



hochschule aschaffenburg
university of applied sciences

Pros and cons of cash: the state of the debate

**Presentation at the
Joint conference “Cash on Trial” organized by
SUFER/Liberales Institut/University of Zurich**

Zurich, 4-5 November 2015

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1. The resource costs of cash

→ “Resource costs”

This term is often used to underline that all costs are considered – excluding external costs (such as effects on crime).

Basically it consists of

- production costs of those entities offering payment services
- plus
- use of own resources (incl. time) of payment service users

1. The resource costs of cash

→ The case against cash

James Gleick (1996)

“Cash is dirty ... Cash is heavy ... Cash is inequitable ...
Cash is quaint, technologically speaking ... Cash is
expensive ... Cash is obsolete.”

By contrast, electronic means of payment are
clean, technologically advanced, supposedly cheap
and convenient.

Interestingly, some regulators seem to agree.

1. The resource costs of cash

→ The case against cash: examples

Holland

PROMOTING ELECTRONIC PAYMENTS

The Forum seeks to improve the social efficiency of the Dutch payment system. The social costs of the payment system can be reduced by replacing cash payments with electronic payments. With this in

National Forum on the Payment System, Report 2013, p. 17

The Forum is chaired by the Dutch Central Bank (DNB)

Sweden

Does cash have any future as legal tender?

Björn Segendorf and Anna Wilbe¹

The authors work in the Financial Stability Department at the Riksbank.

Economic Commentaries, No. 9, 2014

1. The resource costs of cash

→ The case against cash: examples

The European Union

To enable the internal market to function effectively, the use of electronic payments should be promoted and facilitated to the benefit of merchants and consumers. ... Card-based payment transactions instead of payments in cash could therefore be beneficial for merchants and consumers, provided that the fees for the use of the payment card schemes are set at an economically efficient level, ...

REGULATION (EU) 2015/751 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2015 on interchange fees for card-based payment transactions, Recital 8

1. The resource costs of cash

→ The case against cash: position of the card schemes

Of course, the card schemes agree.

MasterCard:

“What is the essence of SEPA? I believe that SEPA is all about winning the ‘War on Cash’ in Europe.”

(Labak 2005)



News Analysis: Visa declares war on cash

23.03.2005



1. The resource costs of cash

→ The case against cash: estimates

EPC Cash Working Group (2003)

Costs of Cash of Banks and Retailers in the EU



“no less than EUR 50 billion (or 0.4 to 0.6% of GDP)”

10%: Central banks

22%: Banks outgoing

42%: Banks incoming/recycling

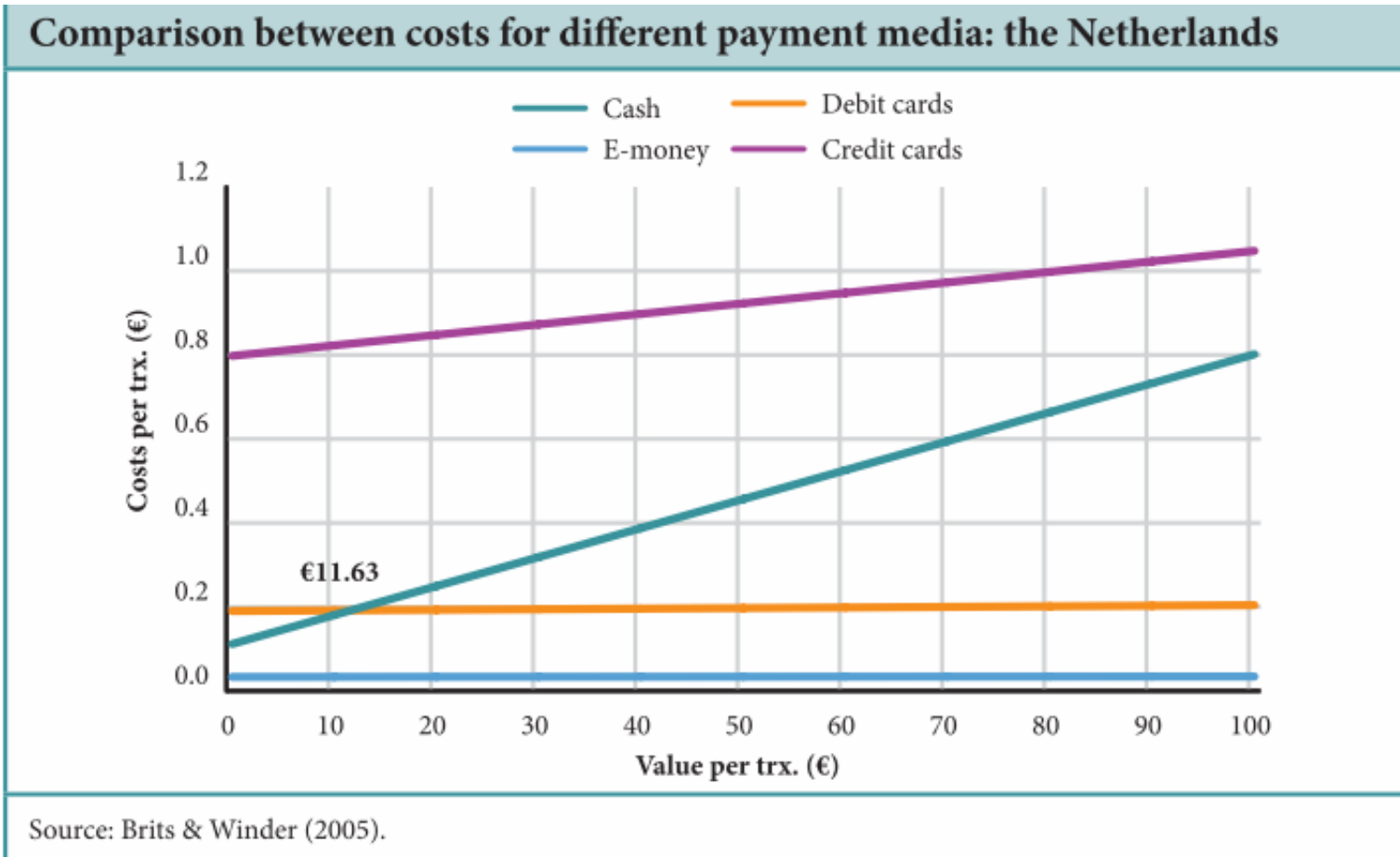
26%: Retailers

The EPC also came up with an estimate of the number of cash transactions: 360 billion.

Put together, that yields an estimated cost per cash transaction of 15 cents. Is that so bad?

1. The resource costs of cash

→ The case against cash: estimates



1. The resource costs of cash

→ The case for regulation

Choice of payment instruments:

Ideally, this should be an issue of competition.

May the best win!

But there are doubts that competition may do the job.

- Payment services are a network industry
- No level-playing field

Whatever the reasons, European policy makers seem to think that action is required and have endowed central banks with the task to promote the “efficiency of the payment system”.

1. The resource costs of cash

→ Payment services are a network industry

Payments are a network industry and many types of payments can be described as two-sided markets.

As such, competition may work only imperfectly due to

- Access inertia
- Chicken and egg / critical mass phenomena

In particular, there is the argument that cash as the “incumbent” will profit from these effects and will maintain a substantial market share – even if other means of payment are superior.

1. The resource costs of cash

→ Payment services are a network industry

Given the nature of payment systems, there may be a case for regulation.

But:

- Difficult to define an optimal policy.
- Simple rules such as “cost-based pricing” do not necessarily follow from the theory of two-sided markets.

1. The resource costs of cash

→ Level-playing field arguments

Unfair competition because cash is “legal tender”?

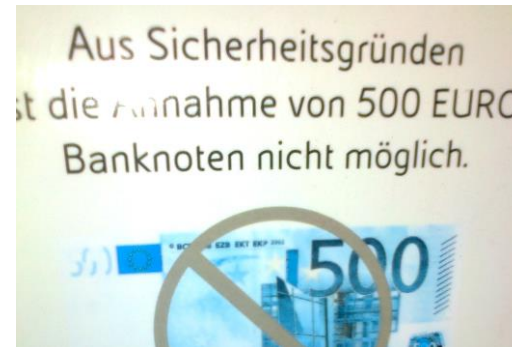
“Legal tender” – what does that mean?

Difficult to answer!

What it does **not** mean:

“Everybody has to accept cash.”

Just look around a bit the next time you visit a gas station!



1. The resource costs of cash

→ Level-playing field arguments

Central bank involvement in issuing and processing cash

Should central banks charge more for cash services?

That seems questionable since cash is hugely profitable.

Central bank involvement in “product management”

In the competition between cash and cards central banks – the issuers of cash - profess “neutrality” (or even support cards). The card schemes do not exhibit such restraint.



1. The resource costs of cash

→ Level-playing field arguments

Other regulations

For the past decades, there have been more and more severe restrictions on the use of cash:

Maximum transaction amounts for

- Cash transactions in general
- Commercial transactions with cash

Taxes on cash withdrawals (agreed in Ireland)

Cards are also increasingly regulated, however, with the express aim to promote their use (increase security, reduce costs for merchants, enhance card holder rights, etc.)

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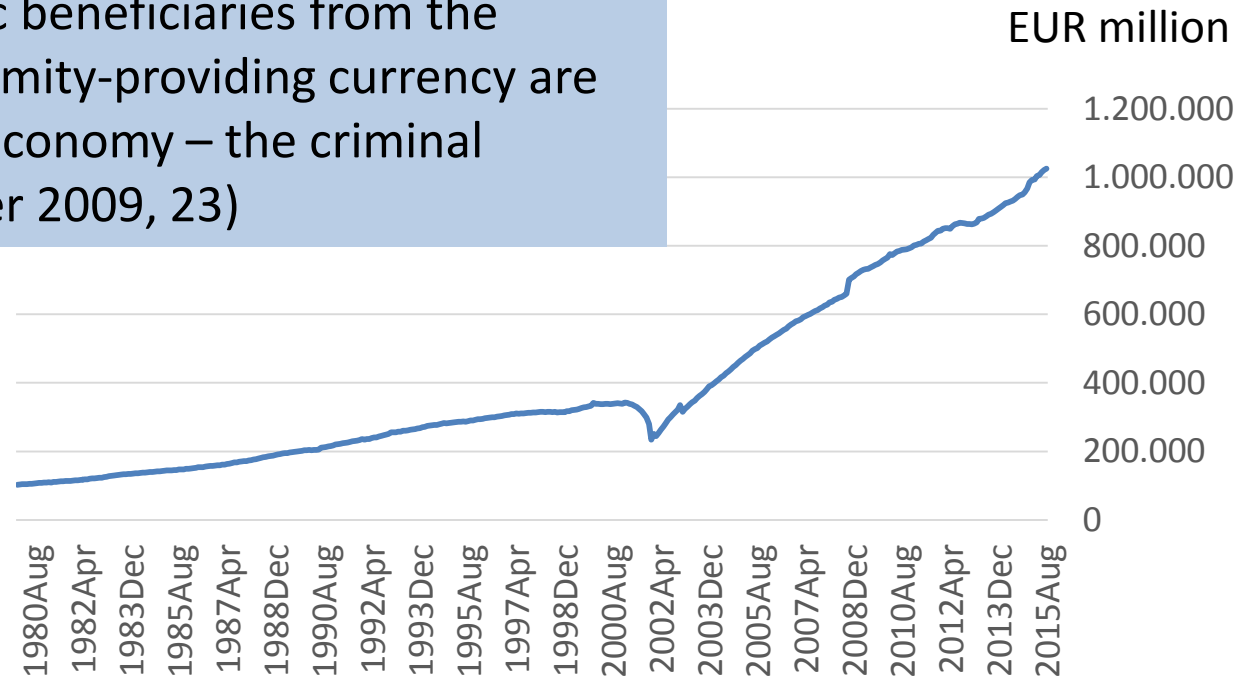
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2. External effects

→ Use of cash in the shadow economy and by terrorists

The rising stock of cash in the Eurozone:

„The only domestic beneficiaries from the existence of anonymity-providing currency are the underground economy – the criminal community“ (Buiter 2009, 23)



Huge rise in black market activities in the Eurozone?

2. External effects

→ Use of cash in the shadow economy and by terrorists

Hide income from legal transactions (tax evasion)

Carry out illegal transactions (drugs, ...)

No doubt:

Cash is a interesting means of payment (and store of value) in connection with these activities.

But the questions are:

- If we are to abolish cash, how strong would be the effect on these activities?
 - availability of substitutes
- Is abolition of cash first best or are there better alternatives?
- Reduction of illegal labour = unqualified benefit?

2. External effects

→ Foreign use of cash

Some currencies such as the US dollar or the euro are heavily used outside of their respective currency areas.

This is particularly the case in areas that lack a stabile money (medium of exchange, unit of account, store of value).

Obviously, economic agents do have to pay for obtaining money (usually with goods). (Or, looked at from a different angle: The local issuer of money loses seignioarge.)

But the benefits of having recourse to stabile money seems to exceed the costs of obtaining USD, Euro etc.

Thus, there remains a positive external effect which would be lost if Euro and Dollar banknotes were abolished.

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3. Privacy and data protection

→ Data, data, data

Data availability increases:

- Data created via use of communication devices
- Data created in social networks
- Data created in electronic payment systems
- Data created by video surveillance cameras in public places

Adding a few more payment data – does it matter?

Cash payments are more than “a few” (we estimate 500 cash trx. per person in Germany compared to 30 card trx. (Krueger and Seitz 2014))

3. Privacy and data protection

→ Data protection and "bad behavior"

Data availability touches upon the relationship

- citizen – state
- customer – businesses
- person – person

In any of these relationships there may be legitimate reasons for seeking privacy.

In 2002 we wrote

“There are many reasons why people may prefer anonymity – many of which are connected with “bad” behaviour.”

(Drehmann/Goodhart/Krueger 2002)

But “bad” does not necessarily mean “illegal”. Moreover, we pointed out that governments may also mis-behave.

3. Privacy and data protection

→ Electronic cash equivalents

Of course, it is conceivable that an anonymous electronic means of payment could be created. At the moment, Bitcoin receives a lot of attention. But:

From the point of view of uses, such products are complex and it is difficult to ascertain, how well anonymity is protected.

From the point of view of governments, such products would be worse than cash:

Criminals, terrorists, etc could send around millions across the globe with one click.



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4. Macro-economic effects

→ Zero lower bound

During the crisis, rates should have been negative.

According to some estimates for the US, as low as -5% or even -7.5% (quoted in Buiter 2009).

Japan has battled since the 1990s with a mild deflation and is incapable to return to an inflation rate in significantly positive territory.

As a consequence, more and more economists are contemplating drastic action to make negative rates possible. (Rogoff, Buiter, Haldane, ... sceptical: McAndrews)

4. Macro-economic effects

→ Zero lower bound

The problem with cash:

Cash has a nominal return of zero and a real return (taking carrying costs into account) that is mildly negative.

$$i_C^{real} = i_c^{nom} - k = -k$$

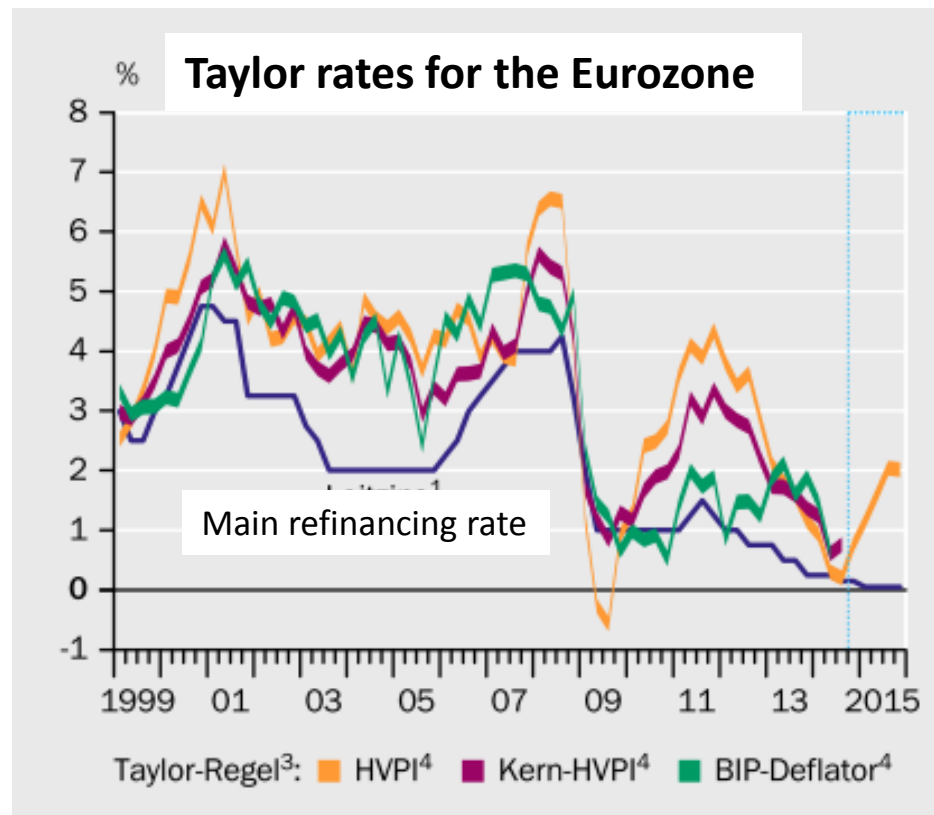
Once a negative rate on short-term instruments such as bank deposits, money market funds etc. is introduced, there comes a point when it will be profitable to take cash out of the bank and store it (under the mattress, or wherever).

Thus, an attempt to get interest rates significantly into negative territory (below $-k$) requires a mechanism to interfere with this hoarding behavior.

4. Macro-economic effects

→ Do we need negative rates?

Not everyone agrees.



Council of Economic Experts – Expertise 2014/15, p. 143

4. Macro-economic effects

→ Are there alternatives?

What is the problem?

- Bank lending is down.
- Saving is high relative to investment opportunities.

What is the proposed strategy?

“Bring down the riskless interest rate.”

But why not “Bring down the risk premium”?

As Hellwig recently pointed out, central banks are banks.

Why are they so keen to avoid risk?

In fact, they have started taking on more risk and they should continue to do so – if it is necessary.

After all, that is just a return to the roots of central banking.

4. Macro-economic effects

→ Are there alternatives?

Saving is high relative to investment opportunities.

If this is the case, fiscal policy may be the right tool.

Economists like Summers and von Weizsäcker are calling for more government borrowing to finance public investment.

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5. Proposed policies

→ Many ideas

Focus on costs of payments

- Promote cards (and other e-payments)
- Cost-based pricing
- Central bank e-money
- Nudging
- Abolish large-value notes

Focus on zero lower bound

- Abolish cash altogether
- Carry tax on cash (“Schwundgeld”)
- Monetary separation

5. Proposed policies

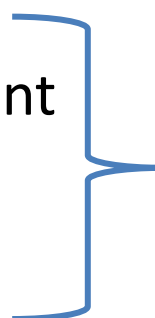
→ Many ideas

Nudging (van Hove 2009)

Cash users as “polluters”:

“Thaler and Sunstein note that polluters impose externalities on others (o.c., p. 184). This is also true for cash users (cf. supra). ... Just as polluters "do not pay the full costs that [they] impose on the environment" (ibidem), cash users can in part free ride on others.” (van Hove 2009, p. 10)

- altering the default option
- making cash withdrawals somewhat less convenient
- engage in consumer education
- dis-continue issuing large denomination notes



**And if it
does not
work?**

5. Proposed policies

→ Many ideas

Abolish cash altogether (Rogoff 2014, 11)

“... given the role of paper currency (especially large-denomination notes) in facilitating tax evasion and illegal activity, and given the persistent and perhaps recurring problem of the zero bound on nominal interest rates, it is appropriate to consider the costs and benefits to a more proactive strategy for phasing out the use of paper currency.”

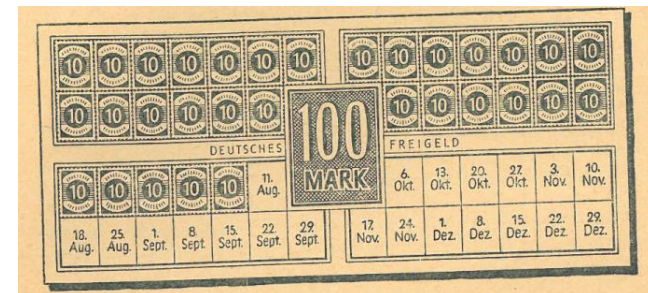
5. Proposed policies

→ Many ideas

A come-back of Gesell's ideas ("Schwundgeld"):

A carry tax on money Goodfriend (2000, 12-13)

"To supplement the carry tax on electronic reserves, a carry tax could be imposed on currency by imbedding a magnetic strip in each bill. The magnetic strip could visibly record when a bill was last withdrawn from the banking system. A carry tax could be deducted from each bill upon deposit according to how long the bill was in circulation since last withdrawn and how much carry tax was "past due."



5. Proposed policies

→ Many ideas

Monetary separation: A flexible exchange rate between cash and deposits (Buiter, various papers, Agarwal and Kimball 2015)

Buiter: introduce a new unit for cash, the “wim” (€ for deposits)

Agarwal and Kimball: a time varying deposits fee for cash

In both cases, there would be an exchange rate between cash and deposits that could differ from 1.

In times of depreciating currency, there could be a negative interest rate on deposits without triggering a large flight into cash.

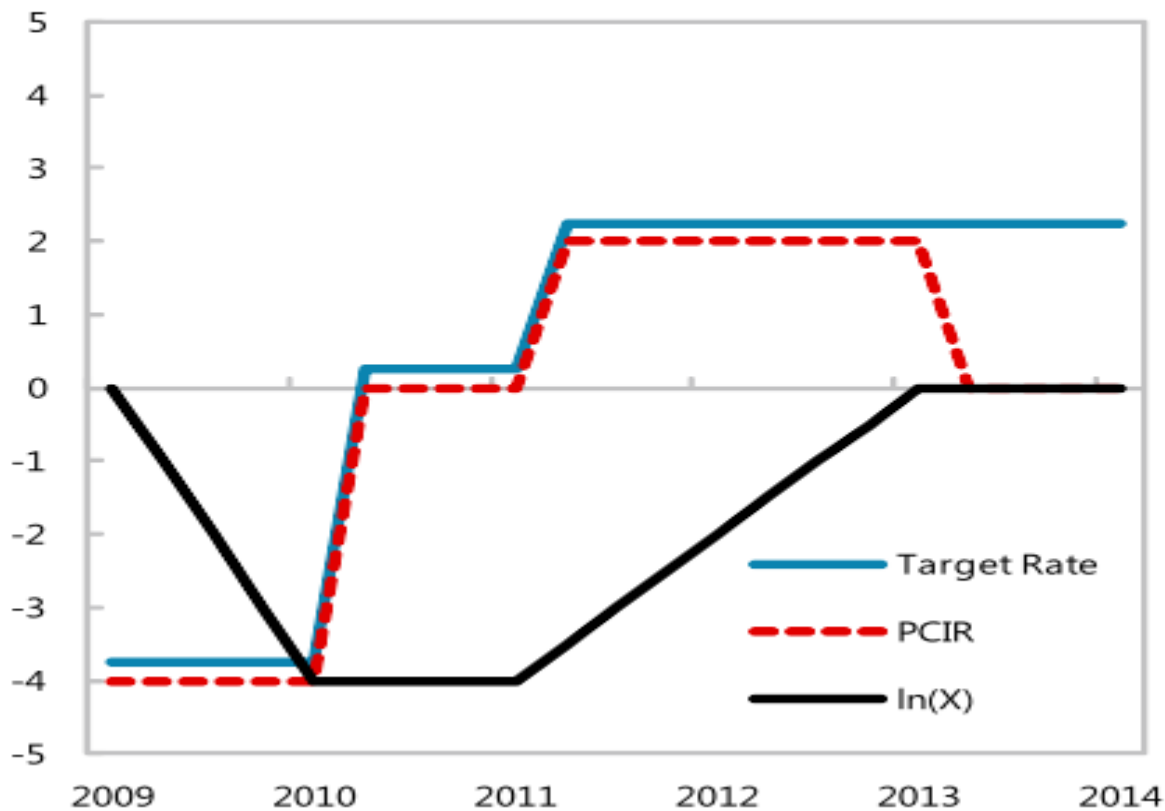
This idea partly draws on older research on monetary separation, the New Monetary Economics and ghost money.

5. Proposed policies

→ Many ideas

An example with negative interest rates for a temporary period

Case 2: Gradual Return to Par
(Percent)



X = electronic dollars
per paper dollar

Source: Agarwal and Kimball 2015

5. Proposed policies

→ Many ideas

Many ideas - but would they work?

- If carrying costs or exchange rate changes are small:
 - Cash may be accepted at par by retailers and in P2P.
 - Means of payment function little affected.
 - (But: Both types of policy would add extra costs to retailing.)
 - Store of value? Future spending at par possible.
- If carrying costs or exchange rate changes are large:
 - Cash may not be accepted at all by retailers (and in P2P).
 - Cash would no longer serve as means of payment.
 - Cash would lose its special features as store of value.

Moreover: Political “costs” may be far from trivial!

5. Proposed policies

→ Many ideas

Following the debate, I am reminded of F.A. Hayek and his critique of what he calls “constructivism”:

the innocent sounding formula that, since man has himself created the institutions of society and civilisation, he must also be able to alter them at will so as to satisfy his desires or wishes.

F.A. Hayek. The errors of constructivism, in: New Studies in Philosophy, Politics, Economics, and the History of Ideas, London 1978, p. 3.

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6. Miscellaneous issues

→ 6.1 Stability of the payment system

What if the electronic payment system is down?

What if its security is compromised?

Paper works without infrastructure (to a certain extent).

Example: bank strikes in Ireland:

→ Heavy use of cash, checks and foreign cash.

Problem today:

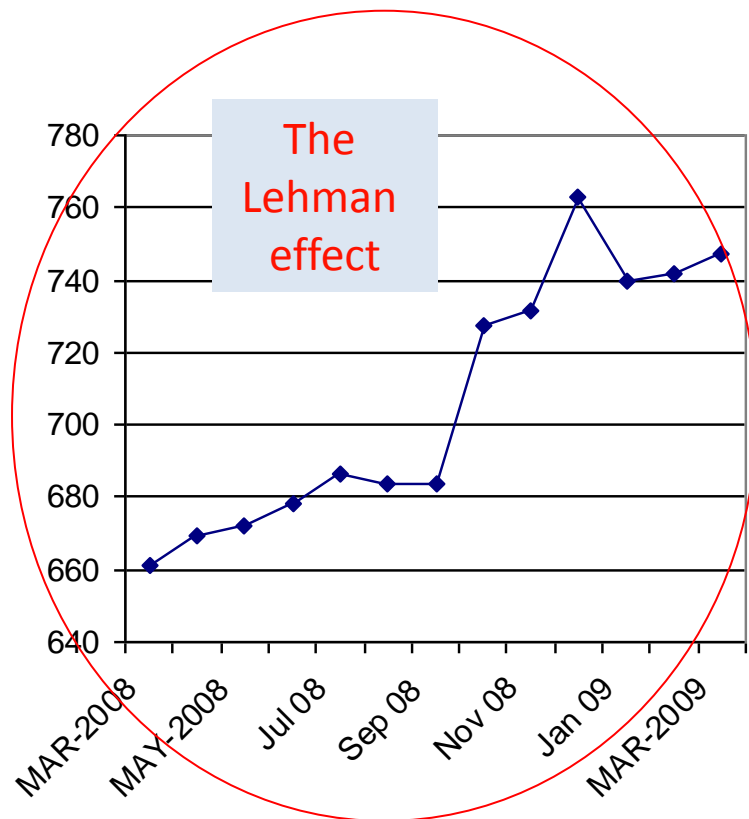
- In many countries, checks are on the way out.
- Access to cash mostly by card.

But what are the fall-back solutions in an all electronic world?

I don't see any.

6. Miscellaneous issues

→ 6.2 Bank runs with and without cash



Oct. 2008:
+EUR 43.7 billion

We are used to see bank runs as accidents with a potential to create economic disaster.

But a “run” on banks may actually have beneficial results.

If all “runners” find that they actually can take out “their cash” they are no longer worried.

An emerging panic is drowned in cash and confidence is re-instated.

Arguably, this happened in October 2008.

6. Miscellaneous issues

→ 6.2 Bank runs with and without cash

If there is no cash, there is no way in which the public can take its funds out of the banking system. It is trapped within the banking system.

At times, that may prevent panic.

But at times, it may increase panic.

A frantic buying and selling of all kinds of assets (shares, gold, real estate,...) may be the result. But of course, such transactions can only reduce deposits of individuals – not of all bank customers in the aggregate. (The “hot potato” problem.)

6. Miscellaneous issues

→ 6.3 The role of cash for modern banking

Banks seem to view cash mainly as a burden.

In the eyes of bank customers, cash may be the fundamental factor that distinguishes banks from non-bank competitors.



Willie Sutton
(1901 – 1980)

My favorite theorist of money and banking.

Actually, he was more of a practitioner who could look back on a long and distinguished career as bank robber.

6. Miscellaneous issues

→ 6.3 The role of cash for modern banking



Willie Sutton
(1901 – 1980)

„Sutton’s law“

„A bank is where the money is“.

Obviously, Sutton refers to cash.
That’s not unusual. For most people
“money” means “cash”.

If the “money” is not in the bank
anymore –
is a “bank” still a “bank”.

Beyond policy

In a similar vein ... a comment from the menu of my favorite Biergarten in Aschaffenburg

*As payment we accept
money - not plastic!*



*Zum Bezahlen nehmen
wir Geld – kein Plastik!*



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