

# The Future of Cash Beyond Corona Part II



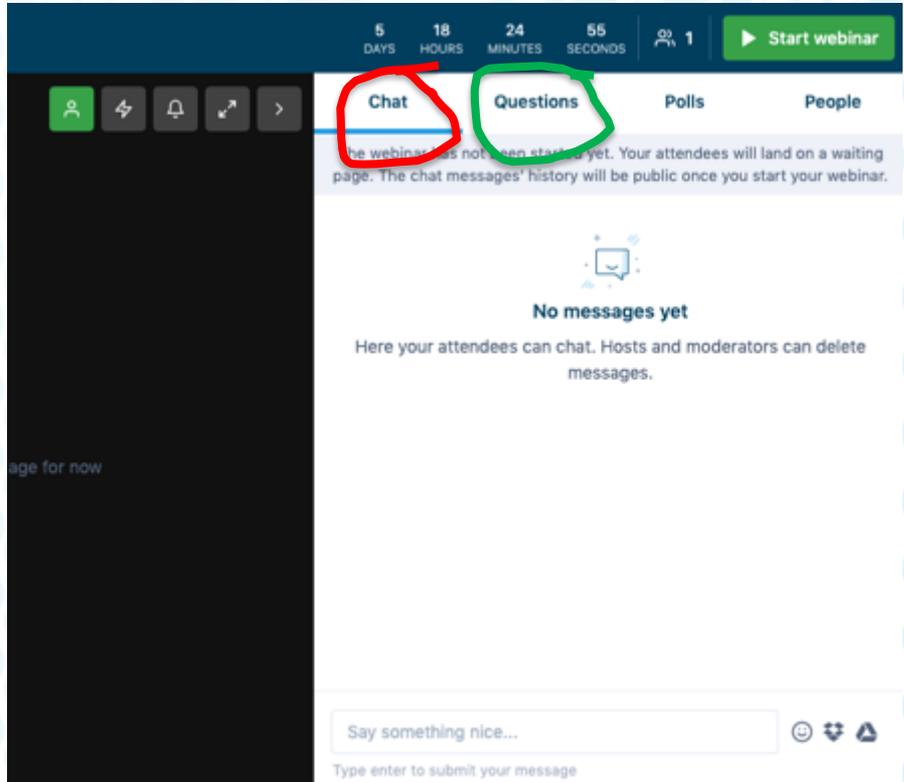
Webinar – 9 June 2020



CashEssentials

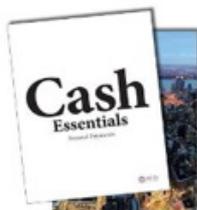
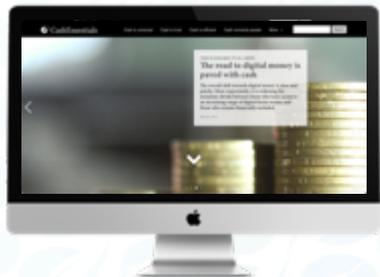
# House-keeping

- We love interaction but attendee mics and cams are switched off
- Please submit questions in Questions panel
- You can chat in Chat panel
- Session is recorded
- Part I:  
<https://cashesentials.org/publication/webinar-the-future-of-cash-beyond-corona-part-i/>



CashEssentials is as an independent initiative, which aims at offering a platform for debate about the payments and monetary ecosystems, to conduct and foster high-quality research on cash and its future.

*Demos Helsinki is an independent think tank, working together with the public sector, private sector, and NGOs. We want to impact the ongoing global transformations actively and aim to build sustainable and fair post-industrial societies.*



# Forget Forecasting – Let's Become Futures Literate

Futures literacy is a capability. It is the skill that allows people to better understand the role that the future plays in what they see and do. People can become more skilled at 'using-the-future', more 'futures literate', because of two facts. One is that the future does not yet exist, it can only be imagined. Two is that humans have the ability to imagine. As a result, humans are able to learn to imagine the future for different reasons and in different ways. Thereby becoming more 'futures literate'.



# Our Panel



Head of Innovation and Payments,  
European Savings and Retail Banking  
Group.

**Diederik Bruggink**



Chairman, Banknote Ethics Initiative;  
Former Head of Banknotes, European  
Central Bank

**Antti Heinonen**



Senior Consultant,  
Demos Helsinki

**Petteri Lillberg**



Economist, Weiden Technical  
University of Applied Sciences

**Franz Seitz**

# Agenda

Introducing Futures Literacy Building Scenarios	Petteri Lillberg
Scenario 1: Global Recovery	Guillaume Lepecq Antti Heinonen
Scenario 2: The Return of the State	Petteri Lillberg Franz Seitz
Scenario 3: Let's Get Digital	Guillaume Lepecq Diederik Bruggink
Q & A	All
Conclusion	Guillaume Lepecq

# DEMOS HELSINKI



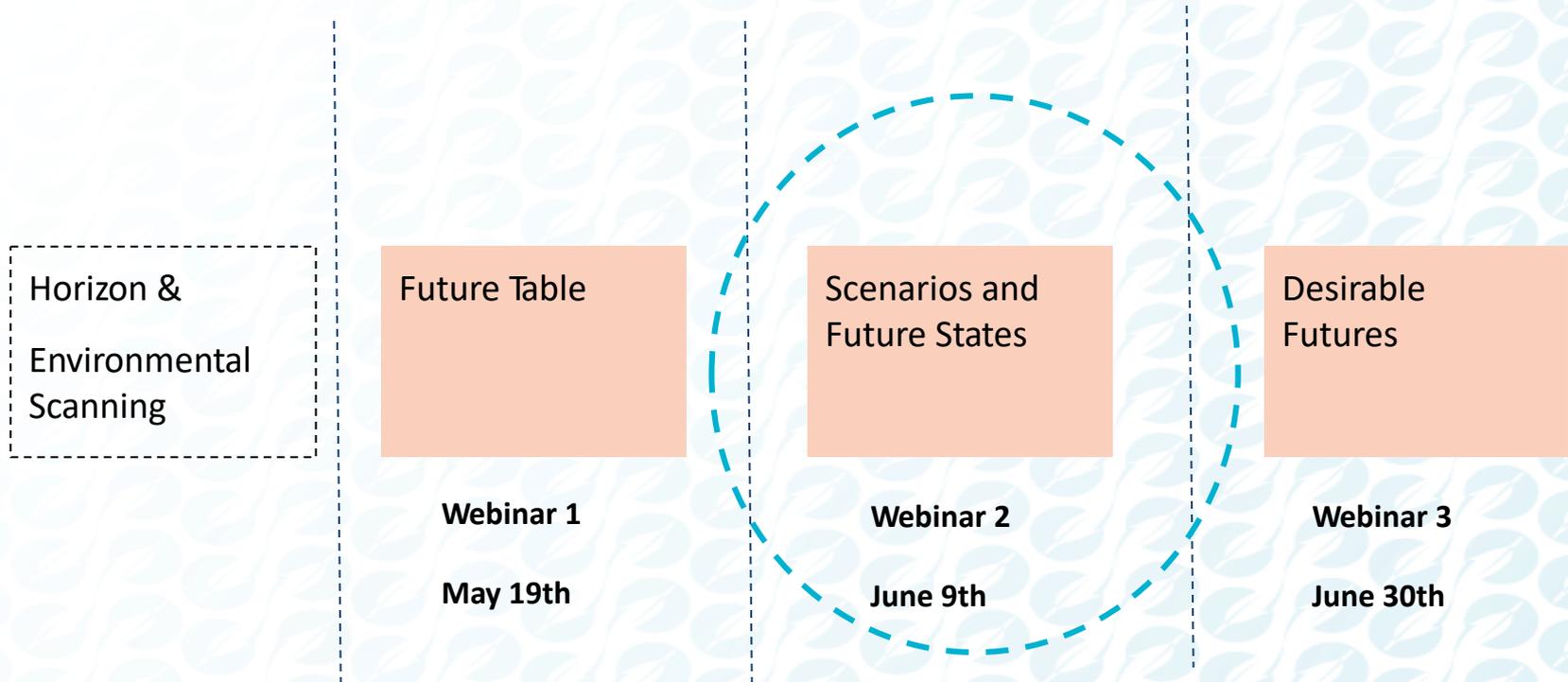
**Petteri Lillberg**

Senior Consultant,  
Demos Helsinki

*Demos Helsinki is an independent think tank, working together with the public sector, private sector, and NGOs. We want to impact the ongoing global transformations actively and aim to build sustainable and fair post-industrial societies.*

Petteri Lillberg is a Senior Consultant at Demos Helsinki, focusing on strategy, foresight and societal impact across industries and organisations. A noted columnist and international speaker, Petteri holds an M.Phil from Cambridge University. He also serves at the board of Unicef Finland.

# Our Futures Literacy Process



# Future Table Example from Webinar 1

Tensions	Sustainability & Inclusion		Society		Economic Recovery		Technology		Money	
Variables	Trajectory of Global Warming	Distribution of wealth	Social priorities	Surveillance vs freedom	Security and resilience of supply chains	Economic Recovery	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Mitigation	Efforts to reduce divide between rich and poor countries	Equality	No surveillance	Strengthen BCP	Post-WW2 global institutions lead recovery	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Adaptation	Efforts to reduce inequality within countries	Economic growth	Regulated surveillance	Relocate Sourcing & Production	Local recoveries	Regulated platforms	States control data	Commercial Bank	Fragmentation
VALUE 3	Uncontrolled	Increasing inequality	Individual rights	Surveillance capitalism	Diversify sourcing	Regional governance leads comeback	Unregulated platforms	Private corporations sell data	BigTech	Diversification
VALUE 4	Denial	Fragmentation	Transformation	State Surveillance	Sovereignty is back	Global recovery led by few competitive regimes	Platforms control states	Data is the new currency	Anyone	Cash

# What are scenarios and future states?

**Scenario** is a credible narrative of possible development paths, events and actions leading to a specific future

**Future States** are snapshots from the future, identifying the essential characteristics



# Today we talk about three scenarios and future states



# Scenario 1: Global Recovery

Tensions	Sustainability & Inclusion		Society		Economic Recovery		Technology		Money	
Variables	Trajectory of Global Warming	Distribution of wealth	Social priorities	Surveillance vs freedom	Security and resilience of supply chains	Economic Recovery	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Mitigation	Efforts to reduce divide between rich and poor countries	Equality	No surveillance	Strengthen BCP	Post-WW2 global institutions lead recovery	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Adaptation	Efforts to reduce inequality within countries	Economic growth	Regulated surveillance	Relocate Sourcing & Production	Local recoveries	Regulated platforms	States control data	Commercial Bank	Fragmentation
VALUE 3	Uncontrolled	Increasing inequality	Individual rights	Surveillance capitalism	Diversify sourcing	Regional governance leads comeback	Unregulated platforms	Private corporations sell data	BigTech	Diversification
VALUE 4	Denial	Fragmentation	Transformation	State Surveillance	Sovereignty is back	Global recovery led by few competitive regimes	Platforms control states	Data is the new currency	Anyone	Cash

# Scenario 1: Global Recovery

- Following the pandemic, international co-operation is strengthened and post WWII institutions lead the economic recovery.
- International Trade is geared towards more resilient supply chains through relocation of sourcing and production.
- Reducing global inequality is the new priority.
- Global warming is partly mitigated and international co-operation aims at assisting the most affected areas to adapt.
- Digital platforms are strictly regulated by international standards and individuals are in control of their data.

Antti Heinonen has been the chairman of the Banknote Ethics Initiative since its inception in 2013. He was the chairman of the Central Bank Counterfeit Deterrence Group, reporting to G10 Governors, between 2008 and 2012 and the Director, Banknotes at the ECB from 1998 until 2008. He chaired the Banknote Committee of the European System of Central Banks for more than 10 years and the Eurosystem Cash Changeover Co-ordination Committee in 2001 and 2002. Prior to joining the ECB he was the chief cashier for the Bank of Finland. He holds degrees in economics and mathematics from the University of Helsinki, and has written several books on banknotes and their history.



**Antti Heinonen**

Chairman, Banknote Ethics Initiative;  
Former Head of Banknotes, European  
Central Bank

# Scenario 1: Global Recovery

- What this scenario would mean to the global financial system, and who would issue money?
- In this scenario post WWII institutions would lead the economic recovery → A new Bretton Woods?
- → a new role for IMF as an international clearing union, however central banks would retain their role as issuing authorities.

# Scenario 1: Global Recovery (cont'd)

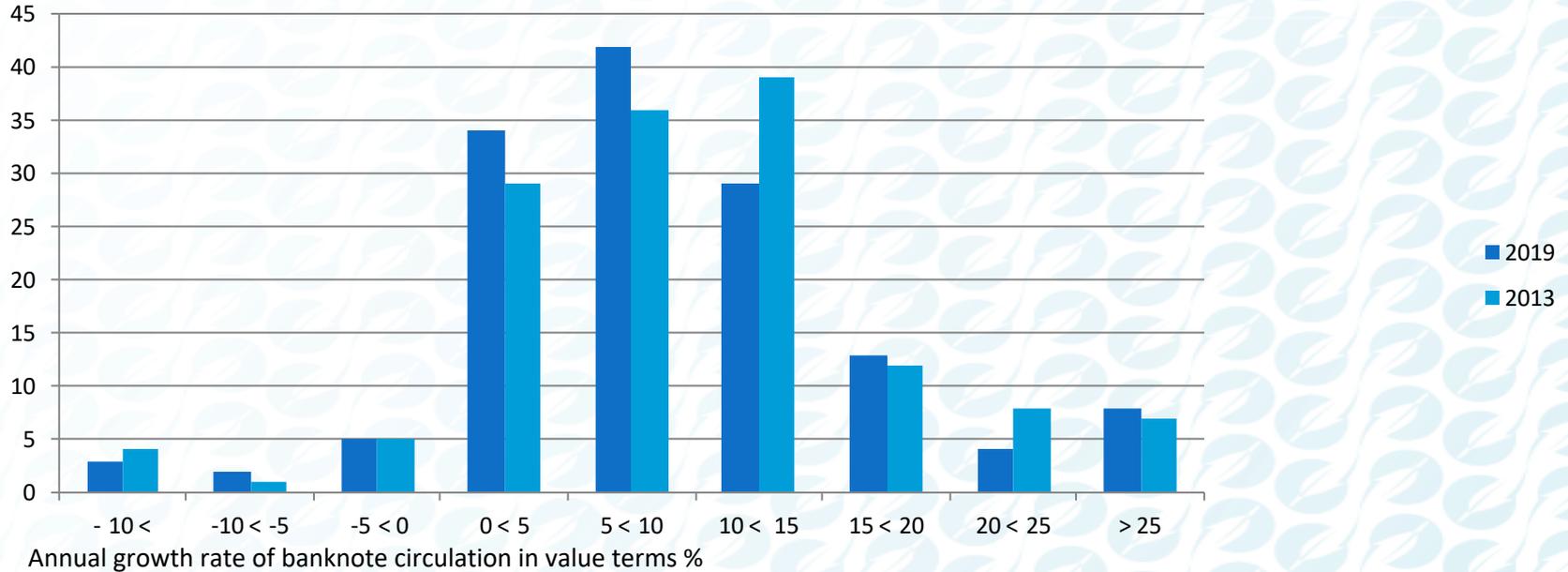
- More resilient supply chains → would promote the role of cash as a fallback solution
- Reducing global inequality → would increase the importance of digital financial inclusion
- Digital platforms are strictly regulated by international standards → would promote CBDG's instead of private digital currencies
- Individuals are in control of their data → would promote the use of cash.

# Scenario 1: Global Recovery

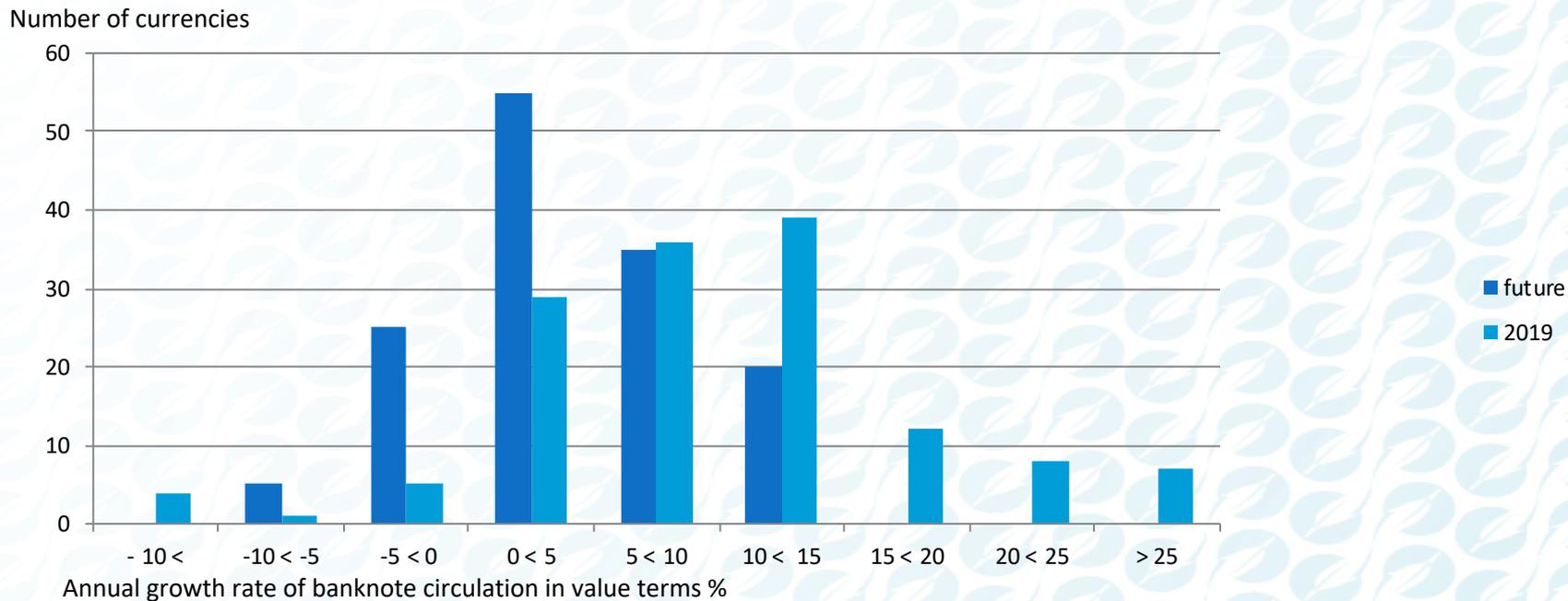
Tensions	Sustainability & Inclusion		Society		Economic Recovery		Technology		Money	
Variables	Trajectory of Global Warming	Distribution of wealth	Social priorities	Surveillance vs freedom	Security and resilience of supply chains	Economic Recovery	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Mitigation	Efforts to reduce divide between rich and poor countries	Equality	No surveillance	Strengthen BCP	Post-WW2 global institutions lead recovery	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Adaptation	Efforts to reduce inequality within countries	Economic growth	Regulated surveillance	Relocate Sourcing & Production	Local recoveries	Regulated platforms	States control data	Commercial Bank	Fragmentation
VALUE 3	Uncontrolled	Increasing inequality	Individual rights	Surveillance capitalism	Diversify sourcing	Regional governance leads comeback	Unregulated platforms	Private corporations sell data	BigTech	Diversification
VALUE 4	Denial	Fragmentation	Transformation	State Surveillance	Sovereignty is back	Global recovery led by few competitive regimes	Platforms control states	Data is the new currency	Anyone	Cash

# Current development

Number of currencies



# The impact of the scenario "Global Recovery" on cash circulation



# Scenario 2: The Return of the State

Tensions	Sustainability & Inclusion		Society		Economic Recovery		Technology		Money	
Variables	Trajectory of Global Warming	Distribution of wealth	Social priorities	Surveillance vs freedom	Security and resilience of supply chains	Economic Recovery	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Mitigation	Efforts to reduce divide between rich and poor countries	Equality	No surveillance	Strengthen BCP	Post-WW2 global institutions lead recovery	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Adaptation	Efforts to reduce inequality within countries	Economic growth	Regulated surveillance	Relocate Sourcing & Production	Local recoveries	Regulated platforms	States control data	Commercial Bank	Fragmentation
VALUE 3	Uncontrolled	Increasing inequality	Individual rights	Surveillance capitalism	Diversify sourcing	Regional governance leads comeback	Unregulated platforms	Private corporations sell data	BigTech	Diversification
VALUE 4	Denial	Fragmentation	Transformation	State Surveillance	Sovereignty is back	Global recovery led by few competitive regimes	Platforms control states	Data is the new currency	Anyone	Cash

# Scenario 2: The Return of the State

- Following the pandemic, economic recovery is driven by individual states.
- Economic sovereignty is a priority to ensure more resilient supply-chains.
- International co-operation is reduced to a strict minimum.
- Economic growth is the new priority.
- Global warming is uncontrolled and the most impacted areas see an increase in extreme weather events.
- Globally, inequality increases sharply.
- States take control over digital platforms which are used as surveillance tools.
- States control the data of their citizens.

Professor Franz Seitz teaches Economics with a special focus on Monetary Policy and Financial Markets at Weiden Technical University of Applied Sciences. He is author of numerous articles in national and international journals. His main fields of research are monetary theory and policy, financial markets and banking as well as payments markets, especially cash in circulation. For many years now, Professor Seitz is acting as a consultant in different projects for central banks, commercial banks and financial as well as non-financial corporations.



**Franz Seitz**

Economist, Weiden Technical  
University of Applied Sciences

# Privacy, anonymity, data protection

- "Cash is privacy!"
- Currently, the recording of payment data is far from comprehensive: cash as substitute and payment competitor necessary
- Cash guarantees **payment anonymity**, not necessarily anonymity of participants (often only buyer anonymity)
- Payment anonymity not always advantageous (proof of purchase, payment history, criminals)
- What is the **efficient level of confidentiality of personal data**?
- What about people's **behaviour**?
- Bad behaviour  $\neq$  criminal behaviour  
There is also bad behaviour of the Government

# Private vs. public provision of money/cash

- *F.A. Hayek*: If only government obstacles were removed, the free market would provide the optimal quantity (and variety) of monetary products. Competition in the "fiat money industry" would lead to monies that were infinitely better than their government-produced counterparts.
  - Long-run steady-state vs. long dynamic adjustment
  - Incentive for Government regulation (see Libra, Bitcoin, CBDC,...)
  - Good reasons for Government monopoly
  - But: rules necessary
- Idea: private provision of transactions balances; public provision of non-transactions balances (in cash only?), i.e., crises related, store-of-value, precautionary, foreign demand etc.
- Unique characteristics of cash (e.g., anonymity, ease of use, offline tool,...) imply coexistence of cash with other payment instruments
  - Efficiency issues

# Scenario 2: The Return of the State

Tensions	Sustainability & Inclusion		Society		Economic Recovery		Technology		Money	
Variables	Trajectory of Global Warming	Distribution of wealth	Social priorities	Surveillance vs freedom	Security and resilience of supply chains	Economic Recovery	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Mitigation	Efforts to reduce divide between rich and poor countries	Equality	No surveillance	Strengthen BCP	Post-WW2 global institutions lead recovery	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Adaptation	Efforts to reduce inequality within countries	Economic growth	Regulated surveillance	Relocate Sourcing & Production	Local recoveries	Regulated platforms	States control data	Commercial Bank	Fragmentation
VALUE 3	Uncontrolled	Increasing inequality	Individual rights	Surveillance capitalism	Diversify sourcing	Regional governance leads comeback	Unregulated platforms	Private corporations sell data	BigTech	Diversification
VALUE 4	Denial	Fragmentation	Transformation	State Surveillance	Sovereignty is back	Global recovery led by few competitive regimes	Platforms control states	Data is the new currency	Anyone	Cash

# Scenario 3: Let's Get Digital

Tensions	Sustainability & Inclusion		Society		Economic Recovery		Technology		Money	
Variables	Trajectory of Global Warming	Distribution of wealth	Social priorities	Surveillance vs freedom	Security and resilience of supply chains	Economic Recovery	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Mitigation	Efforts to reduce divide between rich and poor countries	Equality	No surveillance	Strengthen BCP	Post-WW2 global institutions lead recovery	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Adaptation	Efforts to reduce inequality within countries	Economic growth	Regulated surveillance	Relocate Sourcing & Production	Local recoveries	Regulated platforms	States control data	Commercial Bank	Fragmentation
VALUE 3	Uncontrolled	Increasing inequality	Individual rights	Surveillance capitalism	Diversify sourcing	Regional governance leads comeback	Unregulated platforms	Private corporations sell data	BigTech	Diversification
VALUE 4	Denial	Fragmentation	Transformation	State Surveillance	Sovereignty is back	Global recovery led by few competitive regimes	Platforms control states	Data is the new currency	Anyone	Cash

# Scenario 3: Let's Get Digital

- The pandemic accelerates the shift towards towards a digital economy and digital capitalism. Platforms are the big winners.
- Global recovery is driven by a few competitive regimes, who harbour the majority of platforms.
- The new social priority is transformation, from transhumanism, to techno-utopianism.
- Platforms control large parts of the economy including activities which were once state prerogatives; education, healthcare, banking, infrastructure
- Data is openly sold on platforms.
- Global warming is no longer a priority as disinformation is rife.
- The world is largely fragmented with on the one hand those who benefit from the digital economy and on the other those who have lost



Head of Innovation and Payments,  
European Savings and Retail Banking  
Group.

**Diederik Bruggink**

### **Disclaimer**

The views and opinions expressed in this presentation are those of the author and do not necessarily reflect the official policy or position of the ESBG or its Members.

Diederik Bruggink holds responsibility at the two savings and retail banking associations for all innovation and payments topics from a worldwide perspective. In that role, he analyses the multiple dimensions of the payments market, proposing and assisting in agreeing member positions with respect to their payments' and related businesses. He also advocates the associations' positions on payments with policymakers, regulators, standardisation bodies, industry associations, and enabling a constant member dialogue on developments, with a particular focus on innovation. He is one of the key authors of the first three editions of the World Payments Report, makes regular appearances at industry conferences and serves as a member of the editorial board of, and regulator contributor to, the Journal of Payments Strategy & Systems. He is also a Board Member of the European Payments Council (EPC) and within the EPC he is also the Chair of the Cash Efficiency Working Group.

# Let's get digital – possible consequences for Money

## and Payments TRADITIONAL SITUATION

```
rsync is a file transfer program capable of efficient remote update via a fast differencing algorithm.

Usage: rsync [OPTION]... SRC [SRC]... DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
       or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "" usages connect via remote shell, while "" & "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.

Options
-v, --verbose          Increase verbosity
-q, --quiet           suppress non-error messages
--no-motd             suppress daemon-mode MOTD (see manpage caveat)
-c, --checksum       skip based on checksum, not mod-time & size
-a, --archive         archive mode; same as -rlptgoD (no -H)
--no-D               turn off an implied OPTION (e.g. --no-D)
-r, --recursive     recurse into directories
-R, --relative       use relative path names
--no-implied-dirs   don't send implied dirs with --relative
-b, --backup         make backups (see --suffix & --backup-dir)
--backup-dir=DIR    make backups into hierarchy based in DIR
--suffix=SUFFIX     set backup suffix (default = w/o --backup-dir)
-u, --update         skip files that are newer on the receiver
--inplace           update destination files in-place (SEE MAN PAGE)
--append           append data onto shorter files
-d, --dirs          transfer directories without recursing
-l, --links         copy symlinks as symlinks
-L, --copy-links    transform symlink into referent file/dir
--copy-unsafe-links only "unsafe" symlinks are transformed
--safe-links        ignore symlinks that point outside the source tree
-k, --copy-dirlinks transform symlink to a dir into referent dir
-K, --keep-dirlinks treat symlinked dir on receiver as dir
-H, --hard-links    preserve hard links
-p, --perms         preserve permissions
--executability     preserve the file's executability
--chmod=CHMOD      affect file and/or directory permissions
-o, --owner         preserve owner (super-user only)
-g, --group         preserve group
--devices           preserve device files (super-user only)
--specials         preserve special files
-D, --devices      same as --devices --specials
-t, --times        preserve times
--omit-dir-times   omit directories when preserving times
--super           receiver attempts super-user activities
-S, --sparse       handle sparse files efficiently
-m, --dry-run      show what would have been transferred
-x, --one-file-system copy files whole (without rsync algorithm)
-B, --block-size=SIZE don't cross filesystem boundaries
--rsync=COMMAND   force a fixed checksum block-size
-e, --rsync=COMMAND specify the remote shell to use
```



Central Bank



Commercial Banks











```
rsync is a file transfer program capable of efficient remote update via a fast differencing algorithm.

Usage: rsync [OPTION]... SRC [SRC]... DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
       or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "" usages connect via remote shell, while "" & "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.

Options
-v, --verbose          Increase verbosity
-q, --quiet           suppress non-error messages
--no-motd             suppress daemon-mode MOTD (see manpage caveat)
-c, --checksum       skip based on checksum, not mod-time & size
-a, --archive         archive mode; same as -rlptgoD (no -H)
--no-D               turn off an implied OPTION (e.g. --no-D)
-r, --recursive     recurse into directories
-R, --relative       use relative path names
--no-implied-dirs   don't send implied dirs with --relative
-b, --backup         make backups (see --suffix & --backup-dir)
--backup-dir=DIR    make backups into hierarchy based in DIR
--suffix=SUFFIX     set backup suffix (default = w/o --backup-dir)
-u, --update         skip files that are newer on the receiver
--inplace           update destination files in-place (SEE MAN PAGE)
--append           append data onto shorter files
-d, --dirs          transfer directories without recursing
-l, --links         copy symlinks as symlinks
-L, --copy-links    transform symlink into referent file/dir
--copy-unsafe-links only "unsafe" symlinks are transformed
--safe-links        ignore symlinks that point outside the source tree
-k, --copy-dirlinks transform symlink to a dir into referent dir
-K, --keep-dirlinks treat symlinked dir on receiver as dir
-H, --hard-links    preserve hard links
-p, --perms         preserve permissions
--executability     preserve the file's executability
--chmod=CHMOD      affect file and/or directory permissions
-o, --owner         preserve owner (super-user only)
-g, --group         preserve group
--devices           preserve device files (super-user only)
--specials         preserve special files
-D, --devices      same as --devices --specials
-t, --times        preserve times
--omit-dir-times   omit directories when preserving times
--super           receiver attempts super-user activities
-S, --sparse       handle sparse files efficiently
-m, --dry-run      show what would have been transferred
-x, --one-file-system copy files whole (without rsync algorithm)
-B, --block-size=SIZE don't cross filesystem boundaries
--rsync=COMMAND   force a fixed checksum block-size
-e, --rsync=COMMAND specify the remote shell to use
```




```
rsync is a file transfer program capable of efficient remote update via a fast differencing algorithm.

Usage: rsync [OPTION]... SRC [SRC]... DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
       or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "" usages connect via remote shell, while "" & "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.

Options
-v, --verbose          Increase verbosity
-q, --quiet           suppress non-error messages
--no-motd             suppress daemon-mode MOTD (see manpage caveat)
-c, --checksum       skip based on checksum, not mod-time & size
-a, --archive         archive mode; same as -rlptgoD (no -H)
--no-D               turn off an implied OPTION (e.g. --no-D)
-r, --recursive     recurse into directories
-R, --relative       use relative path names
--no-implied-dirs   don't send implied dirs with --relative
-b, --backup         make backups (see --suffix & --backup-dir)
--backup-dir=DIR    make backups into hierarchy based in DIR
--suffix=SUFFIX     set backup suffix (default = w/o --backup-dir)
-u, --update         skip files that are newer on the receiver
--inplace           update destination files in-place (SEE MAN PAGE)
--append           append data onto shorter files
-d, --dirs          transfer directories without recursing
-l, --links         copy symlinks as symlinks
-L, --copy-links    transform symlink into referent file/dir
--copy-unsafe-links only "unsafe" symlinks are transformed
--safe-links        ignore symlinks that point outside the source tree
-k, --copy-dirlinks transform symlink to a dir into referent dir
-K, --keep-dirlinks treat symlinked dir on receiver as dir
-H, --hard-links    preserve hard links
-p, --perms         preserve permissions
--executability     preserve the file's executability
--chmod=CHMOD      affect file and/or directory permissions
-o, --owner         preserve owner (super-user only)
-g, --group         preserve group
--devices           preserve device files (super-user only)
--specials         preserve special files
-D, --devices      same as --devices --specials
-t, --times        preserve times
--omit-dir-times   omit directories when preserving times
--super           receiver attempts super-user activities
-S, --sparse       handle sparse files efficiently
-m, --dry-run      show what would have been transferred
-x, --one-file-system copy files whole (without rsync algorithm)
-B, --block-size=SIZE don't cross filesystem boundaries
--rsync=COMMAND   force a fixed checksum block-size
-e, --rsync=COMMAND specify the remote shell to use
```

# Let's get digital – possible consequences for Money and Payments

rsync is a file transfer program capable of efficient remote update via a fast differencing algorithm.

Usage: rsync [OPTION]... SRC [SRC]... DEST  
or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST  
or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST  
or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST  
or rsync [OPTION]... [USER@]HOST-SRC [DEST]  
or rsync [OPTION]... [USER@]HOST-SRC [DEST]  
or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "" usages connect via remote shell, while "" & "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.

Options

- v, --verbose Increase verbosity
- q, --quiet suppress non-error messages
- no-motd suppress daemon-mode MOTD (see manpage caveat)
- c, --checksum skip based on checksum, not mod-time & size
- a, --archive archive mode; same as -rptgd (no -H)
- no-OPTION turn off an implied OPTION (e.g. --no-D)
- r, --recursive recurse into directories
- R, --relative use relative path names
- no-implied-dirs don't send implied dirs with --relative
- b, --backup make backups (see --suffix & --backup-dir)
- backup-dir=DIR make backups into hierarchy based in DIR
- suffix=SUFFIX set backup suffix (default = w/o --backup-dir)
- u, --update skip files that are newer on the receiver
- inplace update destination files in-place (SEE MAN PAGE)
- append append data onto shorter files
- d, --dirs transfer directories without recursing
- l, --links copy symlinks as symlinks
- L, --copy-links transform symlink into referent file/dir
- copy-unsafe-links only "unsafe" symlinks are transformed
- safe-links ignore symlinks that point outside the source tree
- k, --copy-dirlinks transform symlink to a dir into referent dir
- K, --keep-dirlinks treat symlinked dir on receiver as dir
- H, --hard-links preserve hard links
- p, --perms preserve permissions
- executability preserve the file's executability
- chmod=CHMOD affect file and/or directory permissions
- o, --owner preserve owner (super-user only)
- g, --group preserve group
- devices preserve device files (super-user only)
- specials preserve special files
- D, --dirs same as --devices --specials
- t, --times preserve times
- l, --omit-dir-times omit directories when preserving times
- super receiver attempts super-user activities
- S, --sparse handle sparse files efficiently
- n, --dry-run show what would have been transferred
- w, --whole-file copy files whole (without rsync algorithm)
- x, --one-file-system don't cross filesystem boundaries
- B, --block-size=SIZE force a fixed checksum block-size
- e, --rsh=COMMAND specify the remote shell to use

Capabilities: 64-bit files, socketpair, hard links, symlinks, batchfiles, inplace, 64-bit system links, 64-bit internal inums

Usage: rsync [OPTION]... SRC [SRC]... DEST  
or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST  
or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST  
or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST  
or rsync [OPTION]... [USER@]HOST-SRC [DEST]  
or rsync [OPTION]... [USER@]HOST-SRC [DEST]  
or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "" usages connect via remote shell, while "" & "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.

Options

- v, --verbose Increase verbosity
- q, --quiet suppress non-error messages
- no-motd suppress daemon-mode MOTD (see manpage caveat)
- c, --checksum skip based on checksum, not mod-time & size
- a, --archive archive mode; same as -rptgd (no -H)
- no-OPTION turn off an implied OPTION (e.g. --no-D)
- r, --recursive recurse into directories
- R, --relative use relative path names
- no-implied-dirs don't send implied dirs with --relative
- b, --backup make backups (see --suffix & --backup-dir)
- backup-dir=DIR make backups into hierarchy based in DIR
- suffix=SUFFIX set backup suffix (default = w/o --backup-dir)
- u, --update skip files that are newer on the receiver
- inplace update destination files in-place (SEE MAN PAGE)
- append append data onto shorter files
- d, --dirs transfer directories without recursing
- l, --links copy symlinks as symlinks
- L, --copy-links transform symlink into referent file/dir
- copy-unsafe-links only "unsafe" symlinks are transformed
- safe-links ignore symlinks that point outside the source tree
- k, --copy-dirlinks transform symlink to a dir into referent dir
- K, --keep-dirlinks treat symlinked dir on receiver as dir
- H, --hard-links preserve hard links
- p, --perms preserve permissions
- executability preserve the file's executability
- chmod=CHMOD affect file and/or directory permissions
- o, --owner preserve owner (super-user only)
- g, --group preserve group
- devices preserve device files (super-user only)
- specials preserve special files
- D, --dirs same as --devices --specials
- t, --times preserve times
- l, --omit-dir-times omit directories when preserving times
- super receiver attempts super-user activities
- S, --sparse handle sparse files efficiently
- n, --dry-run show what would have been transferred
- w, --whole-file copy files whole (without rsync algorithm)
- x, --one-file-system don't cross filesystem boundaries
- B, --block-size=SIZE force a fixed checksum block-size
- e, --rsh=COMMAND specify the remote shell to use

Capabilities: 64-bit files, socketpair, hard links, symlinks, batchfiles, inplace, 64-bit system links, 64-bit internal inums

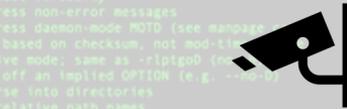
Usage: rsync [OPTION]... SRC [SRC]... DEST  
or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST  
or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST  
or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST  
or rsync [OPTION]... [USER@]HOST-SRC [DEST]  
or rsync [OPTION]... [USER@]HOST-SRC [DEST]  
or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "" usages connect via remote shell, while "" & "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.

Options

- v, --verbose Increase verbosity
- q, --quiet suppress non-error messages
- no-motd suppress daemon-mode MOTD (see manpage caveat)
- c, --checksum skip based on checksum, not mod-time & size
- a, --archive archive mode; same as -rptgd (no -H)
- no-OPTION turn off an implied OPTION (e.g. --no-D)
- r, --recursive recurse into directories
- R, --relative use relative path names
- no-implied-dirs don't send implied dirs with --relative
- b, --backup make backups (see --suffix & --backup-dir)
- backup-dir=DIR make backups into hierarchy based in DIR
- suffix=SUFFIX set backup suffix (default = w/o --backup-dir)
- u, --update skip files that are newer on the receiver
- inplace update destination files in-place (SEE MAN PAGE)
- append append data onto shorter files
- d, --dirs transfer directories without recursing
- l, --links copy symlinks as symlinks
- L, --copy-links transform symlink into referent file/dir
- copy-unsafe-links only "unsafe" symlinks are transformed
- safe-links ignore symlinks that point outside the source tree
- k, --copy-dirlinks transform symlink to a dir into referent dir
- K, --keep-dirlinks treat symlinked dir on receiver as dir
- H, --hard-links preserve hard links
- p, --perms preserve permissions
- executability preserve the file's executability
- chmod=CHMOD affect file and/or directory permissions
- o, --owner preserve owner (super-user only)
- g, --group preserve group
- devices preserve device files (super-user only)
- specials preserve special files
- D, --dirs same as --devices --specials
- t, --times preserve times
- l, --omit-dir-times omit directories when preserving times
- super receiver attempts super-user activities
- S, --sparse handle sparse files efficiently
- n, --dry-run show what would have been transferred
- w, --whole-file copy files whole (without rsync algorithm)
- x, --one-file-system don't cross filesystem boundaries
- B, --block-size=SIZE force a fixed checksum block-size
- e, --rsh=COMMAND specify the remote shell to use

## EXTREME DIGITAL SITUATION



"BigTech"



"BigTech"



# Let's get digital – possible consequences for Money

## and Payments TRADITIONAL SITUATION

```
rsync is a file transfer program capable of efficient remote update via a fast differencing algorithm.

Usage: rsync [OPTION]... SRC [SRC]... DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
       or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "rsync://" usages connect via remote shell, while "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.
```

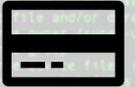
```
Options
-v, --verbose          Increase verbosity
-q, --quiet           suppress non-error messages
-n, --no-motd         suppress daemon-mode MOTD (see manpage caveat)
-c, --checksum       skip based on checksum, not modification-time & size
-A, --archive         archive mode; same as -rlptgoD (no -H)
-t, --timeout=SECS  turn off an implied timeout (default 30)
-r, --recursive      recurse into directories
-R, --relative       use relative path names
-k, --no-implied-dirs don't send implied dirs with --relative
-b, --backup         make backups (see --suffix & --backup-dir)
-B, --backup-dir=DIR into hierarchy based in DIR
-s, --suffix=SUFFIX suffix (default -w/o --backup-dir)
-u, --update         skip files that are newer on the receiver
-i, --inplace        update destination files in-place (SEE MAN PAGE)
-a, --append        append data onto shorter files
-d, --dirs           transfer directories without recursing
-l, --links          copy symlinks as symlinks
-L, --copy-links    transform symlink into referent file/dir
-l, --copy-unsafe-links only "unsafe" symlinks are transformed
-k, --safe-links    ignore symlinks that point outside the source tree
-K, --copy-dirlinks transform symlink to a dir into referent dir
-n, --keep-dirlinks treat symlinked dir on receiver as dir
-H, --hard-links    preserve hard links
-p, --perms         preserve permissions
-x, --executability preserve executability
-c, --chmod=CHMOD affect file and/or directory permissions
-o, --owner         preserve owner (super-user only)
-g, --group         preserve group (super-user only)
-d, --devices       preserve special files (super-user only)
-s, --specials     same as --devices --specials
-t, --times         preserve times
-l, --omit-dirs     omit directories when preserving times
-O, --super        receiver attempts super-user activities
-S, --sparse        handle sparse files efficiently
-m, --dry-run       show what would have been transferred
-x, --one-file-system don't cross filesystem boundaries
-B, --block-size=SIZE force a fixed checksum block-size
-e, --rsh=COMMAND  specify the remote shell to use
```



Central Bank



Commercial Banks



```
rsync is a file transfer program capable of efficient remote update via a fast differencing algorithm.

Usage: rsync [OPTION]... SRC [SRC]... DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
       or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "rsync://" usages connect via remote shell, while "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.
```

```
Options
-v, --verbose          Increase verbosity
-q, --quiet           suppress non-error messages
-n, --no-motd         suppress daemon-mode MOTD (see manpage caveat)
-c, --checksum       skip based on checksum, not modification-time & size
-A, --archive         archive mode; same as -rlptgoD (no -H)
-t, --timeout=SECS  turn off an implied timeout (e.g. --no-D)
-r, --recursive      recurse into directories
-R, --relative       use relative path names
-k, --no-implied-dirs don't send implied dirs with --relative
-b, --backup         make backups (see --suffix & --backup-dir)
-B, --backup-dir=DIR make backups into hierarchy based in DIR
-s, --suffix=SUFFIX set backup suffix (default -w/o --backup-dir)
-u, --update         skip files that are newer on the receiver
-i, --inplace        update destination files in-place (SEE MAN PAGE)
-a, --append        append data onto shorter files
-d, --dirs           transfer directories without recursing
-l, --links          copy symlinks as symlinks
-L, --copy-links    transform symlink into referent file/dir
-l, --copy-unsafe-links only "unsafe" symlinks are transformed
-k, --safe-links    ignore symlinks that point outside the source tree
-K, --copy-dirlinks transform symlink to a dir into referent dir
-n, --keep-dirlinks treat symlinked dir on receiver as dir
-H, --hard-links    preserve hard links
-p, --perms         preserve permissions
-x, --executability preserve executability
-c, --chmod=CHMOD affect file and/or directory permissions
-o, --owner         preserve owner (super-user only)
-g, --group         preserve group (super-user only)
-d, --devices       preserve special files (super-user only)
-s, --specials     same as --devices --specials
-t, --times         preserve times
-l, --omit-dirs     omit directories when preserving times
-O, --super        receiver attempts super-user activities
-S, --sparse        handle sparse files efficiently
-m, --dry-run       show what would have been transferred
-x, --one-file-system don't cross filesystem boundaries
-B, --block-size=SIZE force a fixed checksum block-size
-e, --rsh=COMMAND  specify the remote shell to use
```



```
rsync is a file transfer program capable of efficient remote update via a fast differencing algorithm.

Usage: rsync [OPTION]... SRC [SRC]... DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST
       or rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
       or rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... [USER@]HOST-SRC [DEST]
       or rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]

The "rsync://" usages connect via remote shell, while "rsync://" usages connect to an rsync daemon, and require SRC or DEST to start with a module name.
```

```
Options
-v, --verbose          Increase verbosity
-q, --quiet           suppress non-error messages
-n, --no-motd         suppress daemon-mode MOTD (see manpage caveat)
-c, --checksum       skip based on checksum, not modification-time & size
-A, --archive         archive mode; same as -rlptgoD (no -H)
-t, --timeout=SECS  turn off an implied timeout (e.g. --no-D)
-r, --recursive      recurse into directories
-R, --relative       use relative path names
-k, --no-implied-dirs don't send implied dirs with --relative
-b, --backup         make backups (see --suffix & --backup-dir)
-B, --backup-dir=DIR make backups into hierarchy based in DIR
-s, --suffix=SUFFIX set backup suffix (default -w/o --backup-dir)
-u, --update         skip files that are newer on the receiver
-i, --inplace        update destination files in-place
-a, --append        append data onto shorter files
-d, --dirs           transfer directories without recursing
-l, --links          copy symlinks as symlinks
-L, --copy-links    transform symlink into referent file/dir
-l, --copy-unsafe-links only "unsafe" symlinks are transformed
-k, --safe-links    ignore symlinks that point outside the source tree
-K, --copy-dirlinks transform symlink to a dir into referent dir
-n, --keep-dirlinks treat symlinked dir on receiver as dir
-H, --hard-links    preserve hard links
-p, --perms         preserve permissions
-x, --executability preserve executability
-c, --chmod=CHMOD affect file and/or directory permissions
-o, --owner         preserve owner (super-user only)
-g, --group         preserve group (super-user only)
-d, --devices       preserve special files (super-user only)
-s, --specials     same as --devices --specials
-t, --times         preserve times
-l, --omit-dirs     omit directories when preserving times
-O, --super        receiver attempts super-user activities
-S, --sparse        handle sparse files efficiently
-m, --dry-run       show what would have been transferred
-x, --one-file-system don't cross filesystem boundaries
-B, --block-size=SIZE force a fixed checksum block-size
-e, --rsh=COMMAND  specify the remote shell to use
```

## EXTREME DIGITAL SITUATION



"BigTech"



"BigTech"



# Scenario 3: Let's Get Digital

Tensions	Sustainability & Inclusion		Society		Economic Recovery		Technology		Money	
Variab-les	Trajectory of Global Warming	Distribution of wealth	Social priorities	Surveillance vs freedom	Security and resilience of supply chains	Economic Recovery	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Mitigation	Efforts to reduce divide between rich and poor countries	Equality	No surveil- lance	Strengthen BCP	Post-WW2 global institutions lead recovery	States controls platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Adaptation	Efforts to reduce inequality within countries	Economic growth	Regulated surveillance	Relocate Sourcing & Production	Local recoveries	Regulated platforms	States control data	Commercial Bank	Fragmen- tation
VALUE 3	Uncontrolled	Increasing inequality	Individual rights	Surveillance capitalism	Diversify sourcing	Regional governance leads comeback	Unregulated platforms	Private corporations sell data	BigTech	Diversification
VALUE 4	Denial	Fragment- ation	Transfor- mation	State Surveillance	Sovereignty is back	Global recovery lead by few competitive regimes	Platforms control states	Data is the new currency	Anyone	Cash



# Some Take-Aways



## Scenario 1: Global Recovery

Central Banks and international organisations issue money

Money would be diversified: mix of cash and digital including CBDC

Cash guarantees resilience and privacy



## Scenario 2: The Return of the State

Cash is privacy!

Public vs Private money

Governments behave badly too



## Let's Get Digital

BigTech companies becomes issuers of currencies

Liquidity is taken out of the market

Social profile becomes measure of creditworthiness

# Next Steps

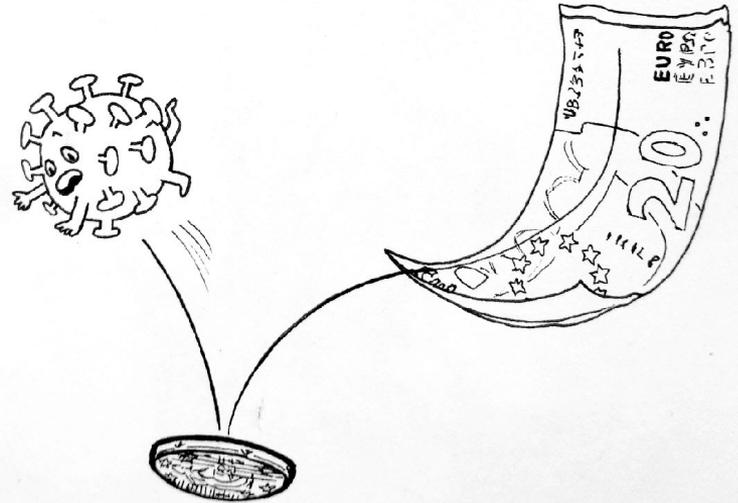
- The future of cash is not written.
- This Futures Literacy project is ongoing and open source.
- Recording will be available in 24 hours
- Third Webinar on the 30th of June
  - Desirable scenario & roadmap
- Follow us on [www.cashessentials.com](http://www.cashessentials.com)
- [glp@agis-consulting.com](mailto:glp@agis-consulting.com)



@Cash\_Essentials



<https://www.linkedin.com/groups/95614/>



© Alice Charvet