

Digital Credit: A New Category of Corporate Finance

The Math Behind Amplification

Mike Flaum

Grain of Salt - @GrainofSaltSF

Sunday, October 11, 2026

Mathematical exposition / technical note

Introduction

Strategy, formerly MicroStrategy (common-stock ticker MSTR), began its perpetual preferred program with STRK in January 2025. Strategy subsequently introduced STRC, whose IPO closed July 29, 2025. Strive (common-stock ticker ASST) introduced SATA in November 2025. Strive's SATA is most similar to Strategy's STRC: both are variable-rate perpetual preferred shares, although their terms and payment schedules differ. These companies use capital markets to expand their Bitcoin treasuries, combining common-equity financing with preferred equity. [3, 5, 8]

In this paper, **Digital Credit** provides a linguistic distinction for perpetual preferred equity used to acquire Bitcoin within a company that also has common stock, typically a Bitcoin treasury company such as Strategy or Strive. The perpetual preferred shares and common stock serve complementary roles within the same capital structure. Common stock acts as the spring, absorbing residual gains and declines as Bitcoin value rises and falls, after accounting for senior claims and preferred payments. Variable-rate perpetual preferred shares such as STRC and SATA are designed to support trading around a reference price through their rate-setting policies, although that price is not guaranteed. Here, Digital Credit therefore refers specifically to perpetual preferred equity paired with common stock. A standalone Bitcoin bond without that residual common-stock layer is a different financing structure. We view the paired structure as a workable implementation of Bitcoin-treasury financing, rather than a claim that perpetual preferred equity itself is new.

Amplification describes preferred claims relative to Bitcoin value and the resulting magnification of gains and losses attributable to common stock, represented by MSTR for Strategy and ASST for Strive. It is this magnified exposure flowing through to common stock that we specifically call *Amplification*. Perpetual preferred issuance can finance additional Bitcoin without issuing additional common shares at that transaction. After preferred payments, the remaining economic gain or loss belongs to common stockholders. The model measures that gain or loss against their starting residual equity capital, which can increase percentage gains or magnify losses; it does not guarantee common share-price outperformance.

Introduction (continued)

We distinguish **Amplification** from **Net Debt Leverage**, which in this paper refers to debt less a specified cash offset, measured relative to the stated asset base. The familiar simplified enterprise-value expression, $EV = \text{common equity market value} + \text{debt} - \text{cash}$, illustrates the debt-and-cash adjustment; a fuller enterprise-value calculation may also include preferred equity and other claims. Cash offsets debt in the net-debt calculation but does not extinguish the debt or its contractual obligations. Our preferred operating approach combines perpetual preferred shares, producing Amplification, with zero or near-zero Net Debt Leverage and a cash buffer.

The supplied Strive dashboard snapshot reports approximately **\$285 million in cash, \$50 million in marketable securities, and no outstanding debt**, providing approximately **\$335 million in combined cash and marketable securities**. Strategy's reported Net Debt Leverage is **1.41%**, according to the measurement supplied for this revision. These illustrate distinct implementations: Strive has no debt, while Strategy uses cash to offset much of its outstanding debt. We favor keeping Net Debt Leverage close to zero, generally below approximately 5%. Higher levels, including 10%-15%, do not by themselves invalidate the Amplification mechanism, but introduce additional debt exposure. This preference reflects the operating history considered here, which we believe supports a durable financing approach; it is not an established safety threshold. Preferred claims and their payment obligations remain present even when debt-based leverage is zero.

Snapshot context: Strive treasury dashboard supplied for this revision; Strategy 1.41% figure supplied by the author. Included in the October 11, 2026 revision; these are dated observations, not constant model inputs.

Abstract

This note applies elementary algebra to a simplified capital structure. It separates asset growth over time, an affine relationship between one-year Bitcoin growth and common capital return, and convexity in starting amplification when Bitcoin growth exceeds the preferred rate. Four scenarios illustrate the mechanism; algebra proves conditional identities. No new mathematical theorem or empirical stock-return result is claimed.

The central identity is $R(2r) = 2R(r) + ca/(1 - a)$, with the same starting amplification a and preferred rate c in both scenarios. A separate result concerns doubling the excess return above Bitcoin growth, rather than doubling total common return.

Context: Payments, Pricing and Permanent Capital

Stated rate and market yield answer different questions

Strategy launched STRK with an 8% stated dividend and a \$100 liquidation preference, although its initial offering price was \$80. Its U.S.-dollar lineup also includes fixed 10% preferred series STRF and STRD, and variable-rate STRC. Dividend rights, conversion, accumulation and redemption provisions differ by series. A stated amount or liquidation preference is not the same as the price paid in the market. [3, 4]

The simplest bond-like pricing relationship is annual dividend dollars divided by market price. Assume a \$100 reference amount and an unchanged \$12 annual dividend. At a \$100 purchase price, current yield is 12%; at \$50, it is 24%. Current yield doubles from 12% to 24% without Strategy or Strive increasing the modeled \$12 annual payment. The buyer pays less for the same payment stream.

Market purchase price	Annual dividend, unchanged	Current yield
\$100	\$12	12%
\$50	\$12	24%

This is **current yield**, not a guaranteed total return or a compounded effective annual yield. Market value can fall, distributions depend on terms and declaration, and an actual variable rate can change. STRC targets trading near \$100 through its rate-setting policy, but \$100 is not a guaranteed price or a \$100.01 ceiling. The price-target concept does not apply identically to every preferred series. [4]

Why perpetual financing matters

Perpetual preferred shares have no scheduled maturity requiring ordinary principal repayment in two, five or ten years. This can remove a maturity-driven refinancing deadline during an unfavorable Bitcoin market. The structure supplies long-duration, potentially permanent capital, while payments and any contractual redemption, put or conversion provisions remain relevant. This is a structural explanation, not a claim about the issuers' sole motivation.

Strive's SATA pays on business days and its stated annualized rate for October 2026 is 13%, equivalent to \$13 annually per \$100 stated amount at that rate. Strive reported zero debt principal at September 30, 2026. Zero debt does not eliminate preferred claims or the need to fund their distributions. [6, 7]

Amplification and net debt leverage

In this paper, amplification concerns preferred claims and common's residual exposure; net debt leverage, usually called net leverage here, concerns debt less the specified cash offset relative to assets. The operating approach discussed here seeks zero or near-zero net leverage, or zero debt, together with a cash buffer; these are different balance-sheet conditions, not an assertion that both issuers have no debt. Preferred equity can amplify common exposure even when debt is zero. In the broader mathematical sense this is still fixed-claim leverage. A positive Bitcoin-growth spread can benefit common in the simplified model, but a one-year growth rate does not establish a constant amplified CAGR.

Context sources (accessed October 9, 2026)

[3] Strategy, February 5, 2025 results; January STRK launch.

[4] Strategy, August 23, 2026 investor briefing, SEC filing.

[5] Strive, November 10, 2025 SATA launch.

[6] Strive, October 2026 dividend announcement.

[7] Strive, October 5, 2026 SEC filing.

[8] Strategy, July 29, 2025 STRC IPO closing.

1. Definitions and Scope

Symbol	Meaning
B	Starting dollar value of Bitcoin held
P	Starting preferred claim in dollars
$E = B - P$	Starting residual common equity capital
$a = P/B$	Starting amplification, with $0 < a < 1$
c	Annual preferred payment rate on modeled preferred claims, fixed within a scenario
r	Bitcoin price return over one year
$C = cP$	Preferred payment for the modeled year
$R(r,a,c)$	Residual gain divided by starting common capital

The model's c is the payment rate on modeled claims. It is distinct from a preferred buyer's current market yield and from a treasury-wide financing-payment burden. STRC, SATA can change their stated rates; the examples deliberately hold c fixed.

Cash is excluded from amplification. The baseline excludes additional issuance, share-count changes, operating expenses, taxes and other claims. Preferred payments are deducted from economic gain. Section 11 shows how a year-end Bitcoin sale implements payment and how earlier sales change the result. The model does not prescribe a universal cash-funding method.

The quantities to keep separate

Residual dollars: $Br - cP$.

Starting residual common equity capital: $B - P$.

Common capital return: $(Br - cP)/(B - P)$.

Common exposure multiple: $B/(B - P)$.

A positive spread $r > c$ makes additional amplification beneficial to the percentage return under the model. Positive residual gain requires $r > ca$. These are different thresholds. Financing costs can reduce residual dollars while the smaller common denominator increases the return percentage.

2. The Basic Math of Amplification

The fraction puts the **dollar value of preferred claims in the numerator** and the **dollar value of Bitcoin held in the denominator**. A \$1 preferred claim divided by \$10 of Bitcoin is 10% amplification.

Preferred claim / Bitcoin value	$\frac{\$1}{\$10}$	$\frac{\$2}{\$10}$	$\frac{\$3}{\$10}$	$\frac{\$4}{\$10}$	$\frac{\$5}{\$10}$	$\frac{\$6}{\$10}$	$\frac{\$7}{\$10}$	$\frac{\$8}{\$10}$	$\frac{\$9}{\$10}$
Preferred claim	\$1	\$2	\$3	\$4	\$5	\$6	\$7	\$8	\$9
Bitcoin value	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10
Amplification percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%
Amplification multiple*	1.11x	1.25x	1.43x	1.67x	2.00x	2.50x	3.33x	5.00x	10.00x

* Strategy typically presents amplification as a multiple; Strive typically presents it as a percentage. Both forms are shown here under the same simplified preferred-only definitions. Issuer metrics can use broader claims and cash adjustments. [Strategy notes](#); [Strive investor presentation](#).

20% amplification corresponds to a 1.25x amplification multiple; 50% corresponds to 2.00x; 90% corresponds to 10.00x. The conversion is $M = 1/(1 - a)$, not a direct percentage-to-multiple substitution.

3. The residual-return equation

Bitcoin produces an economic gain of Br. Preferred holders receive cP. The residual gain attributable to common is therefore Br - cP. Dividing by the initial common capital E gives:

$$R(r,a,c) = (Br - cP) / (B - P) = (r - ca) / (1 - a). \quad (1)$$

$$R = [1 / (1 - a)]r - ca / (1 - a). \quad (2)$$

$$R = r + a(r - c) / (1 - a). \quad (3)$$

Equation (2) identifies affine dependence on Bitcoin growth. Equation (3) isolates the excess return above Bitcoin growth, governed by the return spread $r - c$ and amplification a .

4. A Single Worked Example

Two different inputs: starting amplification $a = \$2 / \$10 = 20\%$ describes the capital structure before Bitcoin moves. Bitcoin growth $r = 30\%$ is the assumed price increase during the year. The preferred annual rate c is 13%; starting residual common equity capital E is \$8.

Step	Calculation	Result
Bitcoin dollar gain	$\$10 \times 30\%$	\$3.00
Preferred annual cost	$\$2 \times 13\%$	\$0.26
Residual common gain	$\$3.00 - \$0.26$	\$2.74
Starting residual common equity capital	$\$10 - \$2$	\$8.00
Common capital return	$\$2.74 / \$8$	34.25%

The 30% growth rate applies to all \$10 of Bitcoin, producing \$3.00 of gain. The 13% preferred rate applies only to the \$2 preferred claim, costing \$0.26. The remaining \$2.74 belongs to the \$8 residual common equity capital, producing 34.25%. Starting amplification of 20% is a balance-sheet ratio, not the Bitcoin growth assumption.

5. Four Structures and Two Growth Scenarios

The four structures are four starting amplification percentages. Each pair doubles starting amplification: **20% to 40%**, then **30% to 60%**. Bitcoin starts at \$10 in every column. The preferred annual rate is 13%. Each column keeps its starting structure fixed when Bitcoin growth changes.

	Structure 1	Structure 2	Structure 3	Structure 4
Starting amplification	20%	40%	30%	60%
Preferred claim	\$2	\$4	\$3	\$6
Bitcoin value	\$10	\$10	\$10	\$10
Starting residual common equity capital	\$8	\$6	\$7	\$4
Preferred annual cost at 13%	\$0.26	\$0.52	\$0.39	\$0.78
Bitcoin gains 20%				
Bitcoin dollar gain	\$2.00	\$2.00	\$2.00	\$2.00
Residual common gain	\$1.74	\$1.48	\$1.61	\$1.22
Common capital return	21.75%	24.67%	23.00%	30.50%
Bitcoin gains 40%				
Bitcoin dollar gain	\$4.00	\$4.00	\$4.00	\$4.00
Residual common gain	\$3.74	\$3.48	\$3.61	\$3.22
Common capital return	46.75%	58.00%	51.57%	80.50%

The highlighted cells show the surprise: when Bitcoin's gain doubles, 21.75% becomes 46.75%, rather than the expected 43.50%. At 30% starting amplification, 23.00% becomes 51.57%, rather than 46.00%. Section 7 explains the extra return through the affine identity.

Across columns, doubling starting amplification changes the 20%-BTC-growth return from 21.75% to 24.67%, or from 23.00% to 30.50%. That is a separate comparison; neither doubles total common return.

6. The Changing Denominator - Bond Math

	Bitcoin value halves	Starting point	Bitcoin value doubles
Amplification	40%	20%	10%
Preferred claim	\$2	\$2	\$2
Bitcoin value	\$5	\$10	\$20

With preferred claims and Bitcoin units unchanged, $a = P/B$ falls as Bitcoin price rises and rises as Bitcoin price falls. This observation is compatible with the preceding table: the table compares equal starting ratios across separate scenarios, rather than assuming unchanged ending ratios.

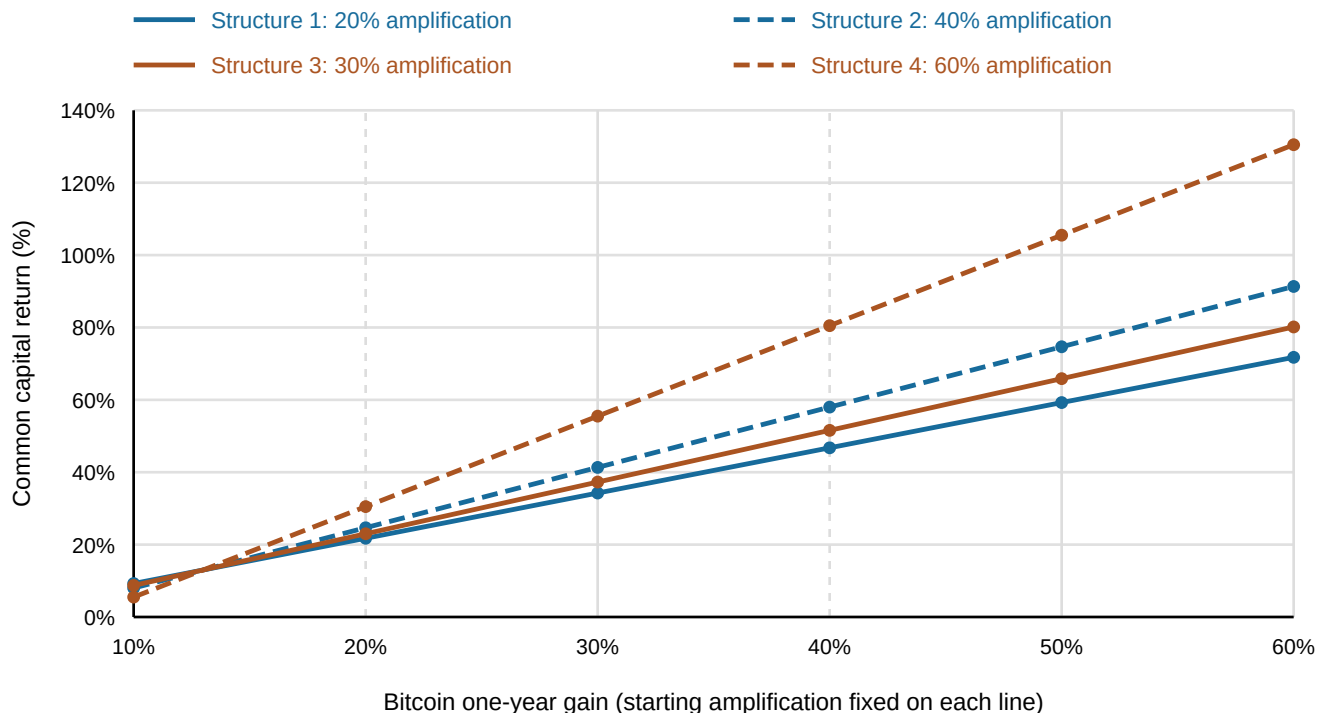
7. “Witchcraft” and the Affine Proof

What catches the reader off guard

At **20% starting amplification** and a **13% preferred rate**, common capital earns **21.75%** when Bitcoin gains 20%. When Bitcoin's gain doubles to 40%, common capital earns **46.75%**, exceeding the simple-doubling benchmark of **43.50%**.

Four structures, four straight lines

The graph extends the comparison across Structures 1-4. Bitcoin growth varies along the horizontal axis; each line keeps its starting amplification fixed. The preferred rate remains 13%. All points represent separate one-year scenarios, not successive years.



Blue pairs Structures 1 and 2 (20% and 40% amplification); orange pairs Structures 3 and 4 (30% and 60%). Dashed lines identify the higher-amplification structure in each pair. Vertical guides mark 20% and 40% Bitcoin growth. Both axes use evenly spaced linear scales.

Three numbers, two actual scenarios

Comparison	At 20% starting amplification
Actual common return: BTC gains 20%	$(\$2.00 - \$0.26) / \$8 = 21.75\%$
Simple-doubling benchmark only	$2 \times 21.75\% = 43.50\%$
Actual common return: BTC gains 40%	$(\$4.00 - \$0.26) / \$8 = 46.75\%$

The benchmark is not a third investment scenario. Doubling the first net gain deducts the \$0.26 preferred payment twice; the actual 40%-growth scenario deducts it once. The difference is $\$0.26 / \$8 = 3.25$ **percentage points**.

7. “Witchcraft” and the Affine Proof (continued)

The same comparison across all four starting structures

	Structure 1	Structure 2	Structure 3	Structure 4
Starting amplification	20%	40%	30%	60%
Actual: 20% BTC gain	21.75%	24.67%	23.00%	30.50%
Actual: 40% BTC gain	46.75%	58.00%	51.57%	80.50%
Simple-doubling benchmark	43.50%	49.33%	46.00%	61.00%
Extra above simple doubling (pp)	3.25	8.67	5.57	19.50

pp means percentage points. Values are independently rounded from unrounded arithmetic. Twice 24.6666...% is 49.3333...%, displayed as 49.33%. Bitcoin's gain doubles; its ending value rises from \$12 to \$14, rather than doubling.

Across the blue pair, doubling starting amplification from 20% to 40% increases the extra-return gap from **3.25 to 8.67 percentage points**, rather than 6.50. Across the orange pair, 30% to 60% increases the gap from **5.57 to 19.50 percentage points**. The gap is $ca/(1 - a)$: preferred cost rises while starting residual common equity capital shrinks.

Proposition 1. Doubling identity

For $c > 0$ and $0 < a < 1$, with identical a and c in both growth scenarios:

$$R(2r, a, c) - 2R(r, a, c) = ca/(1 - a) > 0. \quad (4)$$

Proof: $[(2r - ca) - 2(r - ca)]/(1 - a) = ca/(1 - a)$. A more-than-doubling interpretation of positive gains requires a positive initial residual return.

At 60% amplification, $80.50\% = 2 \times 30.50\% + 19.50$ percentage points; the return ratio is $161/61$, approximately 2.6393.

Why the graph is straight, despite the surprise

For fixed a and c , $R(r) = mr + b$, where $m = 1/(1 - a)$ and $b = -ca/(1 - a)$. The relationship is **affine: a straight line with a nonzero intercept**. Its second derivative in r is zero. More-than-doubling arises from the fixed preferred payment, not from curvature in Bitcoin growth. [1, 2]

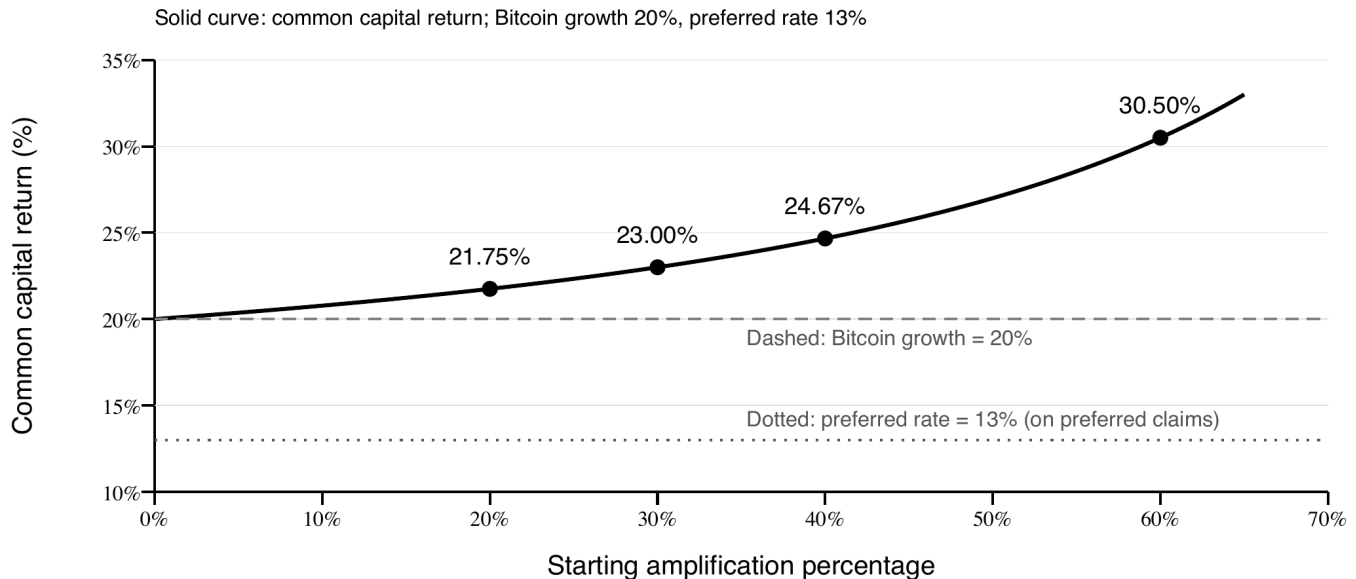
Section 8 changes the question: Bitcoin growth stays at 20% while starting amplification varies. That different relationship is curved and convex under the stated positive-spread conditions.

8. A Different Result: Convexity in Amplification

This section changes the question. Section 7 doubles Bitcoin growth while holding starting amplification fixed. Here, Bitcoin growth stays at 20% and the preferred rate stays at 13%; we change starting amplification. Common capital return bends upward as amplification rises.

$$\text{For } R(a) = (r - ca)/(1 - a):$$
$$dR/da = (r - c)/(1 - a)^2; d^2R/da^2 = 2(r - c)/(1 - a)^3. \quad (5)$$

When $r > c$, both derivatives are positive: higher amplification increases return at an increasing rate. When $r = c$, $R = r$; when $r < c$, more amplification worsens the modeled return.



The points are ordered by starting amplification: **20%, 30%, 40%, 60%**. Both axes use evenly spaced linear scales. The dashed line is the 20% Bitcoin growth assumption; the dotted line marks the 13% preferred-rate assumption. That rate applies to preferred claims, not to all Bitcoin value. Vertical distance above the 20% line is common's excess return.

Starting amplification	20%	30%	40%	60%
Common capital return	21.75%	23.00%	24.67%	30.50%
Excess above 20% Bitcoin growth (pp)	1.75	3.00	4.67	10.50

Proposition 2. Doubling the Excess Return

At fixed Bitcoin growth, doubling amplification from 20% to 40% raises the excess from **1.75 to 4.67 points**, rather than 3.50. Doubling from 30% to 60% raises it from **3.00 to 10.50 points**, rather than 6.00. Total common return itself does not double.

Let $X(a) = R - r = a(r - c)/(1 - a)$. For $r > c$ and $0 < a < 1/2$:

$$X(2a)/X(a) = 2(1 - a)/(1 - 2a) > 2. \quad (6)$$

Proof: substitute $2a$ and a in X and cancel $a(r - c)$. Since $1 - a > 1 - 2a > 0$, the ratio exceeds two. This proves the pattern generally, rather than only for the plotted examples.

9. Boundary Behavior and Sensitivity

As a approaches 1 from below, R tends to positive infinity if $r > c$ and to negative infinity if $r < c$. At $a = 1$ the formula is undefined because starting common capital is zero. If $r = c$, $R = c$ throughout the domain and in the limit; the formula at $a = 1$ remains undefined. The diverging percentage for a nonzero spread arises from division by vanishing common capital. It is not unlimited dollar wealth.

Preferred yield variability changes the result. The sensitivity is $dR/dc = -a/(1 - a)$. At 60% amplification, reducing yield from 13% to 12% reduces the annual payment from \$0.78 to \$0.72 and raises common return by 1.50 percentage points. A narrow yield range is therefore not mathematically identical to a fixed payout, especially at high amplification.

10. Compounding, Time and Model Boundaries

Compounding describes repeated growth across periods. The affine and convex relationships above describe comparisons within a specified one-year model. They can coexist, but they answer different questions.

For example, if preferred claims P and Bitcoin units remain fixed, Bitcoin appreciates at a constant rate r , and no Bitcoin is sold, the asset value after n years is $B(1 + r)^n$. Amplification then evolves as:

$$a_n = P / [B(1 + r)^n]. \quad (7)$$

For positive r , this ratio declines over time. A strategy that issues additional preferred capital, reinvests, sells Bitcoin, pays distributions from another source, or targets a stable amplification ratio requires a separate dynamic model. Equation (1) alone does not establish a constant amplified CAGR or guarantee that realized returns improve with time.

11. Funding the Preferred Payment

The payment mechanism matters. Equation (1) can be realized exactly by a Bitcoin sale at the end of the modeled year, after the full year of appreciation. It does not require all Bitcoin to remain held after that payment.

Assume $B = \$10$, $P = \$6$, $E = \$4$, $c = 13\%$, and $r = 40\%$. No Bitcoin is sold during the year. The preferred payment is made at year-end by selling Bitcoin at its ending price, with no transaction cost or tax.

$$\text{Ending Bitcoin value before payment} = \$10 \times 1.40 = \$14.00$$

$$\text{Year-end preferred payment} = \$6 \times 13\% = \$0.78$$

$$\text{Bitcoin remaining after payment} = \$14.00 - \$0.78 = \$13.22$$

$$\text{Ending common capital} = \$13.22 - \$6.00 = \$7.22$$

$$\text{Common gain} = \$7.22 - \$4.00 = \$3.22$$

$$\text{Common capital return} = \$3.22 / \$4.00 = 80.50\%$$

In general, ending common capital in this implementation is $B(1 + r) - cP - P$. Subtracting initial common capital $B - P$ leaves $Br - cP$, which recovers equation (1). A year-end sale solely to pay the modeled coupon therefore preserves the residual-return equation exactly under these assumptions.

Earlier payments and common issuance

Selling Bitcoin earlier changes the amount exposed to subsequent price movements. If a payment C_j is funded by selling Bitcoin at time t_j , and $G(t_j, 1)$ is the Bitcoin price multiplier from that time to year-end, the ending Bitcoin value is $B(1 + r) - \sum_j C_j G(t_j, 1)$, assuming no other trades. The residual gain becomes $Br - \sum_j C_j G(t_j, 1)$. Payments at year-end have $G = 1$; earlier payments require the price path and timing to be modeled.

Funding payments through common issuance introduces new shareholders and changes share count. Total underlying capital and the return attributable to an existing shareholder must then be tracked separately. Issuance price and timing determine dilution. Equation (1) alone cannot establish that existing shareholders receive the displayed return per share.

The same distinction applies to external cash: a payment from another asset or funding source must be reflected in a complete balance-sheet model. Excluding cash from the amplification ratio does not make funding economically free.

12. Interpretation and limitations

This is legitimate applied mathematical analysis: definitions specify the quantities, examples illustrate the mechanism, and propositions prove conditional results. The contribution is an exposition of familiar algebra in a particular financial setting. This note makes no priority claim, does not establish what other commentators did or did not previously explain, and has not undergone peer review.

The identity is an instance of fixed-claim leverage. It applies to assets beyond Bitcoin. Digital credit is the financial setting of the examples, rather than a new mathematical object. The preferred-cost analogy concerns an economic financing charge; preferred dividends and debt interest can have different tax and contractual treatment. Those distinctions are excluded from the present model.

The model measures economic residual gain relative to starting common capital. Market returns on common shares also depend on share count, valuation, other assets and liabilities, liquidity, funding actions and investor expectations. Those factors are outside this note. Annual Bitcoin price appreciation is treated as economic gain; it is not necessarily realized cash available for preferred payments.

Negative spreads and Bitcoin losses can be magnified as well as positive outcomes. Preferred payments remain in the model even when Bitcoin falls. Calls, conversions, variable preferred yields, taxes and actual payment frequency may require a more detailed implementation. A narrow preferred-yield range is not equivalent to a fixed payment.

13. The result in plain language

When Bitcoin gains more, the preferred payment stays the same in the two modeled scenarios. Doubling the net return would subtract that payment twice. The actual calculation subtracts it once.

Separately, increasing amplification places the residual on a smaller common capital base. With a positive Bitcoin-return spread, the extra return above Bitcoin growth increases convexly. Neither observation requires new mathematics; both require careful choice of variables and comparison bases.

References

[1] Sloughter, D. *The Calculus of Functions of Several Variables*, section 1.5, "Linear and Affine Functions," Mathematics LibreTexts. Defines an affine function as a linear function plus a translation.
Mathematics LibreTexts: Linear and Affine Functions

[2] Cengage Learning. *Web Extension 15A: Operating and Financial Leverage* (2010), pp. 4-5. Discusses fixed financing costs and the degree of financial leverage; preferred stock requires an adjusted formulation.
Cengage: Operating and Financial Leverage

All numerical examples in this note are hypothetical and were developed for the accompanying Explaining Amplification course. Calculations were checked with exact rational arithmetic; tables use rounded decimal displays.

Document Version History

Current version: 1.7

Version 1.0 - Initial Mathematical Note

Introduced the amplification definitions, residual-return equation, worked examples, four starting structures, the affine doubling identity, and convexity in starting amplification.

Version 1.1 - Payment Funding and Model Scope

Added a year-end Bitcoin-sale implementation of the preferred payment. Explained how earlier payments and common issuance affect the result, and clarified the fixed-claim interpretation. Numerical results and propositions were unchanged.

Version 1.2 - Digital Credit Context

Introduced the title Digital Credit: A New Category of Corporate Finance, with The Math Behind Amplification as its subtitle. Added Strategy and Strive context, current-yield pricing, perpetual financing, and amplification versus net debt leverage. Clarified the simple-doubling benchmark in Section 7.

Version 1.3 - Residual Common Equity and Readable Tables

Capitalized Digital Credit in the introduction and tied residual common equity to MSTR and ASST. Compared STRC and SATA and clarified their launch chronology. Right-aligned numerical tables, incorporated fractions into the basic table, tabulated the worked example, and highlighted the key return comparisons.

Version 1.4 - Paper Development and Convexity Graph

Removed course labels from section headings. Left-aligned table labels, extended the basic table through 90% amplification and 10.00x, and named amplification percentage and amplification multiple. Emphasized the 30% input and 34.25% common return. Boxed actual-versus-doubling pairs, added the ordered convexity graph and concise Proposition 2 explanation, and reflowed the paper. The paper began developing separately from the version 1.3 slides.

Version 1.5 - Input Clarity, Structure Labels and Graph Scales

Moved version markings and revision notes to this final history page. Aligned the front-page technical-note line and the first-column table headings on the context and definitions pages. Distinguished the 20% starting amplification ratio from 30% Bitcoin growth in the worked example. Named Structures 1-4 in the scenario and affine-comparison tables, darkened the changing-denominator starting-point heading, and preserved the boxed comparisons. Made both graph scales visibly linear, placed the return label vertically on the Y axis, added the 13% preferred-rate reference line, and shaded the 30% and 60% columns in the excess-return table. Slides remain at version 1.3.

Version 1.6 - Affine Comparison Graph

Added four fixed-amplification lines across 10%-60% Bitcoin growth in Section 7. Paired Structures 1-2 and 3-4 visually, emphasized 20% and 40% growth, and retained the actual-versus-doubling comparisons and proof. Reflowed Section 7 onto two pages; Section 8 and its convexity graph remained unchanged. Updated subsequent page numbers.

Version 1.7 - Digital Credit and Amplification Introduction

Dated the paper Sunday, October 11, 2026. Expanded the introduction to define Digital Credit as perpetual preferred equity paired with common stock, emphasized Amplification, and distinguished Net Debt Leverage. Added the supplied liquidity and leverage snapshots and financing preferences. Reflowed the introduction onto two pages and updated subsequent page numbers. Preserved the Section 7 and Section 8 graphs, tables and proofs.