

## SPECIAL INTEREST POLITICS COULD SAVE CASH OR KILL IT

*Norbert J. Michel*

There has been a steady shift from paper-based payments to electronic means of payment in the United States during the last 30 years (Federal Reserve 2016). Many consumers and businesses have relied more on credit and debit cards, as well as electronic transfers, instead of on checks and cash. Of these electronic methods, credit and debit card transactions account for much of the growth. The percentage of U.S. consumer expenditures with debit and credit cards (combined) was only 3 percent in 1986 but rose to 25 percent by 2000 (Lyon 2006). In 1995, debit and credit cards (combined) accounted for less than 20 percent of all noncash payment transactions but increased to more than 40 percent of this volume by 2003 (Lyon 2006). As of 2015, cards accounted for more than 65 percent of all noncash transactions (Federal Reserve 2016). More recently, smartphone-based payment services have rapidly gained importance as a noncash form of payment, “increasing from 0.3 billion payments in 2012 to 1.3 billion in 2015, or 71.9 percent per year” (Federal Reserve 2016).

Globally, mobile phone-based financial services are having a major impact in the developing world. Since 2007, more than 250 such services have reached more than 300 million customers in 89 countries, with more than half the services deployed in Sub-Saharan Africa (Burns 2015). This shift also coincides with the rise

---

*Cato Journal*, Vol. 38, No. 2 (Spring/Summer 2018). Copyright © Cato Institute. All rights reserved.

Norbert Michel is Director of the Center for Data Analysis at The Heritage Foundation.

of bitcoin and similar blockchain-based digital currencies, the underlying technology of which serves as a digital payments system. The first bitcoin was created in 2009, and there are approximately 16.5 million bitcoins as of November 2017, as computed at the website [bitcoincharts.com](http://bitcoincharts.com). Though it is difficult to tell precisely how many people transact with bitcoins or similar digital currencies, Coinbase recently estimated that more than 10 million people worldwide hold a material amount of Bitcoin (Torpey 2017). To date, overseas remittances remain one of the most prominent uses for such digital currencies. In 2016, remittances totaled more than \$429 billion, with some of the largest markets in China and the Philippines (Young 2017).

Even though bitcoins—or some offshoot—may become a generally accepted medium of exchange in the future, these digital currencies do not yet rival established national currencies such as the U.S. dollar. Nonetheless, there is no doubt that bitcoin proved thousands of economists wrong: private markets can, in fact, successfully issue digital currency that is not backed by any government or any physical commodity. Most economists, polled prior to bitcoin, would likely have predicted that no such digital currency would ever take hold because people would not accept it. But the privately produced cryptocurrency bitcoin is clearly an example of a market innovation that allows people to choose their own mediums of exchange, and it happens to be a digital means of payment rather than a paper-based method. Although the success of bitcoin, smartphone-based payment applications, credit and debit cards, and other electronic forms of payment have led many to predict the demise of cash (Wolman 2012, Norris 2016), it is striking how many people still use cash.

Federal Reserve data shows that “consumers choose to use cash more frequently than any other payment instrument, including debit or credit cards,” and that cash still plays “a dominant role for small-value transactions” (Bennett et al. 2014). Furthermore, cash is still frequently used for relatively large transactions, particularly by lower-income consumers, and is the leading payment instrument for several expenditure categories, such as (1) person-to-person gift transfers, (2) food and personal care supplies, and (3) entertainment and transportation expenditures (*ibid.*). As of 2012, cash accounted for roughly 40 percent of U.S. consumer transactions by volume, and approximately 14 percent by value (*ibid.*). Anyone predisposed

to the benefits of private competition would recognize these trends for nothing more than what they are: people revealing their preferred ways of making payments as technologies change. Not surprisingly, many people see these trends as an opportunity to impose their will on others.

## Overview of War on Cash

Several prominent academics and policymakers throughout the world have been actively seeking to either phase out or (at least partially) ban the use of paper currency.<sup>1</sup> Three commonly cited reasons to support a ban on cash are (1) paper currency requires an inefficient use of resources; (2) paper currency facilitates tax evasion and criminal activity; and, (3) paper currency makes monetary policy more ineffective when interest rates are at the zero-lower bound. One study estimates that cash cost U.S. consumers \$200 billion per year, including expenses associated with collecting, sorting, and transporting cash, as well as ATM fees (Chakravorti and Mazzotta 2013). Banning cash, or certain denominations of paper currency, to stamp out tax evasion and criminal activity is perhaps the most often cited justification, with one author calling on policymakers to “consider the broad spectrum of socio-economic gains—things like reduced criminal activity of nearly every stripe and the promotion of financial inclusion” (Wolman 2012).

Perhaps the most recent rationale for banning cash deals with monetary policy and the somewhat obscure topic of negative interest rates. Negative interest rates on deposits are effectively a penalty for holding cash in a bank account, so any bank customer faced with such a penalty is likely to remove his money from the bank and keep his cash at home. Of course, if enough people keep their cash under mattresses, total spending in the economy will fall. The anti-cash crowd’s solution is to ban cash so that people have no choice but to use electronic means of payment. Thus, government officials would always be able to assess a penalty on people when they believe aggregate spending is too low, thus providing a bullet-proof mechanism to incentivize people to spend money rather than save it (Rogoff 2014, 2016; Michel 2016).

<sup>1</sup>In several cases, policymakers are seeking to ban both cash and coin in favor of digital alternatives.

Aside from the merits of these arguments, many of the G20 countries have undertaken some type of effort to ban, or at least curb the use of, cash. For instance Australia recently moved to a cashless welfare system to more tightly control which items benefit recipients could purchase (ABC News 2015). The Canadian government disallowed the payment of taxes in cash (at service counters) in 2007 (CBC News 2007), stopped accepting cash as a payment for passports in 2010 (*Toronto Star* 2011), and eliminated the penny in 2013 (Smith 2013). In 2016, the European Central Bank stopped production of its €500 banknote (ECB 2016). In 2014, the Bank of Indonesia launched a campaign urging businesses and consumers to switch to alternative forms of (noncash) payment (Bank of Indonesia 2014). The Italian prime minister made cash payments of more than €1,000 illegal in 2011 (Migliaccio and Sirletti 2011), and in 2015 the Bank of England's chief economist publicly made the case for abolishing cash (Spence 2015).<sup>2</sup> In perhaps the most extreme example, India banned its 500 and 1,000 rupee notes (worth \$7.50 and \$15, respectively), which constituted more than 85 percent of circulating currency in 2016, primarily in the name of cracking down on corruption and tax evasion (Iyengar 2017, Chakravorti 2017).<sup>3</sup>

In the United States, the effort has been far less dramatic, and there is currently no serious (federal) legislative effort to ban cash. However, several prominent academics, such as Harvard's Larry Summers, Peter Sands, and Kenneth Rogoff, have all publicly supported government policies that curb the use of cash. Summers, a former U.S. Treasury secretary, and Sands, a senior fellow at Harvard, have called for banning \$100 bills "based on a judgment that any losses in commercial convenience are dwarfed by the gains in combatting criminal activity" (Sands and Summers 2016).

<sup>2</sup>Citizens in other countries, such as Argentina, shun official paper currency because they do not trust the government (Saks-McLeod 2014).

<sup>3</sup>Interestingly, one of the most vocal proponents of banning cash, Harvard's Kenneth Rogoff, casts doubt on the effectiveness of mitigating certain crimes in this manner. For instance, Rogoff states that "Obviously there are better ways of reducing drug-related crime" and "Eliminating cash would hardly eliminate drug cartels." (Rogoff 2016: 69). Similarly, Citigroup's Willem Buiter, who has argued for eliminating high-denomination paper currency, states that "even though hard evidence is hard to come by, it is very likely that the underground economy and the criminal community are among the heaviest users of currency" (Keohane 2015).

Rogoff, a professor of public policy and economics at Harvard, has written several papers on the subject as well as a book titled *The Curse of Cash*. Rogoff would like to phase out cash over a 15-year period to stem criminal activity and improve monetary policy effectiveness. He also notes the following:

Third, it is essential that poor and unbanked individuals have access to free basic debit accounts (or the future equivalent), and possibly also basic smartphones, as several countries have already done or are contemplating. The cost is ideally borne directly by the government, though it can also be imposed on banks that will eventually pass the costs on to paying customers. Under the current system, financial exclusion imposes high costs on the poor (e.g., high fees for cashing checks or wiring money), and a strong case can be made for providing better access to financial services even under the current system [Rogoff 2016: 93].

Regardless of the merits of such arguments, it is easy to see how politicians could use these themes—particularly reducing criminal activity and promoting access to banking for the poor—to attract voters.

For the most part, the anti-crime theme has dominated the other reasons for banning and curbing the use of cash. One recent example at the state level is Louisiana HB 195, passed in July 2011. This law, which went into effect in August 2011, banned the use of cash in any secondhand market transaction in the state of Louisiana. The bill was cosponsored by state Rep. Rick Hardy (D), who argued that the legislation would help create “a mechanism to be used so the police department has something to go on and have a lead” (Steigerwald 2011). Secondhand dealers who failed to comply with the bill three times or more could have been fined up to \$10,000 and face up to five years in prison. The crucial section of the bill was as follows:

A second-hand dealer shall not enter into any cash transactions in payment for the purchase of junk or used or second-hand property. Payment shall be made in the form of check, electronic transfers, or money order issued to the seller of the junk or used or second-hand property and made payable to the name and address of the seller. All payments made by

check, electronic transfers, or money order shall be reported separately in the daily reports required by R.S. 37:1866 [LA HB 195: 30].

The bill, passed mainly in response to a spike in copper thefts, created a public outcry and was quickly amended to apply *only* to businesses that purchase secondhand copper. Louisiana was not alone—it was actually among a handful of states (and cities) to ban junkyards from purchasing scrap metal during an increase in copper and metal thefts (Wiggin 2011). Unsurprisingly, the effort was particularly controversial with scrap dealers. For example, an attorney for the Institute of Scrap Recycling Industries noted: “If you wish to be paid in cash, you’re a criminal. We have a problem with that” (Wiggin 2011). Though it may seem odd that state and local governments could restrict payment in Federal Reserve notes (legal tender), federal courts have actually upheld statutes similar to Louisiana’s in New York, Mississippi, and Tennessee (Wiggin 2011). To be sure, the legislation in Louisiana did not appear to be driven by partisan politics—of the original sponsors, nine were Republicans and seven were Democrats.

At the federal level, very few members of Congress have introduced legislation aimed directly at curbing the use of cash.<sup>4</sup> One recent bill is the Currency Optimization, Innovation, and National Savings Act of 2017 (COINS Act), introduced by Senator John McCain (R-AZ). The COINS Act would (among other things) suspend the production of the penny for 10 years and require the Government Accountability Office to study the effect of this temporary suspension. The COINS Act would also replace \$1 paper notes with \$1 coins. The COINS Act was introduced in a previous Congress (in 2011) by Rep. David Schweikert (R-AZ)—neither bill (nor their counterparts in the Senate and House) made it through committee. Incidentally, another bill introduced in 2011—the Currency Efficiency Act, sponsored by Senator Scott Brown (R-MA)

<sup>4</sup>The 1970 Bank Secrecy Act, and its concomitant know-your-customer rules, certainly makes it more difficult to use cash. The bill is rightly viewed as a major turning point in the war on cash in the United States. However, the bill did not ban the use of any particular denomination of U.S. currency, and it was originally aimed at deterring *foreign banks* from laundering criminal proceeds and helping people evade federal income taxes (Burton and Michel 2016).

and cosponsored by Senator John Kerry (D-MA)—would have *suspended* the production of \$1 coins “during any period for which the [Treasury] secretary determines that the surplus supply of \$1 coins exceeds the reasonable circulation needs for one year” (Currency Efficiency Act of 2011, S. 1624).

## Special Interests in the War on Cash

Unless one believes in pure coincidence, the near simultaneous introduction of the COINS Act and the Currency Efficiency Act in 2011 provide a gloomy lesson in the politics of Washington, D.C. The COINS Act was sponsored by a representative from Arizona, a state with a notable mining constituency. Copper ore mines are indigenous to Arizona and nearly 70 percent of the U.S. copper supply is mined in the state (Thorburn 2017). Meanwhile, the Currency Efficiency Act was sponsored by two senators—one Republican and one Democrat—from the state of Massachusetts. It turns out that Massachusetts is the home state of Crane & Co., a paper manufacturing company that has supplied its currency paper to the U.S. Treasury since 1879. Although it has been difficult to find any public statements from either the senators or Crane & Co. that directly bolster this connection, the Dollar Coin Alliance has been happy to connect the dots (Kasperowicz 2011). This group (with members such as the Arizona Mining Association, Copper and Brass Fabricators Council, Copper Development Association, American Amusement Machine Association, National Mining Association, and the Snack Food Association) has openly lobbied for the COINS Act. Because so few bills of this nature have been introduced in Congress, the remainder of the special interest story is less centered on members of Congress and specific legislation.

Visa and Mastercard, the dominant card network companies, have an obvious vested interest in moving more people away from making cash transactions. In 2017, Visa launched the “The Visa Cashless Challenge,” whereby it offered small business food service owners direct financial incentives to stop accepting cash payments. It is not yet clear whether the effort was successful, but Visa offered 50 eligible businesses up to \$10,000 each in exchange for going cashless (Wattles 2017). Mastercard has been similarly aggressive, but in its own way. For instance, Mastercard launched a campaign called the “Cashless Journey” to “track progress towards cashless economies”

(Thomas 2014). Mastercard markets increasing electronic payments as a solution to an efficiency problem, noting that cash usage costs national economies up to 1.5 percent of GDP (*ibid.*).

Separately, Mastercard CEO Ajay Banga has been “one of the most ardent supporters of ditching paper currency in the U.S.” (Surane 2017). Banga unabashedly states that he views “cash as the real competitor for the company” (*ibid.*). In 2014, Mastercard also became the first payment company to officially lobby on behalf of bitcoin (Hattem 2014). The bitcoin company Xapo has developed a bitcoin debit card that works on Mastercard and Visa networks, but Mastercard is not affiliated with the company. Regardless, records show that Mastercard paid the lobbying firm Peck Madigan Jones to concentrate on “bitcoin and mobile payments” issues (Hattem 2014). While there are several payment network–related trade associations in Washington, D.C., these groups have been more passive with regard to taking a stand against cash. For example, the Merchants Payment Coalition focuses mainly on reforming card interchange fees and has no official position on banning cash. Similarly, the Electronic Payments Coalition—a coalition including trade associations, credit unions, community banks, and payment networks—has no official position on efforts to ban cash.

Naturally, there are several companies on the opposite side of this issue, and they are lobbying against those that want to ban cash. Perhaps the most vocal is the ATM Industry Association (ATMIA), a trade group that has more than 10,000 members from over 650 companies, including different-sized financial institutions, as well as independent ATM deployers, manufacturers, and processors. In a direct response to Visa’s Cashless Challenge, Mike Lee, the CEO of the ATMIA, issued a press release blasting Visa. Lee stated:

By paying these food service owners \$10,000 to reduce their customers’ payment choices, Visa Inc. has elevated its commercial interests above the public interest in America. Currency is going to become more important in the cyber era as a bulwark against identity theft, card fraud, skimming, customer data compromises and the kind of global hacking which can render systems in the public and private sectors inoperable. You can’t hack cash in the hand. Nor can cash be used as a basis for identity theft. And it never leads to mass data compromises. Nobody needs a war on cash. All we’re asking for is freedom of choice for all [Orem 2017].



Loomis International and The Brinks Company are two of the most widely recognized companies on the same side as the ATMIA. In 2014, both companies (along with others) sponsored a report titled “The Case for Cash,” aimed at dispelling myths surrounding the anti-cash movement (Currency Research 2014).<sup>5</sup> Though perhaps lesser known to the general public, both Cardtronics (the world’s largest ATM operator) and Payment Alliance International (a leading provider of payment-processing solutions) have publicly promoted the benefits of cash.

One of the more powerful trade groups that *could* end up influencing the outcome of this debate is the National Federation of Independent Business (NFIB). The NFIB represents more than 300,000 small businesses and certainly influences legislative outcomes. The NFIB has not, however, taken an official position on whether cash should be banned. On the basis of conversations with NFIB representatives, it appears likely that the NFIB will only weigh in on the debate if its members push it to do so. A similar approach is being taken by the Retail Industry Leaders Association (RILA) and several state and local retail trade associations contacted for this article—all are unlikely to take sides in the debate until their members push them.<sup>6</sup>

As anyone who observed the legislative battles over the Durbin Amendment—the price control that Dodd-Frank instituted on debit card swipe fees—can attest, retail trade associations can undoubtedly sway members of Congress on important financial legislation votes. The National Retail Federation (NRF), for instance, played a pivotal role in convincing Republican members to strip a repeal of the price control from the Financial CHOICE Act, a bill that ultimately passed the House of Representatives. The NRF, and other groups, were successful even though they were pitted against many bank trade groups (Kharif 2016).

<sup>5</sup>The report was published by Currency Research, an “international organization,” that represents many financial institutions and other organizations within the “currency and cash handling industries.” See <http://currencyresearch.com/about>.

<sup>6</sup>A partial list of associations, with no official position on the cash debate, contacted for this article includes the following: Colorado Restaurant Association, Maine Restaurant Association, National Restaurant Association, Restaurant Association of Metropolitan Washington, National Association of Convenience Stores, the American Beverage Association, and the National Pawnbrokers Association.

In the debate over banning cash, the NRF has not yet taken an official position, but a recent article indicates that the NRF is unlikely to support anything like a full ban on cash anytime soon. NRF Senior Vice President Mallory Duncan argued that many retailers prefer cash transactions because cash still provides 100 cents on the dollar versus the 97 to 98 cents on the dollar they receive from card network transactions. Duncan noted that these swipe fees far outweigh the cost of handling cash, and stated, “From a cost standpoint for most retailers of any size, cash is still king” (Greene 2016). If any member of Congress makes a serious effort to ban cash in the near future, the NRF seems likely to mount an opposition campaign.

Last but not least, it is unclear what role the banking industry will ultimately play in this debate. It is true that Chase, the nation’s largest bank, recently stopped allowing customers to use cash to make payments on credit cards, mortgages, equity lines, and auto loans, and also prohibited the storage of cash in safe deposit boxes (Murray 2015). Though it would be easy to argue that “the banking industry” is beholden to federal regulators, and is simply carrying out more controls on cash at regulators’ behest (Burton and Michel 2014), the industry is actually quite fragmented. For instance, the CEO of Iowa’s Northwest Financial Corp, Jeff Plagge, argues that the cashless society may be “overhyped,” and that he sees “a less-cash society rather than a cash-free society” (Epstein 2017). In general, community banks take a very different view of regulation than the largest banks—even when it comes to the cash-unfriendly know-your customer rules. It is unlikely, for instance, that JP Morgan Chase’s CEO would make a statement similar to Plagge’s.

There is, of course, no doubt that all banks would be at the mercy of their federal regulators should the federal government decide to crack down on cash even further, but the largest banks stand to gain the most by policies such as negative interest rates because they hold such a large percentage of customers’ deposits.<sup>7</sup> The true wildcard in this debate, though, is the Federal Reserve.

<sup>7</sup>It is tempting to think that the largest banks have the most leverage with government regulators, but community bank trade groups, such as the Independent Community Bankers of America, hold enormous sway on Capitol Hill. And, many members view large banks negatively. Exactly how this dynamic influences the debate on banning cash will depend on how (and when) events unfold.

Should the Fed decide that implementing monetary policy requires a move to a digital-only world without paper currency, it will become very difficult to stop the ban—especially if current trends continue and people continue to rely less on cash. Nonetheless, powerful special interest groups regularly affect the outcome of policy battles, and there is no reason to think that the assault on cash will play out any differently. Still, if the use of cash continues to diminish, then the interest groups that currently oppose banning cash will hold less sway. If history is any guide, groups that want to preserve consumer choice in forms of payment should waste no time redirecting federal efforts toward solving real economic problems and directly stemming criminal activity. Otherwise, the long-term trend of central banks taking over monetary functions from private markets will surely continue.

## Conclusion

Throughout the world, there has been a steady shift away from paper-based payments during the last few decades. This change has occurred as technology changed, thus making it easier to facilitate consumer exchanges electronically. If the federal government would simply allow those changes to take place, there would be no particularly unique problem—the trends toward a less-cash society would likely continue. Criminals may find it more expedient to transfer money anonymously via the Internet, but they have surely found it easier to commit crimes with the advent of better automobiles, computers, and communication devices.

There is certainly a strong public interest in preventing terrorist attacks and prosecuting fraudulent behavior, but there is an equally strong public interest in protecting law-abiding citizens' personal and financial privacy. And there is simply no reason that these factors cannot be properly balanced without banning cash and forcing all citizens to use only one form of money. Virtually no U.S. banker would object to, for example, providing legitimate criminal suspects' transaction records to the proper authorities. There is no need to criminalize cash itself to prosecute someone engaged in criminal activity, or to ignore law-abiding citizens' right to personal and financial privacy.

Even some of the staunchest supporters of banning (or limiting) the use of cash acknowledge that doing so will not eliminate crime. Furthermore, at least one prominent supporter of banning cash

acknowledges that “the biggest threat to the value of the currency is often the government itself” (Rogoff 2016: 19). It seems risky, at best, to give the government so much control over the form of payment citizens choose, but that is exactly what many policymakers are hoping to do. At the federal level, there is no doubt that special interest lobbying will influence whether the government successfully bans cash. As citizens continue to rely more on digital payments and less on cash, it will become more difficult for trade associations to resist the federal push to ban cash. If history is any guide—central banks have taken over nearly all of the monetary functions that private markets used to handle—it is critical that policymakers soon redirect their efforts at the source of real economic problems and criminal activity.

## References

- ABC News (2015) “Government Criticised for ‘Rushing Through’ Cashless Welfare Card Trial with Ceduna to Be First Trial Site” (October 14).
- Bank of Indonesia (2014) “Bank Indonesia Launches National Non-Cash Movement.” Press Release (August 14).
- Bennett, B.; Conover, D.; O’Brien, S.; and Advincula, R. (2014) “Cash Continues to Play a Key Role in Consumer Spending: Evidence from the Diary of Consumer Payment Choice.” Federal Reserve Bank of San Francisco (April).
- Burns, S. (2015) “Mobile Money and Financial Development: The Case of M-PESA in Kenya.” Available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2688585](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2688585).
- Burton, D., and Michel N. (2016) “Financial Privacy in a Free Society.” Heritage Foundation Backgrounder No. 3157 (September 23).
- CBC News (2007) “Cash No Longer Accepted for Paying Taxes” (May 4).
- Chakravorti, B. (2017) “Demonetisation: A Year after India Killed Cash, Here’s What We Can Learn.” Brookings Institution (November 7).
- Chakravorti, B., and Mazzotta B. (2013) “The Cost of Cash in The United States.” Institute for Business in the Global Context, The Fletcher School, Tufts University.

- Currency Research (2014) "The Case for Cash." Available at <http://currencyresearch.com/files/assets/basic-html/index.html#1>.
- Epstein, E. (2017) "Two Faces to a Cashless Future." *ABA Banking Journal* (April 13).
- ECB (European Central Bank) (2016) "ECB Ends Production and Issuance of €500 Banknote." Press Release (May 4).
- Federal Reserve (2016) "The Federal Reserve Payments Study 2016: Recent Developments in Consumer and Business Payment Choices."
- Greene, M.V. (2016) "Cashing In or Cashing Out?" National Retail Federation *Retail Trends* (December 12).
- Hattem, J. (2014) "MasterCard Lobbying on Digital Currency Bitcoin." *Hill* (April 29).
- Iyengar, R. (2017) "50 Days of Pain: What Happened When India Trashed Its Cash." *CNN Money* (January 4).
- Kasperowicz, P. (2011) "House GOP Wants to Cash Out Dollar Bill." *Hill* (September 27).
- Keohane, D. (2015) "Buiter on the Death of Cash." *Financial Times* (April 10).
- Kharif, O. (2016) "Banks, Retailers Take Swipes at Each Other over Dodd-Frank Fees." Bloomberg (December 6).
- Louisiana House Bill 195 (2011) Available at <https://legiscan.com/LA/text/HB195/2011> (July 1).
- Lyon, J. (2006) "The Interchange Fee Debate: Issues and Economics." Federal Reserve Bank of Minneapolis, *The Region* (June 1).
- Michel, N. (2016) "The Fallacy of Banning Cash." *Cayman Financial Review* (August 2).
- Migliaccio, A., and Sirletti, S. (2011) "Italy's Cap on Cash Payments." *Bloomberg Business Week* (December 8).
- Murray, T. (2015) "Chase Bank to Restrict Cash Payments on Credit Cards and Loans After Restricting Cash Deposits a Year Ago: Money Matters." *Plain Dealer* (January 30).
- Norris, J. (2016) "The Disappearing Paper: Why Cash Is a Dying Payment Method." *TransferWise* (December 7).
- Orem, T. (2017) "Anti-Cash Campaigns Need to Stop, Trade Association Says." *Credit Union Times* (July 27).
- Rogoff, K. (2014) "Costs and Benefits to Phasing Out Paper Currency." NBER Working Paper No. 20126 (May).

- \_\_\_\_\_ (2016) *The Curse of Cash*. Princeton, N.J.: Princeton University Press.
- Saks-McLeod, A. (2014) “Argentina to Be the First Cashless Society Due to Bitcoin Popularity?” *LeapRate.com* (August 4).
- Sands, P., and Summers, L. (2016) “In Defense of Killing the \$100 Bill.” *Washington Post* (February 25).
- Smith, N. (2013) “Canada Kills the Penny.” *Business News Daily* (February 1).
- Spence, P. (2015) “Negative Interest Rates Could Be Necessary to Protect UK Economy, Says Bank of England Chief Economist.” *Telegraph* (September 18).
- Steigerwald, L. (2011) “Louisiana Outlaws Use of Cash at Goodwill, Flea Markets.” *Reason.com* (October 19).
- Surane, J. (2017) “Plastic-Versus-Cash Battle Heats Up after Visa, Mastercard Deals.” *Bloomberg* (July 17).
- Thomas, H. (2014) “Measuring Progress toward a Cashless Society.” Available at <https://newsroom.mastercard.com/wp-content/uploads/2014/08/MasterCardAdvisors-CashlessSociety-July-20146.pdf>.
- Thorburn, E. (2017) “Mining in Arizona Remains an Economic Goldmine.” *Arizona BigMedia* (September 18).
- Toronto Star* (2011) “Why Can’t You Pay Cash at a Passport Office?” (June 8).
- Torpey, K. (2017) “Report Estimates There Are More than 10 Million Bitcoin Holders Worldwide.” *CoinJournal* (January 11).
- Wattles, J. (2017) “Visa Offers Restaurants \$10,000 if They Stop Accepting Cash.” *CNN Money* (September 14).
- Wiggin, A. (2011) “Louisiana Law.” *Daily Reckoning* (October).
- Wolman, D. (2012) “The Demise of Cash.” *Huffington Post* (October 22).
- Young, J. (2017) “Overseas Remittance Is a \$400 Billion Market, Can Bitcoin Dominate?” *Cryptocoins News* (June 5).