

The cashless society

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“The cashless
society is a
con”
The Guardian

“despotic”
Amartya
Sen

Going
cashless

“The cashless
society: a huge
threat to our
freedom”
CNBC

“We need cash
for privacy”
Kenneth Rogoff

“This will be the darkest of all tyrannies. From cradle to grave one will not only be tracked in location, but on purchases. Liberty will be non-existent ...

However, it will be sold to us as expedient simplicity itself, freeing us from crime: Fascism with a friendly face.

Perhaps the scariest consequence of all is that an individual can be "terminated" by a bureaucrat erasing his identity. Do not kid yourself, it will happen. Real "Mark of the Beast" stuff.”

Mike Konrad, *The American Thinker*, Feb 8th, 2016,

https://www.americanthinker.com/articles/2016/02/here_comes_the_cashless_society_.html

**KONTANT
UPPRORET**

Main objections to cashless

- Risk of privacy
- Not suitable for the bankless
- Not useable by the computerless
- Dependent on IT, which is itself unreliable
- Financially fees
- Encourages over-spending
- Exposes consumers to negative interest rates

Main objections to cashless

- Privacy
- Usability
- Security
- Financial

Four fears of cashless

- Privacy
- Usability
- Security
- Financial

Objectors to cash...



Yves Mersch, *Why Europe Still Needs Cash*,
ECB Board member,
<https://www.ecb.europa.eu/press/key/date/2017/html/ecb.sp170428.en.html>

What is cash though?

Cash is free



Cash is free



Japan spends around \$500M per year on banknote production. Around 27% of central bank operational costs

Cash is free

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UK Link cash machine network turnover £8M



Cash is anonymous

www.wheresgeorge.com/realtimetypehitmap.php#

aurora Google Maps Yahoo! News Popular boat Apple Yahoo! Comms m&s UEA Travel personal

Search Where's George? - Official Currency Tracking Project

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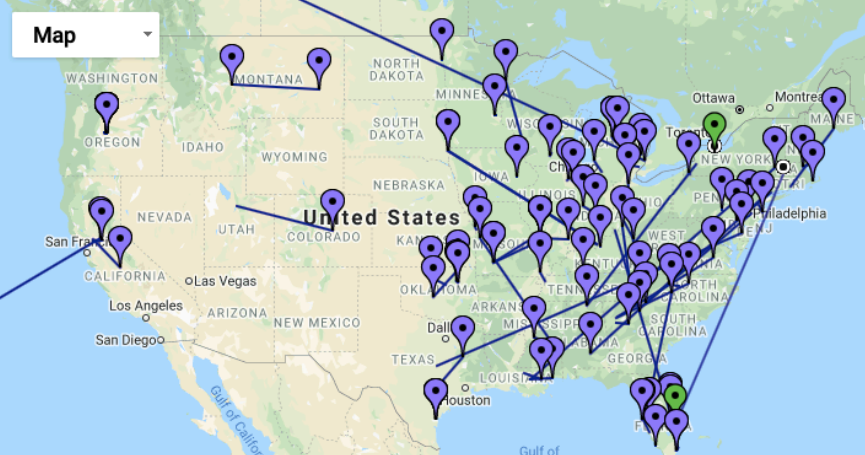
Logon

Real Time Hit Feed Map


Real Time Hit Map Popup

[Hide Hit Paths] | Realtime Feed Status:Running (click to Pause) ..

Map



OWN YOUR SUCCESS




Howell, MI
1st hit
One: D8966--8C
This bill came from the drive up window at Culver's last fall


Chicago, IL
1st hit
Five: ML859--45J
Convenient store

Holland, MI
1st hit
One: F1167--0G
Huntington bank holland

Sandwich, MA
1st hit
One: F0913--7E
Faded, received from Inheritor sales FM

Facebook
Now find us on.


Facebook


Twitter

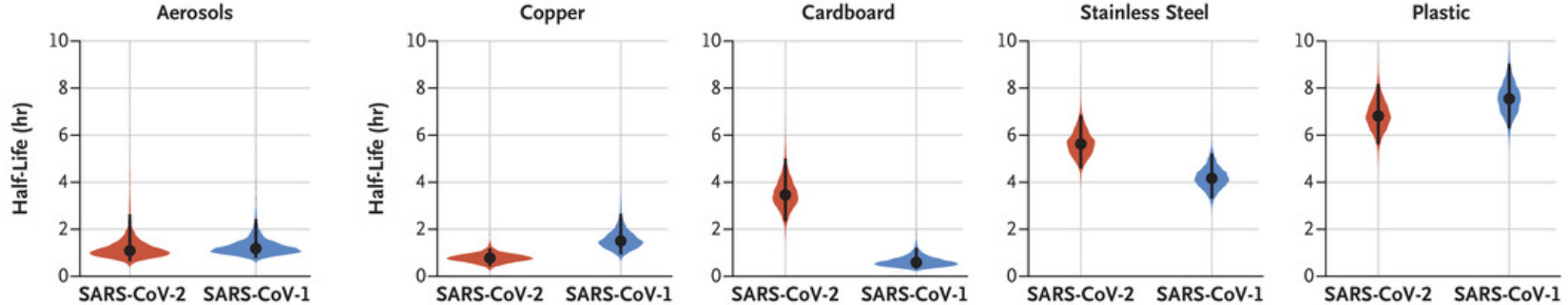
Cash is secure



Cash is safe

Viability of SARS-CoV-1 and SARS-CoV-2 in Aerosols and on Various Surfaces.

C Half-Life of Viable Virus





BBC BITEZSIZIE Weimar Germany 1918-1924

What do we mean by cashless?

Figure 3 Scoring of payment instruments on key attributes of payments

	Legal Tender	Convenience	Direct Settlement	Anonymity	Availability	Reliability	Safe Haven/Fallback	Tangible/Budgeting	Secure	Efficient	Remote payment	'Higher' value payment >5000 EUR
Cash	✓	✓	✓	✓	✓	✓	✓	✓	+	+	✗	✗
Cards	✗	✓	✗	✗	+	+	✗	✗	+	✓	✓	✓
Debit card	✗	✓	✗	✗	+	+	✗	✗	+	✓	+	+
Credit card	✗	✓	✗	✗	+	+	✗	✗	+	+	✓	✓
Prepaid card	✗	✓	✗	✓	+	+	✗	✗	+	+	+	✗
Credit transfer	✗	✓	✗	✗	+	✓	✗	✗	+	✓	✓	✓
Direct debit	✗	+	✗	✗	+	+	✗	✗	+	✓	✓	✓
Cheques	✗	✗	✗	+	+	+	✗	✗	✗	✗	✗	✗
Mobile	✗	✓	✗	✗	✗	+	✗	✗	+	+	✓	✗
Internet	✗	✓	✗	✗	✗	✓	✗	✗	+	+	✓	✓
Crypto currency	✗	+	✓	+	✗	✗	✗	✗	✗	+	✓	✗
Instant payments	✗	✓	✓	✗	✗	✓	✗	✗	+	+	✓	✓

World Cash Report 2018, G4s,
Table compiled by G4s and
Payments Advisory Group

Four fears of cashless

- Financial
- Privacy
- Usability
- Security

Financial fears

Credit cards fees

Fee	What	Possible cost
Transaction charges	Charge for each payment	1% to 3%
Amex fee	Extra cost of Amex	1 -2% more than normal payments
Method		Higher cost for car-holder not present payments
Service charges		0.2 to 0.3%
Service fees		£10 to £15 per months
Merchant account fees		£5 to £15 per month
Authorisation	Transaction auth fees	£0.01 to £0.03 per sale
Card machine		£30 to £80
Set-up	Installation	£100 or less

Gresham's Law

- Bad money drives out good.
- Encapsulates two meanings:
 - 1. A race to the bottom
 - 2. If one currency is cheaper than another but they have equal purchasing power, the cheaper will dominate.

Overcoming the Zero Lower Bound

- Central Bankers are keen to pass-on negative interest rates to consumers!
- Consumers are not so keen!
- Technically quite feasible to insulate small consumers against ZLB
 - Non-linear interest rates

Privacy fears

The privacy myth

- Cash is far from anonymous in practice
 - Anonymity is not the same as privacy
 - Privacy is best protected via legislation
 - Distributed ledger systems (such as bitcoin) are only anonymous to some extent
-
- Total anonymity is not realistic
 - Privacy is improved via recent legislation (GDPR, CCPA etc)

Main objections to cashless

- ~~Privacy~~
- Usability
- Security
- ~~Financial~~

Usability fears

Usability



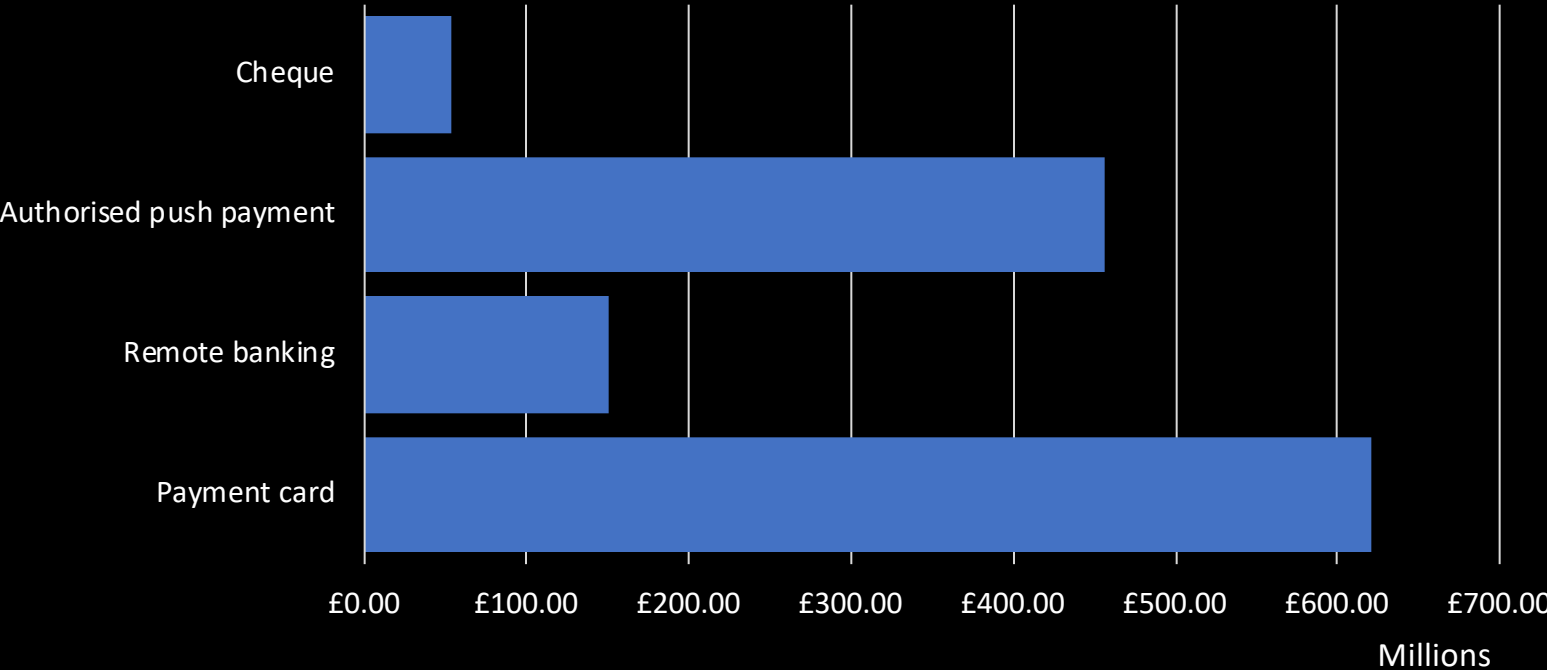
- The bankless
 - A major problem in the UK
 - Basic bank accounts are hopeless
 - No state bank account (yet)
- The computerless
 - The decimalisation experience
 - Mobile phones are affordable for everyone
 - Les Médiathèques
- The spendthrift
 - Monzo budgeting
 - Open banking

Security fears

Security

- The most serious of the concerns
- Digital money appears to be hideously insecure compared to cash

Sidebar: fraud in UK



“Fraud- the facts 2020”, UK Finance, <https://www.ukfinance.org.uk/policy-and-guidance/reports-publications/fraud-facts-2020>

Sidebar: fraud in UK

Fraud-to-turnover
ratio: 0.08%



“Fraud- the facts 2020”, UK Finance, <https://www.ukfinance.org.uk/policy-and-guidance/reports-publications/fraud-facts-2020>

Security

- The most serious of the concerns
- Digital money appears to be hideously insecure compared to cash
- Fraud thrives on insecure communication
- So far, no large scale, attacks on major banks (I think!)

Mitigations

- Everyone should have two, independent, bank accounts
- Redundant IT is critical
- State bank accounts
- Daily flow restrictions (to prevent a run)
- Smart money/programmable money

Programmable money

Bob

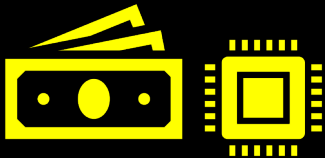


Alice



Programmable money

Bob

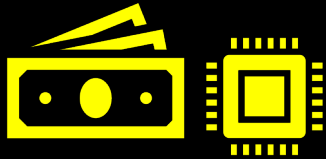
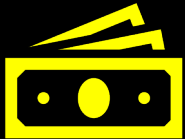


Alice



Programmable money

Bob



Alice

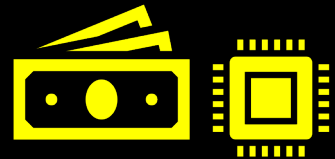


Programmable money

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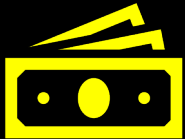


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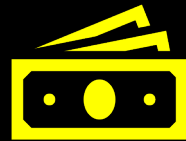


Programmable money

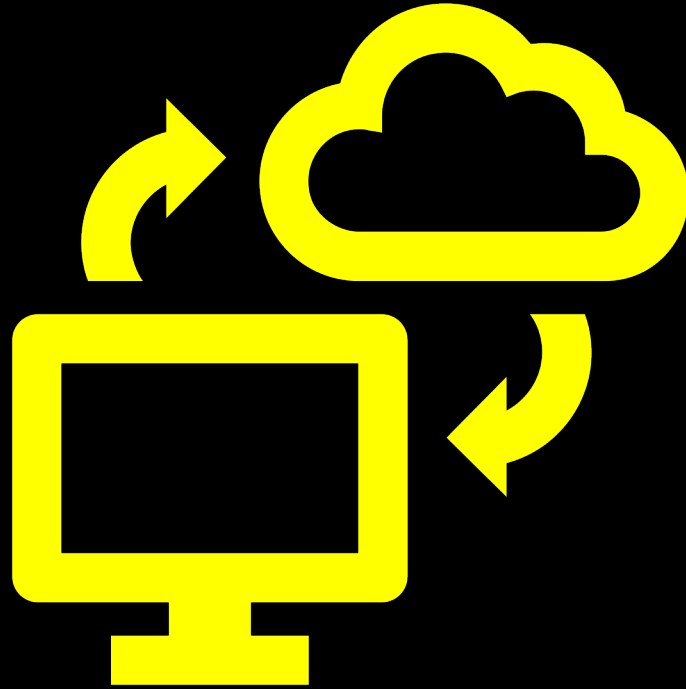
Bob



Alice



The bank manager of the future?



Next lecture:

“Digital healthcare: will the robot see you now?”

Thursday 4th June 2020 18:00 UK time

www.gresham.ac.uk