MIAMI AI CLUB

WHITE PAPER

AGI AND CAPITAL MARKETS: OPPORTUNITIES, RISKS, AND THE FUTURE OF FINANCIAL SYSTEMS

A whitepaper based on insights from the Miami AI Club's AGI Series event on the Impact of AGI on Capital Markets

https://miamiaiclub.com

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MIAMI AI
Club

Executive Summary

This whitepaper explores the intersection of Artificial General Intelligence (AGI) and capital markets, drawing insights from leading experts in AI, investment management, and technological innovation. As AI systems grow increasingly sophisticated, their potential to transform financial markets presents both unprecedented opportunities and systemic risks that must be managed proactively

The paper examines historical patterns of technological adoption, current AI applications in financial services, and future projections for AGI-driven market systems. It emphasizes the need for collaborative foresight, balanced assessment of risks and opportunities, and adaptive governance frameworks to ensure that AGI development enhances rather than destabilizes global financial systems.

Our Mission

- Uncover hidden truths in the AI landscape
- Influence key policies and industry directions
- Drive AI innovation towards positive global impact

Miami AI Club, Where exclusive insight meets collective responsibility, forging the path to an AI-empowered world.
Miami AI Club is led by Nima Schei, MD, a pioneer in nature-inspired AI and biomimetic intelligent systems. As the creator of BELBIC, the first emotion-based decision-making machine, and founder of BEL Research and Hummingbirds AI, Schei brings a wealth of experience in developing impactful AI applications across industries. His unique approach combines cutting-edge AI development through learning from nature with a deep commitment to ethical considerations and saving nature.

Our Vision

To become the vanguard of AI development, guiding its immense power towards a future that benefits all of humanity.

PART I:

Historical Technology Adoption Patterns and the Imperative for Proactive Risk Assessment in AGI Development

By Nima Schei, Founder of Miami AI Club and creator of emotional decision makers

The Pattern of Technological Myopia

Throughout human history, we have consistently displayed a pattern of technological optimism that often neglects potential long-term consequences. New technologies are typically met with enthusiasm and fixation on their immediate benefits, while their potential downsides remain largely unexamined until problems manifest at scale. This reactive approach to technological risk management has repeatedly resulted in significant challenges that could have been mitigated through earlier intervention.

CASE STUDIES IN DELAYED RISK RESPONSE:

PLASTICS:

Invented around 1900 and reaching mass adoption in the 1950s post-World War II, plastics revolutionized manufacturing and consumer goods. However, it wasn't until the 1980s that their environmental impact began receiving serious attention. By 1997, the "Pacific Garbage Patch" was identified—a massive oceanic waste accumulation now twice the size of Texas or three times the size of France. This environmental crisis continues to expand, demonstrating how waiting to address technological externalities can create self-compounding problems.


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ELECTRONIC TRADING SYSTEMS:

Introduced in the 1960s and popularized in the 1970s, electronic trading transformed capital markets by increasing speed and efficiency. Yet, the systemic risks remained largely unaddressed until the Black Monday crash of 1987, which was significantly exacerbated by these systems. Despite subsequent regulatory measures, we continue to witness "flash crashes" like the recent incident following DeepSeek's announcement, where even fundamentally sound companies like NVIDIA suffered 17% value drops, amounting to $600 billion in market capitalization lost in a single day.

BIOMIMETIC AI:

When early emotional decision-making systems modeled after biological processes were developed in 2003 by Nima Schei, the focus was on the immediate benefits: faster decision-making with reduced computational requirements. These systems found applications across various industries from home appliances to drone technology. However, their long-term implications and potential unintended consequences weren't fully considered at inception—a realization that came only after wider deployment.

THE ACCELERATION TOWARD AGI

The pace of AI advancement is accelerating exponentially. As noted in a significant exchange between Elon Musk and Peter Diamandis at FII8 in Riyadh, machine intelligence is increasing approximately tenfold annually. At this rate, within four years, AI systems could be not just 10,000 times but potentially 100,000 times more capable than current systems. The projection suggests that machine intelligence might soon surpass the combined intelligence of all humans.

When this threshold is crossed, AI systems will possess unprecedented understanding of complex systems, including capital markets—comprehending their mechanics, dynamics, and vulnerabilities more thoroughly than any human expert or institution. This projection raises critical questions about the implications for investment strategies, financial stability, and economic structures.

THE IMPERATIVE FOR PROACTIVE GOVERNANCE

Unlike previous technological revolutions, we cannot afford to address AGI's challenges reactively. Once these advanced systems are deployed, as with other transformative technologies, "the genie cannot be put back in the bottle." This reality necessitates a fundamentally different approach, as emphasized by Nima Schei:

Collaborative Foresight:

Platforms like the Miami AI Club provide essential infrastructure for cross-disciplinary dialogue to identify potential systemic risks before they manifest.

Anticipatory Governance:

Instead of waiting for catastrophic failures to implement safeguards, we must develop governance frameworks that evolve alongside the technology.

Balanced Assessment:

While embracing AGI's transformative potential, we must simultaneously investigate its possible negative externalities with equal rigor.

This approach represents not merely a prudent risk management strategy but an essential paradigm shift in how we govern emerging technologies with unprecedented capabilities and implications.

PART II:

The Path to AGI: Human Context, Capital Markets, and Responsible Innovation

By **Caroline Yap**, former Managing Director of Global AI Business and Applied Engineering at Google Cloud

Redefining Our Understanding of AGI

Despite widespread speculation about the timeline for achieving Artificial General Intelligence (AGI), there remains significant misunderstanding about what constitutes true AGI. The public's experience with generative AI and large language models (LLMs) has created a perception that we are closer to AGI than we actually are. While current models excel at prediction based on patterns in historical data, they fundamentally lack an understanding of human context, purpose, and meaning.

As Cassie Kosyrkov, Google's first Chief Decision Officer, eloquently articulated: "**AI only sees the past, not the future. It only sees the pattern, not the purpose. It sees the data trail, not the human story.**" This distinction is crucial for realistic expectations about AGI's timeline and capabilities.

The Human Element in Technology

With thirty years of experience in technology, I have consistently observed that the most effective technological implementations acknowledge human contexts and limitations. The current AI wave represents the first opportunity to fundamentally reimagine processes rather than simply optimize existing ones.


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When advising boards and C-suites on AI strategy, I emphasize looking beyond shareholder pressure to implement generative AI. The real value lies in how these technologies can transform back-end systems and business processes. The key question is not *"How can AI make this process more efficient?" but rather "Should this process exist at all, and how can AI help us reimagine it?"*

Capital Markets and AI Integration

Capital markets present a particularly compelling use case for advanced AI systems. The industry demands rapid processing of information, generation of insights, creation of derivatives, and enforcement of compliance at unprecedented speeds. Current language models can assist with these functions, but the question of fully automating decision-making remains contentious.

This relates to Daniel Kahneman's concept of System 1 (fast, intuitive) versus System 2 (slow, rational) thinking. Most AI models currently operate in a System 1 mode - quick and pattern-based but potentially missing the nuanced context that human decision-makers bring to complex financial decisions.

For family offices developing investment indices, AI tools cannot yet replace understanding of individual preferences, risk tolerances, and personal "gut feelings" about investments. The richness of human experience - shaped by cultural background, education, and life experiences - provides context that current AI lacks.

The Road to AGI: Strategic Investments

For those looking at investment opportunities in this space:

Healthcare Applications:

Recognize the regulatory and liability challenges in certain domains like healthcare, where even highly effective AI diagnostics still require human verification for legal reasons.

Industry-Specific Models:

Encourage the development of specialized models for specific industries rather than relying solely on general-purpose large models that may sacrifice domain specificity.

Digital Infrastructure:

Go long and go hard" on digital infrastructure investments, as computational demands will continue to grow exponentially

PRACTICAL RECOMMENDATIONS FOR AI IMPLEMENTATION

Organizations implementing AI in capital markets should focus on three key areas:

- **Process Evaluation:** Use AI for efficiency, but first evaluate whether the process itself should be redesigned rather than merely optimized.
- **Human Oversight:** Maintain humans in the loop, especially for validating outputs and ensuring alignment with client needs and expectations.
- **Data Discipline:** Enforce rigorous data quality practices as your data serves as the "ground truth" for your models. Proper grounding, chaining, and embedding of high-quality data into language models reduces hallucinations and improves output specificity.

The Growth Mindset

When approaching AI implementation, I recommend organizing initiatives into three categories: AI for growth, AI for efficiency, and AI for the future. *Many organizations instinctively prioritize efficiency, but this approach risks becoming a "race to the bottom."*
Instead, prioritizing growth changes the narrative around technology adoption. Whether for corporations, projects, or startups, a growth-oriented approach creates positive momentum and shifts how the technology is perceived and utilized throughout the organization.
In conclusion, while true AGI remains at least 25 years away, by my estimation, the path to getting there presents tremendous opportunities for innovation, particularly in capital markets. Success will depend on balancing technological capabilities with human insight, maintaining appropriate oversight, and focusing on how these tools can drive growth rather than merely reduce costs.

PART III:

Panel Discussion: AI Agents and the Evolution of Capital Markets

Moderated by Brian Engelbert, CFA, CPA (Former COO of Kyber Data Science). Featuring insights from Ari Lehavi (General Manager- Predictive Analytics at Moody's), Maja Vujinovic (Former CIO of GE, Managing Director at OGroup), Afsheen Afshar (Founder and Managing Member at Pilot Wave Holdings), and Scott Benesch (Owner and Managing Partner at Benesch Investment Group)

Current AI Use Cases in Capital Markets

The evolution of AI in investment and financial services is already underway. Current applications range from basic research tools for screening information and analyzing SEC filings to comprehensive systems that transform business processes end to end.

THE EVOLUTION OF AI AGENTS IN FINANCIAL SERVICES

Ari Lehavi provides insight into the development of AI agents within financial systems: *"An agent is functionality that leverages AI reasoning capabilities, applies it to information, tools, and makes decisions.*
That decision could be used by an individual or passed to another agent to utilize that information and make their own decision."

He describes how these narrow agents are becoming more capable of cross-domain reasoning and agent-to-agent interaction, which creates an emerging system with properties that may become difficult to predict:
"I'm envisioning a world in capital markets where the dynamics of interaction across agents has an emerging property that we are going to study as a whole new field of behavioral finance."

HETEROGENEITY VS. HOMOGENEITY IN AI TRADING SYSTEMS

A key debate centers around whether AI trading systems would lead to greater market homogeneity or heterogeneity:
Maja Vujinovic argues that *"what I see currently is so much learning in these AI systems that we're not going to tap into the same data. The agents are not going to be the same. The information is not going to be the same because somebody's agent is going to be way smarter than somebody else's."*

Afsheen Afshar counters this perspective: *"That inherently assumes there is heterogeneity to how these algorithms work. That may happen, but we've not seen that happen yet. Usually what happens is everyone just runs after the best algorithm of the day... when these models get smart, typically they get dumb in the same exact way."*

Ari Lehavi suggests that *"diversity of agents is actually a risk mitigation protection. I think to the extent that we can encourage more diversity, that is great."*


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The Marriage of Blockchain and AI

A particularly promising development is the integration of blockchain technology with AI systems. **Maja Vujinovic** introduced what she called *"the perfect marriage" between blockchain and AI: "Blockchain and AI are what I call a perfect marriage. And AI agents... it was a perfect way, a perfect new highway for these agents to communicate."*
Afsheen elaborated: *"The data markets, where our companies exchange data at a fee using a blockchain backend... exchanging information across agents in a secure, tamper-resistant, scalable way is probably the only way to achieve that marketplace of interaction."*
The panel discussed how this combination addresses current inefficiencies in value transfer systems. As Maja noted, *"The current system is completely incompetent in transferring value. We might not feel it here in the U.S. because you get Visa and Venmo... but the rest of the world, or us just moving money to Guatemala, to Africa, I mean, it's hell."*

Market Volatility and Price Discovery

The panel explored how AI would affect market volatility and price discovery:

Scott Benesch argued that even as AI becomes more prevalent, market dislocations would continue to create opportunities: *"Asset prices don't typically change that much on any given day. But the great thing about the public market is that things can be down 20-40% over a couple of days for dumb reasons. When an asset value falls out of bed for a reason that doesn't make any sense, often it's an opportunity for me to take advantage of it."*

He questioned whether AI could predict unpredictable human decisions: "I don't know what a company CEO is going to do three years from now if they're going to have to change its business... I don't know if a new technology coming along three years from now is going to eliminate 20% of its revenues."

The panelists generally agreed that increasing AI involvement in markets would likely lead to greater volatility rather than stability. As Afsheen put it: "There is going to be this arms race where agents, pockets of agents, will move things. And this pocket of agents will exploit the other pocket of agents that's one version behind them... which is why I think volatility is not going to be tapped out."

REGULATORY CHALLENGES IN THE AI ERA

The discussion concluded with perspectives on regulation in an increasingly AI-driven financial system:

Maja highlighted the preparedness gap: *"I sat down with a number of regulators around the world, from **Saudi Arabia** to the Hill, to **Europe**, to **Latin America**. And the amount of time that everybody is in is actually extremely scary... If we actually want to protect the individual at any level, all those offices will need to dodge some aspects. They're gonna need to have people who understand technology, understand operational levels, and actually understand how a 15 or 17-year-old computer scientist that trains on blockchain thinks."*

The panel envisioned a future where regulatory AI agents would compete with market-focused AI agents in a continuous evolutionary arms race.

CONCLUSION: AN UNPREDICTABLE FUTURE

Afsheen summarized the panel's overall sentiment: *"The meta theme of all this is no one can predict the future except it's going to be more volatile and more complex... There's gonna be some very, very nuanced interaction that no one's going to have the brainpower to understand. Even the agents themselves will not understand; they'll just be part of this larger organism. Which will lead to behaviors and spikes that no one will understand, will come back, and then hopefully we'll all make money."*


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Synthesis and Conclusion

The convergence of expert perspectives on AGI and capital markets reveals several key themes:

1. **Historical Patterns as Warning Signs**: As Dr. Schei highlights, our tendency toward technological myopia and delayed risk assessment has repeatedly led to unintended consequences. The financial system is particularly vulnerable to systemic risks from rapidly evolving technologies.
2. **Realistic Timeline for True AGI**: Caroline Yap's estimate of at least 25 years to true AGI contrasts with public perception influenced by the rapid advancement of large language models. This gap in understanding creates both risks and opportunities.
3. **Human-AI Collaboration Remains Essential**: All experts emphasized that despite increasing AI capabilities, human judgment, contextual understanding, and oversight remain critical, especially in complex financial decision-making.
4. **The Blockchain-AI Nexus**: The integration of blockchain with AI systems emerges as a particularly promising frontier, potentially addressing issues of data provenance, security, and value transfer that are essential for trusted financial systems.
5. **Increased Volatility Rather Than Stability**: Counter to some expectations, the experts predict that increasing AI involvement in markets will likely lead to greater volatility as competing systems exploit each other's weaknesses and limitations.
6. **Regulatory Readiness Gap**: The regulatory framework for AI in financial markets significantly lags behind technological advancement, creating potential risks that require collaborative solutions between industry, government, and academic sectors.

As we move toward an increasingly AI-mediated financial future, the insights from these experts suggest that success will depend not merely on technological advancement but on thoughtful integration that respects human judgment, encourages system diversity, incorporates appropriate regulatory oversight, and maintains a growth-oriented perspective that balances risk and opportunity.

The future of capital markets in the age of AGI remains uncertain, but by learning from historical patterns, maintaining realistic expectations, and adopting proactive approaches to governance, we can work to ensure that these powerful technologies enhance rather than destabilize the global financial system.

Contributors:

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Hosted by Benesch Investment Group:

This exclusive event is proudly hosted by Benesch Investment Group, a boutique investment firm with over thirty years of Wall Street and advisory experience. Known for providing sophisticated, institutional-level financial services, Benesch Investment Group has built its reputation on trust, confidentiality, and an unwavering commitment to putting clients first.

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