

EARLY WARNING SYSTEM

- **Early Warning System (EWS)** is a rules-based indicator that measures financial and economic fragility.
- It combines forward-looking data points from credit markets, macroeconomic data, and investment market behavior.
- The EWS is not a market timing tool and does not attempt to predict short-term market movements.
- Instead, it is designed to identify emerging stress and shifts in economic conditions.

Early Warning System: Overview



The Early Warning System is designed to measure *fragility*, not forecast headlines. Rather than attempting to predict recessions outright, it monitors stress building across multiple areas of the economy and markets. The system operates on a 0–10 scale, where most healthy expansionary environments naturally reside between 0 and 3. Extremes — either 0 or 10 — are not normal states. The economy rarely produces conditions that are uniformly positive or uniformly negative; what is relevant is when economic stress begins to *move outside* normal ranges.

The EWS aggregates three core buckets:

- **Financial Strength** – Credit spreads and bank deposits (liquidity & funding stability)
- **Macroeconomics** – Financial conditions, yield curve, and labor trends (economic momentum)
- **Market Stability** – Bank leadership and cyclical vs. defensive performance (behavioral risk signals)

It also features several circuit breaker "triggers" designed to heighten early responses. These relate to sudden stock market weakness and/or large movements in any of the individual components.

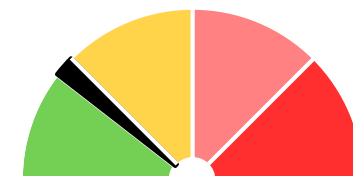
A conceptually important structural feature is the **"Key Fragility Barrier."** Historically, when the composite score rises above 4.0, fragility begins to compound across multiple buckets. Below that level, stress is typically contained and reversible. Above it, downturns often achieve a form of "escape velocity," where weakness spreads from markets into credit and economic activity.

Importantly, most elevated readings have proven to be short-lived episodes — tightening cycles, credit scares, or liquidity disruptions — rather than systemic crises. Over the past two decades, only the Global Financial Crisis and the COVID shock pushed the system into the highest stress zone.

The purpose of the EWS is simple: identify when isolated stress becomes broad fragility — and when normal growth conditions remain intact.

SCORING SYSTEM:

- 0 to 2.5:** Benign
- 2.5 to 5:** Early Caution
- 5 to 7.5:** Elevated Fragility
- 7.5 to 10:** Systemic Stress



CURRENT SCORE

2.3

Benign

The average score since 2007 has been 3.0.

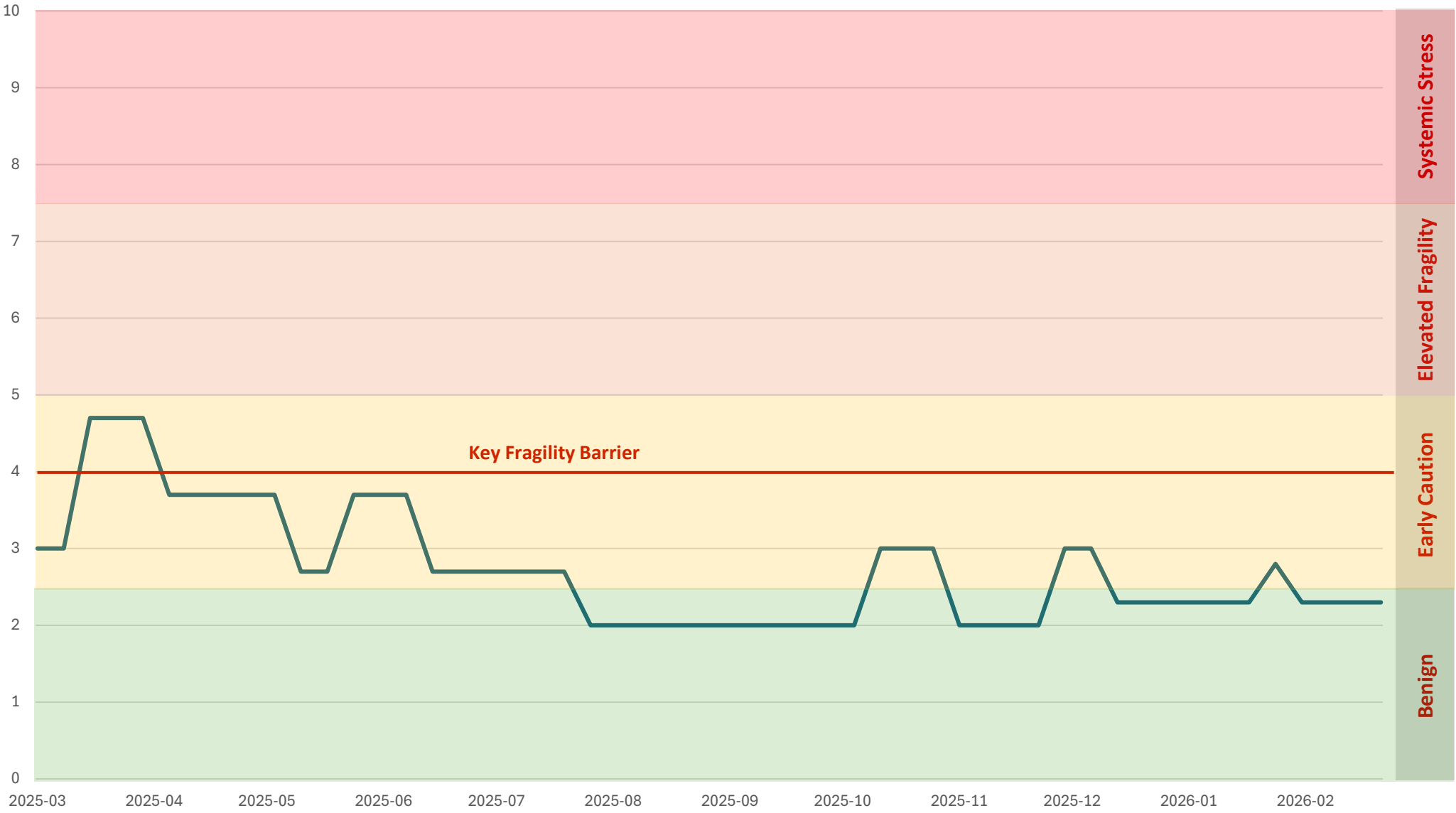
Early Warning System: Component Overview



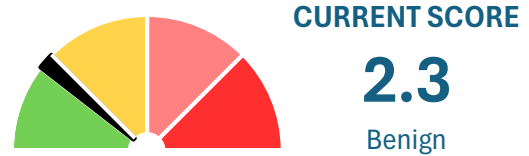
The Early Warning System (EWS) measures financial and economic fragility on a 0–10 scale. It is built around eight components which economists consider to be "forward-looking" economic indicators. These data points combine with two "circuit breakers"; predetermined rules which help to override and elevate scoring in times of sudden market or economic stress.

Financial Strength	BBB Corporate Bond Spread	Tracks borrowing costs for investment-grade companies; widening spreads signal tightening financial conditions and rising risk aversion.
	High Yield Credit Spread	Reflects risk appetite for lower-quality debt; typically deteriorates early when investors begin to price in economic or financial stress.
	Commercial Bank Deposits	Monitors stability and growth of the banking system's funding base; weakening deposits can indicate tightening liquidity.
Macroeconomics	Financial Conditions Index (NFCI)	A broad measure of liquidity and credit availability; captures systemic tightening that may not yet be visible in individual indicators.
	Yield Curve (10Y–3M)	A leading indicator of economic cycles; inversion has historically preceded periods of economic slowdown or recession.
	Initial Jobless Claims	A timely measure of labor market stress; sustained increases signal emerging weakness in employment conditions.
Market Stability	Bank Stocks vs. S&P 500	Banks are sensitive to credit and economic conditions; relative underperformance can indicate rising financial stress.
	Cyclical vs. Defensive Stocks	Measures investor preference for growth-sensitive sectors versus defensive ones; rotation toward defensives often signals increased caution.
Supplemental Signals ("Circuit Breakers")	Bucket-Based Circuit Breaker	Adds weight when any one category shows a sharp increase in fragility, helping highlight early-stage deterioration before it is fully reflected across all components.
	S&P 500 Shock Trigger	Activates during large, rapid market declines, capturing sudden repricing events that may indicate emerging risks not yet visible in macroeconomic or credit data.

Early Warning System: Last 52 Weeks

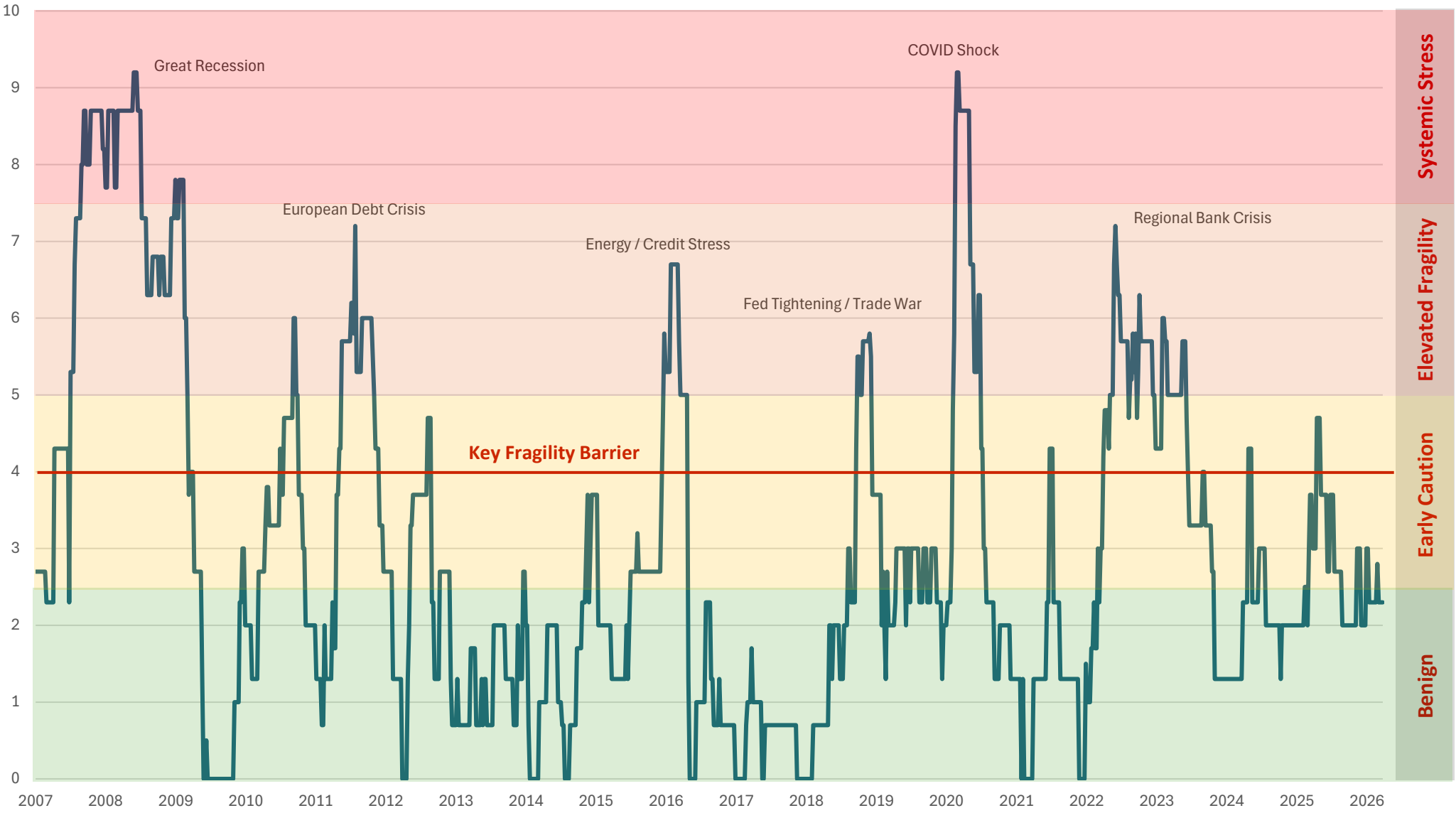


The Early Warning System (EWS) measures financial and economic fragility on a 0–10 scale by tracking credit conditions, macro trends, and market leadership. Rather than predicting recessions, it identifies when isolated stress begins to compound across multiple areas—highlighting when normal growth conditions give way to elevated and potentially self-reinforcing risk.



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Early Warning System: Backtested History

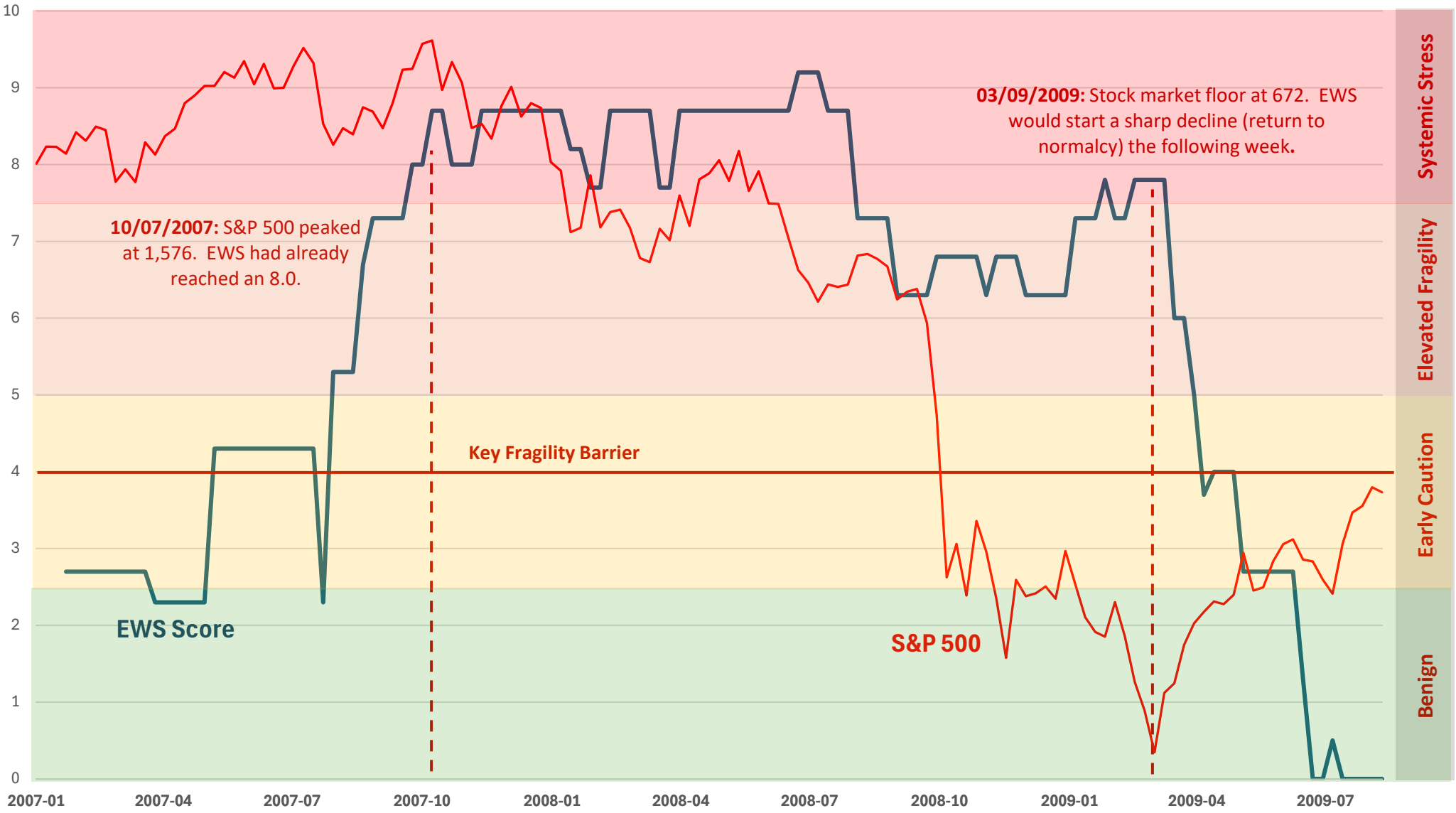


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CURRENT SCORE
2.3
 Benign

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Early Warning System: Great Recession



Early warning signs began to surface in **mid-2007**, as credit spreads widened and the yield curve inversion of 2006 continued to exert pressure on financial conditions. By **August 2007**, stress in subprime mortgage markets spilled into broader funding markets. The most acute deterioration occurred between **September 2008 and March 2009**, following the collapse of Lehman Brothers (September 15, 2008), when systemic stress accelerated rapidly. Importantly, initial signs of relief appeared before economic data improved. By **March-April 2009**, credit spreads began narrowing and financial conditions stabilized. These early improvements preceded the formal end of the recession in June 2009.

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