

Innovation
Hub



Project Helvetia: Settling tokenised assets using central bank money

SUERF-Bocconi webinar on CBDC, 4 December 2020

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The views in this presentations are those of the presenter and do not necessarily reflect those of the BIS, SNB or SIX

What is CBDC all about?

CBDC = MM₀GA

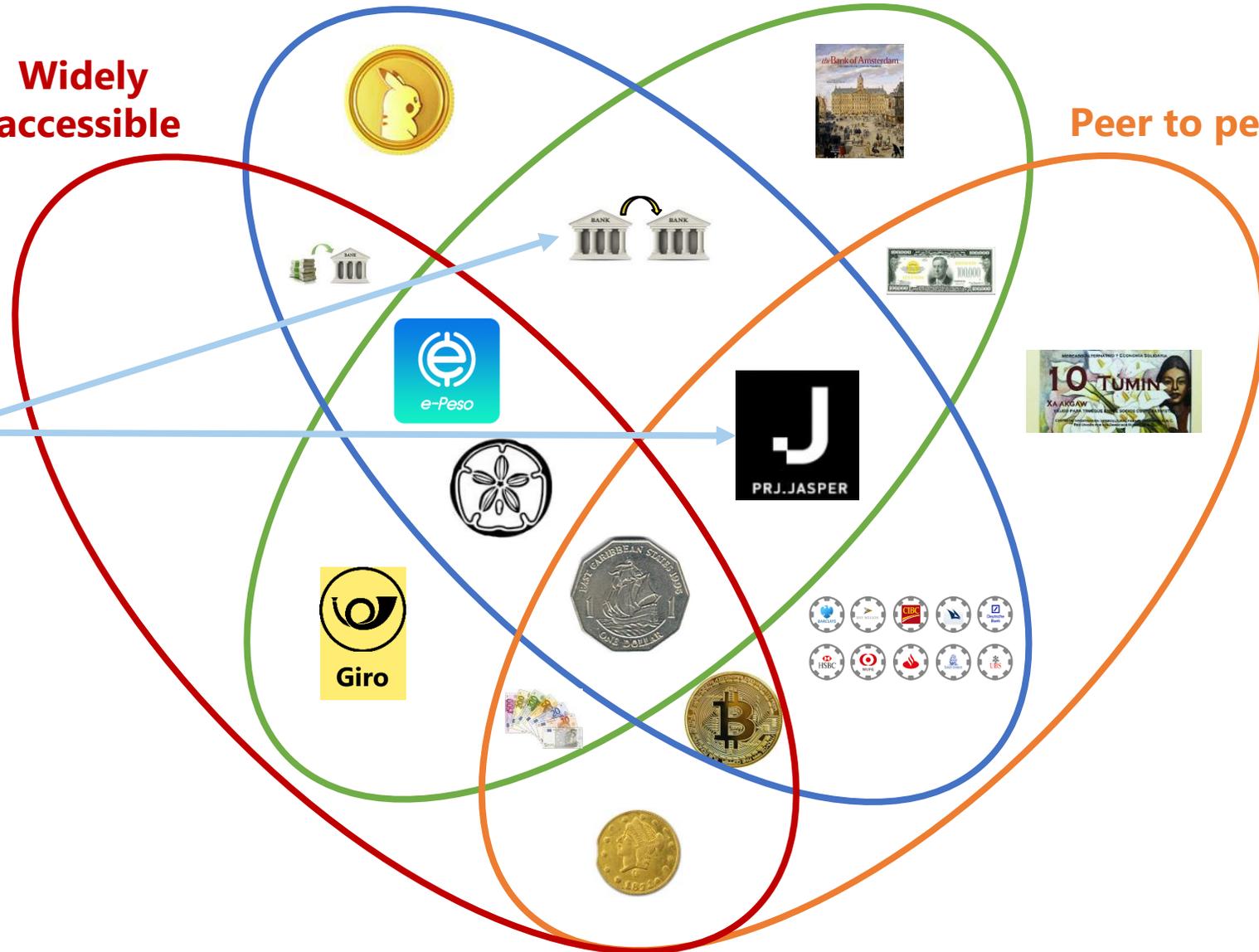
The Money Flower

Electronic

Central bank- State issued

Widely accessible

Peer to peer



Bech and Garratt (2017)

Table A1: Taxonomy of “tokenised” settlement

		Cash leg (payment in central bank money)	
		Reserve balances	Wholesale CBDC
Asset leg (delivery)	Traditional assets	Today's arrangement: securities in traditional CSD, reserve balances in RTGS	Not part of Project Helvetia
	Tokenised assets	PoC2: RTGS link	PoC1: w-CBDC

See also Bech et al (2020): “On the future of securities settlement”, BIS QR

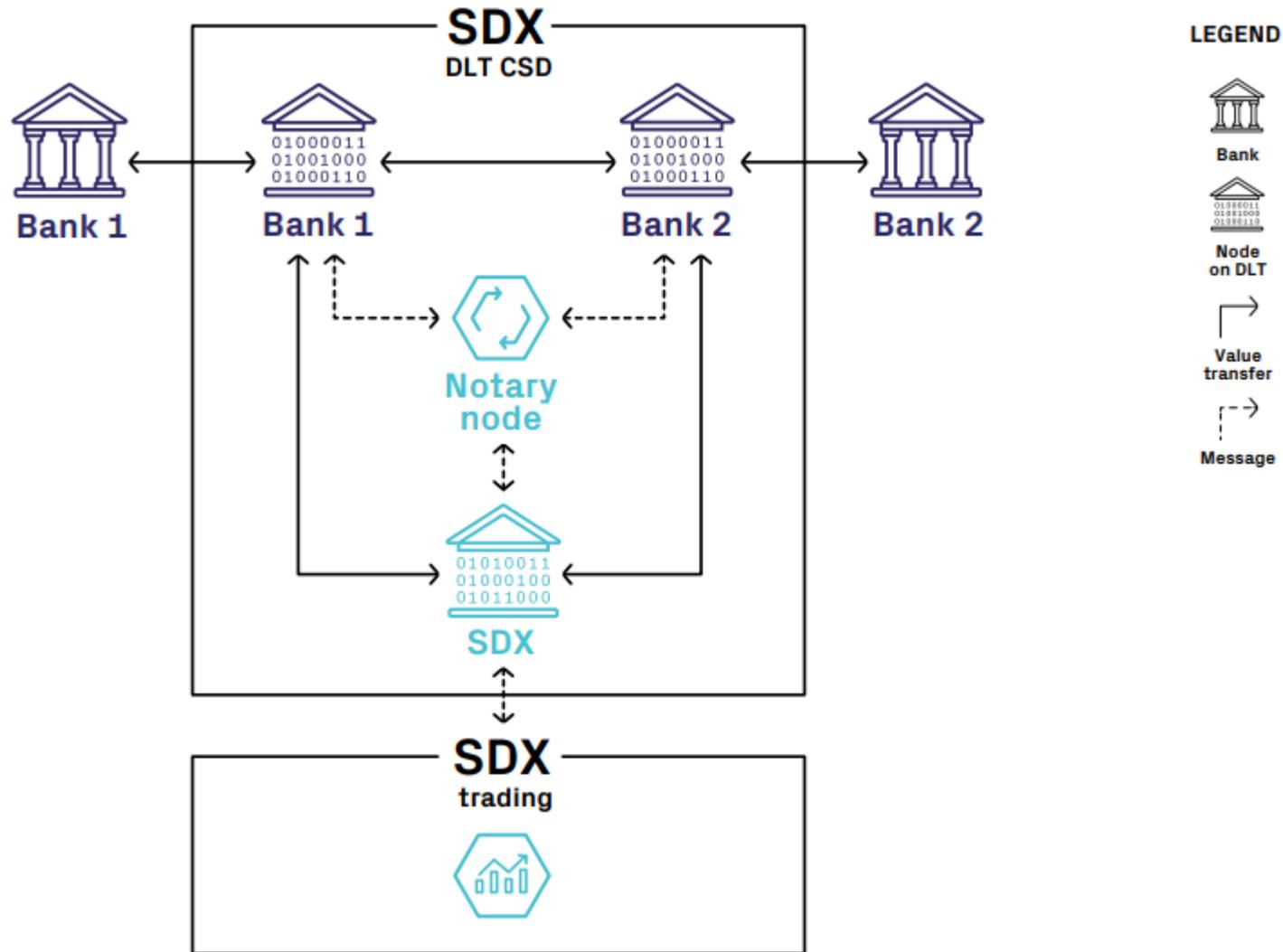
Graph 1: New SDX infrastructure and today's SIX infrastructure

New SDX infrastructure

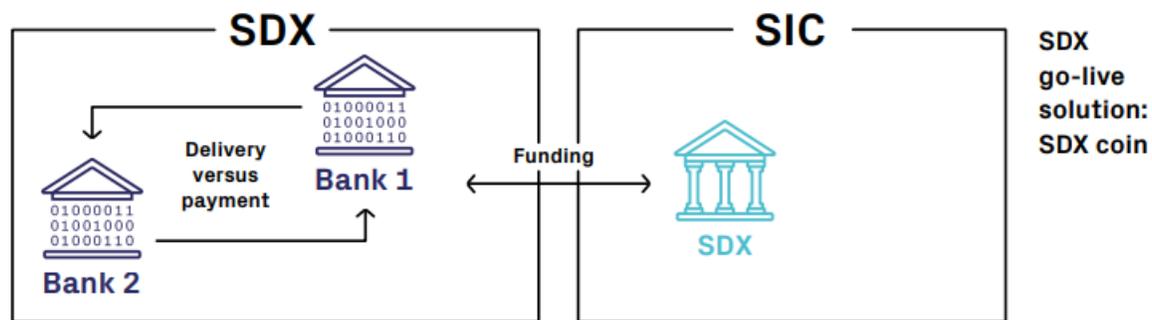


Today's SIX infrastructure

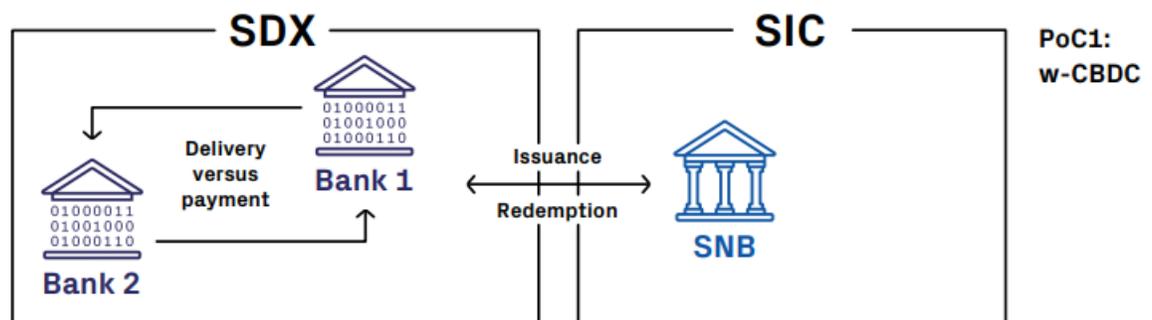
Topology of SDX



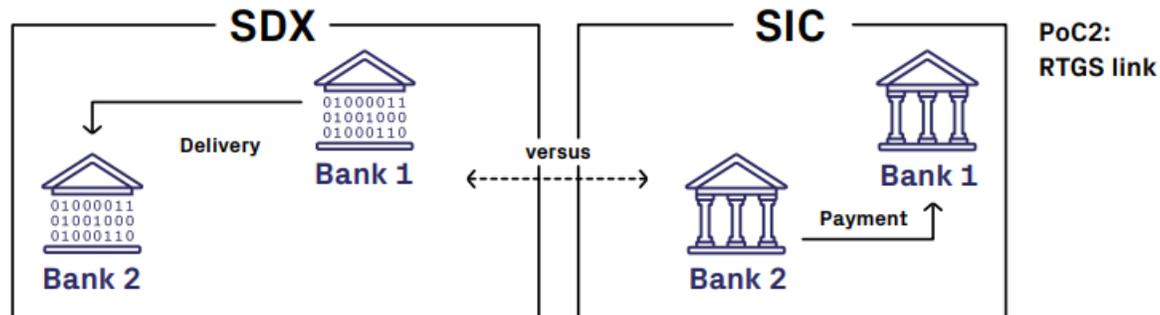
Overview of SDX go-live solution, and PoC1 and PoC2



SDX go-live solution: SDX coin



PoC1: w-CBDC



PoC2: RTGS link

LEGEND



SIC account



Node on DLT

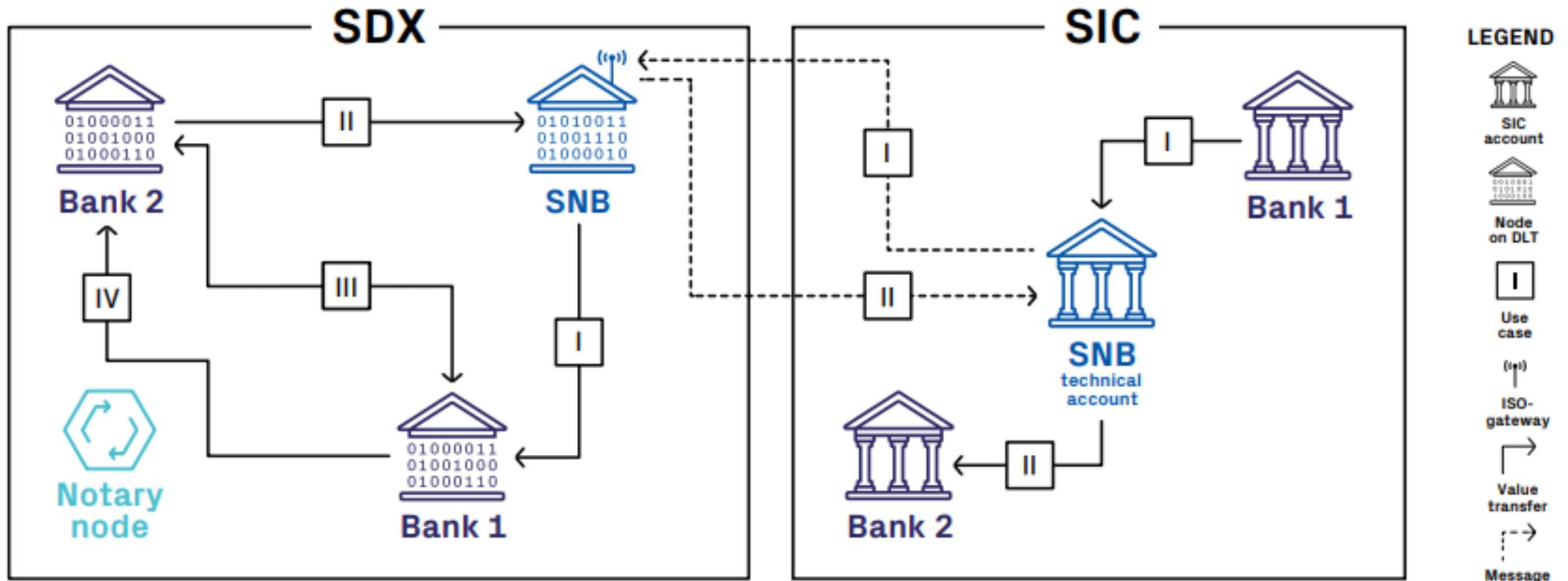


Value transfer



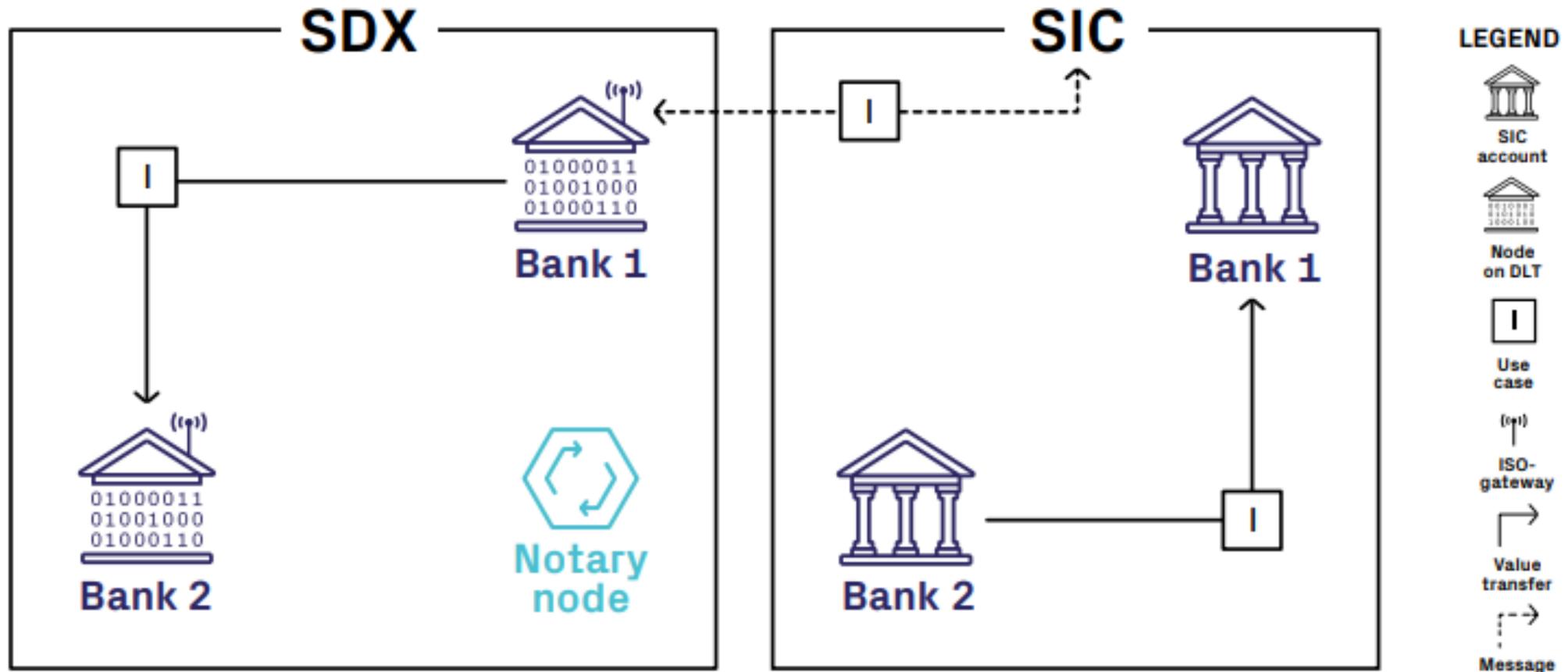
Message

DvP settlement in w-CBDC (PoC1)



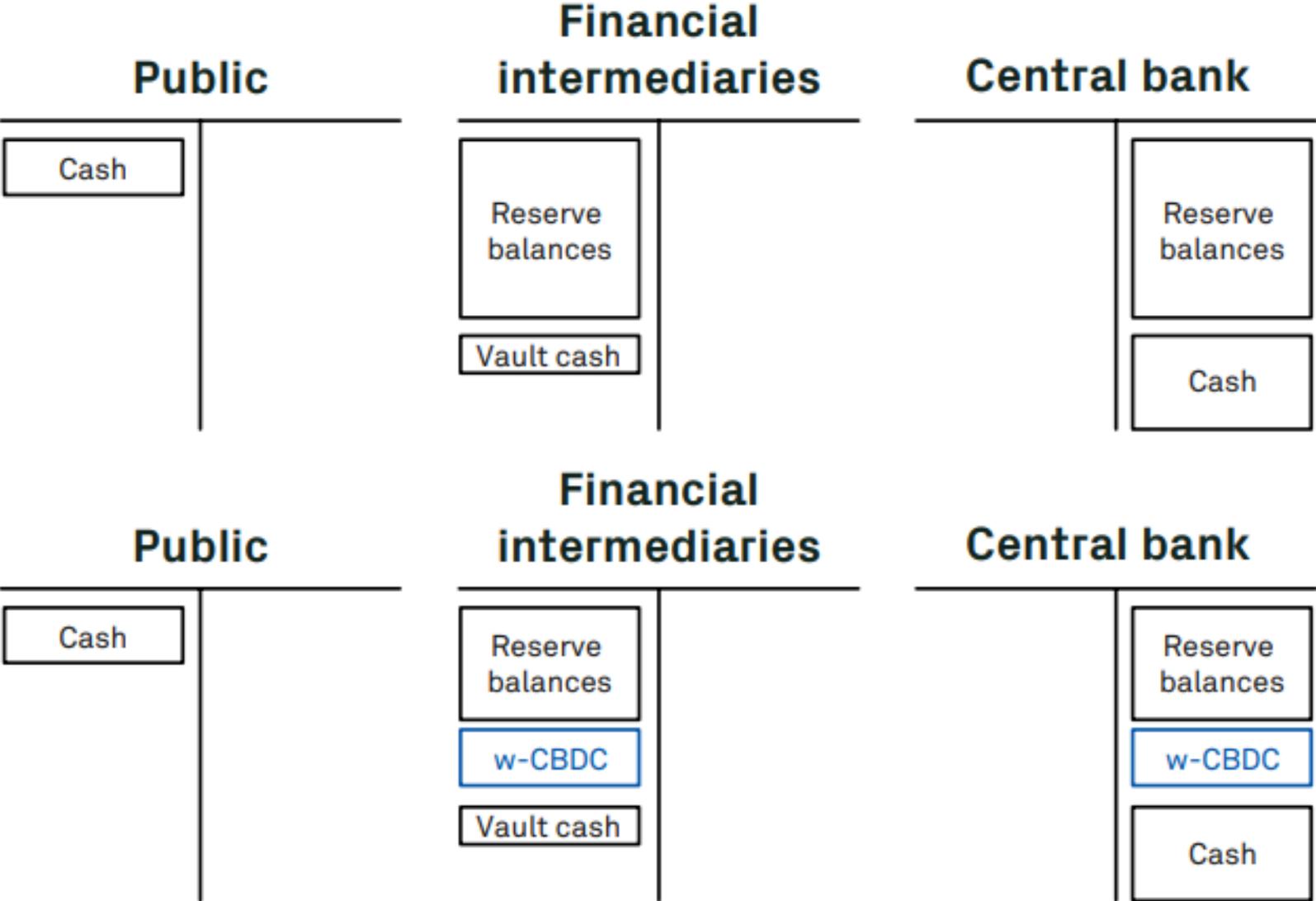
I: Issuance, II: Redemption, III: DvP and IV: Payment

DvP settlement in SIC balances (PoC2)



I: DvP

Stylised balance sheet without and with w-CBDC



Comparison of w-CBDC and RTGS-link PoCs

	PoC1, w-CBDC	PoC2, RTGS link
Benefits	<p>w-CBDC “on ledger” enables the full functionalities of SDX’s DLT platform:</p> <ul style="list-style-type: none"> ▪ Execution of programmable business logic (“smart contracts”) ▪ Atomic multilateral settlement 	<p>An RTGS link:</p> <ul style="list-style-type: none"> ▪ Does not raise major new legal or policy questions, as central bank money always remains in the RTGS system ▪ Would require only minor adjustments to the central bank’s business processes
Challenges	<p>Issuing a w-CBDC:</p> <ul style="list-style-type: none"> ▪ Raises numerous legal and policy questions ▪ Requires substantive adjustments to the central bank’s business processes 	<p>No w-CBDC “on ledger” limits functionalities of the SDX platform:</p> <ul style="list-style-type: none"> ▪ Limited execution of smart contracts involving reserve balances ▪ Atomic multilateral settlement of DvP transactions not feasible with RTGS link due to the current setup of SIC (sequential settlement, queuing mechanism, lack of simultaneous blocking mechanism)

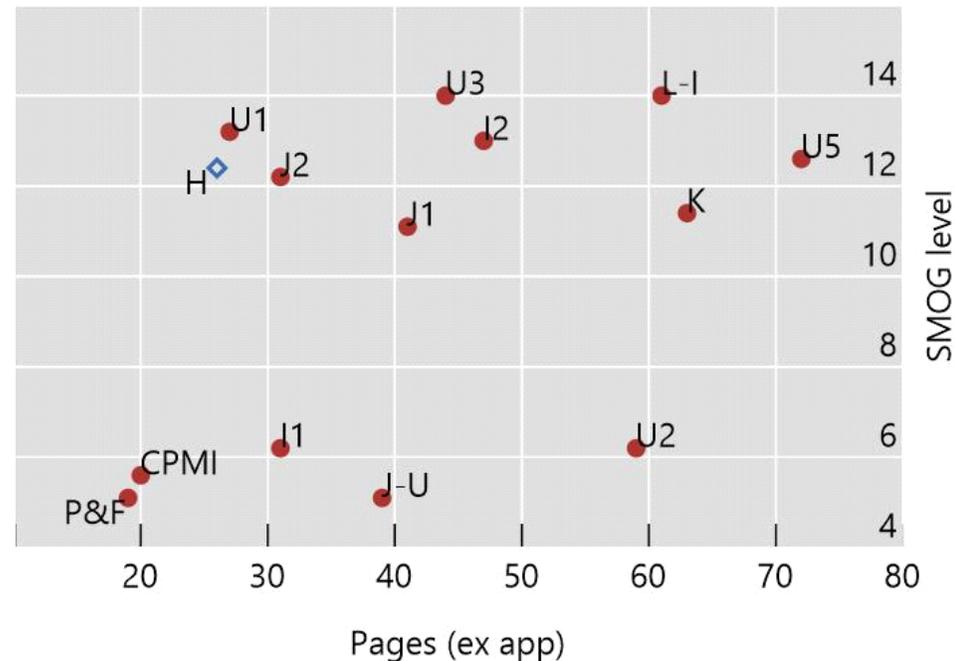
What is new?

- Central banks have options in how to integrate w DLT platforms
 - w-CBDC and RTGS
- The PoCs ran in live / near live environment
 - Technical (test) and Legal!
 - Finality under both current and new CH legal regime
- w-CBDC => more functionality but more challenging and deep policy considerations
- (Inside baseball): w-CBDC in Helvetia = M_0 (not only intraday but also overnight)

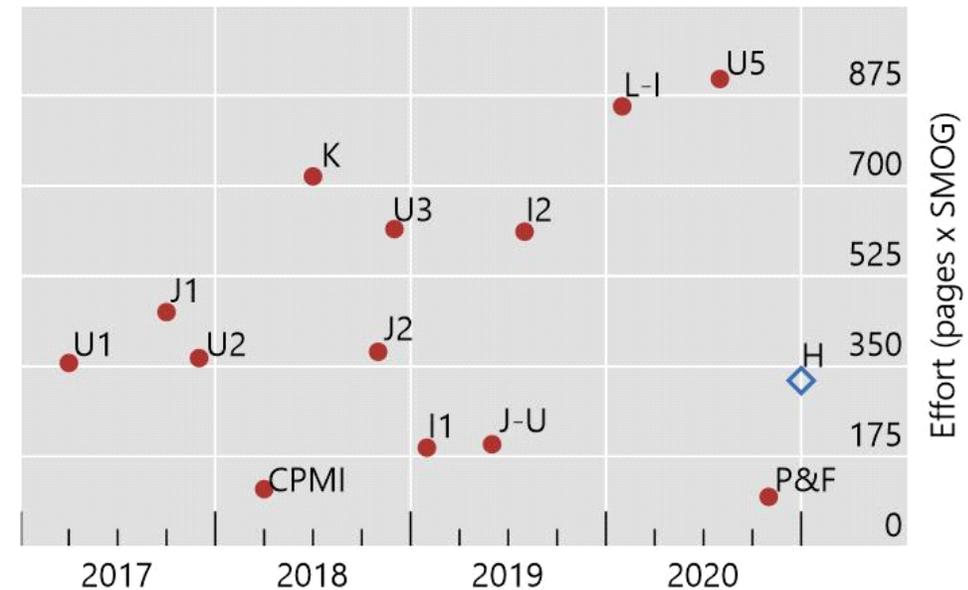


Readability of CBDC reports

SMOG² grade level/page numbers (ex appendices)



Effort to read (SMOG x pages) over time



¹ PoCs reviewed include Project Jasper phases 2 and 3 (confusingly: J1, J2), Jasper-Ubin (J-U), Project Ubin phases 1 to 5 (U1, U2, U3, U5 (phase 4 is J-U), Project Khokha (K), Project Inthanon (P1, P2), Project Inthanon-Lionrock (L-I) and Project Helvetia (H). CBDC reports from the CPMI-Markets Committee (2018) and Group of Central Banks and BIS (2020) are included as a benchmark (CPMI and P&F respectively). ² "Simple Measure of Gobbledygook". This metric is used to check the readability of public health messages. The "grade" denotes the American educational grade required to comprehend a message.

Source: Published reports run through "textcompare.org"

