FEAR: A Volatility-Linked Synthetic Commodity and Global Fear Index

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November 2025 | v1.0

Abstract

Correlation between U.S. equities and synthetic commodities such as Bitcoin (BTC) and Ethereum (ETH) has increased in recent years, reflecting the growing integration of traditional and digital systemic risk. As this correlation deepens, volatility in one domain increasingly transmits to the other. I propose a crypto-native synthetic commodity (FEAR), designed to anchor the CBOE Volatility Index (VIX), as a means of hedging systemic risk and measuring market fear. Through predictable, once-daily elastic supply adjustments tied to VIX movements, FEAR transforms volatility into a tradable on-chain asset. By coupling traditional market sentiment and decentralized liquidity, FEAR establishes the foundation for the world's first 24/7 global fear index. As participants chase a moving rebase, the market discovers its own fear.

FEAR aims to become an open-source measure of global risk sentiment by bridging traditional volatility and decentralized liquidity.

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1 Introduction

Over the past decade, particularly in the post-COVID pandemic era, financial markets have undergone a structural convergence. Traditional equities, derivatives, and digital assets now move in tandem, sharing both liquidity flows and sentiment cycles. Bitcoin's correlation with the S&P 500 has reached historic highs, suggesting that systemic risk now extends across a 24/7 global network. As illustrated in Figure 1, even when correlation turns negative, the beta quickly recovers above 0.6 within days peaking at 0.88. This persistent relationship signals that risk sentiment now flows freely across asset classes.

Figure 1: Bitcoin vs U.S. Equities correlation — Bitcoin price (black) vs. the SP 500 and 7-day EMA rolling correlation (blue). Source: Newhedge (2025).

The convergence of these markets has created a unified, always-on risk ecosystem. Yet, the tools to measure systemic fear remain confined to traditional finance and restricted to U.S. trading hours.

The CBOE Volatility Index (VIX) has long been regarded as Wall Street's "fear gauge." It quantifies the market's expectation of near-term volatility by deriving implied variance from S&P 500 options. The calculation incorporates a weighted average of both call and put prices across a range of strike prices and two consecutive expiration dates, estimating the expected volatility of the S&P 500 over the next 30 days. In practice, the VIX serves as a real-time reflection of investor anxiety, spiking when markets fall and receding during periods of stability. Yet the VIX remains constrained by design: (1) it operates only during U.S. trading hours, and (2) its data is isolated within traditional market infrastructure. As a result, systemic fear goes unmeasured for the majority of each global trading day.

By contrast, crypto markets operate continuously. Liquidity, sentiment, and price discovery occur without interruption, creating the first global always-on risk system. Despite this, no decentralized

instrument can quantify fear in real time. There is no crypto-native measure of volatility capable of bridging the behavioral dynamics of both traditional and digital markets. This absence represents both a structural gap and an opportunity to create a volatility primitive that can express global market sentiment on-chain, independent of time and centralized infrastructure. Despite the deepening integration of risk between traditional and digital markets, no mechanism exists to measure global fear continuously.

FEAR is proposed as that volatility primitive — a synthetic commodity[1] whose supply elastically adjusts in response to the VIX. Empirical research shows that oil prices rise immediately on news of future supply shortfalls, well before production adjusts (Känzig, 2021), reinforcing the design premise that anticipatory pricing emerges naturally in elastic-supply systems. The following sections outline the concept and protocol architecture of FEAR, detailing how elastic supply, rebase timing, and governance mechanisms extend the utility of the VIX into a decentralized, always-on system driven by market sentiment.

> **Important note:** *FEAR is not a derivative or replication of the VIX, but an independent synthetic commodity whose behavior is anchored to observed VIX movements.*

2 Protocol

The FEAR protocol extends the mechanics of the CBOE Volatility Index (VIX) into an on-chain, 24/7 accessible framework. It is a synthetic commodity whose circulating supply expands or contracts once daily in proportion to the percentage change in the VIX. This adjustment mechanism, or rebase, occurs over a defined one-hour window, ensuring the token's behavior mirrors shifts in market-implied volatility while maintaining holders' proportional ownership. The result is a protocol that behaves less like a traditional currency and more like a living reflection of global risk sentiment.

Example:

Scenario	VIX Change	Wallet A Before	Wallet A After
Expansion	+10%	100 FEAR	110 FEAR
Contraction	-10%	100 FEAR	90 FEAR

Table 1: Illustrative supply adjustment example showing wallet balance elasticity with VIX movement.

[1]The term "synthetic commodity" was defined by economist George Selgin (2015) as money that possesses absolute scarcity but no non-monetary use value. The U.S. Commodity Futures Trading Commission (CFTC) has similarly described Bitcoin as a "synthetic commodity" in regulatory interpretations, distinguishing it from securities or fiat currency.

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In traditional economics, supply and demand interact through price. When supply rises, price adjusts downward to restore equilibrium, and vice versa. In elastic supply systems, equilibrium is pursued not through volatile price swings but through adaptive changes in circulating supply, redefining how markets internalize excess supply or demand.

Consider a traditional commodity such as oil. When demand for oil rises, producers typically respond by increasing output, expanding supply to meet consumption. Prices may temporarily spike, and over time additional supply works to restore balance. The elastic supply concept of FEAR functions similarly, though in a purely algorithmic form: instead of oil producers adjusting barrels, the protocol adjusts token quantity to reflect changing market conditions.

Ampleforth, one of the earliest experiments in this model, sought to stabilize purchasing power by expanding supply when prices rose above target and contracting it when prices fell. While the concept was novel, its market dynamics revealed a behavioral paradox. Traders began anticipating rebases, buying ahead of expansions and selling before contractions, effectively turning the mechanism into a speculative reflex loop. These cycles amplified volatility instead of dampening it, obscuring the project's core economic intent.

The FEAR protocol draws from these lessons but inverts their logic. Rather than using elasticity to suppress volatility, it uses volatility as its productive core. Rebase timing is deliberate and predictable, designed to encourage participation without destabilizing the system. In doing so, FEAR converts a behavioral weakness in earlier elastic models into a structural advantage.

2.1 Elastic Anchor

As mentioned previously, the elasticity of FEAR's supply is anchored to the daily percentage change in the VIX. Each trading day at 4:00 PM ET, the protocol records the VIX closing level and compares it to the previous close to determine the rate of expansion or contraction for the next rebase cycle. The process is purely algorithmic, transparent, and identical for all holders.

$$\Delta_{VIX} = \frac{VIX_t - VIX_{t-1}}{VIX_{t-1}} \tag{1}$$

Where:

- VIX_t = current trading day closing level of VIX
- VIX_{t-1} = prior trading day's closing level
- Δ_{VIX} = percentage change used to determine the rebase multiplier

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2.2 Supply Adjustment

Total token supply adjusts proportionally to the recorded change in volatility. Holders' wallet balances expand or contract by the same ratio, preserving each address's proportional ownership of total supply.

$$S_{t+1} = S_t \times (1 + \Delta_{VIX}) \tag{2}$$

$$B_{t+1} = B_t \times \frac{S_{t+1}}{S_t} \tag{3}$$

Where:

- S_t = total supply before rebase
- S_{t+1} = total supply after rebase
- B_t = individual wallet balance before rebase
- B_{t+1} = balance after rebase

2.3 Micro-Rebase Mechanics

To prevent sudden supply shocks and enhance market stability, the daily supply adjustment is implemented as twelve equal multiplicative steps. Each step applies a per-tick factor r, where r defines one of twelve incremental supply adjustments, referred to as micro-rebases. The first micro-rebase occurs at 4:05 PM ET and the twelfth at 5:00 PM ET.

N = 12 (micro-rebases per day)
r = $(1 + \Delta_{VIX})^{1/N}$ $(micro - rebasemultiplier)$
$S_k = S_{k-1} \times r$
$B_{i,k} = B_{i,k-1} \times r$

After twelve micro-rebases, the cumulative adjustment equals the total daily change in the VIX. This structure ensures that the transition between volatility states remains smooth, predictable, and uniform across all participants.

Example: If the VIX closes at a level of 11 after opening at 10, the daily change is +10%. FEAR distributes this 10% expansion compounded across twelve five-minute micro-rebases. A holder with 100 FEAR tokens at 4:00 PM ET will see their balance adjust slightly at each interval:

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Time (ET)	Cumulative Increase (%)	Holder Balance
4:00 PM	0.00	100.00
4:05 PM	0.81	100.81
4:10 PM	1.62	101.62
4:15 PM	2.44	102.44
4:20 PM	3.25	103.25
4:25 PM	4.07	104.07
4:30 PM	4.90	104.90
4:35 PM	5.72	105.72
4:40 PM	6.55	106.55
4:45 PM	7.39	107.39
4:50 PM	8.22	108.22
4:55 PM	9.06	109.06
5:00 PM	10.00	110.00

Table 2: Illustration of a +10% daily expansion compounded across twelve micro-rebases.

2.4 Conceptual Summary

This mechanism anchors FEAR's behavior directly to real-world volatility while preserving on-chain equilibrium. Each rebase translates changes in systemic fear into quantifiable supply movements, allowing the protocol to become an algorithmic barometer of market sentiment. Rebases alter token quantity but not aggregate value; each holder's proportional ownership of total supply remains unchanged. In this way, supply elasticity conveys information about market volatility without redistributing wealth between participants. The underlying mathematics ensure precision and transparency, enabling the 24/7 decentralized market to continuously price systemic risk and collective fear through value discovery of the FEAR token itself.

3 Data Integrity and Oracle Design

The reliability of FEAR's supply adjustment depends on accurate, tamper-resistant transmission of daily CBOE Volatility Index (VIX) movements. To ensure precision, the protocol sources its reference value from authenticated, publicly verifiable market feeds at the official 4:00 PM ET close of the VIX. This data is retrieved through a decentralized oracle network designed to mitigate single-source dependency and timestamp manipulation.

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3.1 Oracle Aggregation and Validation

In its initial implementation, the protocol employs a hybrid oracle framework combining trusted data relays with cryptographic proof-of-source verification. Primary inputs are drawn from institutional-grade APIs (such as CBOE, Bloomberg, or Refinitiv) and relayed on-chain through a distributed oracle aggregator. Each data submission is validated by multiple independent nodes and medianized before being written to the smart contract state. This medianization process neutralizes outliers and ensures the final value represents consensus of legitimate market data.

For additional integrity, each oracle update is immutably recorded with its data source, timestamp, and submitting node signature. The protocol's smart contracts verify both the sequence and latency of each input, preventing back-dated or manipulated submissions. Any deviation beyond an allowed tolerance triggers an automatic halt of the daily rebase until verified data is confirmed.

3.2 On-Chain Delivery Mechanism

In practice, the oracle network will initially push verified VIX data on-chain through either a Chainlink External Adapter or a custom relay designed specifically for volatility benchmarks. The adapter retrieves the official CBOE closing value from authenticated APIs (e.g., CBOE, Bloomberg, or Refinitiv), signs the data payload off-chain, and transmits it to the FEAR oracle aggregator contract. Using a Chainlink External Adapter provides interoperability and security through an established node network, while a custom relay allows tighter control and lower latency. Governance may determine which approach offers the optimal balance between decentralization, cost, and accuracy.

3.3 Governance Evolution and Redundancy

Over time, FEAR governance determines whether to migrate to a fully decentralized oracle standard, such as Chainlink's Data Feeds or custom cross-network attestation modules, ensuring redundancy across networks and independent price aggregators. This evolution from hybrid to decentralized data provisioning reflects the protocol's long-term commitment to transparency, verifiability, and resilience in how systemic fear is measured on-chain.

4 Governance and Treasury Architecture

Long-term stewardship of the FEAR protocol is structured as a dual-token system. FEAR functions as the volatility-linked synthetic commodity, while GFX (Global Fear Index Token) represents

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ownership, coordination, and incentive alignment within the system. The separation of roles ensures that the market's emotional layer (FEAR) remains distinct from the governance and policy layer (GFX).

4.1 Treasury Structure and Function

The treasury serves as the protocol's balance sheet and liquidity reserve. Treasury inflows originate from predefined mechanisms embedded in FEAR's design, such as modest allocations during expansion events or transactional windows. As volatility rises, these inflows naturally increase, creating a reserve that grows in direct proportion to global market fear. Treasury operations rely partly on decentralized liquidity across primary liquidity pools (LPs) and DEX markets, enhancing the precision of the volatility anchor by reducing slippage during expansion or contraction events.

4.2 Governance Role and Decision Rights

GFX holders act as both governors and beneficiaries of the protocol. Governance responsibilities include adjusting rebase parameters, oracle configurations, treasury allocation policies, and liquidity strategies. All governance actions are executed on-chain through verified smart contracts, ensuring that no single entity can alter protocol behavior without collective authorization.

Governance proposals are initiated by GFX holders and require quorum thresholds to pass. Parameter adjustments—including fee curves, rebase timing, and oracle configurations—are subject to time-locked execution, allowing transparent community review prior to enactment. This framework creates predictable governance cycles that minimize the risk of governance capture or unilateral policy changes.

4.3 Distribution and Incentive Alignment

A portion of treasury reserves may be periodically distributed to GFX holders, either annually or quarterly, through governance-approved proposals. Distributions represent the yield on participation in the Global Fear Index itself: the right to share in the value generated when systemic fear rises and the protocol expands. Any distribution event is subject to a capital-adequacy test defined by governance policy, ensuring that a minimum treasury balance remains intact after payouts.

In summary, GFX functions as both a governance instrument and a claim on the protocol's success, creating a direct link between the quality of collective decision-making and the strength of the ecosystem it manages. Over time, this dual incentive of stewardship and reward transforms the FEAR network into a self-sustaining, community-directed system where fear is not only measured but productively monetized.

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5 Roadmap

The development of FEAR follows a deliberate, phased progression that links protocol maturity with governance evolution. Each phase builds directly on the last—expanding functionality, deepening community alignment, and gradually transferring stewardship to GFX governance. The result is a system that grows more autonomous, transparent, and valuable as global participation expands.

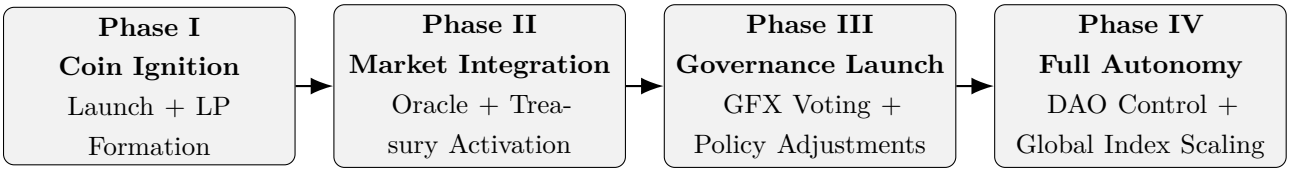

Figure 2: FEAR Development Roadmap — Evolution from initial token deployment to full DAO autonomy.

Phase I: Coin Ignition

FEAR launches as a simple ERC-20 token without rebase mechanics or treasury functions. This stage is belief-driven, focused on community formation, liquidity provision, and early distribution. Participants in this phase establish the foundation of the ecosystem by validating the concept of fear as a tradable asset. Early contributors and stakers in this phase become eligible to receive GFX in future distributions, aligning early conviction with long-term governance rights.

Phase II: Protocol Activation

The volatility-linked mechanics are implemented. FEAR transitions from a static token to an elastic-supply asset that adjusts daily in response to changes in the CBOE Volatility Index (VIX). Micro-rebases are introduced to smooth supply transitions, and the protocol treasury comes online. During this phase, the first GFX tokens are distributed to early participants, forming the initial governance cohort that will later assume decision-making authority.

Phase III: Treasury and Governance Integration

GFX governance becomes active, empowering holders to guide the protocol's evolution and treasury distribution rights. Governance authority includes adjustments to oracle configurations, treasury allocation policies, and liquidity strategies. Treasury reserves begin generating scheduled distributions to GFX holders, either quarterly or annually, subject to minimum reserve thresholds that ensure long-term solvency. This phase marks the full economic interdependence of FEAR and GFX. One (FEAR) measures global fear, while the other (GFX) governs and benefits from its monetization.

Phase IV: Global Fear Index Maturity

With governance and treasury mechanisms fully operational, FEAR evolves into a continuously functioning, on-chain volatility index recognized as crypto's native fear gauge. GFX governance oversees ecosystem integrations with exchanges, analytics dashboards, and derivative markets. At

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this stage, the system becomes a decentralized, self-reinforcing market utility capable of representing and monetizing global sentiment 24/7.

This phased roadmap ensures a disciplined progression—from a belief-driven token to a functioning volatility protocol, and ultimately to a decentralized financial primitive. Each phase introduces measurable technical and governance milestones designed to strengthen transparency, security, and market legitimacy as FEAR matures into the Global Fear Index.

6 Trust and Transparency

Transparency is the foundation on which FEAR is built. Every component of the protocol—rebases, oracle updates, treasury flows, and governance decisions—is verifiable on-chain. The project is built on the principle that visibility drives trust and that volatility, when measured openly, can become a source of information rather than uncertainty. FEAR exists to illuminate systemic risk and quantify market fear in real time.

Treasury balances are maintained in a publicly viewable multi-signature wallet, with signers rotating and expanding as governance decentralizes. Regular disclosures will accompany each phase of the roadmap, including published "Fear Logs" summarizing treasury activity, development progress, oracle integrity checks, and governance proposals. These updates ensure that the community, investors, and external partners can track the health and evolution of the ecosystem in real time.

Governance votes, parameter adjustments, and distribution events are executed exclusively through verifiable smart contracts. No single entity can alter protocol behavior without consensus or recorded authorization. As FEAR transitions to full DAO governance under GFX, every policy decision is immutably recorded and publicly auditable.

This commitment to transparency extends beyond code. FEAR seeks to set a new standard for how decentralized systems communicate with the world. In an ecosystem built on sentiment, transparency is not optional; it is the mechanism by which trust itself is rebased. In doing so, FEAR closes the gap between traditional risk measurement and decentralized market intelligence.

7 Applications and Market Utility

FEAR introduces a new class of on-chain asset: a transparent, volatility-linked measure of systemic risk. Its utility extends beyond speculation, serving as both a portfolio tool and a macroeconomic signal.

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7.1 Portfolio Hedge

Because FEAR expands when volatility rises, it offers investors a novel, crypto-native hedge against systemic shocks. Traditional portfolios rely on volatility products, options, or inverse ETFs to express fear trades. These tools are limited to market hours and centralized exchanges. FEAR provides a 24/7 alternative. In periods of rapid uncertainty—earnings seasons, credit shocks, geopolitical tensions—FEAR can function as a dynamic risk hedge, expressing global sentiment even when traditional markets are closed.

7.2 Systemic Risk Indicator

Beyond its financial use case, FEAR serves as a continuously updating barometer of global risk sentiment. Changes in its price, rebase direction, or trading volume can signal shifts in collective fear before they are reflected in equity or credit markets. By tracking FEAR alongside macro indicators such as the VIX, Treasury yields, or credit spreads, analysts can model the relationship between on-chain sentiment and real-world volatility in near real time.

7.3 Early-Warning Signal for Black Swan Events

In extreme scenarios—e.g., terrorist attacks, geopolitical escalations, pandemics, or systemic failures—traditional risk instruments often lag, constrained by exchange hours or circuit breakers. FEAR, by contrast, operates continuously, reacting instantly to global information flow. Its on-chain activity may serve as an early warning signal for stress events before they manifest fully in traditional markets. While FEAR does not predict specific occurrences, its sensitivity to uncertainty allows it to reflect the probability and intensity of systemic disruption as they unfold.

7.4 Research and Analytics Integration

As the Global Fear Index matures, integration with analytics dashboards, volatility indices, and academic research platforms will extend its utility. Economists, risk managers, and data scientists can use FEAR as an open-source sentiment dataset which links digital behavior to macro volatility, geopolitical risk, and behavioral finance models in ways previously impossible within closed financial systems.

In summary, FEAR transforms volatility into an accessible, tradable measure of global anxiety. It bridges finance, psychology, and geopolitics—capturing not just market fear, but the rhythm of uncertainty itself.

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8 The Future of Fear

The FEAR protocol represents more than a financial experiment; it is an attempt to quantify one of the most powerful forces in global markets. By translating volatility into a transparent, on-chain measure of sentiment, FEAR reframes fear not as chaos but as information that can be observed, traded, and governed. In doing so, it bridges two financial systems: the regulated and time-bound architecture of traditional markets and the continuous and decentralized pulse of crypto.

As adoption grows and integrations deepen, FEAR has the potential to become a universal reference point for systemic risk. It can serve as a crypto-native complement to the VIX and a new tool for portfolio construction, macro research, and behavioral analysis. The emergence of GFX governance ensures that this system evolves under collective stewardship rather than centralized control, creating a living index that reflects both global anxiety and the judgment of its participants.

In the end, FEAR is a mirror. It does not eliminate uncertainty; it measures it. It transforms volatility into signal, sentiment into structure, and collective fear into a tradable reflection of how the world feels about risk, twenty-four hours a day, every day.

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Appendix A — Tokenomics Overview

Dual-Token Framework

The FEAR ecosystem operates through a dual-token model designed to separate emotional volatility from governance and policy control.

- **FEAR** — an elastic-supply synthetic commodity that expands or contracts once daily in response to percentage changes in the CBOE Volatility Index (VIX). FEAR measures and expresses global market fear as a tradable on-chain instrument.
- **GFX (Global Fear Index Token)** — a fixed-supply governance and treasury participation token representing ownership, coordination, and incentive alignment within the protocol.

This separation ensures that the behavioral layer (FEAR) remains distinct from the governance and value-accrual layer (GFX).

FEAR Token Parameters

Parameter	Description
Type	ERC-20 (Upgradeable to ERC-20Rebase)
Initial Supply	1,000,000,000 FEAR
Rebase Frequency	Daily (12 micro-rebases, 4:05–5:00 PM ET)
Anchor Variable	ΔVIX (percentage change in VIX daily close)
Supply Adjustment Formula	$S_{t+1} = S_t \times (1 + \Delta VIX)$
Transaction Fees	Dynamic fee curve adjusting with volatility and liquidity, typically 0.20%–0.80%
Expansion Skim	5% of each positive-rebase expansion routed to the Treasury
Sell-Side Surcharge	1.0% fee on sell-side transactions during the micro-rebase window (4:05–5:00 PM ET)
Market Role	Volatility-linked synthetic commodity reflecting global risk sentiment

Table A1: FEAR token parameters and economic behavior.

The dynamic fee curve adjusts automatically with changes in market volatility and on-chain liquidity. The fee rate f_t is expressed as a function of observed volatility, such that $f_t = f_{base} + \alpha\,|\Delta VIX_t|$, where α governs sensitivity to volatility amplitude and f_{base} represents the minimum transactional fee (typically 0.20%). Fees are subject to modification through GFX governance to preserve optimal liquidity conditions.

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GFX Token Parameters

Parameter	Description
Type	ERC-20 (Governance-enabled)
Initial Supply	10,000,000 GFX
Distribution	50% to early FEAR participants, 25% to team/foundation (4-year vest), 25% to Treasury reserve
Governance Rights	Adjust rebase parameters, oracle policy, treasury allocation, and fee structure
Yield Rights	Receive Treasury distributions subject to capital-adequacy threshold
Vesting	Linear over 48 months for all team or advisor allocations

Table A2: GFX governance-token structure and rights.

Treasury Design

The Treasury functions as the protocol's balance sheet, accumulating reserves that expand in proportion to systemic fear.

Inflow Sources

- Transaction fees (dynamic fee curve)
- 5% skim from positive-rebase expansions
- Sell-side surcharges collected during the rebase window

Outflows

- Governance-approved GFX distributions (quarterly or annual)
- Liquidity operations to defend the volatility anchor or fund oracle costs

Reserve Policy A minimum of 50% of total FEAR market capitalization must remain in the Treasury prior to any distribution events. This capital-adequacy test ensures long-term solvency and continuity across volatility regimes.

Incentive Logic

FEAR's economic design ensures that volatility itself becomes productive. When the VIX rises, FEAR expands and treasury inflows increase. GFX holders govern how and when those reserves

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are distributed, aligning collective fear with on-chain value creation. In this way, FEAR monetizes uncertainty while GFX transforms it into coordinated, sustainable growth.

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Appendix B — Glossary

The following glossary defines principal terms, mechanisms, and concepts referenced throughout the FEAR whitepaper. Entries are presented alphabetically for clarity and technical precision.

Capital Adequacy Test — A governance safeguard requiring that the Treasury maintain a predefined reserve ratio (typically 50% of FEAR market capitalization) before any distributions to GFX holders can occur.

CBOE Volatility Index (VIX) — The Chicago Board Options Exchange Volatility Index, derived from S&P 500 option prices. Represents the market's expectation of near-term volatility and serves as FEAR's anchor variable.

ΔVIX (Delta VIX) — The daily percentage change in the CBOE Volatility Index (VIX), calculated as, $\$\Delta VIX = \frac{VIX_t - VIX_{t-1}}{VIX_{t-1}}$ and used to determine FEAR's rebase magnitude.

Elastic Supply — A token-supply structure that expands or contracts algorithmically in response to an external reference variable, maintaining proportional ownership among holders.

Expansion Skim — A fixed 5 % allocation of each positive-rebase expansion automatically routed to the Treasury to fund liquidity, operations, and governance distributions.

FEAR Token — A volatility-linked synthetic commodity whose circulating supply rebases daily according to the percentage change in the VIX. FEAR functions as the on-chain measure of global market fear.

GFX (Global Fear Index Token) — A fixed-supply governance and treasury-participation token representing ownership, coordination, and incentive alignment within the protocol.

Global Fear Index (GFI) — The aggregate on-chain system composed of the FEAR protocol, GFX governance, and Treasury mechanisms that together quantify and monetize global risk sentiment.

Micro-Rebase — One of twelve incremental adjustments executed every five minutes between 4:05 PM and 5:00 PM ET to distribute the daily supply change gradually and mitigate price shock.

Oracle Network — A decentralized data-relay framework that retrieves, validates, and medianizes official VIX closing data from multiple institutional sources (e.g., CBOE, Bloomberg, Refinitiv) before publishing on-chain.

Rebase — The once-daily algorithmic event that expands or contracts FEAR supply proportionally to VIX, preserving each holder's ownership percentage while updating circulating quantity.

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Rebase Window — The defined one-hour period (4:05 PM – 5:00 PM ET) during which twelve micro-rebases execute, completing the daily supply adjustment cycle.

Sell-Side Surcharge — A 1 % fee applied to sell-side transactions executed during the rebase window to discourage short-term arbitrage and reinforce liquidity stability.

Treasury — The protocol's reserve account that accumulates transaction fees, expansion skims, and surcharges; maintains minimum reserve thresholds; and distributes yields to GFX holders under governance approval.

Transparency Mechanisms — On-chain records of rebases, oracle updates, Treasury balances, and governance votes that ensure the verifiability and auditability of the entire Global Fear Index system.

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Appendix C — References

The following references provide methodological, conceptual, and technical context for the FEAR protocol. They include academic research, protocol documentation, and relevant financial methodologies that informed the design of the Global Fear Index.

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