

# FinTech Business Models: The Profitability Question

Mini-Lecture – BSc Digital Finance Course

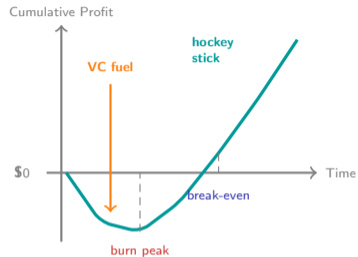
Digital Finance

# Why Do 90% of FinTechs Lose Money – and Why Do Investors Keep Funding Them?

## The Profitability Paradox

FinTech attracted \$500B+ in global VC funding between 2015 and 2024. Median time to first profitability: 7 years. 40% of funded FinTechs never achieve it. Yet valuations remain stratospheric – because network effects promise future monopoly rents once the market tips.

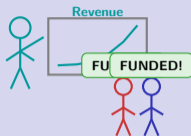
- This is either the greatest business model innovation since SaaS... or the largest capital misallocation in financial history.
- The catch: most FinTechs are not “technology companies” – they are financial intermediaries using technology as a wedge.
- When technology subsidies end, the underlying economics of intermediation reassert themselves. Always.



*The J-curve promised a hockey stick.  
The market delivered a flat line.*

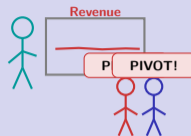
CB Insights (2024): 90% of FinTech startups fail within 10 years. Yet 2023 saw \$51B in new FinTech investment. Investors bet on the 10% with winner-takes-all potential.

### Year 1: The Pitch



vs.

### Year 5: The Reality



*"The J-curve promised a hockey stick. The market delivered a flat line."*

# What Are the Six Revenue Engines That Power Digital Finance?

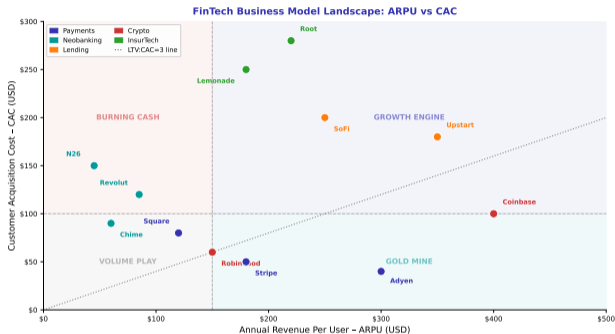
Engine	Mechanism	Example	Margin	Scalable?
Transaction fees	Charge per payment processed	Stripe 2.9%+30c	30–60%	High
Net interest margin	Earn spread between deposit rate and lending rate	Chime float, SoFi loans	15–40%	Medium
Subscription / SaaS	Monthly/annual flat fee for premium features	Revolut Premium, N26 Metal	60–80%	High
Data monetisation	Aggregate behavioural data, sell insights to 3rd parties	Plaid, Credit Karma	70–90%	Very high
Insurance premiums	Collect upfront, invest float, pay claims	Lemonade, Root	10–25%	Medium
Payment for order flow	Route retail orders to market makers for rebates	Robinhood, eToro	40–60%	High

## Three structural observations

- **Mix matters:** Stripe earns 30–60% gross margin on transaction fees. Lemonade earns 10–25% on premiums. Same “FinTech” label, radically different economics.
- **Most FinTechs rely on one engine:** which becomes a single-point vulnerability when that engine faces regulation or competition.
- **Rebundling wins:** Revolut started with FX fees, added subscription, then NIM – gross margin rose from 12% (2018) to 59% (2023) as the revenue mix diversified.
- **The endgame:** every durable FinTech eventually acquires a bank licence to access the highest-margin engine — net interest income.

Revolut’s path to profitability required stacking all six engines. Its first profitable year (2023) came when subscription + NIM together exceeded CAC for the first time.

# Where Does Each FinTech Sit on the ARPU vs. CAC Landscape?



## Quadrant logic

- **Gold Mine** (high ARPU, low CAC): Adyen acquires enterprise clients once; each processes billions. ARPU \$300, CAC \$40. The holy grail – rare because incumbent relationships are hard to displace.
- **Growth Engine** (high ARPU, high CAC): Lending FinTechs (SoFi, Upstart) acquire expensively but earn large margins per loan. Unit economics survive *only* if retention holds.
- **Volume Play** (low ARPU, low CAC): Neobanks (Chime, Revolut) – cheap to acquire via viral referrals, but monetise poorly until the user upgrades to premium.
- **Burning Cash** (low ARPU, high CAC): InsurTech (Lemonade, Root) spend \$250–\$280 to acquire users who generate \$180–\$220 ARPU. Loss ratios above 70% compound the problem.
- **The dotted line:** above it,  $LTV:CAC > 3$  (invest); below it, stop acquiring until the model changes.

The quadrant a company occupies is determined by two forces: regulatory leverage (licensing = low CAC via trust) and product stickiness (multi-product users have 3x higher ARPU).

# How Do You Calculate Whether a Customer Will Ever Be Profitable?

## The unit economics formula

$$LTV = \frac{ARPU \times \text{margin}}{1 - \text{retention} + \text{discount rate}}$$

## Decision rule:

- $LTV : CAC > 3$  — invest aggressively in growth
- $LTV : CAC = 1-3$  — optimise before scaling
- $LTV : CAC < 1$  — stop acquiring; fix the model

## Worked example – Revolut user:

ARPU (annual)	\$85
Gross margin	40%
Annual retention	90%
Discount rate	10%

$$LTV = \frac{85 \times 0.40}{1 - 0.90 + 0.10} = \frac{34}{0.20} = \$170$$

$$CAC = \$120 \Rightarrow LTV : CAC = 1.4$$

**Verdict:** needs improvement before further scaling.

## What moves the ratio

- **Raise ARPU:** upsell premium tier (+\$48/yr) or add NIM product. If ARPU rises to \$133, LTV:CAC hits 3.
- **Raise retention:** from 90% to 95% retention, denominator halves to 0.15 — LTV jumps to \$227, ratio = 1.9. Small retention gains have outsized LTV impact.
- **Lower CAC:** viral referral loops (Revolut's "refer a friend" cut CAC from \$40 to \$5 in early growth).
- **Key insight:** retention is the hidden lever. A FinTech that keeps users for 7 years (not 3) triples LTV without changing a single product feature.
- **Caution:** cohort data beats averages. A healthy mean LTV can hide a collapsing retention curve in recent cohorts.

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Revolut's 2023 profitability coincided with its 3-year cohort retention rising above 85%. Unit economics improved not from pricing changes but from users staying longer.

# What Are the Four Forces That Can Kill a FinTech Business Model Overnight?

## 1. Regulatory capture

Licensing requirements that incumbents already hold raise fixed costs for challengers. Example: when the EU required full EMI licences for BNPL providers in 2023, Klarna's compliance costs rose by 40%. *Pattern: regulation that appears "neutral" often protects incumbents.*

## 2. Rate sensitivity

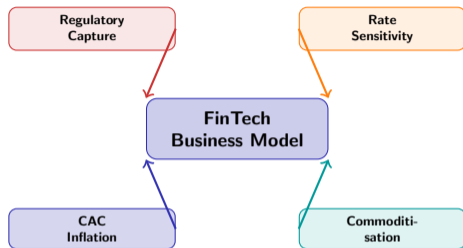
Net interest margin collapses when central banks cut rates. Marcus (Goldman's consumer bank) earned 4.5% NIM in 2022; projections for 2025 at sub-2% forced its partial wind-down. *Pattern: NIM-dependent models need rate hedging or product diversification.*

## 3. CAC inflation

In saturated markets, paid acquisition costs rise faster than ARPU. US neobank CAC rose from \$20 (2018) to \$90 (2023) as the same cohort of banked millennials was targeted by 50+ apps simultaneously. *Pattern: viral/referral loops are the only sustainable low-CAC moat.*

## 4. Commoditisation

No proprietary moat means a race to zero fees. Fee-free stock trading was a Robinhood innovation in 2013 – and an industry standard by 2019. The innovator's advantage lasted exactly 6 years. *Pattern: feature parity kills fee premiums; only data and network effects last.*



*Any single force can be managed.  
All four simultaneously is existential.*

Klarna's valuation fell from \$46B (2021) to \$6.7B (2022): regulatory pressure + rate rise + CAC inflation hit simultaneously. Three forces at once.

# Which Business Model Wins – and Why Does It Depend on Where You Are?

Region	Winning Model	Champion	Why it wins
North America	Transaction fees + PFOF	Stripe, Robinhood	Card-dominant rails reward fee takers; PFOF legal
Europe	BaaS subscription + NIM	Revolut, Adyen	PSD2 open banking enables BaaS; licensing enforced
Asia-Pacific	Super-app platform fees + embedded finance	Alipay, GrabPay	Ecosystem lock-in; float revenue at scale
Africa	Mobile money float + agent transaction fees	M-Pesa, MoMo MTN	Unbanked majority; float yield on stored value is primary revenue

## The structural determinant:

- **Regulatory environment** sets which engines are available (PFOF banned in EU; NIM capped in some Asia markets).
- **Existing infrastructure** determines what FinTech must build vs. can borrow (card rails in US, UPI in India, mobile networks in Africa).
- **Banked population %** determines whether FinTech competes with banks or fills a vacuum – the latter is always more profitable.

Revolut runs four distinct monetisation playbooks by region – subscription-heavy in Europe, NIM-heavy where licensed as a bank, PFOF-adjacent in the US. Geography is destiny in FinTech.

### N. America

Fees + PFOF  
Infrastructure: card rails  
Banked: 95%

### Europe

BaaS + Subscription  
Infrastructure: PSD2/SEPA  
Banked: 96%

Same app,  
different model

### Asia-Pacific

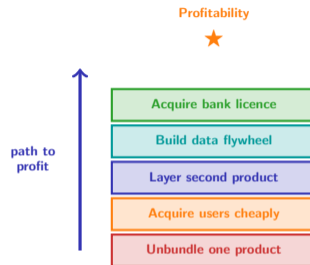
Platform fees + float  
Infrastructure: super-apps  
Banked: 70–90%

### Africa

Mobile money float  
Infrastructure: mobile nets  
Banked: 20–40%

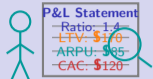
# What Must Every FinTech Analyst Know Before Reading a Pitch Deck?

- 1 **Revenue model determines the ceiling.** Transaction fee businesses scale with volume; NIM businesses scale with rate environment; subscription businesses scale with retention. A single-engine FinTech has a structural cap on valuation.
- 2 **Unit economics determine survival.** LTV:CAC below 1 is not a “growth phase” – it is a countdown timer. The J-curve is only real if the denominator (CAC) is falling as the numerator (LTV) is rising.
- 3 **Moats determine duration.** Network effects and data flywheel are the only two durable moats in FinTech. Feature parity is achieved within 18 months by any well-funded competitor.
- 4 **Market sizing determines ambition.** Mobile money works in Africa because the addressable market is 400M unbanked adults. The same model in Western Europe has 2M potential users. TAM sets the prize.
- 5 **Path to profitability = rebundling.** Every FinTech starts by unbundling one bank product. The profitable ones rebundle: they add back the products the bank had, but cheaper and data-connected. Revolut is now a bank.



The rebundling pattern is universal: Revolut, Nubank, Chime, and WeBank each started with one disruptive product and methodically added back the full suite. The bank is the destination, not the enemy.

## Step 1: Read the P&L



same lens

## Step 2: Use the App



*"Before you download the next 'free' finance app, ask: If I'm not paying, who is — and how long before they make ME the product?"*

**Every free financial product is a business model waiting to reveal itself.**