**Introduction to Fintech (S2-24\_MBACCZG516) - NOTEs**

**Class 1: May 3, 2025**

Its Introduction – ignored.

**Class 2: Notes - May 10, 2025**

**Core Concepts of Fintech**

**Four Pillars of Fintech**

* **Domain Knowledge**: Deep understanding of the financial sector.
* **Technology**: Tools and innovations to disrupt traditional finance.
* **Regulations**: Financial systems are highly regulated (e.g., RBI, SEBI, IRDAI, PFRDA in India).
* **Consumer Behavior**: Adoption relies on user habits and incentives.

**Course Structure**

* Focus on understanding fintech landscapes.
* Mix of domain and tech insights.
* Team assignments:
  + Startup/fintech idea with financial model.
  + Notes submission every 3 classes (group of 5 students).

**Key Fintech Verticals**

* Payments & Remittances
* Lending (including Buy Now Pay Later)
* Insurance (including IoT-based underwriting)
* Wealth Management & Robo Advisory
* Neobanking & Digital Banking
* Crowdfunding & Crowd Investing
* Regulatory Tech (RegTech)
* Compliance Solutions (e.g., KYC, AML)
* CFO Stack & Business Finance Tools

**Market Size & Trends**

* Global Fintech market estimated at **$674 billion+**.
* India’s share: ~$25–50 billion.
* Fintech hubs: US, UK, India, China, Singapore, Australia.
* Strong growth in:
  + Digital lending
  + Insurance tech (insurtech)
  + Wealthtech
  + Regtech

**Evolution of Banking & Technology**

* History from bartering to modern banking.
* Rise of digitization:
  + ATMs, Core Banking Systems (CBS)
  + Mobile apps, AI-based banking, Voice interfaces
* Future: Mobile-first, AI-driven, branchless operations.

**Technology Drivers of Fintech**

* **AI & GenAI**: Enhanced personalization, risk modeling.
* **Blockchain**: Trustless transactions, smart contracts.
* **Cloud & SaaS**: Scalable infra for fintech startups.
* **IoT**: Used in insurtech for risk prediction.
* **Low Code / No Code**: Democratizing app development.
* **Digital Public Infrastructure (DPI)**:
  + UPI, eKYC, Aadhar, GSTN, ONDC, Account Aggregators

**Data Privacy & Security**

* India now has a **Data Privacy Law** (passed by Parliament).
* Inspired by **EU GDPR**, but with capped penalties.
* Focus on **consent-based data sharing** in open banking.

**Banking Sector Insights (India)**

* **Net Interest Margin (NIM)** = Lending rate - Deposit rate.
* Banks also earn **non-interest income** (fees, commissions).
* Public sector banks still dominate but private banks are growing.
* VC Investments declining post-2021 but still substantial.

**Opportunities for Startups**

* Address inefficiencies in lending, investment, compliance.
* Focus on:
  + Consumer pain points
  + Gaps in financial inclusion
  + Leveraging DPI for cost-effective solutions

**Suggested Activities**

* Deep dive into **bank balance sheets** (NIM vs. non-NIM revenue).
* Analyze impact of **GenAI on financial roles**.
* Review **VC-funded fintech case studies**.
* Study **global vs. Indian regulatory frameworks**.

**Class – 3 Notes: May 17, 2025**

**Understanding Banking through Roleplay**

**Objective**

Simulate a simplified bank to understand:

* How banks work
* Basic accounting (balance sheet)
* Capital, deposits, loans
* Risk, leverage, and returns

**Bank Creation Scenario (Bank Sindhur)**

**Initial Setup**

* **Investors**: Nirmala & Yuvraj (₹1,00,000 each)
* **Capital** = ₹2,00,000
* **Assets** = Cash ₹2,00,000
* **Liabilities** = Shareholder Capital

**Loan Transactions**

* **Borrower**: Jitesh
* Loan: ₹2,00,000 at 9% interest for 1 year
* End of year:
  + Repayment = ₹2,18,000
  + Profit = ₹18,000 (shared ₹9,000 each)
  + Return on Capital = **9%**

**Repeat Scenarios with Variations**

**Version 2 – Bank Takes Loan**

* **Depositor (Loan to Bank)**: Mitali @10% interest, ₹1,00,000
* Total Funds = ₹3,00,000
* **Lends to Jitesh @8%**
* Profit = ₹24,000 | Interest to Mitali = ₹10,000
* Investor Return = ₹7,000 each (**7%**)

**Learning:**

Borrowing at higher rate than lending = reduced profitability.

**Version 3 – Bank Negotiates Better**

* Mitali agrees @7%
* Loan to Jitesh @9%
* Total repayment = ₹3,27,000
* Investors get ₹1,10,000 each → **10% return**

**Learning:**

Optimize borrowing and lending rates for higher investor return.

**Version 4 – More Depositors**

* New Depositors: Sowmya @7%, ₹1,00,000
* Total Capital = ₹2,00,000, Deposits = ₹2,00,000 → ₹4,00,000
* Jitesh borrows @8%
* Repayment = ₹4,32,000
* Interest paid to depositors = ₹14,000
* Investors get ₹1,09,000 each → **9% return**

**Learning:**

More capital doesn't guarantee better return if rates aren't optimized.

**Version 5 – Optimal Rates**

* Jitesh borrows full ₹4,00,000 @9%
* Repayment = ₹4,36,000
* Investor return = **11%**

**Version 6 – Increased Leverage**

* More depositors added → Total Capital = ₹2,00,000, Deposits = ₹4,00,000
* Loans to Jitesh & Rangaraj @9%
* Repayment = ₹6,54,000
* Investors return = ₹1,13,000 each → **13%**

**Version 7 – Default Scenario**

**Rangaraj Defaults**

* No repayment of principal or interest
* Total recovery = Only from Jitesh's business
* Investor return = ₹4,000 each → **-96%**

**Learning:**

* Leverage (debt) amplifies returns **AND** losses
* Default risks must be managed

**Key Concepts & Lessons**

**Leverage**

* **Debt/Equity Ratio** matters:
  + Higher debt → Higher risk & potential return
  + Works well in **good times**
  + Can lead to **massive loss** in **bad times**

**Business Structures**

* **Sole Proprietorship**: Owner bears full risk
* **Partnership**: Risk shared among partners
* **Private Limited Company**: Limited liability, losses capped to invested capital

**Conclusion & Takeaways**

* **Balance Sheet** fundamentals: Always balance assets & liabilities
* **Investor vs Depositor**: Different rights and risks
* **Interest Rate Management**: Central to banking profitability
* **Risk Management**: Essential for sustainable banking
* **Roleplay & Simulation**: Effective in understanding banking operations

**Class- 4 Notes: May 24, 2025**

**Bank Revenue Analysis**

**Objective:**

Analyze revenue mix:

* **Interest Income**: Income from loans, investments, RBI balances
* **Fee/Non-Interest Income**: Commissions, custodial services, insurance/mutual fund sales

**Team Work:**

* Team 1: Federal Bank
* Team 2: Equitas Bank
* Team 3: South Indian Bank
* Team 4: TBD
* Task: Analyze % of interest vs fee income over 3–5 years

**Observed Trends:**

* Indian banks like Federal, Equitas show ~80–88% income from **interest**
* Fee income remains around **12–20%**
* Global banks (e.g., BNY Mellon) earn a **higher % from fee-based services**

**Banking Concepts and Income Types**

**Net Interest Margin (NIM):**

**NIM = Interest from Lending − Interest paid on Deposits**

* Key profit driver
* Influenced by:
  + Cost of funds
  + Lending rate
  + Operational efficiency
  + Quality of loan assets

**Fee-Based Income (Non-Interest Income):**

Includes:

* Mutual fund & insurance distribution (agency income)
* Custodial services
* Letters of Credit (trade finance)
* Commissions, brokerage, third-party product sales

*No cap from balance sheet size → Can scale beyond loan limits*

**Banking Risks & Challenges**

**Categories of Risk:**

| **Stakeholder** | **Risks** |
| --- | --- |
| **Investors** | NPAs, operational inefficiency, liquidity crisis, fraud |
| **Depositors** | Bank runs, fake news, delayed payouts |
| **Borrowers** | Interest rate hikes, mis-selling, poor customer service |

**Operational Risks:**

* Internal fraud (e.g., unauthorized lending)
* Staff training gaps, insider frauds
* IT system failures, data loss
* Liquidity mismatches (maturity mismatch of assets/liabilities)

**Tools to Mitigate Risk:**

* Collateral
* Guarantors
* Credit scoring (CIBIL, Experian)
* Maker-checker mechanisms
* Mandatory block leave policies
* CCTV & audit trails

**Open Banking & APIs**

**APIs in Banking:**

* Enable integration of fintech services (Banking-as-a-Service)
* Promote **Neobanks** and **Challenger Banks**
* Allow third-party apps to offer regulated financial services via partner banks

**Regulatory Models:**

| **Model** | **Countries** |
| --- | --- |
| Regulator-driven | EU (PSD2), UK, Hong Kong, Australia |
| Market-driven | India, Singapore, South Korea, Japan |

*Suggested Activity: Explore developer portals of Indian/foreign banks.*

**Types of Financial Institutions**

**Banks vs NBFCs**

| **Feature** | **Banks** | **NBFCs** |
| --- | --- | --- |
| Deposit taking | Allowed | Not allowed (with exceptions) |
| Regulatory scrutiny | High | Moderate |
| Deposit Insurance (India) | Yes (up to ₹5L) | No |
| Example | SBI, ICICI | Bajaj Finance, Capital Float |

* NBFCs like **Bajaj Finance**: ₹4.6 lakh crore asset base → systemically important
* **Systemically Important Banks (India)**: SBI, ICICI, HDFC

**Fintech Opportunity Zones**

**Where Fintech Can Add Value:**

* Lower operational cost via automation
* Enhance credit risk prediction (AI/ML)
* Manage liquidity through analytics
* Sell more third-party products (insurtech, wealthtech)
* Enable fee-based income growth through embedded finance

*"Smell the money": Identify inefficiencies in banks and offer fintech solutions.*

**Homework & Assignments**

1. Analyze income structure (interest vs fee) of Indian and foreign banks over 3 years
2. Explore developer/API portals of selected banks
3. Map Indian banks by total assets (e.g., SBI > ₹20L Cr, ICICI ~₹10L Cr)
4. Track evolution of NIM, risks, and fee income trends

**Class – 5 Notes: May 31, 2025**

**SESSION NOTES – BANKING, NIM, LENDING, CREDIT, AND COLLATERAL**

**Core Concepts Covered**

* **Net Interest Margin (NIM)**:  
  NIM = Lending Rate − Deposit Rate  
  Typical range: **1–4%**
* **Bank Income Types**:
  + **Interest Income** (major in Indian banks)
  + **Fee/Non-Interest Income** (higher in foreign banks like BNY Mellon)

**Bank Revenue Structure**

* **BNY Mellon** (Example):
  + 67% from fee-based (non-interest) income
* **DBS Singapore**:
  + 90%+ from interest income; <10% from fees

**Assignment Insight:**

Students are encouraged to:

* Analyze banks across countries (e.g., India, Singapore, Philippines)
* Compare fee vs interest income
* Look at 3 years of data to identify trends

**NIM and Profitability**

* High NIM = better profits
* Banks need to manage:
  + Idle cash
  + Reserve requirements
  + Liquidity cushions

**Fintech Opportunity Zones**

* Improve NIM using technology:
  + AI, ML, Blockchain, API frameworks
* Use cases:
  + Loan management
  + Predictive analytics
  + Liquidity optimization

**Open Banking & APIs**

* **Open API standards** globally:
  + **Regulatory-driven**: EU (PSD2), UK, HK, Australia
  + **Market-driven**: India (RBI framework, voluntary)
* Key initiative: **Account Aggregators**
* Enable access to financial data across banks with user consent

**Types of Digital Banks**

| **Type** | **License** | **Example** |
| --- | --- | --- |
| Neobanks | No | Must partner with licensed bank |
| Challenger Banks | Yes | Fully licensed digital banks |
| Digital Subsidiaries | Yes (parent) | Owned by traditional banks |

**Banking Regulation Rationale**

* **Public money** → Requires high scrutiny
* Prevents systemic risk
* Ensures depositor trust

**Lending Concepts**

**Types of Loans**

* **Retail**: Home, Vehicle, Personal, Education
* **Business**: Working Capital, Equipment, Invoice Discounting
* **Modern Forms**: BNPL, Embedded Finance, P2P, RBF

**Loan Lifecycle**

1. **Origination**
2. **Servicing/Monitoring**
3. **Closure** (Repayment or Default)

**Collateral**

* Secured loans = backed by collateral
* Realization depends on **market value**, **future value**, and **auction recovery**
* Banks may require:
  + Property/vehicle insurance
  + Life insurance for large loans

**3 Cs of Lending to Individuals**

| **Factor** | **Definition** |
| --- | --- |
| **Character** | Intention to repay – measured via credit score |
| **Capacity** | Income – Expenses = Ability to pay |
| **Collateral** | Assets pledged for loan security |

**Most important**: All 3 are essential; character is often prioritized early in lending.

**Credit Scores**

* In India: **CIBIL** (based on FICO model), Experian
* Score <500 → High risk
* Score >750 → Generally eligible
* New borrowers = "NTC" (New to Credit)
* **Non-traditional scoring**: Utility bills, rent payments, etc.

**Insights from Class Discussion**

* Real-life examples from students:
  + Personal loans, housing loans, vehicle loans
* Banks often disburse home loans **directly to builders**
* Escrow accounts may be used for **property taxes** abroad
* Loan protection through **insurance** is common

**Assignments and Activities**

* Analyze bank balance sheets (domestic vs international)
* Explore APIs and Account Aggregators
* Study loan application forms of various banks
* Understand credit reports (CIBIL/Experian)

**Class 6- June 7, 2025**

**Lending & Gold Loans, Student Loans, MSMEs, and Payments**

**Gold Loans – RBI Guidelines Update**

**Key Changes by RBI:**

* **Loan-to-Value (LTV)** increased from **75% to 85%** (for loans up to ₹2–2.5 lakhs).
* **No credit appraisal** (e.g., CIBIL score check) for small-ticket gold loans.
* **Loans allowed against Gold & Silver ETFs** (virtual assets).
* **Standardized valuation**:
  + Based on **22 karat gold** price (even for 24K).
  + Price averaged over **30 days or prior day**, from IBJA or SEBI-recognized exchanges.
* **Only certified assayers** (with no negative record) can evaluate gold quality.
* **Proof of ownership required** to prevent fraud/theft.

**Benefits:**

* Easier access for underserved borrowers (e.g., farmers).
* Faster disbursement, esp. for ETF-backed loans.
* **Lower purity risk** in ETF loans vs physical gold.
* Improved **liquidity** for banks (via easier collateral liquidation).

**Student Loans – Lending Strategy & Fintech Ideas**

**Traditional Student Loan Challenges:**

* No immediate income from student → can't assess repayment capacity.
* Relies on **future earning potential**.

**Innovative Approaches:**

* Loans **disbursed directly** to educational institutes.
* Use **progress metrics** (e.g., GPA, university ranking) to decide eligibility.
* **Refinance model**: Offer better terms after 1 year if student performs well.
* Risk profiling via **institute, stream, location, job outcomes**.

**Lending to Organizations – Expanded 6 Cs**

1. **Capacity** – Ability to repay (cash flows).
2. **Capital** – How much equity founders bring.
3. **Collateral** – Assets pledged; may include personal assets.
4. **Conditions** – Usage terms, audit rights, board oversight.
5. **Creditworthiness** – Historical repayment behavior.
6. **Character** – Founders’ reputation & integrity.

**Loan Assessment Criteria**

| **Factor** | **Individual Loans** | **Business Loans** |
| --- | --- | --- |
| Credit Score | Essential for personal loans | SPV may not have a score |
| Income Proof | Salary/ITR | Projected revenue, EBITDA |
| Collateral | Optional (unsecured) | Often essential |
| Monitoring | Minimal for personal | Strict for working capital or capex |

**Loan Categories**

* **Consumption Loan**: Travel, medical, weddings → Higher interest, no income generation.
* **Income Generating Loan**: Sieve machines, autos, shops → ROI-based assessment.
* **Bullet Loans**: Entire principal + interest paid at maturity. Max duration: **12 months**.

**Peer-to-Peer Lending (P2P)**

* Removes traditional banks.
* Direct **lender-borrower matchmaking**.
* **Higher returns** for lenders, **lower rates** for borrowers.
* Needs **strong credit/risk assessment** tools.
* Emerging fintech opportunity in AI-driven credit profiling.

**Creative Lending Products**

* **Refinancing student loans** (based on improved academic performance).
* Loans for **second-hand vehicles**, travel, funeral, or maternity emergencies.
* Loans for informal segments (e.g., **samosa sellers**, **tailors**, **saree blouses**).
* Need for tools to assess **capacity** without formal credit history.

**Fintech Business Idea Guidelines (Recap)**

1. **Understand Domain**: Banking, Lending, etc.
2. **Identify Fintech Opportunity**: Reduce cost / boost revenue / improve access.
3. **Comply with Regulation**: RBI norms, NBFC laws.
4. **Address Consumer Behavior**: Will stakeholders adopt your tech?
5. **Show ROI / Market Size**: Is it scalable? Is there revenue?
6. **Build Financial Model**: VC funding need, expenses, break-even analysis.

**Intro to Payments – Foundations**

* **Merchant Discount Rate (MDR)**:
  + Offline: 0.4–1.5%
  + Online: 0.4–2% domestic, 3% international
* **Point of Sale (POS)**:
  + ₹400–600/month subscription + MDR
* **Agent-based payments**:
  + AEPS, mobile ATMs, Aadhaar-enabled services
* **UPI** changed the cost structure → low-cost or free P2P payments
* **Merchant reluctance** to give cash due to MDR loss

**Deliverables & Assignments**

* **Two writeups**:
  1. Banking systems & balance sheets
  2. Lending frameworks, types & risks
* Prepare GitHub submissions for:
  1. Team projects
  2. Fintech idea proposals
* Track RBI updates, market trends