

Cash on Trial

***Findings from a conference jointly organized by SUERF, University of Zurich and Liberales Institut
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Over millennia, mankind has used hard cash in various forms ranging from shells to gold coins and paper. More recently, cash has become unpopular in political circles, as it effectively restricts states' power to tax (explicitly or via negative interest rates) or to survey and potentially control their citizens. Several states have enacted restrictions to the use of hard cash. Above all, a strong new competitor to cash has arisen in the form of various electronic means of payment. Are we heading towards a society in which "coined freedom" (Dostojewski) will cease to exist?

Under this provocative "motto" SUERF organised a combined evening event (in German at the University of Zurich) and one-day conference (in English at the theatre "Millers" in Zurich) to take stock of the arguments brought forward in the current debate on the pros and cons and, more generally, the future of cash.

The main findings were the following:

- There are three main lines of arguments brought forward against cash: first, it is costly, inefficient and outdated. Second, it facilitates criminal activity, money laundering and tax evasion. Thus cash generates several negative externalities. Third, it limits the leeway for monetary policy to drive nominal interest rates deeply into negative territory to fight recessions and deflation.*
- The main arguments mentioned in favour of cash are: It is still the preferred means of payment by many people in many countries. It is fast and easy to use, and facilitates the monitoring of expenses; thus is particularly important for young, old, less educated and lower income groups. It preserves privacy and anonymity both vis-à-vis the state and against transaction partners. It limits states' powers against individuals, which may be particularly urgent in unlawful states and in countries with hyperinflation. Thus world currencies available in cash generate a positive externality. Cash appropriately prevents central banks from implementing excessively low interest rates, which erode pension savings and lead to resource misallocation as well as asset price bubbles. It generates seigniorage for the central bank (i.e. for the state) rather than for private payment service firms.*
- Ideally, the choice of payment instruments should be determined through competition; however, such an approach is difficult to implement because of the nature of payment services as a network industry. There are simultaneously various distortionary elements in force which either favour cash or put it at a disadvantage. More systematic information on competitive neutrality and subsidisation of different payment as well as a systematic cost-benefit analysis of alternative methods of payment is desirable.*
- Crises trigger a sharp increase in currency circulation over nominal GDP; this effect lasts for about two decades after the crisis, until memory of the crisis fades. Cash provides an*

insurance against very bad outcomes, such as economic crises, hyperinflation, or the failure of computer or electricity networks. The costs of cash can therefore be viewed as an insurance premium. It is not clear how robust electronic payment systems would be in the absence of cash.

- *Moderately negative interest rates are possible also in the presence of cash. It is not undisputed whether negative interest rates are desirable at all. Monetary policy is not powerless at the zero lower bound (forward guidance, QE). The case for abolishing cash for monetary policy reasons cannot assume a binding zero lower bound, the effective lower bound on nominal interest rates is currently considered to be around -1%.*
- *Restricting the use of cash could indeed lead to less criminal activity. However, the impact would likely be modest. Crime should be addressed at the source not at the final stage of payment flows. Many of the most damaging crimes in the recent past were not associated with cash.*
- *Any attempt to restrict the use of cash must take into account the negative externalities of such regulations, including the impact on disadvantaged groups of society and on people in other countries (e.g. with regard to remittances, escape option in unlawful states and countries with hyperinflation).*
- *Electronic wallets could be a superior alternative to cash: transaction costs are lower, violent crimes are less likely, anonymity can be preserved, and negative interest rates can be implemented. The blockchain technology can be used in a wide range of applications including digital currencies.*

The evening event was well attended with around 200 people filling all seats of the auditorium.

Peter Bernholz, Professor emeritus, University of Basle, started out with an overview of the usual arguments for an abolition, or limitation on the use of, cash: allowing monetary policy to move nominal interest rates deeper into negative territory; fighting tax evasion and black markets; fighting illicit transactions, money laundering and terrorism. However, these advantages have to be weighed against advantages of keeping cash: individual privacy and personal liberty; the poor might be particularly affected by an abolition of cash; a limit on financial repression and the threat to private pension savings from negative nominal interest rates; a limit to the negative real economic effects (misallocation of resources) from negative nominal interest rates; a limit to central banks' capacity to generate stock and real estate price bubbles through negative interest rates; having a backup means of payment in the event of the failure of technical systems; and, last but not least, the possibility for citizens to hold (foreign) cash as protection against the arbitrariness of unlawful or irresponsible governments (e.g. authoritarian states, governments generating hyperinflation). If the US or the Euro Area were to abolish cash, the positive externality of these currencies for citizens from unlawful states would be lost. In a longer perspective, Bernholz views the current drive to actively abolish cash as a continuation of the erosion of monetary stability that started with the abolition of the gold standard and went on with the demise of the Bretton Woods system.

Friedrich Schneider, Professor of economics, University Linz, explained that our knowledge about the proceeds of transnational crime and about the eventual use of these proceeds is quite limited. The fight against international crime is hampered by the lack of international cooperation. Schneider calls

for the establishment of international organisations that are in the position to fight transnational crime on a global level. Regarding the use of cash by criminals, Schneider observes that cash is used for many criminal activities because it does not leave traces. As a consequence, restricting the use of cash can reduce criminal activity. However, the impact will be modest (10%-20% at most) because profits of criminal activity will remain quite high even after a potential abolishment of cash. According to Schneider, in some cases (e.g. drug-trafficking) liberalisation and legalisation could help reducing organized crime.

The following *panel discussion* led by **Michael Rasch**, *Neue Züricher Zeitung*, gave the audience the opportunity to inquire about further details on both presentations. The comments and questions raised by the audience bore witness to a strong preference for cash, which is also reflected in the continued high importance of cash in Switzerland.

The *conference on the following day* assembled around 100 participants and was couched as a court trial in which cash – in line with recent allegations by prominent economist – was “accused” of three charges: First, cash is an essential part of many kinds of criminal activities. Second, it is an inefficient means of payment. And third, it prevents central banks from implementing optimal monetary policy in times when price stability would require negative interest rates.

Ahead of the actual “trial”, two presentations provided an overview and background information. **Malte Krüger**, Professor of Economics, University of Applied Sciences in Aschaffenburg, critically reviewed the state of the debate on the pros and cons of cash. Resource costs of cash (production costs, time of users) are generally considered to be quite sizable. Regulators, monetary authorities and, not surprisingly, private payment services share this view and there are several initiatives at national and pan-European levels under way to promote electronic payments. Ideally, the choice of payment instruments should be determined through competition; however, the nature of payment services as a network industry and various distortions raise serious doubts about such a “market-based approach”. Access inertia, chicken-and-egg and critical mass effects favour cash as the incumbent. Simple rules such as “cost-based pricing” do not necessarily yield the optimal result. The nature of cash as legal tender in practice does not imply that everybody accepts cash of any denomination and amount as payment. Central banks, while often not charging for issuing and processing cash, at the same time earn non-negligible seigniorage from cash issuance. Contrary to private payment services, they do not advertise cash as a payments medium. On a regulatory level, cash is in many countries actually put at a disadvantage compared to electronic forms of payments (maximum amounts, constraints on tax deductibility of cash transactions). As regards the use of cash for illicit activities, the question is to what extent the abolition of cash would diminish these activities. This depends on the existence of substitutes for cash (foreign cash, electronic cash equivalents, some of which seem to have a number of other disadvantages). Also, the abolition of cash is probably not the first best measure to fight crime. He also questioned whether the abolition of illegal labor would be an unqualified benefit in all respects, given that high tax wedges on labor provide strong incentives for do-it-yourself, which may run counter to principles of comparative advantage. Krüger also reviewed various policy proposals aiming to make cash payments or holdings more expensive and less attractive. These proposals range from the abolition of large-denomination banknotes and making cash withdrawals less convenient; a carry tax on cash similar to Gesell’s Schwundgeld ideas; “monetary separation” in the sense of a flexible exchange rate between cash

and deposits; to the abolition of cash altogether. Finally he also raised doubts of the robustness of a payment system without cash in periods of crises. A “bank run without cash” would imply that depositors, who no longer have the escape to cash, might frantically buy assets in the event of a panic.

Helmut Stix, research economist at the Oesterreichische Nationalbank, presented preliminary evidence on the demand for cash across countries and over time, drawing on unique data sets just recently compiled. He showed that currency in circulation in relation to nominal GDP has not fallen since the turn of the millennium but instead increased strongly since the onset of the financial crisis. The high per capital cash holdings of USD and EUR reflect mostly foreign demand and hoarding, rather than payment transactions. Long time series spanning the last one and a half centuries for Austro-Hungary/Austria, the United States and Germany/the Euro Area show that crises trigger a sharp increase in currency circulation over nominal GDP; this effect lasts for about two decades after the crisis, until memory of the crisis fades. Time series for 57 countries covering 95% of world GDP show that the most important currencies in circulation are the Euro, the US dollar, the Japanese yen and the Chinese renminbi. Per capital circulation is highest in Switzerland, Japan, Hong Kong, Singapore, the Euro Area and the United States. The increase in currency demand is widespread across the vast majority of countries. Even in 2009, when world GDP contracted sharply, currency in circulation expanded. Econometric estimations indicate that the recent strong increase in currency in circulation cannot be fully explained by standard money demand equations, i.e. the extremely low level of interest rates does not fully explain it. Instead, the current crisis seems to mirror observations from the Great Depression when a loss of confidence in banks and generally higher uncertainty drive people into holding cash.

Harry Leinonen, Senior Financial Counsellor, Finnish Ministry of Finance, with his presentation on “Why cash is suboptimal” acted as “witness of the prosecution” against cash. He started his observations with data on the evolution of the number of ATM cash withdrawals per capita between 2002 and 2014. The initial increase in all countries reflected the transition from branch cash to ATM cash; more recently particularly in the Nordic countries and the UK cash has increasingly been substituted by card payments, implying a decrease in the ATM cash withdrawals per capita. Basically, nowadays with ATM cash withdrawal being the norm, cash payments involve bank accounts much the same way as card payments, with the additional – costly detour of paper currency to be handled by banks and by stores. Cards and mobile payments are therefore cheaper and more efficient. In practice, cash payments are cross-subsidized by debit card payments, which results in biased user choices. In addition to direct payment and processing costs, cash also involves higher indirect costs (losses, robberies, safekeeping costs, tax evasion and black economy costs). 1-2% of GDP worth of savings could be achieved by abolishing cash. Cash is given preferential treatment by regulators, politics, consumer organisations and academics without good reasons. Regulators favour it by granting it exclusive legal tender status, accepting anonymity, and by subsidized cash transports and processing. Increased cost transparency would change consumer preferences in favour of card payments; probably, cash would disappear if it had to face open cost-based price competition. As a practical way forward, Leinonen proposed to abolish 1 and 2 cent coins as well as 100, 200 and 500 EUR banknotes. All payment instruments should benefit equally from zero interchange fees, i.e. all users would pay fees only to their own service providers. Basic payment accounts should also

accorded legal tender status. Modern technology could be used to introduce audit trails also for cash payments, while card customer data could be made less transparent for payment recipients.

Aleksander Berentsen, Professor of Economic Theory, University of Basel, with his presentation on “The fallacy of a cashless society” was the first witness of the defense. He argued that, as various central banks have shown recently, cash is no impediment to moderately negative nominal interest rates. Having said this, Berentsen noted that the very idea of negative real interest rates is a bad idea in the first place since it amounts to encouraging investments with positive private but negative social return, thus resulting in a waste of resources. Regarding crime and tax evasion, an abolition of cash would simply lead to new forms of circumvention through other cash-like substitutes. In terms of return, cash has always been inferior to other forms of savings. The reason why people use cash as a store of value is that cash is an insurance against really bad outcomes, such as financial crises (e.g. Lehman collapse), confiscatory taxes (e.g. Cyprus, Argentina), or forced conversion (e.g. Grexit). It also avoids reliance on third-party transaction processing, since it involves immediate settlement. It is easy to use and allows anonymity.

Nicole Jonker, researcher at De Nederlandsche Bank and the second witness of the defense, presented survey results on Dutch cash usage. In Holland, cash continues to be the dominant payments instrument. Cash is more frequently used by very young and very old citizens, by less educated and lower-income people. While in 2004 the main motives quoted by survey respondents in favour of cash payments were speed of payment, monitoring of expenses and acceptance by merchants, in 2014 the monitoring and cutting of expenses as well as habit figured most prominently. For many people, particularly those who continue to prefer cash payments, cash has two major advantages: first, it allows them to monitor their expenditure behaviour very directly, preventing them from overspending; second, cash sets clear expenditure constraints based on the simple availability of cash in the wallet. Electronic forms of payment so far fail to provide the same immediate and direct benefits of payment control, particularly for vulnerable groups, such as elderly, lower income or less educated persons.

Jens Ulbrich, Head of the Economics Department of the Deutsche Bundesbank and the third witness of the defense, offered some monetary policy considerations. He noted that the abolition of cash would impinge on civil liberty rights, affect confidence in the established monetary order and hurt the poor. Simulations conducted at the Deutsche Bundesbank show that indeed the zero lower bound of interest rates limits central banks’ ability to stimulate the economy and to drive up inflation. What does experience so far tell us about the effectiveness of open-market operations with long-term bonds (“QE”)? In theory, QE operates through a number of transmission channels, such as signalling (“forward guidance”), through which the entire yield curve can be lowered. The portfolio rebalancing channel implies that the term premium is lowered. Relative lower interest rates depress the domestic exchange rate. Empirical estimates by various authors find substantial effects of QE on real GDP and consumer price inflation. At the same time, QE also involves risks, such as disincentives for governments to pursue sound fiscal policies and structural reforms; search for yield and asset price bubbles; and a threat to banks and pension funds’ business model viability. All in all, monetary policy is not impotent at the zero lower bound; the zero lower bound is not binding; the zero lower bound argument is thus not suitable to argue in favour of the abolition of cash.

Paolo Tasca, Deutsche Bundesbank and ECUREX, acting as the first court expert, considered the potential role of digital currencies with a special emphasis on bitcoin. According to Tasca, the blockchain technology that underpins bitcoin allows for trustworthy records of transaction preserving anonymity. This technology cannot only be applied to digital currencies but to a much wider range of applications including rating or voting systems, distributed storage, authentication and anonymization of private information. Tasca presented figures showing that investment in bitcoin related start-ups is increasing rapidly even though the share of bitcoin related projects in total capital investments of start-ups is still relatively low. Furthermore, ongoing research reveals that the wealth distribution in the bitcoin system is highly unequal and that the mining industry can be regarded as an oligopoly.

The second expert of the court, **Friedrich Schneider**, complemented his presentation during the evening event at the University of Zurich by providing further information on money laundering. Money laundering is essential if criminals want to make use of the proceeds of their crime. Scrutinizing the different methods of money laundering, it becomes obvious that cash plays no dominant role. Furthermore, Schneider pointed to the growing importance of cybercrime. Cybercrime does not only entail direct costs (corresponding to criminal revenue) but includes also other cost components, e.g. costs to protect the computer infrastructure.

Nikos Passas, Professor of Criminology and Criminal Justice at Northeastern University and the third court expert, spoke about “Informal Payments, Crime Control and Fragile Communities”. Passas argued that many of the most damaging crimes in the recent past were not associated with cash. Cash neither contributed to the financial crisis nor to the LIBOR-scandal, nor was it used in the preparations of the 9/11 attacks. In the attempt to restrict the use of cash, the negative externalities of such regulations must be taken into account. Passas’ presentation made it clear that in this respect one cannot confine attention to Europe or the US but the impact on other countries must also be considered. For example, in their aim to fight terror, governments often hamper legitimate remittance payments. Even though regulation of the channels used for remittances is necessary to prevent the misuse of these channels for criminal activity, regulations should be proportionate to the risk and appropriate to socio-economic and cultural environments. In this regard Passas put special emphasis on the hawala-system. In the same vein, de-risking (i.e. financial institutions close down accounts that they regard as high-risk) raises both the cost to send remittances and systemic risk by e.g. shifting transactions to channels that are harder to monitor.

Jean-Charles Rochet, Professor of Banking at the University of Zurich, offered a wider view. He argued that cash does not matter but money is the important issue. Rochet predicted that cash will soon disappear. Nowadays cash is neither a good store of value nor the most suitable means of payment because cash involves high transaction costs and tends to generate crime. Electronic wallets are a superior alternative to cash. Electronic wallets exhibit lower transaction costs compared to cash and make violent crimes less likely. Furthermore, anonymity can be preserved. If cash is replaced by electronic wallets, negative interest rates can be implemented. Hence, the zero lower bound disappears. Even though demand for M1 might decrease, money will still matter as unit of account. Rochet observes that monetary decisions have a big impact on people (e.g. the consequences of the abandoning of the CHF-EUR peg by the Swiss National Bank or the distributional effects of quantitative easing). Concerning the control of our money, Rochet argued that currently technocrats

are in power and these policy makers (have to) take bold decisions, while from an academic perspective, our knowledge about many money related developments is still very limited

The conference was concluded by the philosopher **Peter Sloterdijk**, Karlsruhe University of Arts and Design, who introduced the concept of postmodern money. The era of postmodern money began when President Nixon announced to suspend the convertibility of the US dollar into gold. Postmodern money neither has an intrinsic value nor does it represent value but it refers exclusively to itself. Furthermore, Sloterdijk stressed the role of believing. Human beings, as believing animals, also believe in the value of money. According to Sloterdijk, economists underrate the will of economic agents to believe. However, this will to believe must be taken into account in deliberations on cash and payments.

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The positive feedback received by many spectators including the media after the “trial” of cash confirmed SUERF’s dedication and will to generate value through innovation and “out-of-the-box thinking” for the community of central banks and supervisors, financial practitioners, and academic economists. The topic addressed was proven to be not only relevant to monetary and financial circles but to societies globally. Merging deep analysis with a broad and encompassing collection of the various arguments and viewpoints has always been SUERF’s goal. The chosen “courtroom” setting proved not only to add an element of entertainment, thus ensuring full attention of the audience through the entire day, but it also helped to sharpen positions and to systematically confront views with counterarguments. It is for sure that the debate on the pros and cons of cash will stay with us for the years to come. But, as the conference made clear, beware of over-simplified views that neglect the multiple facets of the topic.