

Digital Finance 3: Technology in Finance

Lesson 34: Market Prediction Limitations

FHGR

December 13, 2025

Summary of key concepts presented above.

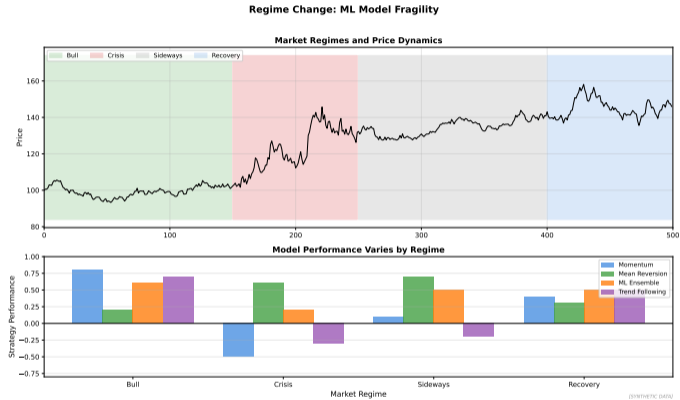
Learning Objectives

By the end of this lesson, you will be able to:

- Explain why markets are hard to predict (EMH)
- Recognize regime changes and structural breaks
- Understand model decay and concept drift
- Apply robust model governance frameworks
- Identify common pitfalls in ML trading systems
- Evaluate realistic performance expectations

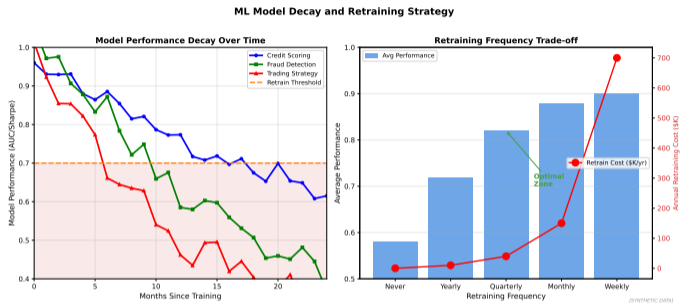
Summary of key concepts presented above.

Market Regime Changes

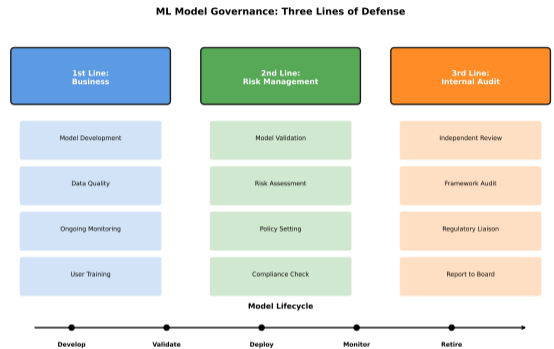


Market regimes shift abruptly, causing models trained on past data to fail in new conditions.

Model Decay Over Time



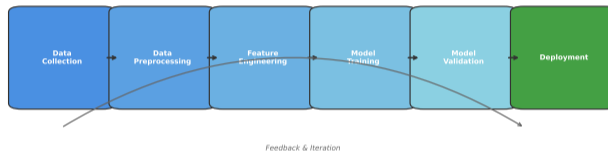
Predictive models degrade as market dynamics evolve, requiring continuous retraining and monitoring.



[SYNTHETIC DATA]

Robust governance includes validation, monitoring, versioning, and documented approval processes.

Machine Learning Pipeline in Finance



(SYNTHETIC DATA)

Production ML systems require data pipelines, feature stores, model registries, and monitoring infrastructure.

Key Takeaways:

- Markets are hard to predict (EMH partially true)
- Regime changes invalidate historical patterns
- Model decay inevitable: continuous monitoring required
- Governance critical for production ML systems
- Realistic expectations: Sharpe 1.5-2.0 is excellent
- Alpha is scarce, crowded, and decays rapidly

Next Lesson: Explainability and Bias

Summary of key concepts presented above.