In-Class Exercise: CBDC Business Models

Exercise 1: Structured Debate — "Is e-CNY Money or Surveillance?"

Format: Split into two teams. Each team prepares arguments for its assigned position, then presents. After both sides speak, the class votes — but first, read the debrief questions.

Team A — "e-CNY Is Money"

Anchoring evidence: e-CNY is a direct claim on the People's Bank of China, designed as legal tender, accepted at retail merchants on the same legal basis as physical cash, and used for everyday payments by pilot-region residents. Its design objectives include retail payment efficiency and financial inclusion in cash-thin contexts.

	Team A: e-CNY Is Money
Argument I	
Argument II	
Argument III	
Concession	*Strongest argument AGAINST your position:*
Closing	*How you address the concession:*

Team B — "e-CNY Is Surveillance"

Anchoring evidence: Every e-CNY transaction is recorded on a centrally-controlled ledger visible to the issuer; programmability allows wallet-level restrictions on counterparties, expiry of balances, and conditional disbursement. Identity verification is mandatory at most tiers, and aggregated transaction data may inform law-enforcement and macroeconomic-policy use cases.

	Team B: e-CNY Is Surveillance
Argument I	
Argument II	
Argument III	
Concession	*Strongest argument AGAINST your position:*
Closing	*How you address the concession:*

Debrief Questions

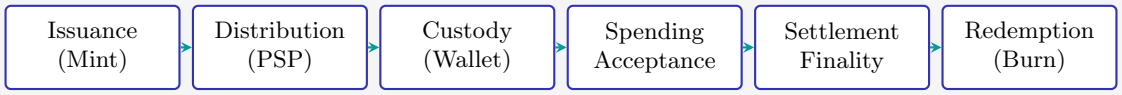
Q1: Does the answer — money or surveillance — matter for whether non-issuing jurisdictions should accept e-CNY in cross-border corridors?

Q2: Could the answer genuinely be "both"? If so, what does that imply about how Western CBDC programmes should be designed?

Q3: Name another technology (in any sector) that delivers a public good while simultaneously enabling pervasive observation. What tensions does that dual nature create?

Exercise 2: Value Chain Mapping

Scenario: The two-tier CBDC value chain breaks into six links, alternating issuer-side and PSP-side ownership. Your task: for each link, identify which CBDC programme has done the most innovative work, describe the friction it removes, and predict the long-term outcome.



Value Chain Link	CBDC Programme	Friction Removed	Replaces or Improves?	Incumbent Loses or Adapts?
Issuance (Mint)				
Distribution (PSP)				
Custody (Wallet)				
Spending Acceptance				
Settlement Finality				
Redemption (Burn)				

Synthesis Question

Q1: Which link in the CBDC value chain is *most vulnerable* to private-sector disruption, and which is *most resistant*? Defend your reasoning by reference to the public-goods nature of the issuer tier, the regulatory perimeter around PSPs, and the data-capture economics at the wallet layer.

Facilitator Solutions

Sample answers for instructor reference. These are illustrative; student reasoning may diverge and still be valid.

Exercise 1: Debate Sample Answers

Team A (e-CNY Is Money) — sample arguments

Argument I. e-CNY is a direct liability of the central bank, the same legal classification that defines physical cash. The legal-tender designation, the unit-of-account function, and the medium-of-exchange role are all present. By the conventional definition of money used by central banks themselves, e-CNY satisfies the criteria. Calling it surveillance because it is recorded mistakes the audit trail for the underlying instrument.

Argument II. Pilot-region residents use e-CNY for routine retail payments, transit, and small commerce. The lived experience is indistinguishable from any modern wallet payment. If the test of money is what people actually transact in, e-CNY passes that test in the regions where it has been deployed.

Argument III. The financial-inclusion benefit is real: e-CNY reaches users who lack a commercial-bank account, especially in rural and migrant-worker areas. Reducing reliance on physical-cash logistics lowers handling costs and speeds up state-payment disbursement. These are the classic policy benefits that justify any new public-money instrument.

Concession. The strongest argument against Team A is that the centralised, programmable ledger does enable a level of transaction visibility that no prior money form has carried at scale. That visibility is structurally different from cash.

Closing. Surveillance potential is a property of the implementation, not of the instrument. Cash is anonymous because the ledger does not exist; e-CNY's ledger could be designed to expire records, anonymise small payments, or pseudonymise wallet identifiers. The instrument remains money; the policy decision about ledger retention is a separate question.

Team B (e-CNY Is Surveillance) — sample arguments

Argument I. The defining feature of cash is its untraceability at the point of exchange. e-CNY cannot replicate that property because every transaction settles on a ledger visible to the issuer. Calling it "digital cash" obscures the structural asymmetry: the user can be observed in ways that cash never permitted, regardless of whether observation is presently exercised.

Argument II. Programmability extends the surveillance dimension into active control. Wallet-level restrictions on counterparties, expiring balances, conditional disbursement, and automated compliance freezes are all properties of the e-CNY design. Money that can be remotely controlled by the issuer is qualitatively different from money that cannot. The control surface is the surveillance tool's complement.

Argument III. The aggregation problem compounds. Even when individual transactions are pseudonymised, the sheer volume of wallet activity, combined with onboarding-time KYC, allows powerful re-identification at scale. Aggregate data is itself a state asset — one that supports macroeconomic targeting, fraud detection, and law enforcement in equal measure. The instrument becomes a data rail with a payment function attached.

Concession. The strongest argument against Team B is that legal-tender status, retail acceptance, and policy-justified inclusion goals do qualify e-CNY as money in any conventional sense. Surveillance and money are not mutually exclusive categories.

Closing. Calling e-CNY money obscures the structural novelty: it is the first money form whose entire economic life is observable to its issuer by design. That novelty has political and consti-

tutional implications that the "money" label does not surface, and the design choice cannot be undone after deployment.

Debrief Q1 — Cross-border acceptance

Whether non-issuing jurisdictions should accept e-CNY in cross-border corridors depends on whose ledger sees what. If a corridor design isolates the foreign jurisdiction's transaction data from the issuing central bank, the surveillance argument loses force at the border, and acceptance becomes a question of liquidity and settlement convenience. If the corridor design exposes foreign-side counterparty data to the issuer, the surveillance question becomes a sovereignty question — and acceptance becomes politically contentious regardless of the economic merits. The same instrument can be money in one jurisdiction and a sovereignty risk in another, depending entirely on the corridor architecture.

Debrief Q2 — "Both" as an answer

The answer genuinely can be "both": e-CNY operates simultaneously as a legal-tender medium of exchange and as a state-readable transaction record. That duality reveals that traditional money definitions, inherited from a world where the ledger and the instrument were physically separate, cannot cleanly capture an instrument whose economic life and observation life are produced by the same act. For Western CBDC programmes the implication is direct: privacy properties have to be architected in at design time, because they cannot be retro-fitted after a centralised ledger is in production. Scope of programmability, ledger-retention windows, and pseudonymisation thresholds are constitutional choices, not merely technical ones.

Debrief Q3 — Cross-sector dual-nature example

Smart electricity meters illustrate the same dual nature. They deliver a public good — granular consumption data that enables demand-response pricing, grid balancing, and decarbonisation planning — while simultaneously revealing intimate household-occupancy patterns to the utility and, by extension, to whoever the utility shares data with. The tensions are direct: privacy regulators want strict data-minimisation; grid operators want maximum granularity; consumers want both lower bills and household privacy; legislators must adjudicate. The parallel to e-CNY is structural: a single infrastructure produces a public good and an observation capability simultaneously, and the policy question is who controls the observation capability and under what oversight.

Exercise 2: Value-Chain Mapping Sample Answers

Value Chain Link	CBDC Programme	Friction Removed	Replaces or Improves?	Incumbent Loses or Adapts?
Issuance (Mint)	Helvetia (wholesale tokenised issuance)	Manual issuance procedures across legacy settlement systems	Improves	Incumbent adapts
Distribution (PSP)	Sand Dollar (PSP-tier carve-out)	Branch-network requirement for retail account opening in island geographies	Replaces	Incumbent loses
Custody (Wallet)	e-CNY (state-backed wallet plus PSP wallets)	Reliance on commercial-bank account as the only retail-money custody point	Replaces	Incumbent adapts
Spending Acceptance	e-CNY (merchant SDK + transit integration)	Card-rail intermediation latency for retail payments	Improves	Incumbent adapts
Settlement Finality	mBridge (cross-border ledger settlement)	Multi-link correspondent-bank reconciliation delay and cost	Replaces	Incumbent loses
Redemption (Burn)	Drex (programmable redemption events)	Manual reconciliation of token retirement against issuer balance sheet	Improves	Incumbent adapts

Synthesis Question Sample Answer

The most vulnerable link is Distribution (PSP). The PSP tier is where the commercial business model lives, and it is the tier most directly contested between incumbent banks and new entrants once a CBDC carve-out exists. Switching costs at the wallet layer are modest, network effects favour whichever PSP onboards first in a given segment, and the licence carve-out itself is structurally temporary — creating a rapid-mover advantage that an entrant can exploit before the perimeter widens. The most resistant link is Issuance (Mint). Issuance is by definition the central bank's monopoly; no PSP can mint a CBDC unit of account because no PSP holds the central-bank balance sheet. Regulatory barriers at the issuer tier are absolute, not negotiable, and the data moat at the issuance layer is irrelevant because issuance is a single administrative act rather than a customer-facing service. A FinTech can improve the wallet experience and capture the distribution layer, but cannot displace the public-money function that defines the top of the pyramid.