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# Speaking to the people? Money, trust, and central bank legitimacy in the age of quantitative easing

*Benjamin Braun* 

*Max Planck Institute for the Study of Societies, Paulstr. 3, Koeln, Germany*

## ABSTRACT

Financial upheaval and unconventional monetary policies have made money a salient political issue. This provides a rare opportunity to study the under-appreciated role of monetary trust in the politics of central bank legitimacy which, for the first time in decades, appears fragile. While research on central bank communication with ‘the markets’ abounds, little is known about if and how central bankers speak to ‘the people.’ A closer look at the issue immediately reveals a paradox: while a central bank’s legitimacy hinges on it being perceived as acting in line with the dominant folk theory of money, this theory accords poorly with how money actually works. How central banks cope with this ambiguity depends on the monetary situation. Using the Bundesbank and the European Central Bank as examples, this article shows that under inflationary macroeconomic conditions, central bankers willingly nourished the folk-theoretical notion of money as a quantity under the direct control of the central bank. By contrast, the Bank of England’s recent refutation of the folk theory of money suggests that deflationary pressures and rapid monetary expansion have fundamentally altered the politics of monetary trust and central bank legitimacy.

## KEYWORDS

money creation; inflation; central bank transparency; central bank communication; ECB; Bank of England.

There will probably always be a communications gap between economists and the public ... But there appears to be rather more of a gap than most of us would have expected. (Robert Shiller 1997: 59)

## 1. INTRODUCTION

Like other social institutions, money ‘works best when it can be taken for granted’ (Carruthers and Babb, 1996: 1556). Rare are the events that lift the veil that conceals money during normal times. The global financial crisis of 2008 and the unconventional policies adopted by central banks in response have done just that: cast a spotlight on the inner workings of contemporary capitalist credit money. The public, elite and non-elite, has been spooked by what it saw, as illustrated by scrambles for cash, gold, and bitcoins, as well as by the growing support garnered by monetary reform movements such as *Positive Money* in the UK. At the same time, public trust in the world’s most important central banks has plummeted. In a 2014 Gallup poll ranking thirteen US government agencies according to respondents’ satisfaction with their performances, the Fed came in second-to-last (Gallup, 2014). In the euro area, ‘net trust’ in the European Central Bank fell from +29 to –23 in the six years following 2008, meaning that a majority distrusted the ECB in 2014 (Roth et al., 2016). In light of these developments, some authors have observed a ‘legitimacy crisis of money’ (Weber, 2016; cf. Koddenbrock, *forthcoming*), while others have diagnosed legitimacy ‘problems’ and ‘crises’ for the Fed (Goodhart, 2015; Jacobs and King, 2016), the ECB (Scharpf, 2012; Schmidt, 2016) and, among many others, postcommunist central banks (Johnson, 2016: ch. 7). There is little understanding, however, of how these two developments relate to each other. What exactly is it about money that spooks people? How do central banks cope when money becomes a salient political issue? And what is the relationship between central bank transparency and the obscurity under which money tends to function best? By asking these questions, this article breaks new ground in the study of central bank legitimacy and communication, which for decades has treated legitimacy as a corollary of successful inflation control. However, this ‘Volcker law of central bank legitimacy,’ valid in a world of inflationary pressures and conventional monetary policy, has run out of steam in the new world of deflationary pressures and quantitative easing, which has turned the politics of central bank legitimacy upside down.

The multidimensionality of legitimacy is well established in the political economy literature. Students of the European economic governance apparatus, including the ECB, have rightly argued that its legitimacy, traditionally weak in the input dimension, has also suffered in the output and throughput dimensions (Nicolaidis, 2013; Scharpf, 2012; Schmidt, 2016). Crucially, however, central bank legitimacy has a fourth, orthogonal dimension, which is both a precondition and a consequence of the other three – public trust in money. Since it tends to become visible only when it suddenly evaporates, trust in money has mostly been studied in the context of episodes of monetary disruption and contestation – the

United States after the Civil War (Carruthers and Babb, 1996), the ‘Rentenmark’ and ‘Poincaré miracles’ (Orléan, 2014: 166–70), postwar Germany (Tognato, 2012: 41–72), or Argentina in 2001–2002 (Muir, 2015). It is unsurprising that after decades of benign monetary conditions in advanced industrial economies – the so-called ‘Great Moderation’ – scholars and policymakers had grown used to seeing central bank legitimacy as merely a matter of low inflation – i.e., output legitimacy – taking public trust in money for granted. Using the recent financial and monetary upheaval as an analytical entry point, this article aims to bring public monetary trust back into the study of central bank legitimacy. To an extent not currently appreciated in the literature, recent developments have shaken public trust in both pillars of the public–private partnership that underpins capitalist credit money (Ingham, 2004): while endemic misconduct in the banking sector has undermined the private pillar of that partnership, the unprecedented expansion of central bank balance sheets – and thus of the ‘monetary base’ – have sparked ‘fear of inflation’ as well as of central banks handing out ‘free money’ to banks (Blyth and Lonergan, 2014; Eichengreen, 2014: 7–8; Haldane, 2016: 5).

Central bank communication constitutes the main ‘access point’ at which money users encounter the representatives of the abstract system that is money (Beckert, 2005: 19; Giddens, 1990: 88). In practice, however, access is restricted due to the ‘communications gap between economists and the public’ (Shiller, 1997: 59). Hinting in a similar direction, the chief economist of the Bank of England has coined the phrase of a ‘great divide’ to capture the – increasingly worrisome, from his point of view – phenomenon of a ‘perception gap between the financial sector and wider society’ (Haldane, 2016). The literature on central bank communication has largely ignored this divide – including in political economy, sociology, and anthropology (Braun, 2015; Holmes, 2014; Krippner, 2007; Nelson and Katzenstein, 2014). This literature has focused on the communicative interaction between central bankers and a select group of financial and business elites, thus reproducing the ‘methodological elitism’ (Stanley and Jackson, 2016) of rational expectations macroeconomics (however, see Velthuis, 2015). From this perspective, the challenge for monetary policymakers consists of managing *expectations*, and the solution comes in the form of central bank *transparency* (Geraats, 2002).<sup>1</sup> However, central banks do not only speak ‘to the markets’ but also ‘to the people’ (Schmidt, 2014) – that is, to a general public that understands little of monetary policy. Here, the primary challenge is not to manage expectations, but to inspire *trust*, both in the monetary authority and in money itself. As central bankers are well aware, since the general public lacks the expertise to process technical information, ‘transparency’ is no panacea in this context. As one Fed policymaker has put it, ‘[y]ou are not going to have the population as a whole understand all the nuances of

what we are talking about here. They need to trust us' (Fleming and Donnan, 2016). The goal, then, is not to be transparent but to be perceived as 'the faithful spokesperson of collective monetary beliefs' (Orléan, 2008: 8). Therefore, the key task for students of monetary trust and central bank legitimacy is to overcome their methodological elitism and to study what goes on the 'far side' of the communications gap. Intended as a first step in this direction, the current article analyzes the folk theory of money that dominates the public conception of the monetary system. A synthesis of common sense observation and anecdotal evidence, the goal of this analysis is not to provide the last word but to blaze a conceptual trail for future research on money and central banking.

The argument is developed in three steps. Building on research in political economy, economic sociology, and economics, [Section 2](#) elaborates on the key concepts of money, trust, and people, highlighting the idea that the communications gap also marks a research gap. [Section 3](#) draws on academic writings, anecdotal evidence, and common sense to systematize the ideas about money that circulate among the general public and that, when put together, amount to a 'folk theory of money' (Muir, 2015: 319). This folk theory is built on the myths that all money is created equal, that banks are intermediaries, and that money is exogenous. [Section 4](#) examines how three central banks have positioned themselves in relation to these myths. It shows that the Bundesbank and the ECB both supported and exploited the notion – which is implied by the folk theory – of money as a quantity under the direct control of the central bank. More recently, however, financial upheaval and unprecedented monetary expansion have reversed the trust-inspiring effect of that notion. The Bank of England's public debunking of the folk theory of money provides an impressive example of a major central bank adapting its communication strategy to cope with the challenges the new monetary environment poses to monetary trust and central bank legitimacy.

## 2. MONEY, TRUST, AND PEOPLE

The 'social studies of money' literature has flourished in recent years. It spans sociology (Dodd, 2014; Ganßmann 2012; Ingham, 2004; Zelizer, 1994), economics (Bell, 2001; Wray, 2012), law (Desan, 2014), history (Spang, 2015), political economy (Knafo, 2013; Konings, 2015), literary studies (Poovey, 2008), anthropology (Graeber, 2011; Maurer et al. 2013), and philosophy (Bjerg, 2014; Yuran, 2014). One way to cut through the bewildering variety of overlapping and recurring debates is to distinguish between a social-philosophical and a political-economic approach to money. The former revolves around the questions of the *social meanings* and, more generally, the *philosophy* of 'universal money' (Bryan and Rafferty, 2016: 28). Building on the work of (among others)

Marx, Simmel, Lacan, Zelizer, and Žižek, authors in this tradition generally subscribe to the epistemological position that ‘the fundamental constitution of money is somehow unknowable’ (Bjerg, 2014: 149) and that consequently, ‘any attempt to build a coherent theoretical conception of money is bound to fail’ (Dodd, 2005: 571). By contrast, political-economic studies – key names are Macleod, Mitchell-Innes, Schumpeter, and Minsky – have focused on the *material processes* and *institutional architecture* of the historically specific system of capitalist credit money, the hallmark of which is the circulation of commercial bank liabilities as means of payment (Desan, 2014; Ingham, 2004; Knafo, 2013). Here, the epistemological position – shared by the current article – is that a reasonably precise understanding of the nature, making, and workings of contemporary credit money is possible (Ingham, 2006, 2007). From this perspective, monetary trust cannot be understood through the social-philosophical approach alone. Instead, a precise understanding of the *economic* workings of credit money is a prerequisite for the analysis of the *social* phenomenon of monetary trust – ‘how money is made matters’ (Desan, 2014: 5). What, then, does it mean to say that people have trust in money? The remainder of this section takes a closer look at the three elements of this question – money, trust, and people.

### 2.1. Money: The political economy of money and (central) banking

The English financial revolution and the establishment, in 1694, of the Bank of England, put in place the basic institutional framework for the ‘production of capitalist credit-money’ (Ingham, 2004). But it took the Bank another one and a half centuries to fully monopolize the issuance of negotiable (i.e., transferable) banknotes, and thus to complete the ‘transformation of privately contracted debts into money’ (Ingham, 2004: 135). By accepting – i.e., by buying at a discount – privately issued bills and notes, the Bank of England swapped these private promises to pay for fully transferable public promises to pay (Sgambati, 2016: 282). This technique of monetizing private loans by making them exchangeable with sovereign promises to pay is the hallmark of capitalist credit money, which finds its contemporary expression in central banks’ collateralized open market operations. In this public–private partnership, demand deposits created through bank loans make up the largest part of the ‘privately contracted debts’ that circulate as money.

Monetary historians routinely use the concept of evolution to describe the development of increasingly abstract forms of money and increasingly complex banking systems (Carruthers and Babb, 1996: 1558). The evolutionary metaphor aptly captures monetary developments since the Industrial Revolution, which saw a unidirectional movement from

metallic coins, to gold-convertible paper money under the gold standard, to a gold-backed dollar standard under the Bretton Woods system, to pure fiat money.<sup>2</sup> The driving force behind this co-evolution of money, banking, and central banking is the need to strike an – only ever temporary – balance between *elasticity* and *trust*. On the one hand, more abstract and elastic forms of money bring efficiency gains in the form of lower transaction costs and greater policy flexibility. On the other hand, the fiduciary character of abstract forms of money requires increasingly sophisticated institutional arrangements to inspire sufficient social trust and confidence (Aglietta, 2002; Giannini, 2011: 27–8).<sup>3</sup> It should therefore not surprise us that the replacement of metallic commodity money by gold-convertible paper money during the late nineteenth century coincided with the rise of modern nation states, which alone had the institutional capacity to implement the shift towards fiduciary money at all levels of the economy (Giddens, 1985: 155–8). The next level of abstraction and elasticity was reached with the international monetary agreement of Bretton Woods, under which the major currencies were pegged to the dollar as the only currency that retained gold convertibility. It was only when President Nixon ended convertibility in 1971 that all money became fiat money.

During the inflationary period that ensued, the burden of restoring trust in the new, pure fiat money standard fell disproportionately to central bankers, as epitomized by Fed chairman Paul Volcker (Aglietta, 2002: 50). Following two decades of experimentation with various forms of monetary and exchange-rate targeting, the 1990s saw the global institutionalization of the ‘trinity’ of *independent* central banks equipped with *price stability* mandates and committed to *accountability and transparency* (Svensson, 2011: 1238). Economists and policymakers readily attributed the ‘Great Moderation’ period of low and stable inflation rates to this institutional arrangement. The institutionalization of what is best described as the ‘Volcker law of central bank legitimacy’ was complete: keep inflation down, and your central bank will be legitimate. Since then, monetary trust has scarcely featured in the literature on central banks.

## 2.2. Trust: What does it mean to say that people have trust in money?

Monetary trust is commonly defined by (political) economists as ‘trust in [money’s] future purchasing power and trust in the continued convention that payment is complete when money changes hands’ (Giannini, 2011: xxv; cf. Issing, 2002: 22). Naturally, there is more to this seemingly simple definition than meets the eye. Money’s future purchasing power depends on the commitment of the government and the central bank to

maintain price stability; the functioning of the transmission mechanism of monetary policy; the fiscal discipline of the government; the stability of the exchange rate; the banking system that creates the bulk the money supply; the effectiveness of regulation and supervision of the banking system; effective lender-of-last-resort and deposit insurance mechanisms and, least visible of all, the payments system. Crucially, however, monetary trust does not follow automatically from this institutional architecture, but is 'created and maintained through discursive processes that take place among the actors in the field and the general public' (Beckert, 2016: 129). How do these discursive processes unfold?

During normal times, trust in money is a matter of routine and habit (Aglietta et al., 1998: 25; Kraemer, 2015: 211–2). Socialization into the monetary economy occurs through 'successful money use' (Ganßmann, 2012: 93) – the repetition of, from an early age, the exchange of money against goods. Each transaction confirms and thus reinforces the monetary convention, thus reproducing the 'social fact' of money (Searle, 1995). This is in line with a long tradition in sociology that has viewed trust as a 'blending of knowledge and ignorance' (Luhmann, 1979: 26). Drawing on the seminal work of Georg Simmel (2011: 191–2), Anthony Giddens has emphasized faith and commitment over intellectual understanding for trust in modern, disembedded institutions. Precisely because of their remoteness and complexity, modern institutions require 'modes of trust ... [that] rest upon vague and partial understandings of their "knowledge base"' (Giddens, 1990: 27). Crucially, this lack of transparency does not mean that trust in money is weaker than it would be if people had a better cognitive grasp of the inner workings of this institution. On the contrary, the transparency-reducing effects of objectification are a constitutive element of institutionalization – people trust in the 'reified' or 'naturalized' image of an institution that obscures its origins as a 'socially contrived arrangement' (Berger and Luckmann, 1966: 106; Douglas, 1986: 48). From this perspective, the hallmark of stable money is its 'muteness' (Orléan, 2014: 160).

And yet, negative personal experience and the disruption of monetary routines are not the only scenarios that can damage trust in money. Cognitive and normative processes do play a role, especially during episodes of monetary and financial upheaval, when established narratives break down. At such moments, people may stop taking money for granted. As Section 4 will show, this is precisely what happened in the context of central banks' quantitative easing policies. As money moves from obscurity to political center stage, a different kind of trust is called for – not just habitual, but 'active trust,' which 'has to be actively produced and negotiated' (Giddens, 1994: 93). Active trust is a core feature of reflexive modernization, under which elite practices and expert knowledge are constantly at risk of being challenged (Langenohl, 2015: 76). Public communications by central



banks – be they via television, schoolbooks, on-site visits or museums – provide ‘access points’ for the negotiation of active trust ‘between lay individuals [...] and the representatives of abstract systems’ (Giddens, 1990: 88). Three related aspects of this negotiation are particularly pertinent to the case of money. First, the trust-taker – the central bank – engages in dramaturgical action. The performances put on for the audience at the front stage need not be consistent with backstage thinking among central bankers (Beckert, 2005: 19; Goffman, 1959). Second, the performances of the trust-taker ‘must deal with the expectations of the trust-giver in order to entice trust’ (Beckert, 2005: 19; Luhmann, 1979). For central bankers, this task is complicated by the need to engage ‘informationally segmented audiences’ with varying expectations (Lohmann, 2003: 106). The example of quantitative easing shows that what constitutes a trust-inspiring performance differs widely between financial market participants and the general public. This leads to the third consideration – what happens when the expectations of the general public are out of sync with how money actually works? Where collective monetary beliefs are misguided but support central bank legitimacy, central bankers may well decide to communicate with ‘strategic ambiguity’ (Best, 2005; cf. Krampf, 2016), or even adopt a double-talk strategy along the lines of ‘organized hypocrisy’ (Brunsson, 1989), using one register when talking to ‘the markets’ and another when addressing ‘the people.’ That said, it is important to note that central banks are not just norm-takers but have the power to shape the discursive context within which audiences form expectations. Therefore, where collective monetary beliefs threaten their legitimacy, central banks should be expected to adopt a more proactive, norm-making communication strategy. Section 4 will flesh out these theoretical considerations, painting a picture of central bank communication in which performance, strategic ambiguity and organized hypocrisy play a greater role than is commonly acknowledged.

### 2.3. People: Beyond methodological elitism

The literature on central bank transparency and monetary trust has come to terms with the problem of the ‘great divide’ that separates central bankers and their lay audiences (Haldane, 2016). On the one hand, quantitative studies have used survey data to analyze trust in monetary authorities. Reflecting data availability, most studies have relied on data from a Eurobarometer question that asks respondents if they tend to trust or distrust the ECB (Bursian and Fürth, 2015; Ehrmann et al., 2013; Hayo and Neuenkirch, 2014; Roth et al., 2016). On the other hand, qualitative studies have analyzed how central banks use communication as a monetary policy tool (Braun, 2015; Holmes, 2014; Krippner, 2007; Nelson and Katzenstein, 2014). While the former reduce monetary trust to a yes/no

answer, ignoring actual collective beliefs about money, the latter focus overwhelmingly on central bankers' attempts to manage the expectations of a very small elite of financial and business professionals, thus remaining within the confines of 'methodological elitism' (Stanley and Jackson, 2016).<sup>4</sup>

In practice, however, central banks depend on the trust of the general public. They certainly do so for *economic* reasons – low public monetary trust can trigger bank runs or inflation scares, which generally undermine monetary governability. Equally importantly, central banks depend on public monetary trust for *political* reasons. Trust in money is the precondition for the legitimacy of the central bank, which in turn is the foundation for central bank independence. The tranquility of the 'Great Moderation' arguably obscured these essential links, as monetary trust and central bank legitimacy appeared to be constants, not variables. Under these conditions, there seemed to be little difference between *de jure* independence, as laid down in central bank laws and statutes, and *de facto* independence. Recent monetary and financial upheaval, by contrast, has raised awareness of the conditional and precarious nature of central bank independence, the ultimate foundation of which is not law – which can be changed by parliament (although not in the euro area) – but legitimacy. Thus, the Fed navigates shifting support coalitions in Congress (Broz, 2015) and various 'soft constraints' in the broader public arena (Judge, 2015). The ECB, too, has been acutely aware of the challenge of gaining and keeping the public's trust (Kaltenthaler, et al. 2010: 1267). Given the communications gap, how do central banks cope with the challenge? If legitimacy is primarily a question of the central bank being perceived as 'the faithful spokesperson of collective monetary beliefs' (Orléan, 2008: 8), then what are these beliefs?

The question would be pointless if the general public had a clear picture of how money works. For all we know, however, that picture is rather muddled (Shiller, 1997; van der Cruijssen et al., 2010). While the field of agnotology knows different 'varieties of ignorance' (Abbott, 2010), this article works with a dichotomous analytical distinction between a very small elite group of finance and business professionals who are 'in the know' about money and a general public for whom money is mired in an 'irreducible opacity' (Aglietta and Cartelier, 1998: 147). Crucially, to insist on this distinction is not to argue that the general public's views on money are irrelevant but, on the contrary, that a hermeneutic approach is needed that takes the 'the subjective "reality" of the trustor' seriously (Möllering, 2001: 416). Needless to say, such an attempt to go beyond the confines of methodological elitism comes with its own methodological challenges. While focus group research offers one promising way of meeting these challenges in the future (Stanley, 2016), the contribution of the present article is primarily conceptual, aimed at

theory development rather than theory testing. It offers a reconstruction – based on existing literature, anecdotal evidence and common sense – of the three myths that arguably constitute the dominant folk theory of money in advanced industrial societies.

### 3. THE FOLK THEORY OF CAPITALIST CREDIT MONEY

The history of money consists of a succession of different ways of obfuscating its core feature – namely, money’s origins in credit–debt relationships. For centuries, a fairly straightforward ‘anchor chain’ (Redish, 1993) linked money to the physical world – literally to the soil of the earth – via the material identity of money and precious metal. Under the gold-backed paper money standard of the nineteenth century, the hierarchy of money was still readily visible, as people were aware that money was, to a greater or lesser extent, ‘backed’ by an asset of ultimate settlement. The representational nature of paper money came to the surface only in moments of crisis (Poovey, 2008: 62). A fundamental change occurred with the switch to a global fiat money standard in 1971, which conclusively eliminated the ‘problematic of representation’ (Poovey, 2008: 62). Whereas before, the anchor chain of the global monetary system ended in the basement of Fort Knox, it now leads to the upper floors of central bank headquarters – ‘The buck starts here,’ as Alan Greenspan’s famous plaque had it. With naturalization via precious metals no longer an option, obfuscation took an ideological turn, in which monetarism played a key role (Ingham, 2004: 80, 149). Awareness of this history is crucial to understanding that the existence of an empirically inaccurate folk theory of money owes little to conspiracy and much to the survival of – technically obsolete – traits from previous stages in the history of money. Above all, the continued circulation of physical currency and the continued usage of the term ‘deposit’ carry anachronistic connotations of commodity money that tend to obfuscate the workings of contemporary fiat money (Ricks, 2016: 14). Presenting three public monetary myths – that all money is created equal, that banks are intermediaries, and that money is exogenous – as systematically as possible, this section aims at giving shape to the prevalent folk theory of money.

#### 3.1. The myth that all money is created equal (and thus non-hierarchical)

The quality of financial claims that circulate as money varies, depending on the issuer. As a result, *all* monetary systems are hierarchical (Bell, 2001; Mehrling, 2013). This hierarchy usually remains hidden from the parties to a monetary transaction by the invisible operation of the

payments system. It manifests itself only at the point of *final settlement*. Thus, while person A may pay her debt to person B by issuing a check (a lower-quality debt), final settlement will only be achieved once A's bank transfers the amount written out on the check to B's bank in the 'asset of ultimate settlement' (Moore, 1988: 13). The visibility of the hierarchy of money varies depending on the monetary standard and on the operational details of the payments system. In the past, gold or silver topped the hierarchy. Today, the hierarchy is topped by 'central bank money,' or '*outside money*,' which consists of cash (notes and coins) and reserves (held by a commercial bank in accounts at the central bank), and which appears on the central bank balance sheet as a liability.<sup>5</sup> The central bank creates outside money by lending to (or buying securities from) commercial banks. While reserves exist only within the closed circuit of bank and government accounts with the central bank, cash is part of the monetary aggregates as measured by M1 or higher. But cash accounts for 'only a rather small fraction of total money balances' (Issing, 2000: 23), which largely consist of bank-created credits held in checking accounts, term deposits, or savings accounts (which together with cash constitute M2). Created through private bank lending to businesses and households, this *inside money* is a liability of the banking system.

Inside and outside money are different in both legal and economic terms. *Legally*, only outside money is 'legal tender.'<sup>6</sup> In practice, this means that debts among banks, as well as banks' debts to the central bank or to the government, can only be settled in outside money. *Economically*, the difference lies in the quality of the credit claims that circulate as money. Outside money is the safest asset in the financial system because it is the liability of the monetary authority that, for all practical purposes, has a default risk of zero.<sup>7</sup> Private banks have a positive default risk, which is why their liabilities occupy a lower rung in the hierarchy of money.

During normal times, the public displays what economists would call 'rational inattention' towards these economic and legal differences between outside and inside money. It seems safe to say that to most people money is 'semantically identical with cash' (Sgambati, 2016: 10). This obfuscation is the achievement of two pillars of the public-private partnership that underpins inside money. The *economic* difference is obfuscated because inside money trades 'at par' with outside money, meaning that bank deposits are convertible into cash at a one-to-one rate (Goodhart, 1989: 293). The state provides the supervisory services and the monetary (lender of last resort) and fiscal (deposit insurance, implicit bailout guarantees) backstops that together make bank liabilities sufficiently safe for them to trade at par with the liabilities of the central bank.<sup>8</sup> The institution which renders the *legal* difference between legal tender and inside money invisible is the *payments system*. The hallmark of cash – a liability of the

central bank – is that it ‘can perform the payment and settlement functions (with finality) at one and the same time, by virtue of its legal tender status’ (Issing, 2000: 26). The same is not true of the liabilities of private banks, such as demand deposits. Consider the following example. After dinner at a restaurant whose bank account is with a bank different from your own, you pay the bill by debit card. How does that settle your debt to the restaurant? Your bank reduces its liability to you (i.e., your checking account balance) and asks the central bank to transfer reserves of the same amount from your bank’s reserve account to that of the restaurant’s bank. The latter then credits the restaurant’s deposit account. Thus, if bank deposits appear to be equivalent to cash they only do so because an invisible infrastructure performs payment and settlement in the background (Issing, 2000: 26). To summarize, public backstops and the payments system obfuscate the hierarchical distinction between outside and inside money, thereby sustaining the myth that all money is created equal. This illusion of non-hierarchical money, in turn, sustains the myths that banks are intermediaries and that money is exogenous.

### 3.2. The myth of banks as intermediaries and the myth of exogenous money

What does a bank do when it makes a loan? For more than a century, the answer given in economic journals, textbooks, and newspapers was that the bank merely channels ‘loanable funds’ from savers to borrowers. This ‘myth of banks as institutions of intermediation’ (Polillo, 2013: 33–7), while always a misrepresentation (Schumpeter, 1954: 1079–80), has proved astonishingly persistent and continues to be ‘firmly entrenched in the contemporary imaginary’ (Sgambati, 2016: 276). Immediately, this raises the question of who, if not the banks, creates ‘loanable funds.’ The answer comes in the form of the closely associated myth of exogenous money, according to which money is created exclusively by the central bank. In short, central bank-created money circulates, banks ‘accept’ deposits from savers and, acting as intermediaries, re-distribute these ‘loanable funds’ to borrowers.

A brief reality check shows that what the two myths convey is not so much a simplified but an upside-down version of the institutional architecture of credit money.<sup>9</sup> First, in order to make a loan – thereby creating new money – banks do not depend on savers depositing their ‘loanable funds’ with them. When making a loan of €1000, a bank expands its balance sheet by adding two offsetting items – ‘€1000 loan’ on the asset side, ‘€1000 deposit’ on the liability side. In other words, it is not deposits that make loans, but loans that make deposits (Schumpeter, 1954: 1080). Second, the limiting factor to the creation of such inside money is not the availability of

outside money, but the demand for loans by firms and households, and the banking system's assessment of the profit opportunities associated with meeting that demand. Banks do not need to hold reserves in order to make a loan. In fact, the reverse is true – banks make a loan and *then* borrow the necessary reserves, either in the interbank market or from the central bank. Point three is the flip side of this: outside money is *not* an exogenous variable under the discretionary control of the central bank. Today as well as in the past, central banks have generally targeted the short-term interbank interest rate. In order to achieve this target, the central bank *must* provide the reserves implied by the amount of inside money *already* created by the banking system. Failing to do so would mean to miss the target for the interest rate, disrupt the money market, and jeopardize financial stability. In practice, therefore, interest-rate-targeting central banks have no choice but to validate inside money creation *ex post*. As a consequence, both inside and outside money are endogenous to the interaction of loan demand and lending behavior in the economy (Goodhart, 2001: 14–6; Ingham, 2004: 137, 142, 151). These points apply not only to the global fiat money standard of the post-Bretton Woods era but to modern monetary systems in general, as has long been highlighted by post-Keynesian economists such as Nicholas Kaldor, Victoria Chick, Basil Moore, and Randall Wray (Goodhart, 2001: 15).

Returning to the question of public monetary trust, the key takeaway from the discussion so far is that this folk theory casts money as a *quantity under the direct control of the central bank*. This pretense of control over broad money generally fosters monetary trust: 'People don't need an advanced course in economics to understand that inflation has something to do with too much money' (Volcker and Gyohten, 1992: 167, quoted in Krippner, 2011: 116). Historically, the diffusion of this pretense of central bank control over M3 was greatly aided by the diffusion of monetarism, which revived and updated Irving Fisher's quantity theory of money (Fisher, 1911; Friedman and Schwartz, 1963; Ingham, 2004: 80, 149). The basic transactions form of the quantity equation of money is written as  $MV = PQ$ , where M, V, P and Q, respectively, denote the nominal quantity of money, money's 'velocity' of circulation, the price level and the volume of real transactions per period. As long as no restrictions are imposed on the behavior of individual terms, the quantity equation is an identity without empirical content, in which '[t]he right-hand side of the [equation] corresponds to the transfer of goods, services, or securities; the left-hand side, to the matching transfer of money' (Friedman, 2008: unpaginated). It is under the assumption of the long-run neutrality of money – according to which changes in M do not affect the long-run trends of V and Q – that the form  $P = MV/Q$  carries the core message of monetarism 'that inflation is always and everywhere a monetary phenomenon

in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output' (Friedman, 2008: unpaginated).

The academic monetarist literature featured complex and nuanced debates over whether M (in practice: M3, a broad measure of money) could actually be controlled by the central bank, and whether velocity and the relationship between output and the demand for money were stable over time. These nuances were absent, however, from the simplified 'Political Monetarism' that became a staple of folk theories of money and the key message of which was 'not that institutional reforms were needed to give the central bank the power to control the money supply tightly, but that the central bank already did control shifts in the money supply' (De Long, 2000: 91). This argument rests – often implicitly – on two assumptions. First, the central bank is assumed to implement its monetary policy stance by manipulating the monetary base – that is, outside money. As explained above, in reality central banks are compelled to meet banks' demand for outside money in order to achieve their target for the interbank interest rate. Second, the central bank's alleged control over outside money is assumed to imply control over the amount of inside money created by the banking system. The ratio between the two is supposed to be determined by the 'monetary base multiplier,' which varies with the size of the legal reserve requirement. In the standard textbook presentation, which assumes a cashless economy, a required reserve ratio of two percent (as initially imposed on euro area banks) implies a monetary base multiplier of 50.<sup>10</sup>

Mitchell Innes once observed that with money 'things are not what they seem' (Innes, 1914: 154). One century on, they still are not. Whereas in reality bank lending determines reserves, the myths of banks as intermediaries and of exogenous money hold that reserves determine bank lending. (Political) monetarism played a key role in the emergence and resilience of these myths, not least in the economic textbooks that have taught generations of students – including shapers of public monetary beliefs such as teachers, journalists, and politicians – an upside-down version of the money creation process (Goodhart, 2001: 15–6). This resilience constitutes an under-appreciated puzzle. Given their penchant for communication and transparency, should central bankers not be expected to do their best to dispel such monetary misconceptions?

#### **4. THE POLITICS OF TRUST AND LEGITIMACY: FROM MONETARY RESTRAINT TO MONETARY EXPANSION**

Money is complicated, and it is hardly surprising that the folk theory of money outlined above is wrong in every major aspect. More surprising – and of greater analytical value – is the U-turn some central banks have performed in relation to that folk theory. For whereas they had long been



unconcerned by the tenuous relationship between monetary myth and monetary reality, central bankers have recently discovered that ‘great divide’ to pose serious risks to their public legitimacy (Haldane, 2016). What has changed? The short answer is: the size of central bank balance sheets. When the focus of central bankers shifted from fighting inflation to staving off deflation, the mythology of credit money stopped playing into their hands. This section will draw on the cases of the Bundesbank and the European Central Bank to show that central banks happily played along with the folk theory of money as long as the conditions were in place that upheld the Volcker law of central bank legitimacy as a corollary of successful inflation control. However, deflationary pressures and quantitative easing have recently spelled the end of this law. The implications for the politics of monetary trust and central bank legitimacy are illustrated by the case of the Bank of England, which has felt compelled to publicly debunk the folk theory of money.

#### 4.1. Fighting inflation: Bundesbank and ECB pretense of control over M3

In a world in which public aversion to inflation varies considerably across countries (Ehrmann and Tzamourani, 2012; Scheve, 2004), postwar Germany stands out for its particularly strong anti-inflationary attitude, or ‘stability culture’ (Hayo and Neumeier, 2016; Tognato, 2012: 41–72).<sup>11</sup> Here, the argument that memories of the Weimar hyperinflation strengthened the institutional position of the Bundesbank certainly has merit. At the same time, however, the Bundesbank was at pains to make sure that people would not forget, even orchestrating media campaigns ‘to reinsert memories of the hyperinflation of the 1920s into Germany’s postwar political mythology’ (Johnson, 1998: 199).<sup>12</sup> In 1973/1974, shortly after the end of the Bretton Woods system of fixed exchange rates, the Bundesbank adopted a policy of monetary targeting. At a time when central bank control over monetary aggregates was, if anything, declining, this decision constituted ‘a strong assertion that the Bank had regained control over its essential variable’ (von Hagen, 1999: 695). While it is difficult to determine whether this decision in favor of monetary targeting reflected genuine conviction inside the Bundesbank or a pragmatic embrace of ‘organized hypocrisy’ (Brunsson, 1989) to accommodate a public preference for seeing the central bank in control of the money supply, the Bundesbank’s disregard for its monetary target suggests that monetary targeting increasingly became a front-stage activity (Bernanke and Mihov, 1997; Clarida and Gertler, 1997). Commenting on Clarida and Gertler’s review of the Bundesbank’s monetary policy record,



Dornbusch (1997: 407) noted that '[a]mazingly, M3 plays absolutely no role in the story.'

The notion that the Bundesbank aimed at sustaining the public's monetarist convictions by nourishing the myth of exogenous money also goes a long way towards explaining the otherwise puzzling German insistence on a 'prominent role' for money in the monetary policy strategy of the ECB. Still arguing in favor of a pure monetary aggregate strategy, then-Bundesbank president Hans Tietmeyer justified this choice as a way for the ECB to 'inherit the reputation of the Bundesbank' (quoted in Dornbusch, 1997: 410). Although Otmar Issing, then chief economist of the ECB, compromised by agreeing on combining a reference value for M3 growth with an inflation target, the rationale remained the same: 'The German saving public (*die Sparerer*) have been brought up to trust in the simple quantity theory, and they are not ready to believe in a new institution *and* new operating instructions all at once' (Dornbusch, 1997: 412, orig. emphasis).<sup>13</sup>

At first, the ECB defended the reference value for M3 against academic criticisms, before relegating it to a subordinated position in its monetary policy strategy in 2003 (ECB, 2003: 87). Even after that, however, the ECB continued to pay heed to the monetarist notion of a tight link between outside and inside money (and thus inflation). The clearest example is provided by its decision to 'sterilize' the outside money created as part of its Securities Markets Programme (SMP). Under the SMP, which was launched in May 2010, the ECB purchased sovereign bonds of euro area member states suffering from particularly high interest rates (ECB, 2010). The total nominal value of the accumulated purchases amounted to €218 billion (ECB, 2013). Paying for the purchase of these assets by crediting the reserve accounts of its counterparties, the ECB expanded its balance sheet, thus increasing the outstanding supply of central bank money. In contrast to its usual refinancing operations, however, these purchases created non-borrowed reserves – central bank money that counterparties did not have to repay after a fixed period. At the time the program was launched, the ECB's assets had already almost doubled from €1.2 trillion in May 2007 to €2.1 trillion in May 2010, and were about to rise further to the peak value of €3.1 trillion in June 2012, mostly due to long-term refinancing operations. In other words, the €218 billion of non-borrowed reserves created to finance the SMP represented a minor item on the ECB's expanded balance sheet. Nevertheless, the ECB announced that it would conduct weekly fine-tuning operations – the auction of fixed-term deposits – 'to re-absorb the liquidity injected through the Securities Markets Programme' (ECB, 2010). Jean-Claude Trichet (2010) was at pains to convey the symbolic key message of sterilization: 'We are not printing money. This confirms and underpins our commitment to price stability.'

To sum up, both the Bundesbank and the ECB not only approved, but actively nourished the myth of money as a quantity under the direct control of the central bank. Professional central bank watchers criticized the ECB's insistence on monetary targets and reference values (Braun, 2015: 374–7). However, this insistence was not an expression of intellectual inertia but a form of 'play-acting' (Goodhart, 2001: 17), performed by the trust-taker for a lay audience (Beckert, 2005: 22–5). Thus, even after the ECB had taken over, communication about money followed the logic not of transparency but of 'constructive ambiguity' (Best, 2005; cf. Krampf, 2016) and even, possibly, of 'organized hypocrisy' (Brunsson, 1989). It is crucial that both the Bundesbank and the ECB acted in a context in which the underlying macroeconomic dynamic was inflationary, so that the notion of money as a quantity under central bank control bolstered public monetary trust. This has recently changed. The tectonic shift from inflationary pressure and monetary restraint to deflationary pressure and monetary expansion has fundamentally altered the politics of monetary trust and central bank legitimacy.

#### **4.2. Fighting deflation: The Bank of England's insistence on non-control over M3**

Policy responses to the global financial crisis of 2007/2008 comprised both material and communicative interventions. Fiscal and monetary authorities injected capital and liquidity into the financial system, while at the same time communicating reassuring messages to the public. Crisis management was complicated by the fact that central bankers had to speak 'to multiple audiences in an informationally segmented way' (Lohmann, 2003: 109). In particular, they 'talked up' the size and scope of their interventions to financial market participants, while 'talking down' the inflationary potential of these measures to the general public. This has been a daunting task, given that the asset purchases and lending operations have expanded central bank balance sheets – and thus outside money – to unprecedented (peacetime) levels (Ferguson et al., 2015). In the case of the Bank of England, asset purchases between 2009 and 2012 amounted to £375 billion. By reinvesting funds from maturing bonds, the Bank has since held the level of its asset holdings constant. In August 2016, following the Brexit vote, the Bank announced a new round of quantitative easing (QE) that will raise the total value of its asset purchases to £435 billion. In this situation of rapid balance sheet expansion, the three myths described above no longer play into the central bank's hands. Put bluntly, 'ignorance is not bliss' anymore but, on the contrary, makes it 'more difficult for central banks to act effectively' (Wolf, 2014; cf. Winkler, 2014). This is true for two main reasons. On the one hand,

the folk theory collapses the distinction between outside and inside money, concluding that the expansion in the ‘money supply’ must bring about inflation. This motive is encapsulated in the misleading but ubiquitous metaphor of the ‘printing press’ spinning at full throttle.<sup>14</sup> On the other hand, the folk theory of money leads to an understanding of quantitative easing in terms of the central bank giving ‘free money’ to the banks. At a time when public trust in the financial sector is still severely dented (Haldane, 2016: 5), this trope has a politicizing effect.

The new ‘voice’ of money has found its most audible expression in a number of monetary reform movements. Since the London-based group *Positive Money* launched its operation in 2010, similar initiatives have sprung up across Europe, including in Germany (*Monetative*), the Netherlands (*Ons Geld*), and Switzerland (*Vollgeld-Initiative*). Aiming to wrest the privilege to create money from banks, these groups advocate the nationalization of money creation via a full reserve banking system (Dyson et al., 2016; for a critique, see Fontana and Sawyer, 2016). Starting off on the fringes of monetary discourse, these ideas have since made considerable inroads into the economic and, in some places, political mainstream. Examples include discussions by IMF economists (Benes and Kumhof, 2012) and Nobel Prize winners (Prescott and Wessel, 2016), parliamentary consultations in Iceland, and the successful calling of a referendum in Switzerland (to be held in 2018). Anecdotal evidence suggests that learning that banks are not mere intermediaries but have the ability to create money tends to have a scandalizing effect on people. At the main annual gathering of *Positive Money* members in London on March 1, 2013 (at which the author was present), a builder addressed the plenary meeting with a representative statement: ‘Creating money out of money is immoral. [Applause] Since I’ve discovered *Positive Money*, I’ve been quite evangelical.’ In addition to the ultimate goal of full-scale monetary reform, *Positive Money* has also criticized the Bank of England’s QE program as a subsidy to the banking sector, advocating a state-led green investment program instead.

It was against this backdrop that, in 2014, the Bank of England addressed the general public to make a ‘game-changing acknowledgement’ (Baker, 2016) that is without precedent in recent monetary history. In two articles in its *Quarterly Bulletin* and in two online videos, the Bank made a point of refuting each of the three myths described above (McLeay et al., 2014a,b). At that time, the public debate about the monetary system had reached a critical momentum, fueled not least by regular press reporting on the *Positive Money* campaign. The desire to get on top of that debate and to reassure the public over the central bank’s ultimate control over monetary and financial conditions is clearly evident in the Bank of England articles. In order to achieve this, the Bank set out to methodically dissect the folk theory of money, taking on one myth at a

time. Firstly, against the myth that all money is created equal, the Bulletin articles made a point of clearly distinguishing between outside and inside money (McLeay et al., 2014a: 10). Secondly, they rejected the myth of banks as intermediaries, highlighting the capacity of banks to create money themselves:

When a bank makes a loan to one of its customers it simply credits the customer's account with a higher deposit balance. At that instant, new money is created. (McLeay et al., 2014a: 11)

[R]ather than banks lending out deposits that are placed with them, the act of lending creates deposits — the reverse of the sequence typically described in textbooks. (McLeay et al., 2014b: 15)

Thirdly, and most significantly, the Bulletin articles rejected the monetary base multiplier and the myth of exogenous money – and thus the notion of central bank control of the money supply:

In normal times, the central bank does not fix the amount of money in circulation, nor is central bank money 'multiplied up' into more loans and deposits. ... [R]eserves are, in normal times, supplied 'on demand' by the Bank of England to commercial banks in exchange for other assets on their balance sheets. In no way does the aggregate quantity of reserves directly constrain the amount of bank lending or deposit creation. (McLeay et al., 2014b: 14, 16)

As argued above, central bankers had not previously seen the need to intervene when these issues were misrepresented – including in mainstream macroeconomic textbooks read by millions of economics students (Di Muzio and Noble, 2016). What, then, persuaded the Bank of England that norm-taking no longer bolstered its legitimacy, and that a proactive, myth-busting, and thus *norm-making* form of communication was needed? The key to answering this questions lies in the excess reserves created by QE. The folk theory of money, which exaggerates central bank control under inflationary conditions, leads into gloomy scenarios when, under deflationary conditions, the central bank engages in large-scale monetary expansion. In particular, the failure to account for the separation between outside and inside money leads to the notion, ubiquitous in media reporting, that commercial banks will 'lend out' or 'pass on' their newly acquired excess reserves, thus multiplying the money supply. This notion sparks fears of goods and asset price inflation. The focus on the nature and the effects of quantitative easing in the second part of the second Bulletin article indicates that countering such fears was a primary goal of the Bank's pedagogical effort:

As a by-product of QE, new central bank reserves are created. But these are not an important part of the transmission mechanism. This article explains how, just as in normal times, these reserves cannot be multiplied into more loans and deposits ... This is because ... banks cannot directly lend out reserves. Reserves are an IOU from the central bank to commercial banks. Those banks can use them to make payments to each other, but they cannot 'lend' them on to consumers in the economy, who do not hold reserves accounts. (McLeay et al., 2014b: 14, 25)

With these articles, the Bank of England hoped to clear up public monetary misperceptions that had hitherto fostered monetary trust and central bank legitimacy but that, under changed circumstances, had become a threat to both. Other institutions have since followed up with similar publications, including the Dutch and Hungarian central banks as well as the IMF (Ábel et al., 2016; De Nederlandsche Bank, 2016; Kumhof and Jakab, 2016). While there are limits to what such articles can achieve, other recent initiatives point towards a broader strategic shift in central bank communication. For instance, the Bank of England, the Fed, and the ECB all launched their own video channels on YouTube between 2009 and 2010. In 2014, the Bundesbank, held its first 'Open Day,' inviting members of the public to explore its premises and address questions to the President and other senior officials. Similarly, the Bank of England held its first 'Open Forum' in 2015, which was open both geographically (with fora taking place in cities across the UK) and in terms of audiences, with members of the public among the participants. The Fed followed suit in 2016, (partly) opening the doors of the annual symposium of the global central banking elite at Jackson Hole where, for the first time, senior policymakers met and discussed with community organizers and representatives of the 'Fed Up' movement (Fleming, 2016). Quantitative easing, it seems, has created a need for communicative soothing.

## 5. CONCLUSION

Since the global financial crisis of 2008, the world's leading central banks have extended their reach and power to unprecedented levels. Their legitimacy in the eyes of the public, meanwhile, has suffered. This article has argued that besides input, throughput and output, there is a fourth, orthogonal dimension to central bank legitimacy – public trust in money. During normal times, monetary trust is 'just there' – trust is habitual, people use money, and neither they nor central bankers or social scientists think much about it. However, financial upheaval and unconventional monetary policies have politicized money to the point where central bankers have felt the need to speak not only to 'the markets' but

also to 'the people.' The literature on central bank communication and legitimacy has been silent on this politicization for two main reasons – an elitist outlook and a conceptual tool kit that stems from a period when monetary policy was about controlling inflation. The purpose of the present article has been to adapt this tool kit for a world of deflationary pressures and ultra-loose monetary policy.

Its core arguments can be summarized as follows. While the general public cannot and does not have a firm grasp of the monetary system, this does not matter when trust is habitual and directed at 'reified' or 'naturalized' images of money, which function best when 'mute' and 'taken for granted' (Berger and Luckmann, 1966: 106; Carruthers and Babb, 1996: 1556; Douglas, 1986: 48; Orléan, 2014: 160). There are, however, episodes when money becomes sufficiently politicized for people to stop taking it for granted. This is when monetary trust becomes 'active trust' (Giddens, 1994: 93). When that happens, folk theories of money can matter a great deal. This article has identified three myths at the core of the prevalent folk theory of money: the myth that all money is created equal, the myth of banking-as-intermediation, and the myth that money is exogenous. This folk theory tends to support monetary trust and central bank legitimacy as long as the underlying macroeconomic dynamic is inflationary. The Bundesbank actively nourished the notion of money as a quantity under the direct control of the central bank, while the ECB did nothing to dispel it. Crucially, however, the legitimacy-supporting implications of the folk theory of money are not cast in stone but depend on the broader monetary situation. Indeed, they are reversed in a situation defined by deflationary pressure and monetary expansion. The Bank of England's decision to publicly refute the myths of the folk theory of money testifies to this fundamental shift in the politics of monetary trust and central bank legitimacy. The communicative challenges central banks face as a result of that shift are set to mount further at a time when discussions about the next generation of unconventional policy tools intensify, including 'helicopter money' and the phasing out cash.

In this context, the article raises important questions regarding central bankers' room to maneuver between the imperatives of two *audiences* that, ultimately, are also two *constituencies* with diverging interests – notably, 'the markets' and 'the people' (Baker, 2015; Schmidt, 2014; cf. Streeck, 2014). Incompatibility in this 'discursive double game' (Crespy and Schmidt, 2014) works both ways. Jörg Asmussen, then member of the ECB Executive Board, has used the example of Angela Merkel addressing the German *Bundestag* on the issue of Greece to argue that 'messages that are necessary and legitimate in public debate can be completely unsuited for market communication and exacerbate tensions' (Asmussen, 2012: unpaginated). In the case of quantitative easing, by contrast, contagion occurred in the opposite direction, as attempts to manage financial

market expectations by talking up the effects of QE undermined public monetary trust by sparking fears of inflation and anger about ‘free money’ for bankers. Here, the key takeaway is that public monetary trust ranks highly among the ‘soft constraints’ that central banks – legally, politically and financially greatly expanded – must navigate today (Judge, 2015). It constitutes an indispensable precondition for central bank legitimacy, which in turn is the bedrock of central bank independence. Following the example set by the Bank of England, central banks may yet find a way to put public monetary trust on new foundations by changing ‘collective monetary beliefs’ (Orléan, 2008: 8). But they will want to tread carefully. As pointed out by Giddens (1994: 129), ‘[r]eflexive engagements with abstract systems may be puzzling and disturbing for lay individuals and resented by professionals.’ In other words, there may be diminishing returns for central bank transparency when it comes to monetary trust (Horvath and Katuscakova, 2016). Mark Carney (2016: 3) put it succinctly in his speech at the Bank of England’s Open Forum: ‘The more people see, the less they like.’ Indeed, the Bank did not feel entirely comfortable about debunking the myth of central bank control over money. As if to lessen the impact of the message, the two video interviews that accompanied the articles in the Bulletin were shot in the vault room of the Bank of England. The young economists explaining credit money appear in front of a very large number of neatly stacked gold ingots.

## NOTES

1. Of course, forming and managing expectations are by no means purely ‘rational’ processes. Here, too, fictions (Beckert, 2016), performativity (Holmes, 2014) and pretense (Braun, 2015) play a crucial role.
2. For a long-term perspective on the cyclical swings between commodity money and credit money, see Graeber (2011).
3. Astutely aware of this dynamic, Georg Simmel predicted that although fiat money represented the ‘final outcome’ of monetary development that was ‘conceptually correct,’ the lack of material restraints on its quantity meant that it would not be ‘technically feasible’ (Simmel 2011: 176).
4. Anecdotal evidence that even ‘many [money, BB] market participants are unaware of the role of central bank versus commercial bank money’ suggests that robust knowledge of the monetary system is confined to an extremely small circle (Comotto, 2011: 2–3).
5. Although still treated as a liability in accounting terms, central bank money is ‘no longer debt in any meaningful sense of the word’ (Hellwig, 2014: 10).
6. For the euro area, this is prescribed in Art. 128.1 TFEU.
7. This relative safety is qualified by the risk of exchange rate devaluation, depending on the position of a currency on the center-periphery continuum of the international monetary system (Pistor, 2013).
8. A bank run occurs as a result of public fear that the par relationship may break down for the liabilities of the bank in question (Bjerg, 2014: 139).



9. The following overview is kept brief and lightly referenced. For more details and references, see McLeay et al. (2014a, b), and Jakab and Kumhof (2015).
10. Note that the monetary base multiplier is 'tautologically correct at all times' (Goodhart, 2001: 21). Under the simplifying assumption of zero cash holdings, the ratio of inside money to outside money is always the inverse of the minimum reserve ratio, because bank lending determines banks' reserve borrowing.
11. For a dissenting view, see Howarth and Rommerskirchen (2015).
12. This view is consistent with Holtfrerich (2008: 33–4), who traces the origins of the relentless price-stability focus of the Bundesbank to the 1950s and the conscious 'German strategy of monetary mercantilism.'
13. For a (slightly bizarre) illustration of the ECB's embrace of the quantity-view discourse, see its educational video on the 'inflation monster' at [www.ecb.europa.eu/ecb/educational/pricestab/html/index.en.html](http://www.ecb.europa.eu/ecb/educational/pricestab/html/index.en.html).
14. For a compilation of alarmist inflation warnings in the German press, see Winkler (2014: 483).

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### NOTES ON CONTRIBUTOR

Benjamin Braun is a senior researcher at the Max Planck Institute for the Study of Societies in Cologne. During the academic year 2016/2017, he is a John F. Kennedy Memorial Fellow at the Minda de Gunzburg Center for European Studies, Harvard University.

### ORCID

Benjamin Braun  <http://orcid.org/0000-0002-5186-5923>

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