

Digital Finance 3: Technology in Finance

Lesson 36: AI Regulation and Future

FHGR

January 3, 2026

AI regulation shapes the future of innovation in financial services.

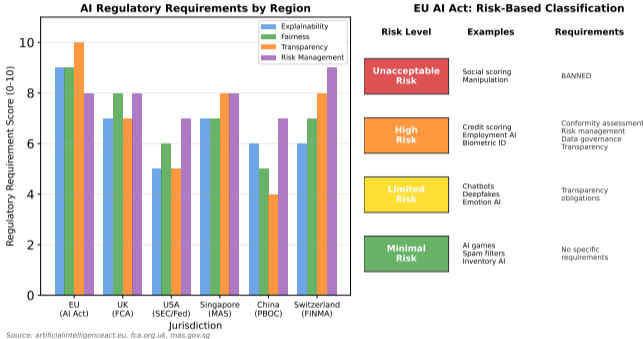
Learning Objectives

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

- Explain the EU AI Act and risk-based framework
- Understand financial sector-specific AI regulations
- Navigate GDPR Article 22 (automated decisions)
- Evaluate emerging regulatory trends
- Anticipate future AI developments in finance
- Assess career opportunities in AI finance

EU AI Act classifies AI systems by risk level with strictest rules for high-risk uses.

Global AI Regulation in Financial Services



Global AI regulation is converging toward risk-based frameworks prioritizing high-risk financial applications.

FINMA AI Guidance (Dec 2024):

- Governance and risk management for AI
- Technology-neutral principles
- Applies existing regulations to AI
- No AI-specific Swiss law (yet)

Key Risks Identified:

- Model risks (robustness, bias)
- Data quality and security
- Third-party dependencies
- Explainability requirements

Four Guiding Principles:

- ④ Clear roles and responsibilities
- ② Human oversight (no AI delegation)
- ③ Sufficient AI expertise required
- ④ Accuracy and reliability testing

Testing Requirements:

- Backtesting, out-of-sample
- Sensitivity analysis, stress tests
- Adversarial testing

FINMA applies principle-based, technology-neutral regulation to AI in financial services. Source: FINMA Guidance 08/2024

Swiss Approach:

- No specific AI legislation
- Existing laws apply (principle-based)
- FINMA guidance (non-binding)
- Focus on financial sector risks
- Technology-neutral regulation

Swiss Advantages:

- Flexibility for innovation
- Faster adaptation
- Less compliance burden

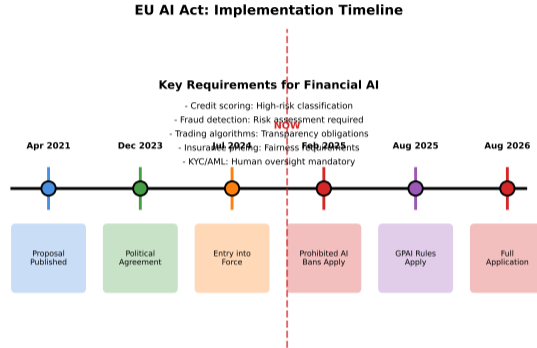
EU AI Act Approach:

- Comprehensive AI-specific law
- Risk-based classification
- High-risk: Credit scoring, fraud
- Extensive documentation required
- Heavy penalties (up to 7% revenue)

EU Requirements for Finance:

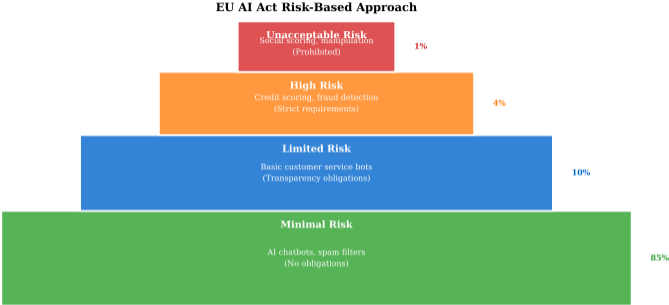
- Conformity assessments
- Human oversight mandatory
- Transparency obligations

Swiss principle-based approach contrasts with EU's prescriptive AI Act, creating potential regulatory arbitrage opportunities.



Source: artificialintelligenceact.eu, europarl.europa.eu

The EU AI Act enters force in phases, with full compliance required by 2026 for most financial systems.



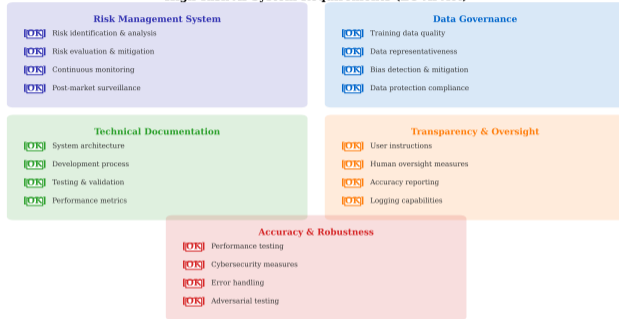
Risk level determines regulatory requirements and compliance obligations

Source: artificialintelligenceact.eu, europarl.europa.eu (EU AI Act)

The EU AI Act classifies systems by risk level, with strictest rules for high-risk applications.

High-Risk AI System Requirements

High-Risk AI System Requirements (EU AI Act)

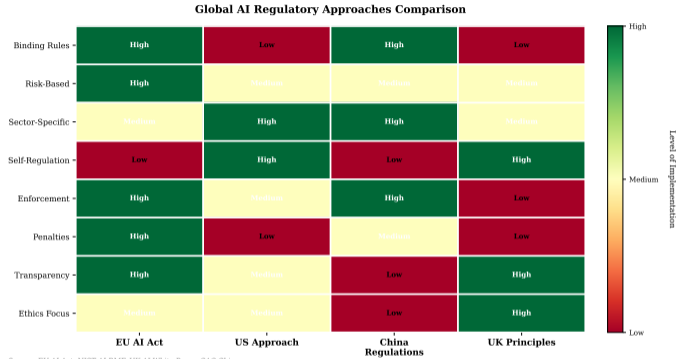


All requirements must be met before market deployment

Source: EU AI Act (2024), eur-lex.europa.eu, digital-strategy.ec.europa.eu

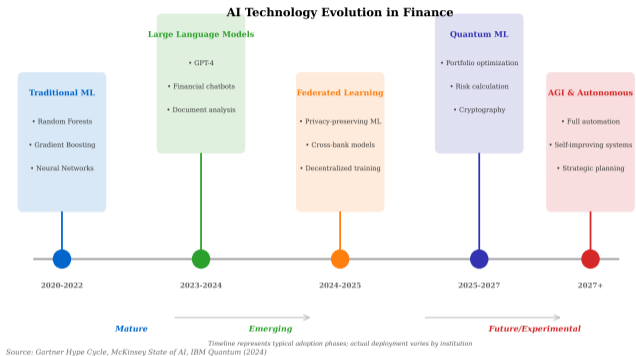
High-risk AI systems face extensive requirements around data, documentation, and human oversight.

Global AI Regulation Comparison



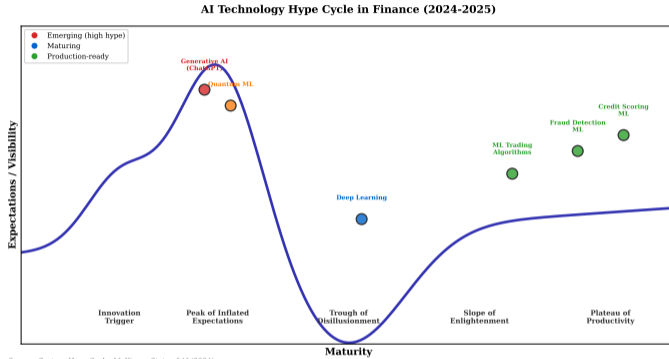
Regulatory approaches vary significantly across jurisdictions.

Future AI Trends Timeline



AI capabilities are expected to advance rapidly, raising both opportunities and risks.

Gartner Hype Cycle for AI in Finance



Many AI applications are transitioning from hype to productive deployment.

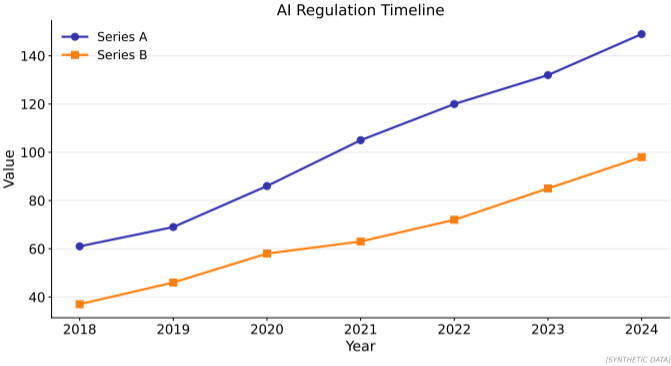
Key Takeaways:

- EU AI Act establishes risk-based framework (2024-2026)
- Financial ML systems mostly high-risk (credit, insurance)
- GDPR Article 22: right to explanation for automated decisions
- Explainability and fairness now regulatory requirements
- Future trends: LLMs, federated learning, quantum ML
- Career opportunities: ML engineers, model validators, AI ethicists

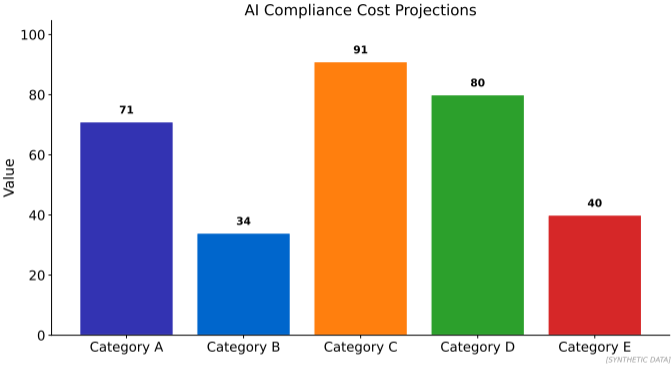
Module 3 Complete! Next: Module 4 - Traditional Finance Technology

AI regulation varies globally with EU taking the most prescriptive approach.

AI Regulation Evolution



Regulatory frameworks continue to evolve globally.



Compliance costs scale with firm size and complexity.