give back many years of profits in a housing downturn. Arch's broader underwriting culture helps here. The data package's management commentary repeatedly emphasizes profitability over volume in the P&C segments, and Mortgage commentary says credit quality remains excellent and that the segment provides diversified earnings [data_package section 6, Mortgage commentary]. While those quotes are not a guarantee, they are consistent with a company that values risk-adjusted return.

The second moat element is capital flexibility. PMIERs require enough liquid available assets to back a risk-based required asset amount. The Freddie Mac PMIERs PDF defines minimum required assets as the greater of $400 million or the total risk-based required asset amount, and states that the risk-based required asset amount is a function of direct risk in force and risk characteristics such as LTV, credit score, vintage, and delinquency status: https://sf.freddiemac.com/docs/pdf/requirements/pmiers.pdf. Arch's disclosed 175% PMIERs sufficiency ratio at March 31, 2026 is therefore more than a compliance statistic. It is a signal that Arch can keep writing, support counterparties, and absorb rule updates with room to spare.

The moat is less durable on price. A lender can route business to another approved MI if pricing, service, or underwriting responsiveness is better. Six credible carriers is enough to keep the market honest. Over five to ten years, I would expect Arch's Mortgage segment to earn attractive returns if credit stays normal, but I would not expect it to grow materially faster than the industry without accepting lower margin or higher risk. The moat supports high normalized profitability; it does not support high sustained premium growth.

6. Historical Growth Rates

The following table reproduces the data-package historicals for the Mortgage segment and its dollar-disclosed product lines. The CAGR shown is the two-year CAGR across the 2023-2025 disclosure window, using FY2023 as the start and FY2025 as the end. No product-level dollars are back-solved.

Product / sub-segment	FY2023 rev	FY2024 rev	FY2025 rev	2023-2025 CAGR	Most recent YoY	Data package cite
Mortgage total	$1.158B	$1.231B	$1.172B	0.6%	-4.8%	data_package section 3, Mortgage table
U.S. primary mortgage insurance	$0.759B	$0.845B	$0.802B	2.8%	-5.1%	data_package section 4, Mortgage primary row
U.S. credit risk transfer and other	$0.220B	$0.213B	$0.207B	-3.0%	-2.8%	data_package section 4, Mortgage CRT row
International mortgage insurance/reinsurance	$0.179B	$0.173B	$0.163B	-4.6%	-5.8%	data_package section 4, Mortgage international row

Internal arithmetic check: Mortgage total FY2024 to FY2025 is $1.231B x 0.952 = $1.172B, matching the disclosed -4.8% within rounding. U.S. primary FY2024 to FY2025 is $0.845B x 0.949 = $0.802B, matching the disclosed -5.1% within rounding. U.S. CRT FY2024 to FY2025 is $0.213B x 0.972 = $0.207B, matching the disclosed -2.8% within rounding. International FY2024 to FY2025 is $0.173B x 0.942 = $0.163B, matching the disclosed -5.8% within rounding. There are no back-solved rows, so no additional tie-out is required.

The product table confirms the segment's mature profile. Primary MI grew modestly over the 2023-2025 window, but the latest annual change was negative. CRT and international were negative on both the two-year CAGR and latest YoY basis. In a different mortgage-rate environment, new insurance written could recover before earned premium does; however, earned premium is what flows through Arch's segment revenue table. That means the forward model should not overreact to any single quarter of new insurance written strength unless it improves the in-force base and persists long enough to offset cancellation and runoff.

7. Management Guidance And Commentary

The data package provides four Mortgage-specific management excerpts from the Q1 2026 earnings call. I reproduce all four here with interpretation. These are the management-provided anchors for the forward assumptions.

Source	Speaker	Verbatim quote	Topic	Interpretation
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"Credit quality across the mortgage insurance portfolio remains excellent"	Credit	Management sees the current book as sound; the base case should not assume an immediate credit break.
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"provide shareholders with a differentiated and diversifying source of earnings"	Segment role	Mortgage is a deliberate diversifier inside Arch, not merely a runoff pocket of legacy risk.
Q1 2026 call, 2026-04-29	Francois Morin, CFO	"frequency assumptions have not changed"	Mortgage losses	Q1 loss-ratio movement was not framed as a changed default-frequency thesis.
Q1 2026 call, 2026-04-29	Francois Morin, CFO	"still very much within what we would expect"	Mortgage loss ratio	Management treated the higher Q1 loss ratio as within normal expectations, not a credit alarm.

The same data package interpretation says Mortgage growth is constrained by high mortgage rates, home prices, and affordability pressure, while management continues to point to innovation and new products across the global footprint [data_package section 6, Mortgage interpretation]. That combination supports a base case with low positive or flat revenue growth, not a hard runoff, and a margin assumption below the extraordinary 2021-2025 reported average. Management's credit confidence is relevant, but it does not eliminate the need to normalize current underwriting income. Mortgage insurance is one of those businesses where the absence of losses can be mistaken for permanent economics until the cycle tests the book.

8. Forward Growth Assumptions

The TTM segment anchor is $1.156 billion of Mortgage NPE. Because the data package does not contain product-level TTM NPE, I allocate that TTM segment base to products using FY2025 product mix from the data package: $0.791 billion U.S.

primary MI, $0.204 billion U.S. CRT and other, and $0.161 billion international mortgage insurance/reinsurance. This allocation sums to the $1.156 billion TTM segment anchor from the quant foundation. It is a model allocation, not a disclosed historical product figure. [DATA GAP: product-level TTM Mortgage NPE by sub-segment is not available in the data package.]

The external macro frame is moderate rather than booming. Fannie Mae's May 2026 housing forecast shows single-family mortgage originations of $2.364 trillion in 2026 and $2.489 trillion in 2027, purchase originations of $1.464 trillion in 2026 and $1.588 trillion in 2027, and a 30-year fixed mortgage rate averaging 6.3% in 2026 and 6.2% in 2027: https://www.fanniemae.com/media/document/pdf/housing-forecast-052026. Its May 2026 economic forecast shows unemployment averaging 4.4% in 2026 and 4.4% in 2027: https://www.fanniemae.com/media/document/pdf/economic-forecast-052026. FHFA reported U.S. house prices up 1.7% from Q1 2025 to Q1 2026: https://www.fhfa.gov/reports/house-price-index/2026/Q1. Those inputs support a slow recovery in purchase originations, but not a return to the refinance-heavy environment that would dramatically increase premium flow.

Base case:

Product	2023-2025 CAGR	Latest YoY	Mgmt FY+1 guide	Base CAGR TTM to TTM+5y	Justification
U.S. primary mortgage insurance	2.8%	-5.1%	Credit quality excellent; growth constrained by affordability	1.0%	Primary MI should recover with purchase originations but remain rate- and affordability-constrained. I assume modest share discipline rather than aggressive volume chasing.
U.S. credit risk transfer and other	-3.0%	-2.8%	No explicit growth guide; CRT income linked to GSE risk transfer	-1.0%	CRT is smaller and more programmatic; lower cancellation-related premiums in Q1 2026 argue for mild runoff absent a larger GSE CRT expansion.
International mortgage insurance/reinsurance	-4.6%	-5.8%	Innovation and new products across global footprint	0.5%	International stabilizes from recent declines but is too small and uneven to drive segment growth.

Bull case:

Product	2023-2025 CAGR	Latest YoY	Mgmt FY+1 guide	Bull CAGR TTM to TTM+5y	Justification
U.S. primary mortgage insurance	2.8%	-5.1%	Credit quality excellent; growth constrained by affordability	3.0%	Purchase originations recover faster, Arch holds or gains share, and persistency remains high enough that new business lifts earned premium.
U.S. credit risk transfer and other	-3.0%	-2.8%	No explicit growth guide; CRT income linked to GSE risk transfer	1.5%	GSE CRT and risk-sharing demand expands while cancellation-related premium pressure fades.
International mortgage insurance/reinsurance	-4.6%	-5.8%	Innovation and new products across global footprint	2.0%	Non-U.S. product initiatives offset runoff and generate modest growth from a small base.

Bear case:

Product	2023-2025 CAGR	Latest YoY	Mgmt FY+1 guide	Bear CAGR TTM to TTM+5y	Justification
U.S. primary mortgage insurance	2.8%	-5.1%	Credit quality excellent today, but housing stress is key risk	-3.0%	Housing affordability remains poor, purchase volume disappoints, and Arch accepts lower volume to protect credit quality.
U.S. credit risk transfer and other	-3.0%	-2.8%	No explicit growth guide; CRT income linked to GSE risk transfer	-5.0%	CRT premiums decline as transactions roll off, cancellation-related premiums remain weak, and GSE structures become less attractive.
International mortgage insurance/reinsurance	-4.6%	-5.8%	Innovation and new products, but small base	-2.0%	International remains in managed runoff or faces weaker housing-credit demand.

The thesis-consistency check is straightforward: no product currently has high disclosed growth that requires an aggressive deceleration bridge. The latest annual product YoY rates are already negative, and Q1 2026 segment earned premiums were down 5.3% YoY [data_package section 5, Mortgage Q1 2026 row]. The base case moves from negative recent growth to low positive growth because the Fannie Mae forecast implies purchase origination growth in 2026 and 2027, while the bear case continues the recent negative trend. The bull case is still only a low-single-digit growth case because this is a mature GSE-linked industry with several credible competitors.

9. Forward Operating Margin Assumptions

Arch reports underwriting income rather than segment operating income. I use underwriting margin as the segment operating-margin proxy. The FY2025 Mortgage underwriting margin was 85.3%, and TTM margin was 83.8% using $0.969 billion TTM underwriting income divided by $1.156 billion TTM NPE [data_package section 3, Mortgage table; quant_foundation P4]. Product-level underwriting margins are not disclosed in the data package, so the product margin model below is a normalized allocation for scenario construction. [DATA GAP: product-level underwriting income and margin by Mortgage sub-segment are not disclosed in the data package.]

Product	Current margin evidence	Base TTM+5y margin	Bear TTM+5y margin	Bull TTM+5y margin	Mechanism
U.S. primary mortgage insurance	Segment TTM margin 83.8%; primary is 68.4% of FY2025 NPE	74.0%	46.0%	82.0%	Primary MI normalizes as reserve releases fade; bear case adds higher default frequency and severity.
U.S. credit risk transfer and other	Product margin not disclosed; CRT is smaller and more transaction-sensitive	64.0%	38.0%	72.0%	CRT earns attractive fees in normal markets but is more sensitive to transaction economics and cancellation premiums.
International mortgage insurance/reinsurance	Product margin not disclosed; international is 13.9% of FY2025 NPE	68.0%	45.0%	75.0%	International remains profitable but less scale advantaged and more heterogeneous by country.
Mortgage segment blended	TTM segment margin 83.8%	71.5%	44.6%	79.5%	Blended result is revenue-weighted and intentionally below recent reported margins in base case.

The base case margin decline is more than 100 bps, so the mechanism must be explicit. I assume favorable prior-period reserve development becomes smaller, the current-year loss ratio drifts upward from the very low recent level, and acquisition/operating expenses absorb a mildly lower revenue base before modest growth returns. This is normalization, not a thesis that Arch is losing underwriting discipline. The Q1 2026 management commentary says frequency assumptions had not changed and the loss ratio was within expectations [data_package section 6, Mortgage commentary], so the base case does not penalize the segment with recession losses. It simply refuses to capitalize an 80%+ margin as if it were a fixed annuity.

The bear case margin also requires explanation. I assume unemployment rises above the benign forecast path, home-price appreciation stalls or turns negative in exposed markets, cure rates weaken, and paid claims plus case reserves increase. Mortgage insurance losses are nonlinear because defaults rise with income stress and severity worsens when home equity is thin. The bear margin of 45% is still profitable because Arch's book starts from strong credit quality and because reinsurance/capital markets protection absorbs part of the tail. But it would cut underwriting income by more than half from TTM. That is the correct stress test for a high-margin credit insurer.

The bull case keeps margin at 80%, modestly below the FY2025 and TTM margin but above the base case. It requires continued low unemployment, positive house price growth, strong credit quality, high persistency, and no meaningful adverse PMIERs capital or reinsurance cost shock. The bull margin does not assume the FY2022 108.4% underwriting margin repeats. That year reflected especially favorable reserve and loss dynamics and should not be treated as a normal target.

10. Segment Rollup

The rollup compounds the model-allocated TTM product revenue base by the case-specific CAGRs for five years, then applies the product-level normalized margins above. Segment totals reconcile to the product lines within rounding.

Case	Product	TTM revenue base	CAGR	TTM+5y revenue	TTM+5y margin	TTM+5y underwriting income
Bear	U.S. primary mortgage insurance	$0.791B	-3.0%	$0.679B	46.0%	$0.312B

Case	Product	TTM revenue base	CAGR	TTM+5y revenue	TTM+5y margin	TTM+5y underwriting income
Bear	U.S. credit risk transfer and other	$0.204B	-5.0%	$0.158B	38.0%	$0.060B
Bear	International mortgage insurance/reinsurance	$0.161B	-2.0%	$0.145B	45.0%	$0.065B
Bear	Mortgage segment total	$1.156B	-3.2%	$0.982B	44.6%	$0.438B
Base	U.S. primary mortgage insurance	$0.791B	1.0%	$0.831B	74.0%	$0.615B
Base	U.S. credit risk transfer and other	$0.204B	-1.0%	$0.194B	64.0%	$0.124B
Base	International mortgage insurance/reinsurance	$0.161B	0.5%	$0.165B	68.0%	$0.112B
Base	Mortgage segment total	$1.156B	0.6%	$1.190B	71.5%	$0.851B
Bull	U.S. primary mortgage insurance	$0.791B	3.0%	$0.916B	82.0%	$0.751B
Bull	U.S. credit risk transfer and other	$0.204B	1.5%	$0.220B	72.0%	$0.159B
Bull	International mortgage insurance/reinsurance	$0.161B	2.0%	$0.178B	75.0%	$0.134B
Bull	Mortgage segment total	$1.156B	2.6%	$1.314B	79.5%	$1.044B

Arithmetic checks: Base revenue is $0.831B plus $0.194B plus $0.165B, or $1.190B. Base underwriting income is $0.615B plus $0.124B plus $0.112B, or $0.851B, giving a 71.5% blended margin. Bear revenue is $0.982B and underwriting income is $0.438B, giving a 44.6% blended margin. Bull revenue is $1.314B and underwriting income is $1.044B, giving a 79.5% blended margin. These are rounded in the summary table to 45%, 72%, and 80% for scenario communication.

The base case is intentionally conservative on profit despite modest revenue recovery. It says Mortgage remains a high-quality earnings contributor, but the current 83.8% TTM underwriting margin should drift toward a still-excellent low-70s normalized margin. The bear case says the market can be wrong if it treats Mortgage as a bond-like annuity. A credit-cycle shock would reduce both premium momentum and margin. The bull case says that if the U.S. economy avoids a housing-credit cycle and purchase originations improve, Mortgage can continue producing about $1 billion of underwriting income even without strong top-line growth.

11. Key Risks And Wildcards

Bear risk - unemployment and borrower cash-flow stress. Mortgage insurance is most vulnerable when unemployment rises and borrowers cannot cure delinquencies. The BLS reported unemployment of 4.3% in April 2026, unchanged from March, with 7.4 million unemployed people: https://www.bls.gov/news.release/empsit.htm. Fannie Mae's May 2026 forecast assumes unemployment averaging 4.4% in both 2026 and 2027. A move materially above that path would pressure defaults, cure rates, and reserve assumptions.

Bear risk - home price declines and loss severity. FHFA reported U.S. house prices up 1.7% YoY in Q1 2026, a positive but slower cushion than the high-appreciation years. If prices fall in high-growth or high-LTV markets, severity rises because borrower equity is thinner and foreclosure proceeds cover less of the unpaid balance. This is the classic tail for MI: frequency and severity worsen together.

Bear risk - PMIERs and capital rule tightening. PMIERs updates can reduce available assets, increase required assets, or limit business flexibility. FHFA's August 2024 release said PMIERs updates reviewed available-asset standards to ensure assets are high quality, liquid, and readily available, with a phase-in through September 30, 2026: https://www.fhfa.gov/news/news-release/fannie-mae-and-freddie-mac-update-their-private-mortgage-insurer-eligibility-requirements-2024. Arch has a large cushion today, but rule tightening can reduce distributable capital and segment ROE.

Base risk - premium yield competition. Six credible private MI carriers compete for lender flow. If price competition intensifies for prime high-credit-score borrowers, Arch may have to choose between share and margin. The base case assumes Arch protects returns and accepts modest growth. A more aggressive market could make even low-single-digit growth unattractive.

Base risk - persistency reversal. A moderate decline in mortgage rates could help originations but also increase refinancing and MI cancellations. That would be mixed for earned premiums. This is why the base case uses only 1.0% primary MI CAGR despite Fannie Mae's 2026 and 2027 purchase origination growth forecasts.

Bull wildcard - purchase market recovery without refinancing surge. The best environment for Arch is not necessarily a collapse in rates. It is a gradual affordability improvement that lifts purchase originations while preserving high persistency on the in-force book. In that environment, new insurance written improves and earned premiums compound from a stable stock.

Bull wildcard - capital markets risk transfer execution. If Arch can continue using reinsurance and insurance-linked structures efficiently, it can manage PMIERs capital intensity while protecting tail risk. That supports both growth capacity and normalized margin.

Bear wildcard - policy substitution. FHA pricing, GSE loan-level pricing, housing finance reform, or changes to acceptable credit enhancement could shift volume away from private MI. This is hard to forecast, but it is a real policy variable in any five-to-ten-year view of the segment.

Summary Table

Case	Segment TTM+5y Revenue	Segment TTM+5y Op Margin	Segment TTM+5y Op Income	Probability
Bear	$0.982B	45%	$0.438B	25%
Base	$1.190B	72%	$0.851B	55%
Bull	$1.314B	80%	$1.044B	20%

Bottom line: Mortgage is not a growth engine in the same way that a hard-market P&C specialty book can be. It is a compact, high-margin credit franchise whose value comes from disciplined risk selection, capital adequacy, persistency, and benign credit. The segment deserves credit for producing nearly $1 billion of TTM underwriting income on only $1.156 billion of TTM NPE, but the correct underwriting stance is to normalize margins downward and stress the credit cycle. In the base case, Mortgage remains one of Arch's best earnings-quality contributors while shrinking slightly as a percentage of consolidated underwriting premium. In the bear case, it is the segment most exposed to a housing-credit shock. In the bull case, it remains a differentiated earnings ballast rather than a high-growth premium compounder.

Appendix S - Synthesis (Combined Earnings Model)

Arch Capital Group Ltd. (ACGL) - Synthesis (Combined Earnings Model)

1. Anchors

This appendix builds the combined earnings model for Arch Capital Group Ltd. from the reviewed segment appendices, the DR-cleared data package, the cleared quant foundation, the management appendix, and the moat appendix. All dollar amounts are in USD billions unless noted otherwise. Segment revenue means net premiums earned, consistent with Arch's reportable segment tables. Consolidated GAAP revenue includes net premiums earned plus net investment income, realized and other items. Segment profit means underwriting income. For Arch, underwriting income is the cleanest segment operating income measure because investment income is not allocated to the underwriting segments.

Anchor	Value	Source
Today	2026-05-29	Stage 0 time anchor, Asia/Singapore runtime
U.S. market date for quote	2026-05-28	FMP quote endpoint for ACGL
Fiscal year end	December 31	Quant foundation and data package
Latest quarter	Q1 2026 ended March 31, 2026	Q1 2026 10-Q and earnings supplement
TTM anchor	Q2 2025 + Q3 2025 + Q4 2025 + Q1 2026	Quant foundation P4
TTM end date	2026-03-31	Quant foundation handoff
Forward horizon	2031-03-31	TTM end plus exactly 5.0 calendar years
Compounding span	5.0 calendar years	Stage 0 anchor
Current price	$91.4709	Live FMP `quote ACGL`, timestamp 1779988742, 2026-05-28 17:19:02 UTC
Required FY+5 EPS for P/E 15	$6.10	$91.4709 / 15
Starting diluted share count	359.7 million	Q1 2026 diluted shares in quant foundation P3

The quant foundation used a quote of $91.40 from the same U.S. market date. I refreshed the FMP stable `quote` endpoint for ACGL as required by the live data rule. The refreshed price was $91.4709 at Unix timestamp 1779988742, which converts to 2026-05-28 17:19:02 UTC. I use $91.4709 consistently for the P/E 15 test in this appendix. The difference versus the quant foundation quote is immaterial, but the appendix should have one valuation anchor, not two.

The horizon discipline matters here. The forecast base is TTM ended March 31, 2026, not FY2025. Every CAGR shown below compounds for exactly five calendar years to March 31, 2031. I do not anchor to FY2025 and I do not stretch the model into a six-year fiscal bridge.

2. Segment-Level Forward Assumptions

The table below reproduces the reviewed segment appendix outputs. I do not re-underwrite the segment cases here. The synthesis job is to combine, test, and translate them into consolidated net income and EPS.

Segment	TTM revenue ($B)	Bear TTM+5y rev	Base TTM+5y rev	Bull TTM+5y rev	Bear OI margin	Base OI margin	Bull OI margin	Source
Insurance	7.782	7.762	9.362	10.522	2.7%	6.2%	8.4%	`appendix_B_insurance.md` Sections 8-10
Reinsurance	7.925	7.318	8.987	10.464	10.7%	17.9%	22.9%	`appendix_B_reinsurance.md` Sections 8-10
Mortgage	1.156	0.982	1.190	1.314	44.6%	71.5%	79.5%	`appendix_B_mortgage.md` Sections 8-10
Total underwriting segments	16.863	16.062	19.539	22.300	8.9%	15.6%	19.4%	Sum of reviewed segment outputs

The most important point is not that Arch grows. It is where the earnings come from. In the base case, Insurance is the largest source of premium expansion, Reinsurance remains the largest underwriting profit pool but at a lower normalized margin than

the current TTM peak, and Mortgage remains a high-margin but mature credit-risk business. The base case underwriting income of $3.045B is lower than the current TTM underwriting income of $3.244B, even though segment net premiums earned rise from $16.863B to $19.539B. That is intentional. It reflects margin normalization in Reinsurance and Mortgage, not a broken franchise.

This matters for the Gideon lens. A lazy model would apply recent underwriting margins to a larger premium base and declare the stock obviously cheap. The reviewed segment appendices do not support that. They support a more restrained view: Arch is a strong underwriter, but the recent TTM margin mix benefited from a favorable reinsurance cycle, benign mortgage credit, and strong investment income. The synthesis therefore tests whether the stock still clears P/E 15 after normalizing those items.

3. Combined Revenue Build By Case

The segment appendices build net premiums earned. Consolidated GAAP revenue is larger because Arch also reports net investment income, realized gains and losses, equity-method income, and other items. The quant foundation shows TTM total revenues of $19.777B and TTM net premiums earned of $16.863B, so the TTM non-premium revenue bridge is $2.914B. I grow that bridge modestly by case: 1.0% per year in bear, 4.0% in base, and 5.5% in bull. This is not a separate aggressive earnings lever. It recognizes that Arch has a large investment portfolio and float base, while avoiding an assumption that current yields rise forever.

Line	Bear	Base	Bull
Insurance TTM+5 net premiums earned	7.762	9.362	10.522
Reinsurance TTM+5 net premiums earned	7.318	8.987	10.464
Mortgage TTM+5 net premiums earned	0.982	1.190	1.314
Sum of segment TTM+5 net premiums earned	16.062	19.539	22.300
Corporate eliminations	0.000	0.000	0.000
Non-premium revenue bridge	3.063	3.545	3.808
Combined TTM+5 consolidated revenue	19.125	23.084	26.108
Segment NPE CAGR over 5.0 years	-1.0%	3.0%	5.7%
Consolidated revenue CAGR over 5.0 years	-0.7%	3.1%	5.7%

The base case consolidated revenue is $23.084B. Of that, $19.539B is underwriting segment revenue and $3.545B is the investment and other revenue bridge. I show both because Arch is an insurer. Net premiums earned drive loss and expense leverage. Investment income and related non-premium items are economically real, but they are tied to float, capital, rates, credit quality, and portfolio duration rather than policy count alone.

The bear case is not a recession liquidation case. It assumes Reinsurance shrinks, Mortgage remains under pressure, and Insurance is flat, but Arch still carries a large investment portfolio and earns non-premium revenue on float. The bull case does not require a return to the FY2023-FY2025 growth burst. It requires mid-single-digit consolidated revenue growth, with Insurance and Reinsurance both compounding while Mortgage contributes modestly.

4. Combined Underwriting Operating Income Build By Case

Arch's segment reporting uses underwriting income, not GAAP operating income by segment. The table below therefore treats combined operating income as combined underwriting operating income before investment and other pre-tax contribution. I do not add a separate unallocated corporate expense line because the segment underwriting income measures already include underwriting expenses at the segment level, while the residual consolidated pre-tax bridge is handled in Section 5. Adding an extra corporate charge here without a disclosed line would double count.

Line	Bear	Base	Bull
Insurance underwriting income	0.211	0.582	0.885
Reinsurance underwriting income	0.779	1.612	2.401
Mortgage underwriting income	0.438	0.851	1.044

Line	Bear	Base	Bull
Sum of segment TTM+5 underwriting income	1.428	3.045	4.330
Unallocated corporate expense adjustment	0.000	0.000	0.000
Combined TTM+5 underwriting operating income	1.428	3.045	4.330
Underwriting margin on segment NPE	8.9%	15.6%	19.4%
Underwriting margin on consolidated revenue	7.5%	13.2%	16.6%

The consolidated base case has a lower underwriting margin than the TTM segment margin of 19.2%. That is the principal conservatism in the model. Reinsurance normalizes from a 23.1% TTM underwriting margin to 17.9%. Mortgage normalizes from 83.8% to 71.5%. Insurance improves from 5.7% TTM to 6.2%, but that improvement is modest because the data package and management appendix both show integration drag, non-renewals, and a more competitive market.

This is why the base case can pass the P/E 15 test without being a heroic underwriting case. The stock is priced at a low multiple of current TTM earnings. Even if underwriting income is flat to down from TTM, investment income and buybacks allow FY+5 EPS to stay well above the required level. The valuation question is less "can Arch compound EPS from here?" and more "how much of current earnings are peak-cycle, and would a normalized base still be high enough?" The answer from this model is yes for the P/E 15 gate, though that does not automatically make the stock a clean Gideon BUY because moat and management durability still matter.

5. Net Income And EPS Build By Case

The quant foundation shows TTM income before income taxes and operating affiliates of $5.410B and TTM segment underwriting income of $3.244B. The residual pre-tax contribution is therefore $2.166B. That bridge includes net investment income, realized and other items, interest expense, corporate items, and affiliate contribution treatment. I grow the residual pre-tax bridge by 2.0% per year in bear, 5.5% in base, and 6.5% in bull. The base case is higher than consolidated revenue growth because the balance sheet and reinvested capital can grow even when premiums slow, but it is not open-ended rate speculation.

The tax assumptions are case-specific and conservative relative to the recent effective rate noise: 16.0% in bear, 15.0% in base, and 14.5% in bull. Preferred dividends are held at $0.040B per year, consistent with the TTM and FY2025 bridge. All EPS figures use the explicit share count path in Section 6.

Line	Bear	Base	Bull
Combined underwriting operating income	1.428	3.045	4.330
Investment, interest, affiliate, and other pre-tax bridge	2.391	2.831	2.968
Other income adjustment	0.000	0.000	0.000
Pre-tax income	3.819	5.876	7.298
Tax rate assumed	16.0%	15.0%	14.5%
Net income available to Arch	3.208	4.994	6.239
Preferred dividends	-0.040	-0.040	-0.040
Net income available to common	3.168	4.954	6.199
Diluted share count at TTM+5	348.3M	324.4M	336.3M
EPS at TTM+5	9.10	15.27	18.43

The base case EPS is $15.27. That is only a modest increase from the quant foundation's TTM diluted EPS approximation of $13.00, despite a five-year period. The model does not need a large EPS growth story because the required P/E 15 EPS at the live quote is only $6.10. The bear case EPS of $9.10 also clears the P/E 15 valuation test, which is a strong result. It means the price test is not the tightest gate for Arch. The tighter gates are whether the current underwriting/investment profit mix is durable enough to deserve a long-term compounder classification, and whether soft-cycle insurance conditions or mortgage credit normalization could compress earnings faster than this bear case assumes.

6. Share Count Path

Arch's share count path is material. The quant foundation shows FY2025 common share repurchases of $1.889B and TTM repurchases of $2.476B. The management appendix shows that buybacks increased when growth opportunities moderated, and that management thinks about repurchases in relation to book-value growth and valuation. I therefore do not hold share count flat.

The base case assumes $1.000B of common buybacks per year for five years, at gradually rising average prices. That is below the TTM repurchase run-rate, so it does not require Arch to continue the unusually heavy Q1 2026 pace. Gross issuance is modeled at 2.5M shares per year. This is a rough dilution proxy because SBC is not disclosed as a clean separate line in the data package; the Q1 2026 common shares issued increase provides a practical anchor. The result is a base TTM+5 diluted share count of 324.4M.

Year	Starting share count (M)	Buyback $ ($B)	Avg price assumed	Shares retired (M)	SBC / gross issuance (M)	Ending share count (M)
2027	359.7	1.000	95	10.5	2.5	351.7
2028	351.7	1.000	100	10.0	2.5	344.2
2029	344.2	1.000	105	9.5	2.5	337.1
2030	337.1	1.000	110	9.1	2.5	330.6
2031	330.6	1.000	115	8.7	2.5	324.4

The bear case uses only $0.500B of annual buybacks and the same 2.5M annual issuance proxy, producing a TTM+5 share count of 348.3M. The bull case uses $0.750B of annual buybacks, not $1.000B, because more capital is assumed to be deployed into underwriting growth; it produces a TTM+5 share count of 336.3M. This is deliberately asymmetric. The base case has the largest buyback program because it assumes organic growth is adequate but not capital-hungry, while underwriting discipline releases excess capital. The bull case has higher net income but a higher share count than base because the company retains more capital for growth.

The arithmetic tie is straightforward: starting diluted shares plus five years of gross issuance minus five years of repurchase retirements equals ending share count. Base retirements are 10.5M, 10.0M, 9.5M, 9.1M, and 8.7M shares, or 47.8M total. Gross issuance is 12.5M total. Starting 359.7M less 47.8M plus 12.5M equals 324.4M after rounding.

7. P/E 15 Test

The Gideon valuation gate asks whether the stock is available at no more than 15 times confident FY+5 EPS. The current price is $91.4709, so required FY+5 EPS is $6.10. The base case is the relevant case for the gate, not the bull case.

Case	EPS at TTM+5y	EPS x 15	Current price	Cushion %	Pass?
Bear	9.10	136.46	91.47	49.2%	PASS
Base	15.27	229.12	91.47	150.5%	PASS
Bull	18.43	276.50	91.47	202.3%	PASS

The base case passes by a wide margin. The cushion is 150.5%, calculated as ($15.27 x 15 - $91.4709) / $91.4709. The bear case also passes with a 49.2% cushion. That is unusual for an ER2 run because the price gate often does the heavy rejection work. Here, the price gate is permissive because Arch's current earnings are high relative to price.

This should not be read as "buy automatically." The model is still exposed to three questions that are outside a simple P/E table. First, current TTM earnings include strong investment income and underwriting margins that may not be through-cycle. Second, Insurance and Reinsurance are competitive, cyclical markets where a disciplined underwriter can shrink rather than compound if pricing deteriorates. Third, Mortgage's high margin can look annuity-like until a housing credit cycle tests cure rates and severity. The P/E 15 test says the valuation hurdle is cleared under the combined model; it does not erase the moat appendix's YELLOW conclusion.

8. Reflexivity Check

The model compounds from the TTM base. If the TTM base does not tie to the source files, the forward model is invalid. The quant foundation P4 provides the controlling official TTM bridge. The data package Section 3 provides the five-year segment historicals and FY2025 check.

Tie-out	Segment reconstruction	Controlling figure	Variance	Status
TTM net premiums earned	16.863	16.863	0.0%	PASS
TTM underwriting income	3.244	3.244	0.0%	PASS
FY2025 net premiums earned	17.065	17.065	0.0%	PASS
FY2025 underwriting income	2.933	2.933	0.0%	PASS

The TTM reconstruction is Insurance $7.782B, Reinsurance $7.925B, and Mortgage $1.156B of net premiums earned, totaling $16.863B. The TTM underwriting income reconstruction is Insurance $0.443B, Reinsurance $1.832B, and Mortgage $0.969B, totaling $3.244B. Both match the quant foundation exactly within displayed precision.

The latest completed fiscal year also ties. FY2025 net premiums earned are Insurance $7.771B, Reinsurance $8.122B, and Mortgage $1.172B, totaling $17.065B. FY2025 underwriting income is Insurance $0.375B, Reinsurance $1.558B, and Mortgage $1.000B, totaling $2.933B. The data package explicitly notes that FY2021 had an old "Other / discontinued presentation" line, but FY2025 and the TTM anchor use the current three-segment taxonomy.

9. In-Progress FY Reconciliation

Stage 0 did not treat an in-progress fiscal year as effectively complete. The anchor is TTM ended March 31, 2026, built from Q2 2025, Q3 2025, Q4 2025, and Q1 2026. Therefore, no FY2026 full-year substitution is used in the model and no in-progress FY bridge is required.

As a recency check, Q1 2026 segment net premiums earned were Insurance $1.871B, Reinsurance $1.831B, and Mortgage $0.284B, or $3.986B in total. Annualizing that single quarter would give $15.944B, below the TTM net premiums earned base of $16.863B. That is not a model failure because reinsurance and insurance seasonality make a single-quarter annualization a blunt tool, and the dispatch anchor is the official four-quarter TTM bridge. Still, it is a useful warning: the base case should not start with a sudden step-up from Q1 2026. The base model does not. The first forward year implied by the combined segment CAGR is roughly 3.0% above TTM, within the 10% recency tolerance.

10. Sensitivity - Which Variable Matters Most

The base case EPS is $15.27. The sensitivities below hold other variables constant and vary one driver at a time. The point is not precision to the cent; it is to identify which assumption has the most leverage on the P/E 15 verdict.

Variable tested	Downside case EPS	Base EPS	Upside case EPS	EPS swing vs base
Reinsurance revenue CAGR +/- 200 bps	14.87	15.27	15.69	-0.40 / +0.42
Insurance underwriting margin +/- 200 bps	14.79	15.27	15.77	-0.49 / +0.50
Share count +/- 5%	14.55	15.27	16.08	-0.72 / +0.81
Tax rate +/- 300 bps	14.73	15.27	15.82	-0.54 / +0.55

Share count has the largest single sensitivity in this simple table because the base case assumes meaningful repurchases. That is not a free lunch. The buyback can fail to create value if repurchases happen at a high price-to-book ratio just before a reserve or cat loss cycle, or if capital is needed for underwriting opportunities with better expected returns. The management appendix reduces that concern because Arch has shown willingness to pause buybacks when underwriting opportunity is attractive and resume them when excess capital builds.

The second major driver is margin quality, not top-line growth. A 200 bps change in Insurance underwriting margin moves EPS by about $0.50. Reinsurance revenue growth has a smaller impact in this sensitivity than many readers might expect because the base model already normalizes Reinsurance margin and because the non-underwriting pre-tax bridge is large. A reinsurance margin sensitivity would matter more in a true soft-market shock than a revenue sensitivity. That is the key monitoring item: the dangerous scenario is not merely lower premium volume, but lower premium volume combined with weaker terms, adverse loss picks, or reserve deterioration.

11. Combined Earnings Summary Table

The probability weights are 25% bear, 50% base, and 25% bull. I do not use equal one-third weights because the evidence is not symmetric. Management quality and recent underwriting discipline support a higher base weight, while the moat

appendix's YELLOW verdict and cycle risks keep the bear weight meaningful. The bull weight is real but not dominant because the recent reinsurance and mortgage profit mix is already favorable.

Case	Revenue ($B)	OI ($B)	OI margin (%)	NI ($B)	EPS ($)	Probability	EPS x 15	vs. $91.4709
Bear	19.125	1.428	7.5%	3.168	9.10	25%	136.46	49.2%
Base	23.084	3.045	13.2%	4.954	15.27	50%	229.12	150.5%
Bull	26.108	4.330	16.6%	6.199	18.43	25%	276.50	202.3%
Probability-weighted	22.850	2.962	13.0%	4.819	14.52	100%	217.80	138.1%

The base case headline is: TTM+5 consolidated revenue of $23.084B, underwriting operating income of $3.045B, common net income of $4.954B, and EPS of $15.27. Required EPS for a 15x multiple at the refreshed live quote is $6.10. The cushion is 150.5% in the base case and 49.2% in the bear case.

The probability-weighted EPS is $14.52, which corresponds to $217.80 at 15x. I do not treat that as a target price. It is a hurdle-test translation. The model says the stock does not need heroic FY+5 earnings to clear the Gideon valuation rule. It also says that valuation alone is not enough to settle the final verdict because Arch's moat durability remains a YELLOW item in the moat appendix. The practical conclusion for the orchestrator is that any WATCH or PASS decision should be driven by business-quality confidence, reserve-cycle risk, and 20-year durability, not by a failure of the P/E 15 arithmetic.

Tie-Out Checks

Tie-out status: 11/11 passed.

- Reported-financial tie-out: PASS. TTM segment net premiums earned of $16.863B matches the quant foundation's official TTM net premiums earned of $16.863B. TTM segment underwriting income of $3.244B matches the official segment underwriting income bridge of $3.244B. FY2025 segment net premiums earned of $17.065B and underwriting income of $2.933B also match the data package and quant foundation. The revenue comparison is made to consolidated net premiums earned, not GAAP total revenue, because GAAP total revenue includes investment and other non-premium items.

- NI / shares = EPS: PASS. Bear common net income of $3.168B divided by 348.3M shares equals $9.10. Base common net income of $4.954B divided by 324.4M shares equals $15.27. Bull common net income of $6.199B divided by 336.3M shares equals $18.43. Differences are rounding only.

- Segment sum tie-out at horizon: PASS. Combined TTM+5 segment net premiums earned equal the sum of Insurance, Reinsurance, and Mortgage in each case: $16.062B bear, $19.539B base, and $22.300B bull. Corporate eliminations are zero because none are identified in the source files for segment NPE.

- Product-to-segment rollup: PASS. The reviewed segment appendices each reconcile product-level TTM+5 revenues to segment total revenue. Insurance Section 10 states product sums equal segment totals within rounding. Reinsurance Section 10 totals $8.987B base, $10.464B bull, and $7.318B bear. Mortgage Section 10 totals $1.190B base, $1.314B bull, and $0.982B bear. Each is within the 1% threshold.

- Weighted margin check: PASS. The segment appendices build segment margins from product revenue and margin assumptions where product-level tables exist. Insurance Section 10 gives product underwriting income sums and margins of 2.7%, 6.2%, and 8.4%. Reinsurance Section 9 gives weighted rollup margins of 10.7%, 17.9%, and 22.9%. Mortgage Section 10 gives blended margins of 44.6%, 71.5%, and 79.5%. The synthesis reproduces those outputs without changing them.

- Share count path: PASS. The base case starts at 359.7M diluted shares, retires 47.8M shares through buybacks, adds 12.5M shares of gross issuance, and ends at 324.4M shares. Bear and bull use the same five-year span, not six years, with lower buyback assumptions. EPS uses the case-specific ending share count.

- Growth plausibility: PASS. Base segment CAGRs are below the recent disclosed historical growth rates: Insurance base 3.8% versus FY2022-FY2025 segment CAGR of 19.4%, Reinsurance base 2.5% versus FY2023-FY2025 product/segment growth near the high teens, and Mortgage base 0.6% versus a mature low-growth history. The base case is not faster than 1.2x recent history for any major segment.

- Historical arithmetic: PASS. The segment forward tables use `TTM revenue x (1 + CAGR)^5 = TTM+5 revenue` over exactly five years. Sample checks: Reinsurance total $7.925B to $8.987B implies a 2.5% five-year CAGR within rounding; Insurance $7.782B to $9.362B implies about 3.8%; Mortgage $1.156B to $1.190B implies about 0.6%. Product rows in each appendix include the same arithmetic convention.

- Recency anchor: PASS. The base case first-forward-year segment run-rate is about 3.0% above TTM, within the 10% tolerance. Q1 2026 annualized segment NPE is lower than TTM, so this check is monitored, but the model does not begin with an unsupported step-change above recent trend.

- Tax and pre-tax bridge: PASS. The model starts from the quant foundation's TTM residual pre-tax bridge of $2.166B, grows it by disclosed case assumptions, adds it to underwriting operating income, applies the case tax rate, subtracts preferred dividends, and then calculates common EPS. The formulas tie in each case.

- P/E 15 and probability summary arithmetic: PASS. Required EPS equals $91.4709 divided by 15, or $6.10. Base EPS of $15.27 gives $229.12 at 15x and a 150.5% cushion. The probability-weighted EPS of $14.52 equals 25% bear, 50% base, and 25% bull, and the probability weights sum to 100%.

Final Synthesis

The combined model clears the P/E 15 test decisively. Base FY+5 consolidated revenue is $23.084B, underwriting operating income is $3.045B, net income available to common is $4.954B, and EPS is $15.27. Required FY+5 EPS at the refreshed quote is $6.10. The base cushion is 150.5%, and the bear cushion is still 49.2%.

The result is not a license to ignore cycle risk. It is the opposite: because the valuation gate passes easily, the final ER2 verdict should focus on whether Arch deserves confidence as a long-duration compounder. Management passes in the management appendix. The moat appendix is YELLOW, with the 2046 test also YELLOW, because the business is an excellent underwriting platform in cyclical insurance markets rather than a permanently protected monopoly-like compounder. This synthesis therefore hands the orchestrator a clean arithmetic result, not a final BUY verdict by itself.

Markdown tables verified: sections 2, 3, 4, 5, 6, 7, 10, and 11.

Appendix CS - Compounder Score

Arch Capital Group Ltd. (ACGL) - Diagnostic Compounder Score

Analysis date: 2026-05-29. Fiscal year end: December 31. Latest quarter: Q1 2026 ended March 31, 2026. TTM anchor: Q2 2025 + Q3 2025 + Q4 2025 + Q1 2026, ending March 31, 2026. Forward horizon: March 31, 2031, exactly five calendar years from the TTM anchor.

This score is diagnostic only. It does not override the ER2 management, moat, or valuation hard gates. The source chain already concludes: management gate PASS, moat gate YELLOW, and the synthesis P/E <= 15 gate PASS. The compounder score asks a different question: does the evidence support Arch Capital as a high-quality capital compounder capable of meeting a 20% annualized return underwriting hurdle without depending on terminal multiple expansion?

1. Executive Verdict

Arch Capital Group Ltd. scores 74 / 100 under the diagnostic compounder rubric: Business Quality 63 / 80 and Valuation / 20% Return Underwriting 11 / 20. The score-implied classification is Watchlist.

That classification may feel conservative for a company whose base-case ER2 model clears the P/E 15 gate with a 150.5% cushion and whose bear case still clears with a 49.2% cushion. The reason is that the ER2 P/E gate and this diagnostic 20% return score are not identical tests. The synthesis asks whether the current price is no more than 15 times confident FY+5 EPS. It passes decisively: the refreshed price was $91.4709, required FY+5 EPS at 15x was $6.10, and the base-case FY+5 EPS was $15.27. This diagnostic score asks whether a 20% annualized return can be underwritten without terminal multiple expansion. On that stricter measure, Arch is capped. At the current TTM EPS of $13.00, the stock trades at about 7.0x TTM EPS. A five-year exit at 15x base-case FY+5 EPS would imply an annualized price return of roughly 20.2%, but that requires the terminal multiple to more than double from today's earnings multiple. A flat-current-multiple case on the base FY+5 EPS produces a much lower annualized return.

The evidence supports Arch as an unusually good specialty insurer and reinsurer. It has generated strong underwriting income, healthy operating cash flow, meaningful book-value growth, a conservative balance sheet, and disciplined capital return. Management quality passes the ER2 gate. The team has shown a willingness to sacrifice volume when risk-adjusted returns weaken, including Q1 2026 reinsurance shrinkage and Insurance non-renewals tied to the middle-market commercial acquisition. The company is not balance-sheet constrained: Q1 2026 cash plus investments were $47.700 billion, shareholders' equity was $24.188 billion, senior notes were $2.729 billion, and senior notes were only 10.1% of senior notes plus equity.

The score is not higher because the moat gate is YELLOW and the business is cyclical. Arch's strongest current profit pools are Reinsurance and Mortgage. Reinsurance is excellent today, with TTM underwriting income of $1.832 billion on $7.925 billion of TTM net premiums earned, but it is exposed to property catastrophe pricing, alternative capital, casualty reserve risk, and renewal-cycle competition. Mortgage generated $0.969 billion of TTM underwriting income on only $1.156 billion of TTM net premiums earned, but those margins depend on benign mortgage credit, cure rates, home prices, unemployment, PMIERs capital, and GSE-related market structure. Insurance is large but lower margin: $7.782 billion of TTM net premiums earned and $443 million of TTM underwriting income. A great underwriter can compound for a long time, but an insurer's moat has to be re-earned every cycle through pricing, reserving, risk selection, and capital allocation.

2. Data Source Map

The score uses the ER2 verified source chain first. No local warehouse or stale cache was used as a substitute.

Data area	Source used	Key figures or use
Price, market cap, valuation anchor	`appendix_synthesis.md` and `quant_foundation.md`	Refreshed price $91.4709; quant foundation market cap $31.934B at $91.40
Segment historicals	`quant_foundation.md`, `data_package.md`, segment appendices	FY2025 and TTM net premiums earned, underwriting income, combined ratios
Consolidated financials	`quant_foundation.md`, `data_package.md`	TTM revenues $19.777B, TTM common net income $4.832B, TTM EPS $13.00
Balance sheet	`quant_foundation.md`, `data_package.md`	Q1 2026 equity $24.188B, cash plus investments $47.700B, senior notes $2.729B

Data area	Source used	Key figures or use
Cash flow and buybacks	`quant_foundation.md`, `data_package.md`	TTM OCF $5.902B, FMP FCF cross-check $5.859B, TTM repurchases $2.476B
Management	`appendix_management.md`	Management gate PASS, capital allocation, incentives, candor, succession
Moat and durability	`appendix_moat.md`	Moat gate YELLOW, 2046 test YELLOW, scale/rating/procurement advantage
FY+5 synthesis	`appendix_synthesis.md`	Base EPS $15.27, bear EPS $9.10, bull EPS $18.43, P/E 15 gate PASS
Segment forward assumptions	`appendix_B_insurance.md`, `appendix_B_reinsurance.md`, `appendix_B_mortgage.md`	Base TTM+5 NPE and underwriting income by segment

3. Key Financial and Quality Metrics

For an insurer, standard industrial ROIC is only a directional proxy. The data package calculates FY2025 NOPAT proxy of $4.25 billion, invested capital of $25.94 billion, and ROIC proxy of 16.4%. That is useful, but it can be distorted by float, reserves, investments, taxes, and insurance liabilities. The core quality evidence is better read through ROAE, book-value compounding, underwriting margins, reserve and capital adequacy, cash generation, and per-share capital allocation.

Metric	Evidence	Diagnostic interpretation
FY2025 industrial ROIC proxy	16.4%	Good, not elite on a pure industrial rubric
Q1 2026 annualized operating ROAE	15.4%	Strong insurer-quality evidence
Q1 2026 annualized net income ROACE	17.8%	Strong, but cycle-sensitive
TTM common net income	$4.832B	High earnings base relative to market cap
TTM diluted EPS	$13.00	Current P/E roughly 7.0x at $91.4709
TTM operating cash flow	$5.902B	Cash conversion strong, but insurance float-cycle dependent
TTM FMP FCF cross-check	$5.859B	Very high FCF yield proxy; not a pure industrial FCF metric
FY2025 net debt / EBITDA proxy	0.32x	Low financial leverage, but insurer leverage should be judged by capital adequacy
Q1 2026 cash plus investments	$47.700B	Supports ratings, liquidity, and underwriting capacity
Q1 2026 reserve for losses and LAE	$34.105B	Core risk item requiring ongoing actuarial monitoring
Estimated common shares outstanding	359.0M to 352.9M in Q1 2026	Positive per-share capital return
Price / book value	1.38x	Not obviously priced for perfection

The five-year consolidated history is strong. Revenue increased from $8.924 billion in FY2021 to $19.929 billion in FY2025. Operating income proxy increased from $1.737 billion to $4.979 billion. Net income increased from $2.157 billion to $4.399 billion. FCF increased from $3.386 billion to $6.128 billion. Diluted shares fell from 400.3 million in FY2021 to 375.9 million in FY2025, and the quant foundation shows estimated common shares outstanding falling further to 352.9 million at Q1 2026.

The segment data explains why the quality score is high but capped. FY2025 segment net premiums earned were Reinsurance $8.122 billion, Insurance $7.771 billion, and Mortgage $1.172 billion. FY2025 underwriting income was Reinsurance $1.558 billion, Insurance $0.375 billion, and Mortgage $1.000 billion. On a TTM basis, Reinsurance underwriting income rose to $1.832 billion, Mortgage remained high at $0.969 billion, and Insurance was $0.443 billion. The blended underwriting franchise is very good, but not all earnings are equally durable.

4. Rubric Scorecard

Category	Score	Max	Evidence summary
Incremental returns on capital	19	25	ROIC proxy and ROAE are strong, underwriting economics are attractive, but insurer ROIIC is not cleanly measurable and current margins are cycle-aided

Category	Score	Max	Evidence summary
Reinvestment runway	16	20	Specialty insurance, reinsurance, mortgage credit, analytics, and capital redeployment provide runway, but growth is constrained by pricing cycles and return thresholds
Durability of moat	11	15	Scale, ratings, broker/cedent relationships, underwriting culture, and high-trust procurement are real; moat gate remains YELLOW
Accounting and financial quality	8	10	SEC-controlled source chain, cash flow, low debt, and governance are good; reserve quality and FMP balance-sheet mis-map require caution
Capital allocation discipline	9	10	Management deploys into underwriting first, then repurchases; compensation aligns with ROE and tangible book value per share
Price and 20% return underwriting	11	20	P/E 15 gate passes, but 20% IRR requires terminal multiple expansion from today's low earnings multiple
Total	74	100	Watchlist

Sub-score details:

Subcategory	Score	Max	Rationale
1A Normalized ROIC high	3	5	FY2025 ROIC proxy of 16.4% and ROAE in the mid-to-high teens are good but not 30%+
1B ROIIC high	4	8	Underwriting income and book value have compounded, but insurer ROIIC cannot be cleanly calculated from disclosed data
1C ROIIC not deteriorating sharply	3	3	Management is shrinking weaker business rather than forcing volume; no evidence of broad return collapse
1D Unit economics support returns	3	3	Reinsurance and Mortgage unit economics are strong; Insurance is profitable but narrower margin
1E Cash conversion is real	3	3	FY2025 OCF exceeded net income and TTM OCF was $5.902B
1F ROIC is not an accounting artifact	3	3	Score uses insurer-specific ROAE, underwriting, book value, reserves, and capital adequacy rather than only industrial ROIC
2A Large remaining opportunity	4	5	Global specialty, reinsurance, and mortgage risk markets remain large
2B Reinvest at scale	4	5	Reinsurance and Insurance scaled materially from FY2021-FY2025
2C Organic opportunity	3	4	Organic growth exists, but Q1 2026 premium trends are slowing
2D Repeatable expansion playbook	3	3	Underwriting discipline, analytics, acquisitions, pruning, and buybacks are repeatable
2E Market structure supports growth	1	2	Market structure is attractive in pockets but competitive and cyclical
2F Growth without ROIC collapse	1	1	Management has shown willingness to reject growth below return hurdles
3A Clear advantage source	3	4	High-trust procurement, ratings, scale, data, and underwriting discipline
3B Pricing power	2	3	Pricing discipline is visible, but unilateral pricing power is limited
3C Competitive evidence	2	3	Strong margins and share relevance, but no monopoly position

Subcategory	Score	Max	Rationale
3D Customer stickiness	1	2	Relationships matter, but renewals are contestable
3E Stress resilience	2	2	Balance sheet, ratings, and diversified segments support resilience
3F Low disruption risk	1	1	AI is more productivity tool than direct demand destroyer
4A Clean revenue and earnings	2	2	SEC source chain controls material FMP mismatches
4B Cash flow supports earnings	2	2	OCF and FCF cross-checks are strong
4C SBC and dilution	1	2	SBC not separately disclosed cleanly; share count reduction offsets concern
4D Balance sheet strength	2	2	Low senior-note burden and large investment portfolio
4E Transparent disclosures	1	1	Segment and management disclosures are above average
4F Governance/accounting flags	0	1	No thesis-breaking flag, but classified board and related-party items deserve annual monitoring
5A Reinvestment rational	2	2	Capital first goes to underwriting opportunities
5B Acquisition discipline	2	2	MCE acquisition is being pruned rather than defended for volume
5C Buyback discipline	2	2	Buybacks accelerated when excess capital built and organic growth moderated
5D Incentive alignment	2	2	ROE and tangible book value per share are central compensation metrics
5E Owner mentality	0	1	Evidence is good but not founder-owner level
5F Past decisions	1	1	Five-year book-value and ROE record supports stewardship
6A Base IRR >= 20%	3	6	Clears around 20.2% only if exit reaches 15x FY+5 EPS
6B Conservative exit multiple	1	4	The 20% case needs expansion from roughly 7.0x TTM EPS to 15x FY+5 EPS
6C Bear case acceptable	2	3	Bear at 15x implies about 8.3% annualized; flat-multiple bear would be weak
6D Reverse DCF beatable	2	3	Low current multiple helps, but normalized earnings uncertainty is material
6E Multiple not perfection	2	2	Current price is not capitalizing flawless growth
6F Cash returns help	1	2	Buybacks help materially; ordinary dividend yield is not meaningful

5. ROIIC and Reinvestment Analysis

The evidence supports high incremental underwriting returns, but not a clean 35%+ ROIIC calculation. That is an important distinction. For an industrial company, one can measure incremental NOPAT against capex, working capital, acquisitions, and capitalized R&D. Arch is an insurer. Its reinvestment is mostly risk capital, reserves, underwriting capacity, broker relationships, systems, claims teams, reinsurance purchasing, and the investment portfolio supporting policyholder obligations. Consolidated capex was only $44 million in FY2025, which would make any industrial ROIIC calculation look artificially high. That would be misleading.

The better insurer-specific evidence is the combination of underwriting income, ROAE, book-value metrics, and capital allocation. Management's proxy evidence shows one-, three-, and five-year annualized ROE of 20.1%, 24.5%, and 18.6%; operating ROE of 17.1%, 19.6%, and 15.4%; total book value return per share of 22.6%, 99.6%, and 114.8%; and total

tangible book value return per share of 24.6%, 102.6%, and 115.5%. That is strong compounding evidence. The Q1 2026 annualized operating ROAE of 15.4% and net income ROACE of 17.8% also clear a good-insurer threshold.

The reinvestment record is mixed in a healthy way. Reinsurance NPE grew from $2.841 billion in FY2021 to $8.122 billion in FY2025, and underwriting income rose from $168 million to $1.558 billion. Insurance NPE grew from $3.625 billion to $7.771 billion, though underwriting income rose only from $115 million to $375 million, leaving Insurance a lower-margin growth engine. Mortgage NPE was mature and slightly down from FY2021, but underwriting income remained very high. This is not a single linear runway. It is a portfolio of risk engines with different capital cycles.

Capital allocation reinforces the ROIIC view. Buybacks were minimal in FY2023 and FY2024 when underwriting opportunity was stronger or capital was being deployed, then increased in FY2025 and Q1 2026 as growth opportunities moderated. The data package shows buybacks of $1.889 billion in FY2025 and the quant foundation shows TTM common repurchases of $2.476 billion. Management also explicitly framed underwriting opportunities as the first call on capital and buybacks as the outlet for excess capital when returns are less attractive. That is exactly the behavior needed for an insurer to preserve incremental returns through a softening cycle.

The cap is reserve-cycle uncertainty. The quant foundation flags reserve quality as requiring actuarial review, with Q1 2026 reserves for losses and LAE of $34.105 billion. Reinsurance and Insurance can report attractive returns before long-tail losses fully emerge. Mortgage can report extraordinary margins while unemployment, home prices, and cure rates remain benign. The diagnostic score gives Arch credit for high returns but refuses to treat recent ROIIC as mechanically proven.

6. Runway Analysis

Arch's runway is real but cyclical. Insurance, Reinsurance, and Mortgage each have a plausible five-year role. Insurance can grow selected specialty, casualty, international, and middle-market lines after integration cleanup. Reinsurance can deploy into specialty, casualty, property, marine, aviation, and catastrophe zones that still clear hurdle rates. Mortgage can remain a high-margin diversifier if credit quality stays strong and purchase origination volume gradually recovers. The synthesis base case builds TTM+5 segment NPE of $9.362 billion for Insurance, $8.987 billion for Reinsurance, and $1.190 billion for Mortgage, compared with TTM starting points of $7.782 billion, $7.925 billion, and $1.156 billion.

The runway score is not higher because management is already telling investors not to extrapolate the recent growth burst. Insurance earned-premium growth decelerated from 33.2% in Q2 2025 to 0.6% in Q1 2026, and management expects selected acquired program non-renewals to reduce 2026 net premiums written by about $250 million. Reinsurance NPE was down 9.7% year over year in Q1 2026 as property catastrophe and short-tail pricing softened and cedents retained more risk. Mortgage NPE was down 5.3% year over year in Q1 2026.

The positive read is that slower growth is the point. A weak insurer grows when pricing deteriorates because it defends premium volume. A strong insurer shrinks or slows when risk-adjusted returns deteriorate and returns capital instead. Arch appears to be behaving like the latter. The runway is therefore best described as return-sensitive capacity deployment, not a simple unit-volume compounding algorithm.

7. Moat Analysis

The moat score is 11 / 15, consistent with the ER2 moat gate YELLOW. Arch has a real franchise, but it is not a structurally locked monopoly-like compounder. Its strongest advantages are scale, ratings, broker and cedent relationships, underwriting culture, claims-paying reputation, analytics embedded in decision-making, capital flexibility, and high-trust procurement. The Q1 2026 balance sheet and ratings context support that. Buyers of specialty insurance, reinsurance, and mortgage credit protection need confidence that Arch can pay claims under stress.

The moat's weakness is that returns are repeatedly contested. Reinsurance is vulnerable to alternative capital, traditional capital inflows, cedent retentions, catastrophe model confidence, retrocession cost, and casualty reserve development. Insurance faces broker competition, E&S capacity, property rate softness, commercial auto severity, casualty inflation, and acquisition integration risk. Mortgage faces other private mortgage insurers, FHA/VA competition, GSE policy, PMIERs, affordability, origination cycles, unemployment, and home-price severity.

The 2046 test is YELLOW for the right reason. One can describe a credible 2046 Arch as a global rated risk-capital platform selling specialty insurance, reinsurance, and mortgage-credit protection. But the moat depends on repeated execution, not structural lock-in. If Arch under-reserves casualty, chases catastrophe volume in a soft market, misprices mortgage credit, or loses rating strength, the franchise can weaken quickly. A company whose moat must be re-earned every cycle can still be an excellent investment, but it should not receive a perfect durability score.

8. Accounting and Capital Allocation Analysis

Financial quality is strong. The quant foundation reconciled material FMP-vs-official discrepancies and used SEC official values where FMP mis-mapped total assets and total liabilities. FY2025 official total assets were $79.241 billion and total liabilities were $55.035 billion; FMP annual balance-sheet values were lower by $12.185 billion on both lines. That discrepancy is disclosed and controlled to SEC official values. The TTM construction ties to Q2 2025 + Q3 2025 + Q4 2025 + Q1 2026. The quant foundation passed all eight reconciliation checks.

Cash conversion is positive but not simple. FY2025 net cash provided by operating activities was $6.172 billion versus $4.399 billion of net income available to Arch. TTM operating cash flow was $5.902 billion versus TTM net income available to Arch of $4.872 billion. This supports earnings quality, but an insurer's operating cash flow is affected by premiums, reserves, loss payments, and float. Strong cash conversion gets credit but not blind industrial-style treatment.

Management and capital allocation deserve high marks. The management appendix concludes PASS. The current CEO is new to the top seat but not new to Arch's underwriting culture. CFO Francois Morin has actuarial and risk leadership background. Incentives use ROE and tangible book value per share, which are materially better than pure premium growth or total revenue metrics. Governance has watch items, including classified-board/no-term-limit structure and ordinary-course related-party disclosures, but no thesis-breaking issue was identified.

Buybacks are rational evidence rather than financial engineering in isolation. Estimated common shares outstanding declined from 359.0 million at year-end 2025 to 352.9 million at Q1 2026. The synthesis models base-case diluted shares falling from 359.7 million to 324.4 million by the forward horizon, with $1.0 billion per year of buybacks and 2.5 million annual gross issuance. That assumption is below the recent TTM repurchase pace and ties to management's stated capital framework. The diagnostic score gives credit for this, while noting that buybacks can destroy value if made before a reserve, cat, or credit shock at too high a price-to-book ratio.

9. 20% Return Underwriting

The valuation result is the most easily misunderstood part of this appendix. The ER2 synthesis passes the P/E 15 gate. Base FY+5 consolidated revenue is $23.084 billion, underwriting operating income is $3.045 billion, common net income is $4.954 billion, and EPS is $15.27. Required FY+5 EPS at the refreshed price of $91.4709 is only $6.10. The base cushion is 150.5%, and the bear cushion is 49.2%. The synthesis probability-weighted FY+5 EPS is $14.52.

For the diagnostic 20% return score, the issue is terminal multiple. Using the ER2 15x hurdle translation, ending value in the base case is $229.12 per share. From $91.4709, that is about 20.2% annualized over five years. The bear case, $136.46 at 15x $9.10 EPS, is about 8.3% annualized. The bull case, $276.50 at 15x $18.43 EPS, is about 24.8% annualized. Those are respectable outputs.

But the current stock price divided by TTM EPS of $13.00 is only about 7.0x. A 15x exit is therefore not a flat-multiple case. It is a major rerating. If the terminal multiple stayed around today's earnings multiple, the base-case terminal value would be roughly $107 per share before any separately modeled dividends, because $15.27 of FY+5 EPS multiplied by about 7.0x is not far above today's price. The synthesis already embeds buybacks in ending EPS, so one should not double-count repurchase returns. Under the no-multiple-expansion diagnostic standard, the 20% return case does not clear at the current price.

The maximum buy price for a 20% annualized return under a flat-current-multiple base case is roughly $43 per share. That is not a target or a prediction. It is a diagnostic stress result showing why the valuation sub-score is capped despite the P/E 15 gate passing. Arch is cheap on current earnings and clears the ER2 price discipline, but the dream-compounder score requires a return path that does not depend on the market deciding five years from now that normalized insurer earnings deserve a much higher multiple.

10. Hard Veto Checklist

Veto item	Status	Evidence
ROIIC below cost of capital with no path	Watch	Returns look above cost of capital, but clean ROIIC is not available
Reported ROIC artifact	Watch	Industrial ROIC can mislead for insurers; appendix uses insurer-specific measures
Growth requires external financing	Pass	Balance sheet and cash generation are strong
Share count rises without value creation	Pass	Share count has declined materially

Veto item	Status	Evidence
Large acquisitions without disclosed returns	Watch	MCE acquisition requires monitoring, but management is pruning poor-fit business
FCF lags earnings structurally	Pass	OCF and FCF cross-check support earnings
Concentration/regulation/cyclicality can impair equity	Watch	Insurance, reinsurance, and mortgage cycles are real
20% case requires terminal multiple expansion	Fail for diagnostic 20% hurdle	Base 20% IRR requires a move toward 15x from about 7x TTM EPS
Needs flawless execution	Watch	P/E 15 gate does not need perfection; 20-year compounder case needs cycle discipline
Moat cannot be explained clearly	Pass	Moat is high-trust rated risk capital plus underwriting culture and relationships
Accounting or governance impair trust	Watch	No breaking issue; related-party and governance items require annual monitoring
Balance sheet risk could wipe out equity	Pass	Low senior-note burden and large investment portfolio, but reserve/cat/credit stress must be watched

No hard veto forces an ER2 rejection from this diagnostic appendix. However, the 20% return case requiring terminal multiple expansion prevents an Investable Now classification under this rubric.

11. Final Decision

Compounder Score note: 74 / 100; Watchlist. Arch is a high-quality insurer/reinsurer with strong management and capital discipline, but the diagnostic score is capped by moat YELLOW, cycle-normalization risk, and a 20% return case that relies on terminal rerating.

Business Quality Score note: 63 / 80. The evidence supports a strong underwriting franchise, healthy ROAE/book-value compounding, disciplined buybacks, and a conservative balance sheet, but insurer ROIIC is not cleanly measurable and Reinsurance/Mortgage profitability is cycle-aided.

20% Return UW Score note: 11 / 20. The ER2 P/E <= 15 gate passes decisively, with base FY+5 EPS of $15.27 versus required EPS of $6.10, but a 20% annualized shareholder return requires the exit multiple to expand materially from today's roughly 7x TTM EPS.

Classification: Watchlist. The business is too good to reject on quality, and the ER2 valuation gate passes. But this is not an "investable now under the diagnostic compounder rubric" result because the total score is below 80, Business Quality is below 65, the valuation underwriting score is below 15, and the no-terminal-multiple-expansion test fails.

Confidence: Medium-high. Historical and synthesis data are well reconciled, management and moat appendices are complete, and the Stage 0 anchor is clean. The remaining uncertainty is not data sloppiness; it is the economic problem of normalizing insurer earnings through reinsurance, casualty, catastrophe, and mortgage-credit cycles.

12. Machine-Readable JSON

The machine-readable score is written separately to:

`C:\Users\Admin\OneDrive\GPT\ER 2.0\Arch Capital\compounder_score.json`

Appendix CSA - Scoring Audit

Arch Capital Group Ltd. - Scoring Audit

Stage 0 anchor: today is 2026-05-29. Arch Capital Group Ltd. has a December 31 fiscal year end. The latest quarter is Q1 2026 ended March 31, 2026. The TTM anchor is Q2 2025 plus Q3 2025 plus Q4 2025 plus Q1 2026, ending March 31, 2026. The forward horizon is March 31, 2031.

1. Original vs Audited Scores

The original compounder score was internally coherent in its main conclusion: Arch is a strong underwriting franchise, but the diagnostic 20% return case does not clear without terminal multiple expansion. The audit does not dispute the broad qualitative picture. It does, however, reduce the score because the dispatch audit rules are stricter than the scorer's treatment of insurer ROIIC, acquisition-inclusive reinvestment returns, FCF conversion, and the 20% underwriting score.

Item	Original	Audited	Notes
Business Quality Score / 80	63	56	Reduced mainly because ROIIC was not calculated, acquisition-inclusive ROIIC is missing, and cash conversion is not a clean industrial FCF test for an insurer.
Valuation / 20% Return UW Score / 20	11	7	Reduced because the base 20.2% IRR requires an exit rerating from roughly 7.0x TTM EPS to 15x FY+5 EPS.
Total Score / 100	74	63	Score falls below the diagnostic Reject threshold, even though this does not mechanically override ER2 management, moat, or P/E gates.
Classification	Watchlist	Reject	Reject under the diagnostic compounder rubric only; Arch can still be considered separately by the ER2 verdict process.

Original reconstructed facts: Business Quality was 63 / 80, Valuation / 20% Return Underwriting was 11 / 20, and Total Score was 74 / 100. The original classification was Watchlist. The original JSON and appendix agree on the key totals. Base, bear, and bull IRRs were 20.2%, 8.3%, and 24.8%, respectively, all using a 15x FY+5 EPS exit. The maximum buy price for a 20% annualized return under the original flat-current-multiple diagnostic was about $43.20. The original JSON also correctly flags `does_not_require_multiple_expansion` as false.

2. Score Reductions and Reasons

This score is reduced because the original 1B ROIIC score violates the audit cap. The appendix says clean insurer ROIIC cannot be calculated from disclosed reinvestment data, and the JSON reports `roiic_3yr`, `roiic_5yr`, and `acquisition_inclusive_roiic_5yr` as null. The audit rule is explicit: if ROIIC is not calculated, Category 1B score must be 0. The original 4 / 8 for 1B is therefore unsupported. Arch deserves credit elsewhere for ROAE, book-value compounding, underwriting income, and capital discipline, but those are not substitutes for a calculated ROIIC score inside this rubric.

Category 1 is also capped by the acquisition-inclusive ROIIC gap. The management appendix shows acquisition activity was material in 2021 and 2024, including the middle-market commercial acquisition. That acquisition is strategically plausible, and management has pruned poor-fit business rather than defending volume. But the score cannot treat acquired scale as high-return reinvestment without a return calculation. The Insurance appendix notes that margins remain much lower than Reinsurance and Mortgage, and the acquired program non-renewals create a real burden of proof. This reduces confidence in both incremental return quality and capital allocation scoring.

Cash conversion receives partial but not full credit. The quant foundation shows TTM operating cash flow of $5.902 billion versus TTM net income available to Arch of $4.872 billion, and the FMP FCF cross-check is directionally strong at $5.859 billion. The data package also provides a five-year FCF series. However, the source files themselves warn that insurer cash flow is reserve and float driven. The appendix does not calculate multi-year FCF conversion ratios or test conversion through adverse reserve development. For an insurer, OCF above earnings can be real evidence of underwriting strength, but it can also reverse if loss reserves prove inadequate. I reduce 1E from 3 to 2 and 4B from 2 to 1.

The 20% underwriting score is reduced more sharply. Under the scorer rubric, 6A awards 6 points only when the base case clears 20% without multiple expansion. The source case clears 20.2% only by applying 15x to FY+5 EPS of $15.27. Current TTM EPS is $13.00, and the refreshed price is $91.4709, so the current earnings multiple is only about 7.0x. A move from roughly 7x to 15x is not mild expansion; it is major rerating. Under the audit cap, 6A cannot exceed 2, and 6B should be 0 because the expansion is material. Bear-case acceptability is also reduced because the cited 8.3% bear IRR uses the same 15x exit; the flat-current-multiple bear case would be weak.

3. Unsupported Claims

The evidence does not support the original 4 / 8 score for high ROIIC. It supports the statement that Arch has compounded book value and earned strong ROAE. It supports the statement that management is behaving rationally by shrinking weak business and returning capital when underwriting opportunities are less attractive. It does not support a numerical incremental return on invested capital. The scorer acknowledged this gap but still awarded half the ROIIC points. That is too generous under the dispatch rules.

The evidence also does not support treating acquisition-inclusive reinvestment as proven. The middle-market commercial acquisition may improve Arch's Insurance scale and capabilities, but the record now includes transitional costs and selected program non-renewals. The management appendix is balanced and credible, yet it does not calculate acquisition IRR, acquired-book ROE, goodwill-adjusted returns, or post-acquisition margin improvement. Good qualitative M&A discipline is worth some capital-allocation credit, but not full credit.

The 6D reverse DCF score is only partly supported. The synthesis ties price to required FY+5 EPS under the P/E 15 rule, and that arithmetic passes decisively. But the audit procedure asks for current EV / NOPAT and reverse DCF required NOPAT CAGR. The score materials provide EV / NOPAT of 7.94, but not a real reverse DCF bridge from current EV to required NOPAT growth. The original 2 / 3 is reduced to 1 / 3.

4. Calculation Errors

The most important calculation break is not a spreadsheet arithmetic error; it is a rubric mechanics error. The base-case IRR is arithmetically plausible: $229.12 divided by $91.4709 over five years is roughly 20.2% annualized. The problem is that the terminal value is 15x FY+5 EPS while today's TTM P/E is roughly 7.0x. The no-multiple-expansion version is closer to $107 per share using $15.27 of FY+5 EPS at the current multiple. That is far below the $229 terminal value required for the stated 20% base-case IRR.

The original score therefore gives too much credit to 6A and 6B. The appendix itself says the 20% case requires terminal multiple expansion, the JSON flags the same issue, and the hard-veto table marks it as a diagnostic fail. The audited score makes the arithmetic and the scoring consistent.

The ROIC proxy is directionally useful but should not be overread. The data package calculates FY2025 NOPAT proxy of $4.25 billion, invested capital of $25.94 billion, and ROIC proxy of 16.4%. That is a reasonable directional check, but the source files repeatedly warn that industrial ROIC can mislead for an insurer because float, reserves, investment assets, taxes, and insurance liabilities distort both numerator and denominator. This is not an error in the data package; it is a limit on how many industrial compounder points can be awarded.

5. Missing Data

The most important missing evidence is clean insurer ROIIC. The audit would need a disciplined bridge from incremental underwriting capital, reserves, capital adequacy, acquisitions, and retained earnings to incremental NOPAT or economic profit. The current files do not provide that bridge. They provide strong adjacent evidence: ROAE, book-value growth, underwriting income, combined ratios, operating cash flow, balance-sheet strength, and management discipline. Adjacent evidence is valuable, but it is not the same as ROIIC.

The second missing item is acquisition-inclusive ROIIC. Acquisition spend is material enough that the audit cannot ignore it. The Insurance appendix and management appendix identify MCE integration, selected non-renewals, and transitional expense. The correct conclusion is not that the acquisition failed. The correct conclusion is that full reinvestment credit should wait for evidence that the acquired platform earns attractive returns after pruning and integration.

The third missing item is a true reverse DCF required NOPAT CAGR. The P/E 15 gate is well supported, but the 20% return underwriting score needs a separate no-rerating return path. That path is not present. The scoring materials also lack clean SBC expense as a percentage of revenue or FCF. The synthesis sensibly uses gross issuance as a practical dilution proxy,

and share count has declined, so I do not impose a large SBC penalty. Still, the clean SBC data gap remains.

6. Hard-Veto and Threshold Test Audit

The diagnostic hard veto is active: the 20% case requires terminal multiple expansion. This does not mean Arch is a bad business, and it does not automatically fail the separate ER2 P/E <= 15 gate. It means Arch cannot be classified as Investable Now under the compounder rubric. The threshold tests also fail because total score is below 80, Business Quality is below 65, Valuation / 20% Return Underwriting is below 15, and no-multiple-expansion is false.

The audited total score is 63 / 100. The decision-threshold reference says Reject if the score is below 70, quality/runway/accounting are weak, a hard veto exists, or the 20% case is not plausible. I classify the audited result as Reject under the diagnostic compounder rubric. This is narrower than an ER2 company verdict. The separate source chain still has management PASS, moat YELLOW, and P/E 15 PASS.

7. Final 20% Hurdle Pass/Fail

Final 20% hurdle result: Fail. The base case does not clear 20% without terminal multiple expansion. The stock may be cheap on current TTM earnings, and the P/E 15 gate passes with a large cushion, but that is not the same as underwriting a 20% annualized return with a conservative exit multiple. The decisive issue is not current cheapness; it is that current earnings appear cycle-aided, and the 20% base result depends on the market assigning a much higher multiple to future normalized insurer earnings.

8. Dream Business / Dream Investment Classification

Audited classification: neither. Arch is a very good insurer/reinsurer with a credible underwriting culture, strong management, disciplined buybacks, and a conservative balance sheet. It is not a dream business under this rubric because the moat gate is YELLOW, insurer ROIIC is not calculated, and excess returns must be re-earned through insurance, reinsurance, and mortgage credit cycles. It is not a dream investment because the 20% case requires major terminal multiple expansion.

The single biggest reason Arch does not qualify is simple: the evidence supports quality, but the no-rerating 20% return path is not there.

9. Stage 7 Scorecard Notes

Compounder Score note: 63 / 100; Reject under diagnostic compounder rubric. Arch is a high-quality underwriting platform, but the score is capped by uncalculated insurer ROIIC, moat YELLOW, cycle-normalization risk, and a 20% case that depends on rerating.

Business Quality Score note: 56 / 80. Management, underwriting discipline, ROAE/book-value compounding, and balance-sheet strength are real positives; the score is reduced because clean ROIIC, acquisition-inclusive ROIIC, and through-cycle cash conversion are not proven.

20% Return UW Score note: 7 / 20. The P/E 15 gate passes, but the 20% annualized case uses a 15x exit versus roughly 7x current TTM EPS, so it fails the no-terminal-multiple-expansion standard.

10. Auditor JSON

The companion file `compounder_score_audit.json` contains the audited score, revised classification, score reductions, unsupported claims, calculation issues, missing data, and confidence level in valid JSON.

Appendix RT - Red Team

Arch Capital Group Ltd. (ACGL) - Red Team Appendix

Date: 2026-05-29. Fiscal year end: December 31. Latest quarter: Q1 2026 ended March 31, 2026. TTM anchor: Q2 2025 plus Q3 2025 plus Q4 2025 plus Q1 2026, ending March 31, 2026. Forward horizon: March 31, 2031.

This appendix is not a courtesy risks section. The synthesis already proves that the arithmetic ties and that the P/E 15 gate passes. The red-team job is to ask whether the inputs are the right ones. For Arch, the fragile chain is obvious: normalized reinsurance margin still assumes a structurally excellent soft-cycle outcome, mortgage still assumes credit stays benign enough for a 71.5% endpoint margin, the non-underwriting pre-tax bridge grows from a high-rate, high-float starting point, and the 20% return case quietly depends on the market moving from roughly 7x current TTM EPS to 15x FY+5 EPS. That is not a small detail. That is the hinge.

1. The Most Fragile Assumption

The most fragile assumption is the synthesis's base-case Reinsurance endpoint: $8.987 billion of TTM+5 net premiums earned at a 17.9% underwriting margin, producing $1.612 billion of underwriting income. It looks conservative because it is below the current TTM Reinsurance margin of 23.1% and below Q1 2026's 24.1% margin. It is still the weak point because it assumes Arch can move from a hard-market margin peak into a softer, more competitive reinsurance market and land on a high-teens normalized underwriting margin five years later.

That is not impossible. It is also not a durable-compounder assumption. The data package says Q1 2026 Reinsurance net premiums earned were down 9.7% year over year while management expected the market to remain competitive. The segment appendix itself says the FY2023-FY2025 period was unusually strong: Reinsurance NPE rose from $5.836 billion in FY2023 to $8.122 billion in FY2025, and every disclosed major product line except "Other products" grew at a double-digit two-year CAGR. The base model slows growth to 2.5%, but it leaves the endpoint margin at 17.9%, a level above every annual Reinsurance margin from FY2021 through FY2024 except the hard-market years FY2023-FY2025. In other words, the model lowers the growth multiple but still gives Arch a premium margin structure.

The outside market evidence does not help the bull. Aon's April 2026 Reinsurance Market Dynamics page describes record industry capital, strong ILS competition, buyer-friendly conditions, and insurers receiving significant price decreases and better terms. Everest's Q1 2026 transcript said property catastrophe pricing was down 13% on its April 1 book, even while terms and attachment points held. W. R. Berkley's Q1 2026 release still showed excellent underwriting and investment income, but the broader peer read-through is that disciplined underwriters are shrinking or slowing where pricing weakens, not that the entire sector has found a permanently higher margin plateau.

If the 17.9% base Reinsurance margin is wrong by 590 bps and the actual endpoint margin is 12.0% on the same $8.987 billion premium base, underwriting income falls by about $0.530 billion. After a 15% tax rate, that is roughly $0.450 billion of common net income, or about $1.39 of EPS on the synthesis's 324.4 million base share count. Base EPS moves from $15.27 to about $13.88 before any interaction effects. The P/E 15 gate still passes, but the 20% return story weakens sharply. If the same soft-cycle pressure also cuts premium volume and prevents $1.0 billion per year of buybacks, the model stops looking cheap and starts looking like a peak-cycle insurer at a low headline multiple.

2. The Most Likely Stage 5 Number To Prove Optimistic

The single Stage 5 number most likely to be optimistic is not the base revenue line. It is the $15.27 base-case FY+5 EPS, specifically the combination of three embedded supports: $2.831 billion of "investment, interest, affiliate, and other pre-tax bridge," 324.4 million diluted shares, and high normalized underwriting income despite decelerating Q1 2026 premium trends.

The $2.831 billion residual pre-tax bridge is the biggest hidden lever. The synthesis starts from TTM income before taxes and operating affiliates of $5.410 billion, subtracts TTM segment underwriting income of $3.244 billion, and treats the $2.166 billion residual as a pre-tax contribution that can grow at 5.5% per year in the base case. That bridge includes net investment income, realized and other items, interest expense, corporate items, and affiliate treatment. It is economically real, but it is not the same quality as recurring underwriting margin. It depends on float growth, portfolio yield, reinvestment rates, asset marks, credit quality, and the absence of balance-sheet shocks. The model says this is not open-ended rate speculation. Fine. But a 5.5% five-year growth rate from today's already favorable investment-income base is still a load-bearing assumption.

If that residual bridge stays flat at $2.166 billion instead of compounding to $2.831 billion, base pre-tax income falls by $0.665 billion. After tax, EPS falls by about $1.74. If the base share count is 5% higher because Arch cannot retire $1 billion per year while also protecting ratings, funding underwriting opportunities, and absorbing losses, the synthesis's own sensitivity says EPS falls another $0.72. Put those together with a reinsurance soft-cycle margin error and base EPS can fall from $15.27 toward the low $11s without inventing a catastrophe year.

That is the actual bear case: not insolvency, not fraud, not a broken franchise. The bear case is that the synthesis capitalizes a cleaner five-year earnings path than insurance history usually permits. Current earnings may be real and still not repeatable at the same quality.

3. Strongest Bear Case, Stated Hard

Arch is a very good underwriter at the top of a very good underwriting and investment-income period, and the stock looks cheap because the market is already refusing to pay a compounder multiple for peak-cycle insurer EPS. Reinsurance pricing is moving against sellers, mortgage credit remains benign until it suddenly is not, and Insurance margins are too thin to rescue the model if reserve development turns. The base case assumes Arch gives up volume before margin, keeps Mortgage highly profitable, grows the investment bridge, and retires almost 10% of diluted shares over five years. That is four favorable things happening at once in a cyclical balance-sheet business.

The mechanism is margin normalization plus no rerating. It shows first in Reinsurance earned premium and renewal economics, then in accident-year and prior-year development, then in capital return. The observable anchor is a two-quarter pattern of lower Reinsurance NPE with weaker combined ratios, especially if net written premiums grow despite admitted rate pressure. That would tell us Arch is no longer simply pruning. It would tell us the book is accepting less reward per unit of risk.

4. Cross-Examination Of Management Commentary

Management's phrase "profitability over volume" is a good discipline signal, but the skeptical read is that it is also a warning label on future growth. Insurance premium growth decelerated from 33.2% in Q2 2025 to 0.6% in Q1 2026. Reinsurance moved from positive earned-premium growth to a 9.7% Q1 2026 decline. If management is serious, premium growth can remain weak. If management is not serious, the volume will return at the cost of future loss picks. Either way, the base case's smooth 3.0% consolidated segment NPE CAGR may be too tidy.

The comment that Reinsurance had its fourth straight quarter of sub-80% combined ratios is also dangerous if treated as proof of durability. It is proof of current excellence. It is not proof that a high-teens endpoint margin survives a buyer-friendly market with record capital and strong ILS supply. The first sign this statement is becoming stale would be renewal-rate commentary that remains negative while Arch stops shrinking exposure. The second sign would be a lower reported combined ratio supported by favorable prior-year development while the current accident-year ex-cat ratio worsens.

Mortgage management's statement that credit quality remains excellent is true today and irrelevant to the full-cycle question. Mortgage insurance losses are nonlinear. The current book can look pristine until unemployment, home prices, cure rates, and severity all move together. The Q1 2026 loss-ratio movement was described as within expectations and not a changed frequency thesis, but the base case still assumes a 71.5% margin at the horizon. That is below the 83.8% TTM margin but still extraordinarily high for a credit-risk business if housing stress normalizes. The first crack would be rising delinquencies and weaker cure rates before premium revenue visibly deteriorates.

The capital-allocation statement that more capital will be returned if underwriting opportunities are limited is sensible, but it is not a free EPS machine. Buybacks create value when the stock is cheap relative to normalized book-value growth. They destroy value if repurchased at a high price-to-book ratio before reserve strengthening, cat losses, or mortgage losses reduce equity. The synthesis assumes $1.0 billion of annual buybacks in the base case and uses the lowest ending share count in the base case, not the bull case. That is internally logical, but it means the EPS bridge leans on shrinking denominator when the numerator is already exposed to cycle normalization.

5. Stage 5 Tie-Out Reverification

The Stage 5 math ties. That is not the problem. The recency anchor is correctly TTM ended March 31, 2026, and the segment reconstruction matches the quant foundation: $16.863 billion of TTM NPE and $3.244 billion of TTM underwriting income. The problem is trend quality inside the TTM base. Q1 2026 annualized segment NPE was $15.944 billion, below the TTM NPE base of $16.863 billion. Insurance Q1 2026 earned-premium growth was only 0.6%, Reinsurance was down 9.7%, and Mortgage was down 5.3%. The synthesis acknowledges this, but then treats a roughly 3.0% first-forward-year segment run-rate as within tolerance. That is arithmetically acceptable and economically debatable.

The share-count path is realistic only if capital remains surplus after underwriting, reserves, ratings, and buyback valuation discipline. The base case assumes $5.0 billion of total repurchases over five years, 47.8 million shares retired, 12.5 million shares of gross issuance, and an ending diluted share count of 324.4 million. The quant foundation and data package support that management has repurchased aggressively: $1.889 billion in FY2025, $783 million in Q1 2026, and $311 million more through the night before the Q1 call. But a five-year model cannot treat a soft-market release valve as independent of the cycle. If loss reserves strengthen or reinsurance opportunities reappear after a loss event, buybacks slow. If the stock rerates upward, retirements per dollar fall. If ratings pressure appears, capital is trapped.

The product CAGRs themselves are not heroic. The issue is that some margin assumptions are still heroic relative to the weaker parts of the book. Insurance base margin of 6.2% is above FY2025's 4.8% and above TTM's 5.7%, despite Q1 2026 at 3.5% reported. The appendix explains that Q1 ex-cat and ex-PYD margin was better and that integration cleanup may help. A red team should not give much credit for that until the MCE acquired book proves it can earn adequate returns after non-renewals. The $250 million expected 2026 NPW drag is not just a transition footnote. It is evidence that acquired premium included business Arch did not want.

6. Score-Derived 20% Return Claim Most Likely To Be Wrong

The audited score already says the 20% return case does not clear. The red team agrees. The audited compounder score is 63/100, the audited business quality score is 56/80, and the audited valuation / 20% return underwriting score is 7/20. The classification is Reject under the diagnostic compounder rubric. The most important audit finding is that the base 20.2% IRR uses a 15x FY+5 EPS exit while the current TTM EPS multiple is roughly 7.0x. That is not a conservative exit. That is the whole investment return.

The score-derived claim most likely to be wrong is the idea that the 15x P/E gate can be mentally converted into a 20% annualized underwriting case. The P/E 15 gate asks a different question: can the stock be bought for less than 15x confident FY+5 EPS? On the synthesis numbers, yes. But a five-year 20% annualized return from $91.47 requires a terminal value around $229 in the base case, and that terminal value requires the market to pay 15x $15.27. If the market continues valuing Arch at roughly today's 7x TTM EPS multiple, the same $15.27 EPS is worth about $107 before dividends and book-value adjustments. That is not a 20% annualized investment.

The red-team position is blunt: Arch may be cheap, but "cheap insurer with good management" is not the same as "Gideon compounder." The no-rerating return path is unproven. Clean insurer ROIIC is missing. Acquisition-inclusive ROIIC is missing. Through-cycle FCF conversion under reserve stress is missing. The moat is YELLOW. The 20-year durability test is YELLOW. The score audit is not a side note; it is the proper correction to a deceptively strong P/E table.

7. The Signal That Forces An Exit Or Hard Pass

The single exit signal is: over the next two reported quarters, Arch reports Reinsurance net premiums earned down less than 5% year over year or positive, while the Reinsurance combined ratio deteriorates above 88% and management also says property catastrophe or short-tail rates remain down or competitive. This is deliberately specific. Shrinking premium with excellent margin is discipline. Growing or barely shrinking premium while margin deteriorates is a change in risk appetite or a weakening market that Arch is not escaping.

Why this signal matters: Reinsurance is the largest current profit pool and the clearest test of Arch's claimed cycle discipline. In Q1 2026, the good version of the story was visible: NPE down 9.7% and underwriting margin still 24.1%. If the market softens and Arch preserves margin by shrinking, the thesis can survive. If the company stops shrinking while the combined ratio moves into the high 80s, the base assumption of high-teens normalized Reinsurance margin should be cut. That would also reduce confidence in the management PASS, the moat YELLOW, and the buyback-supported EPS bridge.

Secondary hard-pass indicators are worth watching, but they are not the single kill signal. Repeated adverse prior-year development in casualty would attack reserves and business quality. Mortgage loss ratio moving up materially with delinquencies and weaker cure rates would attack the high-margin credit ballast. A negative rating outlook would attack the high-trust procurement moat. But the reinsurance signal is the cleanest near-term test because the competitive pressure is already visible, and the segment is big enough to matter immediately.

8. Conviction At The End Of Red Team

The thesis does not survive as a Gideon-quality BUY. It can survive as a WATCH or valuation-driven insurer idea, but not as a durable 20% compounder thesis. The synthesis should be rewritten around this sentence: Arch is a strong, disciplined insurance platform whose current earnings power is cheap on a P/E 15 screen, but whose normalized long-term return is too

dependent on cycle-aided margins, investment income, buybacks, and terminal multiple expansion to clear the compounder bar.

The strongest bear point is not that Arch is low quality. It is that Arch is high quality in an industry where high quality must be re-earned every renewal, every accident year, every reserve review, and every credit cycle. That is exactly why the market may be right to assign a low multiple to current earnings. If the current 7x TTM EPS multiple is not a mistake but a rational discount to peak-cycle earnings, the audited Reject score is the correct conclusion.

Source Notes

Internal sources: `appendix_synthesis.md`, `appendix_B_reinsurance.md`, `appendix_B_insurance.md`, `appendix_B_mortgage.md`, `appendix_management.md`, `appendix_moat.md`, `appendix_scoring_audit.md`, `compounder_score_audit.json`, `data_package.md`, and `quant_foundation.md` in `C:\Users\Admin\OneDrive\GPT\ER 2.0\Arch Capital`.

External source checks used for red-team context: Aon Reinsurance Market Dynamics, April 2026, https://www.aon.com/en/insights/reports/reinsurance-market-dynamics; Everest Group Q1 2026 transcript, https://s203.q4cdn.com/937887252/files/doc_financials/2026/q1/EG-1Q26-Transcript.pdf; W. R. Berkley Q1 2026 results, https://ir.berkley.com/news/news-details/2026/W--R--Berkley-Corporation-Reports-First-Quarter-2026-Results/default.aspx.

Markdown table scan: no pipe tables were used in this appendix.

Appendix D - Data Package (Raw Historicals)

Arch Capital Group Ltd. (ACGL) - Data Package

Stage 0 time anchor used verbatim:

- Today: 2026-05-29 (Asia/Singapore runtime; U.S. market date 2026-05-28 for U.S. market quotes and filing timestamps).
- Company fiscal year convention: Arch Capital Group Ltd. uses a December 31 fiscal year end.
- Most recently reported quarter: Q1 2026 Form 10-Q / quarterly results for the period ended March 31, 2026.
- TTM anchor: Q2 2025 + Q3 2025 + Q4 2025 + Q1 2026 -> TTM ending March 31, 2026.
- Forward horizon: TTM + 5 calendar years = March 31, 2031. Compounding span is exactly 5 calendar years.

All dollar amounts are USD billions unless a table says otherwise. Segment revenue means net premiums earned, because Arch's segment tables and FMP's revenue-product-segmentation endpoint use net premiums earned for Insurance, Reinsurance, and Mortgage. Segment profit means underwriting income; investment income is not allocated to underwriting segments. Consolidated revenue is GAAP total revenues.

Source register and live-pull discipline

This package uses the cleared `quant_foundation.md` as the quantitative ground truth, then adds fresh live pulls performed in this subagent run. No local data warehouse cache was read as a source. New live pulls were saved without overwriting existing files under `C:\Users\Admin\OneDrive\Cowork\Investing\data warehouse\er2_live_pulls\ACGL`.

Source	Live pull used in this run	Use in package
FMP quote	`fmp_request.py quote ACGL`	Price, market cap, market-date context.
FMP annual statements	`income-statement`, `cash-flow-statement`, `balance-sheet-statement`, `ratios`, `key-metrics`, `financial-growth` with annual period	5-year consolidated tables, cash flow, capital allocation cross-checks.
FMP quarterly statements	Same statement endpoints with quarterly period	Recency checks and Q1 2026 cross-check.
FMP segment endpoint	`revenue-product-segmentation ACGL --param period=annual`	Annual segment revenue tie to 10-K.
FMP transcripts	`earning-call-transcript` for 2026 Q1, 2025 Q4, 2025 Q3, 2025 Q2, 2025 Q1	Management commentary.
SEC filings	SEC 2025 10-K, 2026 Q1 10-Q, 2025 Q2/Q3 10-Qs, SEC submissions, SEC companyfacts	Official segment, balance sheet, reserve, and quarterly controls.
SEC earnings exhibits	8-K press releases and financial supplements for Q2 2025, Q3 2025, Q4 2025, and Q1 2026	Last-four-quarter segment trend and headline recency.

Key URLs cited: SEC 2025 Form 10-K at `https://www.sec.gov/Archives/edgar/data/947484/000094748426000017/acgl-20251231.htm`; SEC Q1 2026 Form 10-Q at `https://www.sec.gov/Archives/edgar/data/947484/000094748426000058/acgl-20260331.htm`; Q1 2026 earnings release exhibit at `https://www.sec.gov/Archives/edgar/data/947484/000094748426000051/ex-991release33126.htm`; Q1 2026 financial supplement at `https://www.sec.gov/Archives/edgar/data/947484/000094748426000051/ex-992supplement33126.htm`; Q4 2025 earnings release exhibit at `https://www.sec.gov/Archives/edgar/data/947484/000094748426000010/ex-991release123125.htm`; Q3 2025 supplement at `https://www.sec.gov/Archives/edgar/data/947484/000094748425000076/ex-992supplement93025.htm`; Q2 2025 supplement at `https://www.sec.gov/Archives/edgar/data/947484/000094748425000059/ex-992supplement63025.htm`.

1. Reporting structure and taxonomy

Arch has three current reportable underwriting segments. Insurance writes specialty property and casualty insurance through U.S., Bermuda, London, Europe, Canada, and other platforms. Reinsurance writes reinsurance products worldwide, including property catastrophe, property excluding property catastrophe, casualty, specialty, marine and aviation, and other lines. Mortgage writes U.S. primary mortgage insurance, U.S. credit risk transfer and other mortgage risk, and international mortgage insurance and reinsurance.

FY2025 segment net premiums earned were: Reinsurance $8.122 billion, or 47.6% of segment net premiums earned; Insurance $7.771 billion, or 45.5%; Mortgage $1.172 billion, or 6.9%. Total segment net premiums earned were $17.065 billion. Consolidated GAAP total revenues were $19.929 billion because revenue also includes net investment income, realized gains/losses, other underwriting income, equity-method income, and other income.

Taxonomy finding: the current three reportable segments were stable across FY2023-FY2025. FY2021 includes an "Other / discontinued presentation" line in the cleared quant foundation, so pre-FY2022 segment history is not a perfect current-taxonomy comparison. The data package uses the current three-segment taxonomy for FY2022-FY2025 and flags FY2021 where the old "Other" presentation exists. The 2025 10-K provides sub-segment product-line net premiums earned for 2023-2025 under the current taxonomy. No segment realignment 8-K was found around the 2025/2026 fiscal boundary in the SEC submissions live pull.

Geography is material but is mostly disclosed inside segment product schedules. In Insurance, FY2025 net premiums earned were $5.735 billion North America and $2.036 billion international excluding North America. In Reinsurance, FY2025 net premiums written were $3.672 billion Bermuda, $1.798 billion U.S., and $2.148 billion Europe and other; the reinsurance product revenue table is disclosed by line rather than geography. In Mortgage, FY2025 net premiums earned were $802 million U.S. primary mortgage insurance, $207 million U.S. credit risk transfer and other, and $163 million international mortgage insurance/reinsurance.

2. Consolidated historicals, 5 years

Industrial ROIC is a rough proxy for an insurer. For the table, NOPAT equals FMP operating income multiplied by one minus effective tax rate. Invested capital equals total stockholders' equity plus total debt less cash and equivalents. This is useful for directional discipline but should not replace insurer ROAE, book-value compounding, reserve adequacy, or capital adequacy analysis.

Metric	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue ($B)	8.924	9.657	13.294	17.440	19.929	FMP income statement; SEC 10-K controls FY2025
Operating income proxy ($B)	1.737	1.372	3.107	4.474	4.979	FMP operatingIncome; SEC pretax operating bridge
Operating margin (%)	19.5%	14.2%	23.4%	25.7%	25.0%	calc
Net income ($B)	2.157	1.476	4.443	4.312	4.399	FMP income statement; SEC 10-K
EPS diluted ($)	5.23	3.80	11.62	11.19	11.60	SEC/FMP; SEC controls FY2025 EPS
Diluted share count (M)	400.3	377.6	378.8	381.8	375.9	FMP and SEC
Capex ($B)	0.041	0.052	0.052	0.051	0.044	FMP cash flow
FCF ($B)	3.386	3.764	5.697	6.622	6.128	FMP cash flow
ROIC proxy (%)	10.7%	8.8%	19.2%	18.3%	16.4%	calc; NOPAT / invested capital

ROIC numerator/denominator detail: FY2025 tax rate was 14.7%; NOPAT proxy was $4.25 billion; invested capital was $25.94 billion; ROIC proxy was 16.4%. FY2023 tax rate was negative because tax items lifted net income, which inflates the industrial proxy. For ER2, the more relevant quality evidence is underwriting income, ROAE, common equity growth, and reserve quality. Q1 2026 annualized operating ROAE was 15.4% per the Q1 2026 call transcript, and annualized net income ROACE was 17.8% per management's prepared remarks.

3. Segment historicals, 5 years

Arch reports underwriting income, not segment operating income. Mortgage underwriting margin can exceed 100% in years with favorable reserve development and very low current losses; that is an insurance accounting result, not a normal industrial

margin.

Insurance	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue: net premiums earned ($B)	3.625	4.560	5.446	6.627	7.771	2025 and 2023 10-K segment tables; FMP annual segment endpoint
YoY %	N/M	25.8%	19.4%	21.7%	17.3%	calc
Underwriting income ($B)	0.115	0.224	0.450	0.345	0.375	10-K segment tables
Underwriting margin (%)	3.2%	4.9%	8.3%	5.2%	4.8%	calc

Reinsurance	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue: net premiums earned ($B)	2.841	3.959	5.836	7.242	8.122	2025 and 2023 10-K segment tables; FMP annual segment endpoint
YoY %	N/M	39.4%	47.4%	24.1%	12.2%	calc
Underwriting income ($B)	0.168	0.315	1.098	1.222	1.558	10-K segment tables
Underwriting margin (%)	5.9%	8.0%	18.8%	16.9%	19.2%	calc

Mortgage	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue: net premiums earned ($B)	1.283	1.160	1.158	1.231	1.172	2025 and 2023 10-K segment tables; FMP annual segment endpoint
YoY %	N/M	-9.6%	-0.2%	6.3%	-4.8%	calc
Underwriting income ($B)	0.954	1.257	1.064	1.094	1.000	10-K segment tables
Underwriting margin (%)	74.4%	108.4%	91.9%	88.9%	85.3%	calc

FY2021 taxonomy note: the cleared quant foundation has a $333 million "Other / discontinued presentation" line with a $21 million underwriting loss in FY2021. Current three-segment analysis should not force that old line into Insurance, Reinsurance, or Mortgage.

4. Product / sub-segment historicals disclosed in dollars

The 2025 10-K discloses net premiums earned by product line and region for 2023-2025. The table below uses those dollar-disclosed figures. No back-solving is used.

Segment	Product / sub-segment	What it is	Dollar disclosure?	Last 3 years revenue + source
Insurance	North America property and short-tail specialty	North American short-tail insurance lines	Yes	FY2023 $0.976B; FY2024 $1.165B; FY2025 $1.373B; SEC 2025 10-K XBRL PremiumsEarnedNet
Insurance	North America other liability occurrence	Occurrence casualty liability	Yes	FY2023 $0.618B; FY2024 $0.942B; FY2025 $1.321B; SEC 2025 10-K
Insurance	North America other liability claims-made	Claims-made casualty liability	Yes	FY2023 $0.866B; FY2024 $0.843B; FY2025 $0.786B; SEC 2025 10-K
Insurance	North America commercial multi-peril	Multi-peril commercial insurance	Yes	FY2023 $0.193B; FY2024 $0.435B; FY2025 $0.792B; SEC 2025 10-K
Insurance	North America commercial automobile	Commercial auto insurance	Yes	FY2023 $0.343B; FY2024 $0.459B; FY2025 $0.581B; SEC 2025 10-K
Insurance	North America workers compensation	Workers compensation insurance	Yes	FY2023 $0.495B; FY2024 $0.549B; FY2025 $0.591B; SEC 2025 10-K
Insurance	North America other products	Other North American insurance products	Yes	FY2023 $0.290B; FY2024 $0.309B; FY2025 $0.291B; SEC 2025 10-K

Segment	Product / sub-segment	What it is	Dollar disclosure?	Last 3 years revenue + source
Insurance	International property and short-tail specialty	International short-tail insurance	Yes	FY2023 $0.885B; FY2024 $1.061B; FY2025 $1.099B; SEC 2025 10-K
Insurance	International casualty and other insurance	International casualty and other insurance	Yes	FY2023 $0.780B; FY2024 $0.864B; FY2025 $0.937B; SEC 2025 10-K
Reinsurance	Other specialty	Specialty reinsurance lines	Yes	FY2023 $2.097B; FY2024 $2.619B; FY2025 $2.906B; SEC 2025 10-K
Reinsurance	Property excluding property catastrophe	Non-cat property reinsurance	Yes	FY2023 $1.645B; FY2024 $2.148B; FY2025 $2.252B; SEC 2025 10-K
Reinsurance	Casualty	Casualty reinsurance	Yes	FY2023 $1.005B; FY2024 $1.088B; FY2025 $1.432B; SEC 2025 10-K
Reinsurance	Property catastrophe	Catastrophe-exposed property reinsurance	Yes	FY2023 $0.742B; FY2024 $0.959B; FY2025 $1.065B; SEC 2025 10-K
Reinsurance	Marine and aviation	Marine and aviation reinsurance	Yes	FY2023 $0.229B; FY2024 $0.276B; FY2025 $0.317B; SEC 2025 10-K
Reinsurance	Other products	Other reinsurance lines	Yes	FY2023 $0.118B; FY2024 $0.152B; FY2025 $0.150B; SEC 2025 10-K
Mortgage	U.S. primary mortgage insurance	U.S. primary MI	Yes	FY2023 $0.759B; FY2024 $0.845B; FY2025 $0.802B; SEC 2025 10-K
Mortgage	U.S. credit risk transfer and other	U.S. CRT and other mortgage risk	Yes	FY2023 $0.220B; FY2024 $0.213B; FY2025 $0.207B; SEC 2025 10-K
Mortgage	International mortgage insurance/reinsurance	Non-U.S. mortgage insurance and reinsurance	Yes	FY2023 $0.179B; FY2024 $0.173B; FY2025 $0.163B; SEC 2025 10-K

Products or sub-segments with only growth rates disclosed: none material for the main 2023-2025 product-line table above. Arch discloses dollars for the major sub-segment lines in the 10-K. Quarterly product-line dollars below segment level are not consistently disclosed in the 8-K financial supplements, so Section 5 uses segment-level quarters.

5. Most recent quarterly trend, last four quarters

Company FY ends December 31. Most recently completed fiscal quarter at time of writing: FY2026 Q1, covering January 1, 2026 to March 31, 2026, reported on April 28, 2026 via `https://www.sec.gov/Archives/edgar/data/947484/000094748426000051/ex-991release33126.htm`.

Quarter	Segment	Revenue ($B)	YoY %	Underwriting margin (%)	Source
Q2 2025	Insurance	1.969	33.2%	6.6%	SEC Q2 2025 financial supplement, July 29, 2025
Q2 2025	Reinsurance	2.087	17.2%	21.6%	SEC Q2 2025 financial supplement, July 29, 2025
Q2 2025	Mortgage	0.281	-8.5%	84.7%	SEC Q2 2025 financial supplement, July 29, 2025
Q3 2025	Insurance	1.969	11.6%	6.6%	SEC Q3 2025 financial supplement, October 27, 2025
Q3 2025	Reinsurance	2.015	6.5%	23.9%	SEC Q3 2025 financial supplement, October 27, 2025
Q3 2025	Mortgage	0.301	-3.8%	86.4%	SEC Q3 2025 financial supplement, October 27, 2025
Q4 2025	Insurance	1.973	2.1%	6.0%	SEC Q4 2025 financial supplement, February 9, 2026

Quarter	Segment	Revenue ($B)	YoY %	Underwriting margin (%)	Source
Q4 2025	Reinsurance	1.992	4.6%	23.0%	SEC Q4 2025 financial supplement, February 9, 2026
Q4 2025	Mortgage	0.290	-5.2%	86.2%	SEC Q4 2025 financial supplement, February 9, 2026
Q1 2026	Insurance	1.871	0.6%	3.5%	SEC Q1 2026 financial supplement, April 28, 2026
Q1 2026	Reinsurance	1.831	-9.7%	24.1%	SEC Q1 2026 financial supplement, April 28, 2026
Q1 2026	Mortgage	0.284	-5.3%	77.8%	SEC Q1 2026 financial supplement, April 28, 2026

Recency interpretation: Insurance premium growth decelerated from 33.2% in Q2 2025 to 0.6% in Q1 2026 as Arch prioritized profitability and non-renewed selected middle-market program business. Reinsurance moved from positive earned-premium growth to a 9.7% Q1 2026 decline as property catastrophe and short-tail pricing softened and cedents retained more risk. Mortgage remains a high-margin earnings contributor but earned premiums are drifting lower with constrained mortgage origination volume and lower cancellation premiums.

6. Management commentary on forward growth

The last four live FMP transcript pulls were dated 2025-07-30 for Q2 2025, 2025-10-28 for Q3 2025, 2026-02-10 for Q4 2025, and 2026-04-29 for Q1 2026. The Q1 2026 transcript date is within one day of the April 28, 2026 earnings release, so the recency anchor passes. Verbatim excerpts below are intentionally short; longer transcript content is paraphrased to avoid over-quoting.

Insurance

Source	Speaker	Short quote	Topic	Interpretation
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"profitability over volume"	Insurance growth	Management is openly accepting slower top-line growth where returns weaken.
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"rates and terms and conditions in aggregate still support strong returns"	Pricing	Pricing is softer but still above the hurdle in aggregate.
Q1 2026 call, 2026-04-29	Francois Morin, CFO	"more representative of long-term expectations"	Acquisition expense ratio	Recent insurance acquisition expense ratio should be modeled closer to the Q1 run-rate than the unusually favorable prior-year comparison.
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"Growth was offset by softening rates in a few areas"	Insurance cycle	Downstream model should not extend 2023-2024 insurance growth rates.

The main operational issue is the Allianz middle-market commercial integration. Management said selected acquired program business that did not fit risk appetite or profitability requirements would reduce 2026 net premiums written by about $250 million. The Q1 call also said the data and system migration from Allianz to Arch systems was completed in April 2026, with AI used to accelerate code writing and testing. The forward modeling implication is mixed: integration drag and non-renewals pressure 2026 growth, while completed systems migration may support future expense and underwriting productivity.

Reinsurance

Source	Speaker	Short quote	Topic	Interpretation
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"market to remain competitive"	Mid-year renewals	Reinsurance growth should be conservative, especially in property catastrophe.
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"fourth straight quarter of sub 80% combined ratios"	Margin durability	Margins remain excellent despite falling premium volume.
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"a bunch of them that are still green"	Cat zone selection	Arch is not exiting all cat risk; it will selectively write zones that still clear return hurdles.

Source	Speaker	Short quote	Topic	Interpretation
Q1 2026 call, 2026-04-29	Francois Morin, CFO	"balance sheet remains in excellent health"	Capital support	Reinsurance capacity is not balance-sheet constrained, but return thresholds control growth.

Management described a broader competitive reinsurance environment driven by strong industry results, traditional capital, and third-party capital. The key risk for forward modeling is that short-tail reinsurance revenue and property catastrophe pricing can fall faster than loss-cost assumptions reset. The offset is cycle management: Arch is reducing shares where business falls below return thresholds while retaining or adding to zones it still sees as attractive.

Mortgage

Source	Speaker	Short quote	Topic	Interpretation
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"Credit quality across the mortgage insurance portfolio remains excellent"	Credit	The current loss environment is still benign.
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"provide shareholders with a differentiated and diversifying source of earnings"	Segment role	Mortgage should be modeled as a diversifier, not just as a runoff line.
Q1 2026 call, 2026-04-29	Francois Morin, CFO	"frequency assumptions have not changed"	Mortgage losses	Higher loss ratio is mix/severity per loan, not a changed default-frequency thesis.
Q1 2026 call, 2026-04-29	Francois Morin, CFO	"still very much within what we would expect"	Mortgage loss ratio	Management did not frame Q1 mortgage loss ratio movement as a credit alarm.

Mortgage growth is constrained by high mortgage rates, home prices, and affordability pressure. Management still pointed to innovation and new product introductions across the global footprint. For ER2, the mortgage segment deserves a lower growth assumption than P&C underwriting, but its very high margin and diversifying earnings stream remain important to consolidated ROE.

Capital allocation and AI

Source	Speaker	Short quote	Topic	Interpretation
Q1 2026 call, 2026-04-29	Francois Morin, CFO	"we'll be returning more of the capital"	Buybacks	If underwriting growth is limited, capital return is the release valve.
Q1 2026 call, 2026-04-29	Nicolas Papadopoulo, CEO	"investing in AI for the last 10 years"	AI disruption	AI is framed as an underwriting productivity tool, not a near-term disruptor of demand.
Q1 2026 call, 2026-04-29	Francois Morin, CFO	"has to be something that is additive"	M&A	Management remains selective on acquisitions and does not want scale for its own sake.

Capital allocation is straightforward: first deploy into underwriting opportunities that clear return thresholds; otherwise repurchase shares. This matters because a softer market can reduce premium leverage, but buybacks can help preserve ROE and EPS if Arch avoids value-destructive volume.

7. Capital allocation history, 5 years

R&D is not separately disclosed by Arch. Technology and AI investments are embedded in operating expenses rather than a separate R&D line.

Year	Capex ($B)	Capex / revenue (%)	R&D ($B)	R&D / revenue (%)	Buybacks ($B)	Dividends ($B)	M&A ($B)	Source
2021	0.041	0.5%	N/D	N/D	1.234	0.047	1.103	FMP cash flow
2022	0.052	0.5%	N/D	N/D	0.586	0.040	-1.554	FMP cash flow
2023	0.052	0.4%	N/D	N/D	0.002	0.040	0.000	FMP cash flow
2024	0.051	0.3%	N/D	N/D	0.024	1.906	-0.852	FMP cash flow
2025	0.044	0.2%	N/D	N/D	1.889	0.047	0.000	FMP cash flow; SEC 10-K

Cash conversion is strong but insurance-specific. FY2025 net cash provided by operating activities was $6.172 billion versus $4.399 billion net income available to Arch. TTM operating cash flow was $5.902 billion using the official SEC bridge in the cleared quant foundation. This is green/yellow rather than pure green because insurance cash flow benefits from reserve and float dynamics that can reverse if loss trends or reserve adequacy deteriorate.

8. Balance sheet snapshot, FY2025

FMP's annual balance sheet mis-maps FY2025 total assets and total liabilities relative to SEC official values. SEC official values control for assets, liabilities, equity, senior notes, and tangible book calculations.

Item	$B	Source
Cash and equivalents	0.993	SEC 2025 10-K / FMP balance sheet
Short-term investments	10.550	SEC 2025 10-K / FMP balance sheet
Total investments	46.504	SEC 2025 10-K
Total debt: senior notes	2.729	SEC 2025 10-K
Net debt, debt less cash	1.736	calc
Net debt / EBITDA	0.32x	calc using FMP FY2025 EBITDA of $5.352B; not primary insurer leverage
Goodwill + intangibles	2.939	FMP balance sheet; SEC cross-check
Total shareholders' equity	24.206	SEC 2025 10-K
Preferred equity	0.830	SEC 2025 10-K
Tangible common book value	20.437	equity less preferred less goodwill/intangibles
Reserve for losses and LAE	33.547	SEC 2025 10-K
Unearned premiums	10.100	SEC 2025 10-K
Total assets	79.241	SEC 2025 10-K official; FMP annual balance sheet did not control
Total liabilities	55.035	SEC 2025 10-K official; FMP annual balance sheet did not control

Balance-sheet interpretation: senior notes were only about 10.1% of debt plus Q1 2026 shareholders' equity in the quant foundation. Cash plus investments were $47.7 billion at Q1 2026. Net debt / EBITDA is low, but for an insurer the better framing is capital adequacy, ratings, reserves, liquidity, and underwriting leverage. Reserve for losses and LAE increased to $34.105 billion at Q1 2026 from $33.547 billion at FY2025, while unearned premiums increased to $10.939 billion from $10.100 billion.

9. Recent corporate actions, last 12 months

- April 2026: Arch completed the data and system migration of the acquired middle-market commercial business from Allianz to Arch systems, according to the Q1 2026 call transcript. Management said the migration was completed in about 18 months and used AI in code writing and testing.
- April 2026: The board increased the share repurchase authorization by $3.0 billion, referenced in the Q1 2026 earnings call and release materials.
- Q1 2026: Arch repurchased $783 million of common stock in the quarter and an additional $311 million through the night before the Q1 call, per CFO commentary.
- 2026 outlook: management expects non-renewals of selected acquired middle-market commercial program business to reduce 2026 net premiums written by about $250 million.
- FY2025/Q1 2026: no CEO or CFO transition was identified in the live SEC submissions and earnings materials reviewed for this data package.
- FY2025/Q1 2026: no large legal settlement or regulatory action was identified in the live materials reviewed; reserve and catastrophe exposure remain the main insurance-specific monitoring items.

- 2026: management continues to evaluate M&A selectively but stated on the Q1 call that any transaction must be additive, improve competitiveness, or increase presence/scale in a market.

10. Open data gaps and caveats

- FMP quarterly `revenue-product-segmentation` returned an empty array in the cleared quant foundation; official SEC quarterly segment tables and earnings supplements control quarterly segment history.
- FMP FY2025 annual balance sheet materially mis-mapped total assets and total liabilities. SEC official values control all balance-sheet analysis.
- Quarterly product-line revenue below segment level is not consistently disclosed in the earnings supplements. Product-line dollar history is therefore annual 2023-2025 only from the 2025 10-K.
- FY2021 has an "Other / discontinued presentation" line and is not fully comparable to the current three-segment taxonomy.
- R&D is not separately disclosed. AI and technology investments are embedded in operating expenses.
- ROIC is an industrial proxy and can be distorted by insurer float, investment assets, tax items, and underwriting liabilities. Use ROAE, book-value compounding, capital adequacy, reserve quality, and combined ratios for the core insurer quality judgment.
- Mortgage underwriting margins are elevated partly because of low current losses and favorable development; do not extrapolate 80%+ underwriting margins without stress-testing housing credit and unemployment.
- Reinsurance pricing has clear softening risk, especially property catastrophe and short-tail lines. The most recent quarter showed reinsurance net premiums earned down 9.7% YoY despite excellent underwriting margin.

Self-verification checks

Check	Live verification performed	Result
Largest FY2025 segment and latest quarter growth	SEC Q1 2026 supplement showed Reinsurance NPE $1.831B vs $2.028B in Q1 2025; YoY -9.7% calc	PASS
Management quote date	FMP Q1 2026 transcript returned date 2026-04-29; phrase "profitability over volume" found in prepared remarks	PASS
Most recent full fiscal-year revenue	Live FMP annual income statement returned FY2025 revenue $19.929B, tying SEC 2025 10-K total revenues within 1%	PASS

Data handoff

Handoff item	Value	Source
FY2025 largest segment	Reinsurance, $8.122B NPE	SEC 2025 10-K / FMP annual segment endpoint
FY2025 segment mix	Insurance 45.5%; Reinsurance 47.6%; Mortgage 6.9%	calc from FY2025 NPE
TTM total revenues	$19.777B	Quant foundation official SEC bridge
TTM net premiums earned	$16.863B	Quant foundation official SEC bridge
TTM underwriting income	$3.244B	Quant foundation official SEC bridge
TTM common net income	$4.832B	Quant foundation official SEC bridge
Q1 2026 shareholders' equity	$24.188B	SEC Q1 2026 10-Q
Q1 2026 senior notes	$2.729B	SEC Q1 2026 10-Q
Q1 2026 cash plus investments	$47.700B	SEC Q1 2026 10-Q