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BBA | Semester V | Calicut University

# Behavioural Finance

Course Code: BBA5CJ302 • Module 4 Notes

# 1. External Environmental Factors and Investor Behaviour

While internal cognitive heuristics drive decision-making, external environmental variables—ranging from macroeconomic news and calendar seasonality to atmospheric and physiological influences—significantly impact investor mood, risk tolerance, and asset price volatility.

## Seasonal and Calendar Market Anomalies

Persistent empirical return patterns linked to external calendar variables challenge EMH market efficiency:

| Calendar Anomaly | Empirical Phenomenon | Behavioural & Environmental Explanation |
|---|---|---|
| **The January Effect** | Small-cap stocks systematically outperform the market during the first two weeks of January. | Year-end tax-loss selling by retail investors in December, followed by reinvestment in January. |
| **The Monday / Weekend Effect** | Stock market returns on Mondays are statistically lower than other days of the week. | Investor mood deterioration over the weekend and bad news releases by firms on Friday evenings. |
| **Sunshine & Weather Effects** | Daily stock returns correlate positively with the amount of morning sunshine in financial centers. | Sunlight exposure increases serotonin levels, elevating investor optimism and risk acceptance. |
| **Pre-Holiday Effect** | Markets exhibit disproportionately positive returns on trading days immediately preceding major holidays. | Elevated national mood and optimistic trader sentiment prior to holiday celebrations. |

# 2. Fear and Greed Dynamics in Financial Markets

Financial markets operate along a psychological spectrum anchored by two dominant emotional extremes: **Greed** (which inflates asset price bubbles during expansions) and **Fear** (which triggers liquidity panics and market crashes during downturns).

## Quantifying Fear and Greed in Markets

### 1. CBOE Volatility Index (VIX - "Fear Gauge")

Measures 30-day implied volatility derived from S&P 500 index options. High VIX readings (>30) signal elevated market panic; low readings (<15) reflect investor complacency.

### 2. CNN Fear & Greed Index

Synthesizes 7 market indicators: stock price momentum, stock price strength, stock price breadth, put/call option ratios, junk bond demand, market volatility, and safe-haven demand.



# 3. Emotions and Financial Markets

Neurofinance and cognitive science demonstrate that human emotions are not secondary disruptions to rational thought, but essential biological components of decision-making under uncertainty.

## Key Emotional Frameworks in Investing

- **Somatic Marker Hypothesis (Antonio Damasio):** Emotional signals (somatic markers) generated by past experiences guide rapid decision-making before conscious cognitive processing occurs.
- **Regret Theory (Bell & Loomes):** Investors anticipate the emotional pain of making a wrong decision, leading to indecision, disposition effects, or conforming to consensus herding.
- **The Affect Heuristic:** Evaluating investment risk and return based on immediate emotional gut feelings (good/bad affect) rather than objective quantitative analysis.

- **Pride and Self-Enhancement:** The psychological desire to feel accomplished, driving investors to realize gains prematurely to celebrate success.

# 4. Geomagnetic Storms & Environmental Drivers

A growing body of empirical literature in bio-astrophysics and financial economics investigates the impact of natural environmental variations on human neurophysiology and aggregate stock market returns.

## The SAD Hypothesis & Geomagnetic Influences

### Seasonal Affective Disorder (SAD) Model

Research by Kamstra, Kramer, and Levi (2003) proves that reduced daylight hours in autumn/winter induce SAD, increasing biological depression and heightening risk aversion among market traders.

### Geomagnetic Activity Impact

Studies by Krivelyova and Latané (2003) show that solar flares and geomagnetic storms disrupt human pineal gland melatonin production, leading to negative mood shifts and lower stock returns.



# 5. Statistical Methodologies for Capturing External Influences

To rigorously test the impact of external environmental and psychological variables on stock returns, financial econometricians employ specialized quantitative models.

## Econometric Modeling Techniques

| Econometric Tool | Methodological Description | Primary Application in Behavioural Finance |
|---|---|---|
| **Dummy Variable Regressions** | Ordinary Least Squares (OLS) models incorporating qualitative binary variables (1/0). | Testing calendar anomalies (e.g., Monday effect, January effect, holiday effects). |
| **Event Study Methodology** | Measuring abnormal stock returns ($ ext{AR}_{it} = R_{it} - E(R_{it})$) around specific announcement windows. | Measuring market overreaction or underreaction to corporate earnings or news. |
| **GARCH Models (Engle & Bollerslev)** | Generalized Autoregressive Conditional Heteroskedasticity modeling time-varying volatility clustering. | Capturing psychological fear spikes, volatility persistence, and sentiment shocks in asset prices. |