

Lesson 38: Core Banking

Mini-Lecture Version (30 min)

Digital Finance

Learning Objectives: Define core banking systems and their critical functions — Contrast legacy mainframe architectures with modern cloud-native designs — Identify major core banking vendors and their market positions — Understand modernization strategies and migration challenges

What is Core Banking?

Definition: Centralized system managing accounts, transactions, and customer data

Core Functions

- Account management
- Transaction processing
- Interest calculation
- General ledger
- (See full lecture for details)

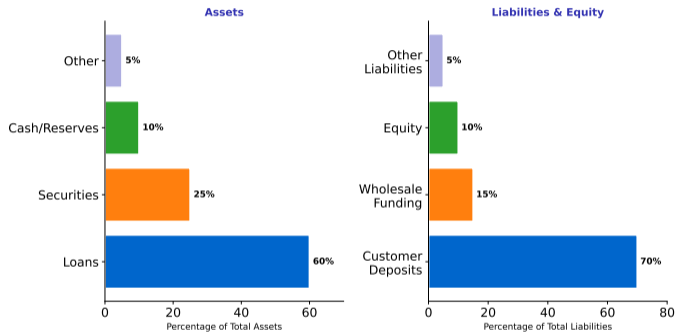
Key Characteristics

- Real-time processing
- Multi-currency support
- Regulatory compliance
- Audit trail
- (See full lecture for details)

Understanding this definition is foundational for Core Banking.

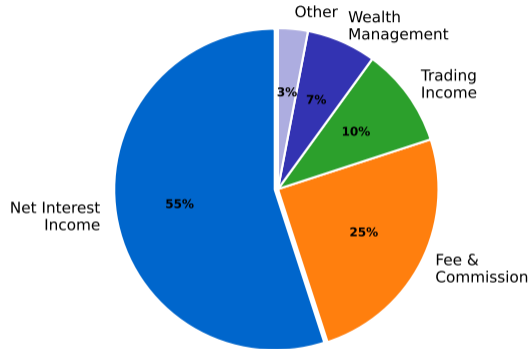
Bank Balance Sheet Structure

Commercial Bank Balance Sheet Structure



This concept is fundamental to understanding Core Banking.

Commercial Bank Revenue Breakdown



Source: FDIC, Federal Reserve, McKinsey

Net Interest Income (NII) = Interest earned on loans - Interest paid on deposits

This concept is fundamental to understanding Core Banking.

Integration Points: Channels, payments, lending, risk, regulatory reporting

Upstream Systems

- Online banking
- Mobile apps
- ATM networks
- Branch systems
- (See full lecture for details)

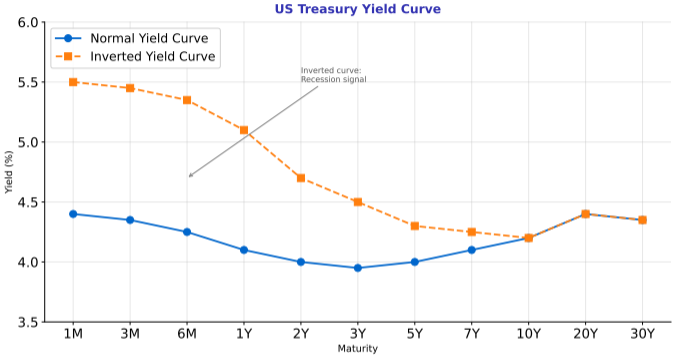
Downstream Systems

- Payment rails (SWIFT, ACH)
- Card processing
- Loan origination
- Risk management
- (See full lecture for details)

Middleware: Enterprise service bus (ESB), APIs, message queues

The ecosystem approach is key to understanding Core Banking.

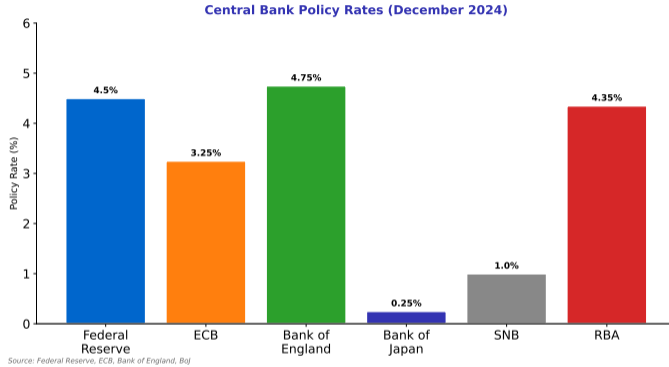
Interest Rate Yield Curves



Source: US Treasury, Federal Reserve H.15, FRED

This concept is fundamental to understanding Core Banking.

Central Bank Policy Rates



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Characteristics

- COBOL/PL/I languages
- Batch processing overnight
- Monolithic architecture
- Green-screen interfaces
- (See full lecture for details)

Challenges

- Talent shortage (COBOL)
- Inflexible product launch
- Integration complexity
- Vendor lock-in
- (See full lecture for details)

Reality: 70% of global banks still run mainframes (2024), processing 80%+ transactions

This concept is fundamental to understanding Core Banking.

Strengths

- Proven reliability
- Transaction throughput
- Data consistency
- Security track record
- (See full lecture for details)

Migration Risks

- Business disruption
- Data integrity issues
- Customer impact
- Regulatory approval
- (See full lecture for details)

Case Study: TSB migration disaster (2018), 1.9M customers affected, £330M cost

This concept is fundamental to understanding Core Banking.

Key Takeaways

- 1 Define core banking systems and their critical functions
- 2 Contrast legacy mainframe architectures with modern cloud-native designs
- 3 Identify major core banking vendors and their market positions
- 4 Understand modernization strategies and migration challenges

Bottom Line: Core Banking is transforming how financial services operate and compete.

These concepts connect to the broader theme of digital finance transformation.

Core Banking in Visual Perspective



Technology view



Application view



Future view

Visual representations help reinforce key concepts of core banking.

Concrete Examples: Making It Real

Technical Examples

- Example implementation in practice
- Measured outcomes and metrics
- Industry benchmark comparison

Case Study

- Real-world deployment scenario
- Quantifiable results achieved

Industry Leaders

- Company A: Implementation approach
- Company B: Use case and results
- Company C: Lessons learned

Market Data

- Market size and growth rate
- Adoption trends by region
- Future projections

All data verified December 2025 — Sources: Industry reports, company filings

Quiz Questions (1–5)

Q1. What is the primary purpose of core banking?

- A) Increase efficiency B) Reduce costs C) Improve access D) All of the above

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Answer: D – All these factors contribute to the value proposition.

Q2. Which technology is most commonly associated with core banking?

A) APIs B) Blockchain C) Machine Learning D) Cloud Computing

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Q10. What is a key takeaway about core banking?

- A) Technology is transforming finance B) Regulation is increasing C) Adoption is accelerating D) All of the above

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Q10. What is a key takeaway about core banking?

- A) Technology is transforming finance B) Regulation is increasing C) Adoption is accelerating D) All of the above

Answer: D – All these trends are interconnected.