The Role of Affective Dimensions in Shaping Economic Decision-Making under Uncertainty: Emotions, Intuition, and Behavioral Outcomes

James Wilson
Department of Finance, Krannert School of Management, Purdue University, USA

ABSTRACT

Economic decision-making under uncertainty has traditionally been analyzed through cognitive frameworks emphasizing probability assessment and expected utility. However, affective dimensions—including emotions, moods, and intuitive feelings—exert powerful influences on how individuals perceive, evaluate, and respond to uncertain prospects. This review examines the integration of affective processes into economic choice, grounded in somatic marker theory, dual-process models, and behavioral economics. Recognition of emotional influences has driven transformations from purely cognitive models to integrated affective-cognitive frameworks, from isolated individual affect to socially modulated emotional responses, and from static preference assumptions to dynamic, contextually constructed valuations. Specific mechanisms—including the affect heuristic, somatic markers, and emotional contagion—shape risk perception, ambiguity aversion, and intertemporal choices. Applications in investment behavior, consumer decision-making, and policy design demonstrate both explanatory power and intervention potential. Challenges of measurement, cultural variation, and the risk of emotional manipulation persist. Prospects center on neuroeconomic insights, affect-aware choice architecture, and governance frameworks that account for emotional dynamics in markets. The analysis concludes that affective dimensions are not merely sources of bias but integral components of adaptive decision-making under uncertainty, requiring theoretical and practical approaches that treat emotions as information rather than noise.

Keywords: Affective Decision-Making; Uncertainty; Emotions In Economics; Somatic Markers; Affect Heuristic; Behavioral Finance; Neuroeconomics; Ambiguity Aversion

1. INTRODUCTION

Uncertainty pervades economic life, from investment choices and consumption decisions to policy responses and entrepreneurial activity. Standard economic theory models decision-making under uncertainty as a cognitive process of probability weighting and utility maximization. Yet substantial evidence from psychology, neuroscience, and behavioral economics demonstrates that affective processes—emotions, feelings, and intuitions—fundamentally shape how individuals interpret and respond to uncertain situations [1]. Fear, hope, regret, and excitement influence not only the evaluation of outcomes but also the very construction of what counts as relevant information and acceptable risk.

Affective dimensions operate through multiple pathways: they provide rapid, automatic evaluations via the affect heuristic; they tag somatic states that guide approach or avoidance; and they are amplified or attenuated through social interaction and emotional contagion. These processes interact with cognitive deliberation in complex ways that can either enhance or impair decision quality depending on context.

Grounded in somatic marker theory, dual-process models of cognition, and behavioral economics, this review analyzes transformation pathways in theoretical understanding, evaluates applications across economic domains, and assesses challenges and prospects for incorporating affective insights. It draws on evidence up to 2023 and maintains critical balance between the adaptive functions of affect and the systematic biases it can produce.

2. The Theoretical Foundation of Affective Dimensions in Economic Decision-Making

2.1 The Connotation and Characteristics of Affective Influences in Economic Decisions

Affective dimensions encompass the range of emotional and feeling states—including discrete emotions such as fear and anger, diffuse moods, and rapid intuitive impressions—that accompany and shape economic evaluation. Their defining characteristics include speed and automaticity, somatic embodiment, social transmissibility, and interaction with cognitive processes rather than simple opposition to them.

Unlike purely informational inputs, affective responses carry evaluative valence and motivational force. They influence attention, memory retrieval, and risk perception in ways that are often adaptive for immediate survival but can produce systematic deviations in complex, abstract economic environments. These characteristics create both opportunities for more

realistic modeling and challenges for normative evaluation of decision quality [2].

2.2 The Theoretical Logic of Emotions and Intuition under Uncertainty

Somatic marker theory proposes that emotional bodily states associated with past outcomes guide current decision-making by marking options as advantageous or disadvantageous. Dual-process theories distinguish between fast, intuitive System 1 processing (heavily affective) and slower, deliberative System 2 processing. The affect heuristic suggests that people substitute easier affective evaluations for more difficult cognitive assessments of probability and utility.

An original extension proposed here is that affect functions as "embodied information" under uncertainty, providing compressed evaluations when complete information and computational capacity are unavailable. This logic implies that emotions are not merely sources of error but evolved mechanisms for navigating complexity. However, in modern economic environments characterized by abstract risks and delayed consequences, these same mechanisms can generate miscalibrated responses that require institutional correction [3].

3. The Transformation Path of Theoretical and Practical Approaches

3.1 Transition from Purely Cognitive to Integrated Affective-Cognitive Models

Early economic models treated decision-making as a cold cognitive calculation. Behavioral economics and neuroeconomics have progressively integrated affective processes, recognizing that emotions influence both the content and process of evaluation. Specific concepts include emotional tagging of outcomes, mood-congruent memory effects, and the role of incidental affect in risk assessment.

Research integrating physiological measures, neuroimaging, and behavioral experiments has established affective involvement in economic choice before 2023. This transition improves descriptive accuracy but complicates normative assessment, as it becomes less clear when affective influence constitutes bias versus adaptive response. Critical balance requires distinguishing between emotions that improve decisions in ecologically valid contexts and those that produce costly errors in modern economic settings [1].

3.2 Transition from Isolated Individual Affect to Socially Modulated Emotional Responses

Early affective research focused on individual emotional processing. Growing attention to social neuroscience and emotional contagion has highlighted how affective states spread through networks, influencing collective risk perception and market sentiment. Specific mechanisms include emotional mirroring, social amplification of fear or optimism, and norm-based emotional display rules in financial contexts.

Studies of market bubbles, panic selling, and social media-driven investment movements have incorporated social affective dynamics before 2023. This transition reveals that individual affective biases are often reinforced or attenuated by social environments. Original insight: markets function as affective amplifiers in which individual emotional responses interact through feedback loops, producing aggregate outcomes that cannot be reduced to isolated psychological processes [4].

3.3 Transition from Static Preferences to Dynamic, Emotionally Constructed Valuations

Traditional models assumed relatively stable preferences. Affective research has demonstrated that valuations are often constructed in the moment and heavily influenced by current emotional states, incidental mood, and the emotional framing of options. Specific phenomena include projection bias, where current affect is projected onto future states, and the impact of immediate emotions on intertemporal choice.

Experimental evidence has shown that transient emotional states can substantially alter willingness to pay, risk tolerance, and time preference. This transition supports the design of emotionally informed choice architecture but raises concerns about manipulation. Critical balance requires recognizing that affectively constructed preferences are not necessarily inferior; they may reflect genuine, context-sensitive values that static models overlook [2].

3.4 Transition from Individual Decision Biases to Market-Level Affective Dynamics

Individual affective biases were initially studied in isolation from market outcomes. Research has increasingly examined how emotional processes aggregate through social interaction, media, and institutional structures to shape market sentiment, volatility, and systemic risk. Specific mechanisms include feedback trading driven by fear and greed, emotional herding, and the role of narrative in sustaining or bursting bubbles.

Analyses linking neurophysiological measures, social media sentiment, and market data have established connections between affective dynamics and aggregate outcomes before 2023. This transition highlights that affective processes contribute to both individual welfare effects and systemic stability concerns. An original insight is that market design and regulation can be understood as forms of collective affect management, shaping the emotional environment in which individual decisions occur [5].

4. Applications of Affective Insights in Economic Domains

4.1 Application in Investment and Risk-Taking Behavior

Investors exhibit well-documented affective influences including excessive optimism during bull markets, panic during downturns, and the disposition effect driven by regret avoidance. Applications include robo-advisors incorporating behavioral features, stress-testing that accounts for emotional responses, and communication strategies designed to moderate affective reactions to volatility. Specific technologies include sentiment analysis of market narratives and physiological monitoring in experimental settings.

Field and experimental studies have linked emotional states to trading volume, risk-taking, and portfolio choices before 2023. These applications demonstrate that affective interventions can reduce costly behaviors such as panic selling, though effects are often modest and context-dependent. Challenges include sustaining changes and avoiding interventions that suppress adaptive emotional signals [6].

4.2 Application in Consumer Choice under Uncertainty

Consumers facing uncertain product quality, future needs, or complex pricing exhibit affective influences on evaluation and choice. Applications include affect-based marketing, emotional framing of warranties and guarantees, and the design of choice environments that account for emotional responses to uncertainty. Specific mechanisms include the use of affective cues in advertising and the structuring of default options to reduce decision-related anxiety.

Research has shown that incidental emotions and integral affect toward products significantly influence willingness to pay and choice under uncertainty. These applications can improve consumer experience and firm performance but raise ethical concerns when they exploit emotional vulnerabilities rather than serving consumer interests [3].

4.3 Application in Policy Design and Nudge Interventions

Behavioral policy has increasingly incorporated affective considerations into the design of interventions. Applications include emotionally calibrated communication about risks (such as climate or health threats), commitment devices that account for present bias and emotional self-control problems, and choice architecture that reduces decision-related stress. Specific mechanisms include fear appeals balanced with efficacy information and social norm messaging that leverages emotional identification.

Policy experiments have demonstrated that affect-aware interventions can improve outcomes in areas such as retirement saving, debt management, and health behavior before 2023. These applications highlight the potential for emotionally informed governance while underscoring the need for ethical safeguards against manipulation and the importance of transparency [7].

5. Challenges and Prospects of Incorporating Affective Dimensions

5.1 Current Main Challenges

Measurement of affective states in real economic environments remains difficult, with self-report, physiological, and behavioral measures each carrying limitations. Cultural and individual differences in emotional experience and expression complicate generalizable interventions. The line between helpful affective guidance and costly bias is often context-dependent and difficult to draw ex ante. Ethical concerns arise around the deliberate use of emotional influence in marketing and policy. Finally, translating micro-level affective findings into robust macro-level predictions and interventions remains challenging [4, 8].

5.2 Prospects for Future Development Trends

Prospects include advances in neuroeconomic methods and wearable technology that enable more precise, real-time measurement of affective processes during economic decisions. Integration of affective computing into digital platforms may enable personalized, emotionally responsive choice environments. Growing interest in well-being economics and alternative welfare measures creates space for affective considerations in policy evaluation. Development of ethical guidelines for affective

influence in markets and governance can help manage manipulation risks. Interdisciplinary collaboration between affective science, economics, and design can improve both theory and application.

An original forward-looking insight is the potential emergence of “affective market design” that deliberately shapes the emotional environment of economic interaction—through information architecture, social norms, and institutional rituals—to support better collective outcomes while respecting individual emotional autonomy.

6. Conclusion

Affective dimensions play a fundamental and often adaptive role in economic decision-making under uncertainty, shaping how individuals perceive risk, construct preferences, and respond to incomplete information. The transition from purely cognitive to integrated affective-cognitive models, from isolated to socially embedded emotional processes, and from static to dynamically constructed valuations reflects growing recognition that emotions are not merely sources of deviation but integral components of human judgment. Applications in investment, consumption, and policy demonstrate both the explanatory value of affective perspectives and the practical potential of emotionally informed interventions.

Significant challenges remain in measurement, ethical application, and scaling. Progress requires continued integration of affective science with economic theory and institutional design, careful evaluation of interventions, and governance frameworks that treat emotional dynamics as features of economic systems rather than external disturbances. When decision environments are designed with realistic assumptions about how affect shapes judgment under uncertainty, economic systems can better support both individual welfare and collective resilience.

REFERENCES

[1] Loewenstein, G. F., Weber, E. U., Hsee, C. K., & Welch, N. (2001). Risk as feelings. Psychological Bulletin, 127(2), 267–286. https://doi.org/10.1037/0033-2909.127.2.267

[2] Damasio, A. R. (2005). Descartes' error: Emotion, reason, and the human brain. Penguin Books.

[3] Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2007). The affect heuristic. European Journal of Operational Research, 177(3), 1333–1352. https://doi.org/10.1016/j.ejor.2005.04.006

[4] Shiller, R. J. (2019). Narrative economics: How stories go viral and drive major economic events. Princeton University Press.

[5] Neely, C. J., Weller, P. A., & Ulrich, J. M. (2009). The adaptive markets hypothesis: Evidence from the foreign exchange market. Journal of Financial and Quantitative Analysis, 44(2), 467–488. https://doi.org/10.1017/S0022109009090103

[6] Kuhnen, C. M., & Knutson, B. (2011). The influence of affect on beliefs, preferences, and financial decisions. Journal of Financial and Quantitative Analysis, 46(3), 605–626. https://doi.org/10.1017/S0022109011000123

[7] Thaler, R. H., & Sunstein, C. R. (2021). Nudge: The final edition. Yale University Press.

[8] Lerner, J. S., Li, Y., Valdesolo, P., & Kassam, K. S. (2015). Emotion and decision making. Annual Review of Psychology, 66, 799–823. https://doi.org/10.1146/annurev-psych-010213-115043