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## Innocent frauds meet Goodhart's Law in monetary policy

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## **Working Paper No. 622**

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### **Innocent Frauds Meet Goodhart's Law in Monetary Policy\***

by

**Dirk Bezemer  
Geoffrey Gardiner**

**September 2010**

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\* We thank Timothy Congdon, Beryl Gardiner, Charles Goodhart, and Richard Werner for helpful conversations and comments. All opinions and any errors are ours alone. Correspondence: Dirk Bezemer, University of Groningen: [d.j.bezemer@rug.nl](mailto:d.j.bezemer@rug.nl).

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## **ABSTRACT**

This paper discusses recent UK monetary policies as instances of John Kenneth Galbraith's "innocent fraud," including the idea that money is a thing rather than a relationship, the fallacy of composition (i.e., that what is possible for one bank is possible for all banks), and the belief that the money supply can be controlled by reserves management. The origins of the idea of quantitative easing (QE), and its defense when it was applied in Britain, are analyzed through this lens. An empirical analysis of the effect of reserves on lending is conducted; we do not find evidence that QE "worked," either by a direct effect on money spending, or through an equity market effect. These findings are placed in a historical context in a comparison with earlier money control experiments in the UK.

**Keywords:** Quantitative Easing; UK Innocent Frauds; Accounting

**JEL Classifications:** E52, E58

## 1. INTRODUCTION

John Kenneth Galbraith (1908–2006) coined expressions that resonated with a large public: “private affluence, public squalor,” “countervailing power,” and “conventional wisdoms.” His last contribution to public discourse was to draw attention to “the economics of innocent fraud,” the title of his 2004 book about “how economic and political systems cultivate their own versions of the truth” (Galbraith 2004: 2). They are intellectual frauds, but they are also “innocent” because “[n]o one is especially at fault; what is convenient to believe is greatly preferred... Most progenitors of innocent frauds are not deliberately in its service. No clear legal questions are involved. There is no serious sense of guilt; more likely, there is self-approval” (Galbraith 2004: 2–3).

Nowhere, Galbraith notes in his chapter on “The World of Finance,” are innocent frauds more prevalent than in money matters. “In the financial markets we celebrate, even welcome, essential error” (Galbraith 2004: 36). This applies in particular to monetary policy, to which Galbraith devotes a separate chapter titled “The Elegant Escape from Reality.” He takes aim at society’s need to believe that, for instance, interest rate hikes will fight inflation or, more generally, that “anything as complex, as diverse as money can be guided by well-discussed and painless decisions”—beliefs which Galbraith (2004: 43) denotes as “our most implausible and most cherished escape from reality.”

There are other indications that innocent frauds occur with remarkable frequency in the discourse on monetary policies—on what it is that monetary policymakers do, and believe to be doing. Two examples illustrate. On monetary theory, Charles Goodhart, emeritus professor at the LSE and former senior policy advisor, last year wrote that he deemed the canonical IS-LM monetary policy model “a steadfast refusal to face the facts” (Goodhart 2009). On practical policies, the U.S. monetary policy commentator Warren Mosler (2010) lists seven innocent frauds, ranging from the supposed need for taxation to fund government expenditures and the assumed debt burden to our children of current government deficits, to the idea that savings are necessary for investment to occur. In this paper we suggest that what helps such “frauds” to persist is a misrepresentation of the financial implementation of public policies. What is typically lost in public discourses with innocent frauds is the accounting side of all financial and monetary policy.

To explore the accounting side of policy that innocent frauds tend to obfuscate, we start by noting that all payments and transfers in the framework of monetary policies are nothing but the crediting and debiting of account balances. In these creditor-debtor relations, it matters who

is the creditor, who the debtor, and for what the liquidity so created can be used. It follows that different forms of money serve different purposes. For instance, banks create loan assets balanced by liabilities on themselves: customers' deposits which constitute "money." Lending from central banks to commercial banks—or vice versa—is not "money," but "liquidity," and has no direct stimulating effects on the economy. Thus, the study of monetary policies is not just the study of tweaking interest rates, of deciding on the rate of "printing money," or of using taxpayers' money to bail out banks. It is the study of administering financial accounting processes on the macroeconomic level, differentiating between types of assets and liabilities.

That difference is not just of academic interest. In 2009 when the UK government decided on "quantitative easing" (QE), it confused liquidity with money. It also misunderstood the actions of its own Debt Management Office (DMO). But the public discourse on monetary policy tends to obfuscate accounting reality—in Goodhart's words, it is "a steadfast refusal to face the facts"—and leads to confused policy interventions.

A second key issue that follows from the accounting nature of monetary policies is that the rules that government adopts for the macro accounting process matter greatly to their policy options. Those rules need to avoid the fallacy of composition: what is true for any single bank is not generally true for the banking system. For example, if government debt is the preferred form in which commercial banks hold balances with the central banks, then government borrowing and banking liquidity are closely connected and government can use this as a monetary policy instrument. If, however, governments believe that central banks should not lend to their own governments—a belief enshrined in Article 123 in the amended treaty of the European Community known as the "Lisbon Treaty"—then this drastically restricts the scope for monetary policy via liquidity management. This seems not to have been realized at the time of the treaty. The avowed purpose of this clause is to thwart fiscal profligacy by limiting government borrowing. Its actual and, it seems, unintended effect is to thwart monetary policy by restricting bank liquidity. The effect is rationalized by the innocent fraud that government borrowing from its central bank is fiscally irresponsible. The fraud relies on a failure to understand that government debt is both a liability and an asset, with separate effects. It is not only a government liability indicating the level of government indebtedness. It is also an asset on banks' balance sheets, which regulates their behavior. If government borrowing from the central bank (by the central bank buying government stocks and banks thereby increasing their balances with the central bank) is not allowed, then banks in the aggregate cannot increase their holding of liquidity—that is, their balances at central bank accounts. Therefore a ban on government borrowing from its own central bank, whatever its merits, implies that government

paper can no longer be used as liquidity. This seems not to have been realized until the first banking crisis following the Lisbon Treaty. The UK government then felt obliged to ignore it in order to provide liquidity to its banks during the Royal Bank of Scotland's (RBS) capital base enhancement, popularly referred to as a "bailout," and the QE experiment.

Thus, these two recent episodes in British monetary policy provide examples of innocent frauds at work, which we explore in the remainder of this paper. In section 2 we present a case study of the RBS "bailout" and the unintended consequences of Article 123 as a prelude to the wider policy of quantitative easing. We study its origins in the debate on Japanese monetary policies (section 3) and its defense by the Bank of England (BoE) when introduced in Britain in 2009 (section 4). We then conduct an empirical analysis of the effectiveness of the 2009–2010 quantitative easing experiment in section 5, and place the findings in the broader context of previous money control attempts in the UK in section 6. Section 7 concludes with a summary and some reflections.

## **2. THE RBS "BAILOUT" AND THE UNINTENDED CONSEQUENCES OF ARTICLE 123**

Three innocent frauds in monetary policy come together in a case study of the recent capital base enhancement by the UK government of The Royal Bank of Scotland (RBS), and the wider issue of quantitative easing. The first innocent fraud is that money is a thing, not a relationship. By lending, banks enter into a contractual relationship and there are limitations to what the newly created liquidity can be used for, as circumscribed by legislation. Liquidity creation by the government is not "lent on" by banks to the public—even though the image is that the government "pumps money into the system," which then unclogs the credit pipelines to the economy. The second innocent fraud is that the government does this with taxpayer's money. The third is a "fallacy-of-composition" innocent fraud: the idea that what is possible for one bank is also possible for all banks—in this case, to increase their liquidity positions.

Article 123 in the amended treaty of the European Community known as the "Lisbon Treaty" states that:

*1. Overdraft facilities or any other type of credit facility with the European Central Bank or with the central banks of the Member States (hereinafter referred to as "national central banks") in favor of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies*

*governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments.*

*2. Paragraph 1 shall not apply to publicly owned credit institutions which, in the context of the supply of reserves by central banks, shall be given the same treatment by national central banks and the European Central Bank as private credit institutions.*

This was the legal context of the RBS capital base enhancement. In April 2008, following concerns about its vulnerability, RBS was urged by the Financial Services Authority to acquire more government paper, the common method for banks to improve their liquidity. The idea is that a bank that is short of liquidity will be able to sell government paper to the central bank when it needs to increase liquidity. Liquidity is here defined as the credit balance a bank has with the central bank, ignoring holdings of currency notes (which are quantitatively small). Government borrowing from the central bank is the most convenient and indeed the most natural source of liquidity for a bank. When a government draws down a loan from the central bank to make a payment, that payment first becomes a deposit by the payee at a commercial bank. Then as a result of the clearing of the payment, it becomes a deposit by the commercial bank at the central bank. The credit balance of the bank will be reduced if it buys a newly issued government bond or if it buys such a bond from the customer of another bank. In the first case the aggregate liquidity of the banks is reduced. In the second case there is a transfer of liquidity from one bank to another.

Article 123 has the effect of cutting off the banks from their natural supply of liquidity (gilts to be sold for BofE reserves). The consequence of this article is that banks cannot increase their holdings of new government bonds without reducing the aggregate liquidity of the banks. (In fact, Article 123 ensures that the only way a bank can acquire liquidity is by borrowing from the central bank and lending the money back to the central bank!). How this played out is illustrated in the following account of the RBS “bailout.” We rely on Fuller (2009) for the figures.

In May 2008, RBS raised £12 bn from its shareholders through a “rights” issue. The government told RBS that it needed more, indeed another £17 bn. Fuller (2009) reports that RBS had £57bn of tier-one capital, not including intangible assets. Under the original Basel Capital Accord it needed £23.5bn, and under the Financial Services Authority’s enhanced

requirements, £47bn. Thus we can see that neither the capital injection by shareholders, nor the injection by the government was necessary if one takes the same prudential view as has been the norm for over half a century. The government insisted it alone would provide the £17bn, but on the most disadvantageous terms. The government took new shares at well-below net asset value, indeed well-below market value at the time of the announcement, but above the market value at the time the injection was made. In the meantime the market value had been destroyed by the activities of American hedge funds, which had short-sold the shares (i.e., sold shares they did not own), driving their price down to a very low level. This was highly disadvantageous to existing shareholders, mostly the pension funds, and also hundreds of thousands of bank employees and bank pensioners who held shares as a result of decades of profit-sharing schemes that had been encouraged by a succession of governments. (After the episode the hedge funds were obliged to disclose their short positions. Paulson and Co. of New York revealed they had shorted 1.67 of Lloyds Bank shares and 0.87 of RBS shares, a colossal bet. Alan Greenspan, former chairman of the Federal Reserve Bank, was a director of Paulson and Co.)

Thus, for providing a little under a quarter of the net tangible assets of RBS, the government acquired 70 percent of the shares. The government's PR men portrayed the purchase of bank shares as a bailout by the taxpayer. Actually no taxpayers' money had been used. The money had been created in the normal way. To put £17bn into RBS, all the governor of the BoE had to do was to debit the account of the government with £17bn, and credit the account of RBS with £17bn, in return for which RBS issues billions of shares to the government at a knock-down price. An accountant who looked at the figures with no knowledge of their origin and saw that the government was in debt for £17bn more, and RBS in credit for £17bn, might presume that that RBS has lent the government £17bn to buy its shares—an illegal transaction. This strange accounting phenomenon leads some observers to believe that bank liquidity is created by government borrowing from the banks.

The deal should have given RBS £17 Billion more liquidity, for the usual way for the government to increase bank liquidity is to borrow from the central banks as just described. Another £20bn was borrowed to pay for shares in the combined Lloyds HBOS bank, making a total of £37bn, but the deals did not increase much-needed liquidity at all. Because Article 123 forbade the BoE from lending money to the government, in the two months before the deals took place, the government's Debt Management Office sold £40bn of new government stocks. That removed all the new liquidity from the banks before it had even been created.

Eventually it was decided to ignore EU law. During the “quantitative easing” experiment, the BofE bought up to £200bn of existing government stocks, and bank liquidity went up to eight times the level when the credit crisis first arose in August 2007. It is hard to see why this was necessary. The government apparently thought the banks would onlend this additional money, not understanding that banks lend their own money, not that of the central bank. The BofE succumbed to the innocent fraud that money is a thing, not a relationship. If the banks in the aggregate had lent the whole £160bn, equal to their aggregate liquidity, they would still have had £160bn of liquidity.

### **3. ORIGINS OF THE QE INNOCENT FRAUD**

The “quantitative easing” experiment, of which the RBS episode was an example even before quantitative easing officially started in March 2009, merits closer scrutiny. Studying its origins, evolution, and implementation highlights how (unwittingly?) obfuscation of the accounting relations governing monetary policies may take over. In this case the “innocent fraud” was created in Bank of Japan publications when it implemented a QE strategy in the early 2000s, and perpetuated by the BofE when QE was adopted in the UK from March 2009 until February 2010.

What is now being discussed in the press and the academic literature (including in the present paper) as “quantitative easing” is in fact nothing more than the monetarist recipe promoted by Milton Friedman from the 1970s—“printing money”—by increasing banks’ reserves with the central bank and relying on their “lending this on” to the economy. This idea relies on the theory of fractional-reserve banking, where banks are thought to multiply their central bank reserves into loans to the economy, and where lending is determined as being a multiple of bank reserves (of liquidity). In this causal scheme, expanding banks’ deposit with the central banks (their reserves) will lead to an expansion of banks’ lending to the economy.

The principal problem with this theory is that fractional-reserve banking is unsatisfactory as a model of what banks actually do (a point made in detail in Wray [1998]). The fraction of reserves to loans is more an *ex post* ratio that can always be constructed than a causal determinant of bank lending. Under current regulations within the “Basel” framework, lending occurs without direct reference to the level of banks’ reserves and is principally restricted by a bank’s capital base through the so-called capital adequacy ratios (CARs). The best one can say in defense of the fractional-reserve banking view is that banks, when lending, create a liability on themselves, and therefore will ensure that their asset base is sufficient to

allow this. Banks' balances with the central bank may be considered their safest assets and therefore the most secure counterpart to their lending. But banks lend against their total asset base, of which reserves are only a part. With variations in assets, in risk assessments, and in capital, there is no reason for a stable ratio of reserves-to-loans to exist, nor a causal relation from central bank reserves to bank lending.

Confusion about the role of Central Bank reserves in determining bank lending has plagued the uses of QE—both as a concept and as a policy tool—from the beginning. The expression “quantitative easing” was coined in 1995 by Richard Werner (then-chief economist of Jardine Fleming Securities in Tokyo) in the Japanese weekly *Nihon Keizai Shinbun* (*Nikkei*). As Werner (2003: 302) subsequently explained, he meant the term to denote an increase in bank lending to the economy, not an increase in banks' deposits with the central bank. Werner recommended direct purchases by the central bank of nonperforming assets, commercial paper, and equity instruments from the banks and from the private nonbank sector—as recently implemented by the U.S. Federal Reserve and known as “credit easing.” In contrast, what Japan did from 2001–2006, and the UK in 2009–2010, was the traditional monetarist policy of increasing reserves (or “high-powered money”), not “quantitative easing” as proposed by Werner—despite Bank of Japan publications, such as Ugai (2006), discussing this under the nomenclature of quantitative easing. Voutsinas and Werner (2010) discuss the genesis of QE in more detail, critique its use in Bank of Japan publications and speeches, and conduct an empirical analysis of the effectiveness of QE in Japan as originally conceived over the 1984–2008 years.

A common view is that QE (in its misinterpreted form of reserves boosting) failed in Japan. Even the Bank of Japan, in a survey of the empirical evidence, had to conclude that “QE's effect on raising aggregate demand and prices was often limited” (Ugai 2006: 1)—meaning that no discernable effects could be established. What did happen was an expansion of the monetary aggregate M1. Wieland (2009) shows that M1 increased in tandem with the “monetary base” (i.e., reserves) during the 2001–2006 years, and argues this is proof of QE effectiveness. The problem with this evidence is that the effect of QE on spending is better captured by a broader monetary aggregate, perhaps even best by total bank lending to the economy; M1 includes only currency and checking account balances, which covers only a small part of total spending. Bank of Japan data show that quarterly M3 percentage growth slid from 4 percent in 1999 to 1 percent in 2001 when QE started. It fluctuated around one percent from 2001 to 2004 and then dropped into negative territory where it still was when QE was terminated in 2006. Other data indicate that domestic credit as a percentage of GDP contracted from 190 to 175 during 2001–2004, then recovered to just under 190 in 2006, the end of QE

(Bank of Japan 2010). This is in contrast with the growth in M1 as a percentage of nominal income, which increased from 45 to 75 during 2001–2006 (Wieland 2009: 11). On balance, broad money (M3) was about stable when credit contracted, and the share of currency and checking account balances in broad money went up. QE did not work in Japan: it increased reserves, but it did not increase lending.

#### **4. THE DEFENSE OF QUANTITATIVE EASING IN BRITAIN**

From March 2009 until February 2010, the BofE implemented a £200bn QE program. There was no uncertainty about the aim. The BofE's explanatory document that accompanied the introduction of QE was titled "Putting More Money into Our Economy." In it, it asks "How will we know if the asset purchases are working?" and answers this by stating that "[u]ltimately, what matters is the degree to which the cash injection [meaning purchase of government debt, DB&GG] boosts the growth of money and spending by households and businesses" (Bank of England 2010). In its Quarterly Bulletin of 2009Q2, BofE staff explained QE in detail and wrote that "the aim of quantitative easing is to inject money into the economy in order to revive spending" (Benford et al. 2009: 91). Charlie Bean, Deputy Governor for Monetary Policy of the Bank of England, answered a number of frequently asked questions on QE on the BofE web site on July 13, 2009. He explained that QE was motivated by BofE concern "with the growth of money spending in the economy... Quantitative easing aims to increase money spending." That the BofE aimed for actual spending (not just banks' BofE deposits to go up) is also clear from Mr. Bean's contemplating the possibility that "quantitative easing ends up stimulating the housing market, [in which case] it is also likely to stimulate spending more generally." When asked "Quantitative easing was tried in Japan but didn't work. What lessons have you drawn from this? Why do you think it will work here?" Mr. Bean replied:

Policy should not focus on a single transmission channel. The Bank of Japan sought to increase the banking sector's money holdings by buying assets principally from the banks. This meant that there was no direct effect of the Bank of Japan's actions on broad money—the money holdings of the nonbank private sector. So the Bank of Japan, in order to have an effect on broad money, was entirely reliant on the banks reacting to the extra reserves by expanding their lending. But the banks simply hoarded the reserves and did not expand lending. The Bank of England has taken a different approach, which aims to have a direct effect on broad money, and works through a wider range of channels to stimulate spending. In particular, it has focused on purchasing

assets from the nonbank private sector in order to increase directly the money holdings of private individuals and companies who are more likely to spend this extra money. Of course this may then be reinforced if the banks choose to expand lending as well....” (Bank of England 2009a)

It is telling that Mr. Bean notes that banks “just hoarded reserves,” in line with the idea that reserves are lent on and then spent into the economy. Other BofE staff (Benford et al. 2009: 91) likewise write that “Banks face the choice of holding reserves or lending them out in the market.” But reserves are not either “hoarded” or “lent.” “Hoarding reserves” would occur regardless of whether banks increase lending *pari passu*. QE causes reserves to go up and stay up whether or not bank lending increases.

Recognizing that in previous QE exercises “the banks simply hoarded the reserves and did not expand lending,” Mr. Bean seems to undermine much of the QE rationale. He then proposes to salvage it by “purchasing assets from the nonbank private sector in order to increase directly the money holdings of private individuals and companies.” There are two problems with his reply. The first is that the effect of purchasing assets from the nonbank private sector is not different from purchasing assets from banks, unless it changes banks’ lending preferences—which was the problem to start with. The second is that the nonbank private sector is unlikely to sell gilts and spend the money, unless their spending/investment preferences have suddenly changed.

A closer look at the accounting sequence may clarify this. The BofE receives gilts from a nonbank firm. BofE credits seller’s account at the commercial bank and that becomes an increase in the commercial bank’s deposit at the BofE via clearing (as the customer cannot have an account at the BofE). Then the nonbank firm spends this money if it so wishes (aim achieved spending is up) or invests it in a financial asset (all in vain—gilts were replaced by other financial assets). The problem in Mr. Bean’s reply is in the words “who are more likely to spend this extra money.” Why should they spend what must be capital? Surely the BofE has only been able to buy gilts because many holders expect them to fall when the increase in the national debt causes the rating agencies to downgrade gilts—not because investors have suddenly decided to go on spending spree.

Even if this were the case, the commercial bank is likely to undo the extra spending by the nonbank firm. Banks lend their own money (not someone else’s) and a bank loan is a liability on themselves. Forced to increase their liabilities to some party, they may well seek to reduce it to others. Due to BofE operations, deposits on its balance sheets have increased to a level it did not initially prefer. The logical response would be for the bank to restrict deposit

creation to other customers so as to rebalance its portfolio in line with initial preferences. Only on the assumption that its BofE reserves have increased its appetite for deposit creation we expect the desired effect.

There is another reason why QE may backfire. It causes banks to have colossal credit balances at the BofE on which they earn very little, but the people who have sold investments to the central bank as a result of QE now have equivalent deposits at their banks. Those deposits would like a higher return than their banks are getting from the central bank. The banks are in a quandary. Ideally they would like to lose the deposits to another bank, passing on the poisoned parcel. Failing that, they must raise interest rates to their borrowers to cover the deficit. This negates the supposed expansionary effect of QE! This may well be one reason why, when the Bank of Japan applied zero interest rates, the interest rate on loans to industry remained high (around 13 percent).

In sum, the BofE defense relies on QE changing either or both of the private sector's spending/investment preferences and the banks' appetite for deposit creation. If neither occurs, then gilt purchase by the BofE from a private party may actually *decrease* lending and spending—and this outcome is reinforced when banks seek to compensate low returns on their large BofE balances by charging higher interest rates on their loans. So QE increases investors' (not spenders') deposits, and causes banks to restrict deposit creation to other customers and to make it more expensive to borrow. The net effect of this scenario is a shrinking deposit base. This sequence is not a necessary outcome, but at least it is as plausible as the increase-in-spending scenario espoused by the BofE.

## **5. QUANTITATIVE EASING: A QUANTITATIVE EVALUATION**

QE was discontinued on February 4, 2010 when the BofE's monetary policy committee announced it was putting its £200bn QE program on hold, but warned the economy remained sluggish and said it would start buying assets again if need be (Seager 2010). For an assessment of its effectiveness, we need to briefly sketch the operational details of QE. QE was administered through the Asset Purchase Facility (APF), a wholly owned subsidiary of the BofE. The Quarterly Report issued by the APF for the first quarter of 2010 shows the total amount of asset purchases from February 2009 to March 2010, which comes to £199,721bn. Table A in the report shows that virtually all of it (£198,275bn) was the buying up of gilts, fully financed by central bank reserves (Bank of England 2010: 3). As just noted, the BofE balance sheet (which incorporates the APF balance sheets) showed “only” £156.4bn of reserves in

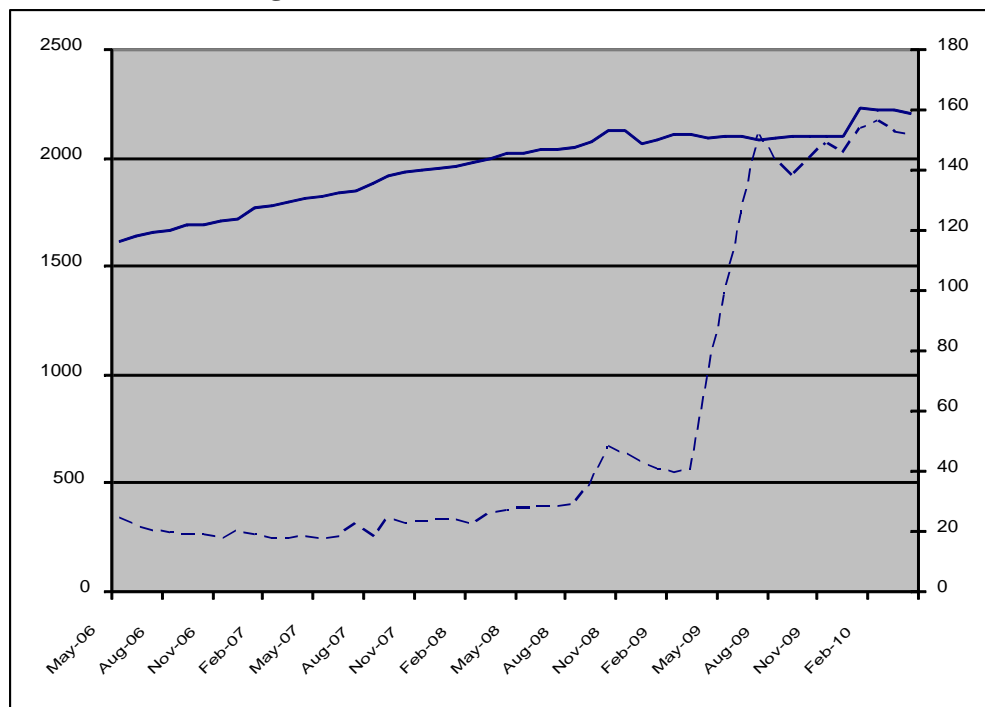
February 2010 (see figure 1, below). The difference is accounted for by simultaneous selling of gilts by the Treasury's Debt Management Office (DMO), the operations office for the Treasury's funding needs. The DMO is not part of the BoE. It was until 1998, when the Bank was given political independence. Robert Stheeman, head of the DMO, explains that the decision was taken because "if you bundled up debt management and monetary policy, there is the potential for the most extraordinary conflict of interest" (quoted in Aldrick [2009]). This view ignores that, as was argued in the previous section, bank reserves vary with the issuing and purchasing of government debt and therefore debt management *is* monetary policy. Their "unbundling" seems to have impeded effective QE implementation. For instance, in the middle of QE on the August 6, 2009, the BoE and the DMO issued a joint statement that "[t]he Bank of England and the Debt Management Office (DMO) have agreed that the Bank will make available to the DMO a significant amount of the gilts purchased via the Asset Purchase Facility (APF) for on-lending to the market through the DMO" (Bank of England and Debt Management Office 2009). As in the RBS episode analyzed above, the government and the BoE were thus partly undoing each other's actions, joint statements notwithstanding. Financial commentator Tim Congdon of Lombard Street Research commented that the whole process "is quite idiotic, frankly" (quoted in Aldrick [2009]) and suggested that the DMO, if run by the Bank, would simply issue fewer gilts. As it is, the DMO seems to have quietly reduced the BoE's announced £200bn QE program to £156.4bn.

Did QE work? No one seems to know. The present authors attempted to assess its effectiveness by studying data on bank lending and reserve balances before and during the QE experiment. Figure 1 tracks both these time series from May 2006 (the earliest date for which data are publicly and readily available) to April 2010. We find that until February 2008, reserve balances were fairly stable, fluctuating in a band between £17bn and £25bn. From March 2008 to the start of QE, reserve balances already increased to historically large levels of around £40bn. During the QE experiment, reserve balances nearly quadrupled from £39.4bn in February 2009 to £156.4bn in February 2010. The first conclusion therefore is that—unlike in the RBS episode—the BoE was successful in increasing reserves, at a rate never observed before and to levels unique in BoE history.

The response in bank lending to the net £150bn in gilt purchases is unclear. During the last phase of the credit boom that preceded the crisis, outstanding loans from UK banks peaked in November 2008 at £2,124bn, having grown from a level of £1,611bn over the two-and-a-half years since May 2006, the start of our data series. This represents an annualized loan growth rate of 12 percent. During the "credit crisis," outstanding loans dropped slightly from their

£2,124bn peak in November 2008 to a level of £2,110bn at the start of QE in March 2009. During most of QE, the loan stock was virtually constant; it stood at £2,098 at the end of December 2009. It then jumped to £2,233bn at the end of January 2010 and went flat again: the latest observation at the time of this writing is for the end of April 2010, £2,203bn.

**Figure 1: Outstanding Amounts of UK Resident Monetary Financial Institutions' (excluding Central Bank) Sterling Loans to Private and Public Sector (straight line, left-hand axis) and Bank of England Banking Department Sterling Reserve Balance Liabilities (dotted line, right-hand axis), Billions of Pound Sterling**



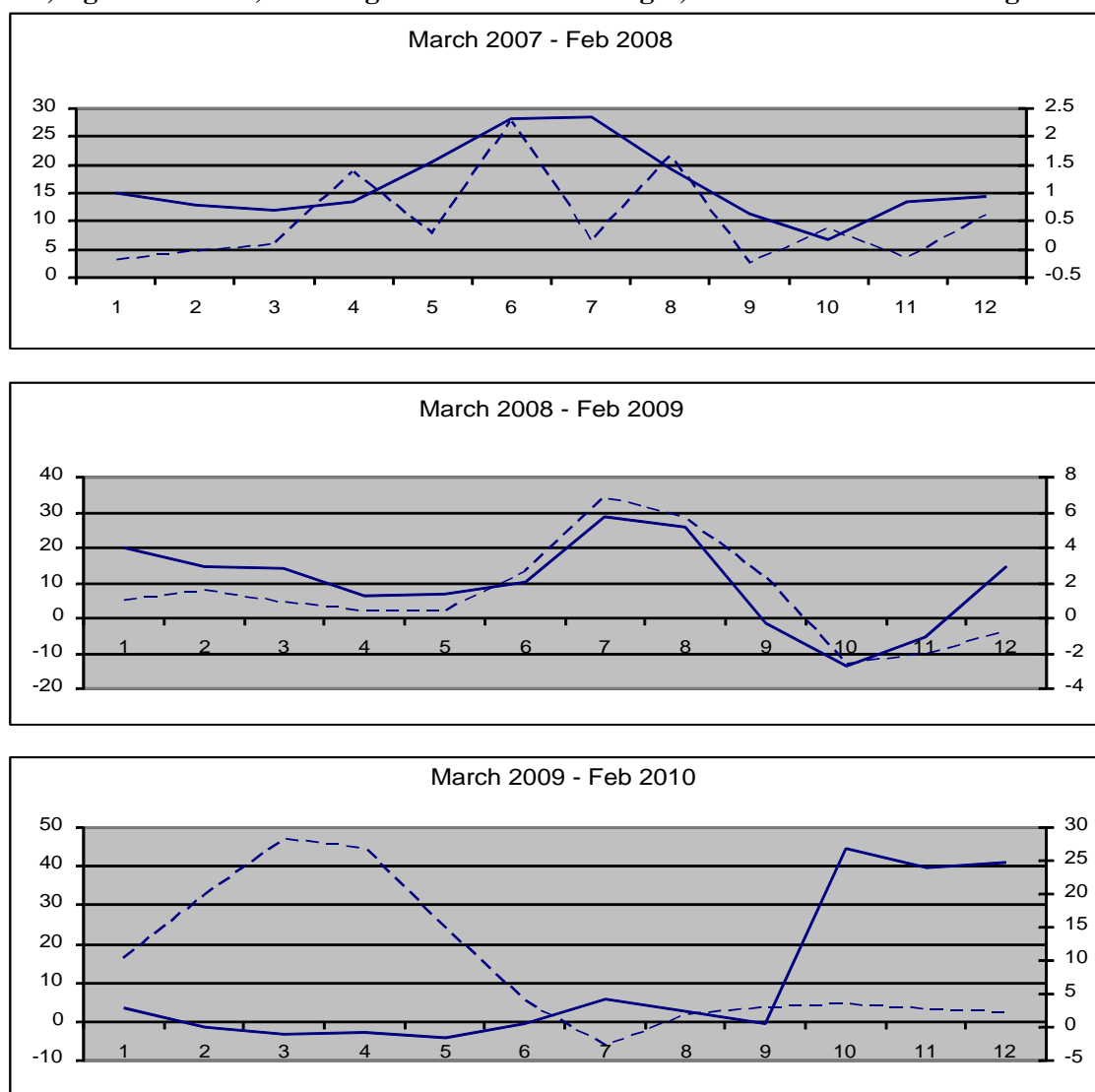
**Source:** Bank of England

In order to look more closely at the correlation between the two variables, we look at month-on-month growth rates of bank lending and reserve balances (year-on-year or quarter-on-quarter rates, give qualitatively identical results). Figures 2a, 2b, and 2c (below) show monthly growth rates from March to February in the three years 2007–2008, 2008–2009, and 2009–2010. The data are smoothed by taking three-month moving averages, so removing some of the spikes and making it easier to observe trends (not smoothing yields messier pictures, but identical conclusions). We find that in 2007–2008 there is a substantial (but far from complete) correlation between reserve balances and lending: the coefficient of correlation is 0.46 in 2007–2008. Reserves growth oscillates between 5 percent and 25 percent, while lending growth rates rise and decline more smoothly through the year. In 2008–2009, correlation is a

high 0.78 as loan growth quite closely tracks the growth in reserves. However, when reserve balances are quadrupled during QE, the positive correlation completely disappears, with a negative -0.49 coefficient of correlation over 2009–2010. This suggests that the earlier positive correlations can not be interpreted as causation—as BofE reserves leading to bank lending. It might be argued that loans responded to reserves with a six-month lag in 2009–2010; however, this would be an *ad hoc* argument as the pattern cannot be observed in earlier years. Rather, what we see is “Goodhart’s Law” in action. Goodhart’s law is the principle proposed by Charles Goodhart (1975) that “any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes.” Loans and reserves tend to develop proportionally—until policymakers purposely boost reserves. Then it is revealed that reserves do not and never did cause loans in a systematic fashion.

We obtain the same result when only looking at private lending (which is theoretically unwarranted, but preferred by some). Private lending is always over 98 percent of total lending in our period of observation. Also, identical results are found when we study the response to QE of money (M3 or M4 monetary aggregates) instead of lending. For those who like that sort of thing, in a companion paper we analyze the data in a more rigorous econometric fashion, applying vector auto regression (VAR) analysis and testing for structural breaks and Granger causality. We obtain the same conclusion there: there is no evidence from the data that changes in reserve balances cause changes in bank lending to the economy, and hence no evidence that that QE “works.” Nor, as we have discussed above, is there reason from either theory or experience to think so.

**Figure 2: Monthly Growth Rates in UK Resident Monetary Financial Institutions' (excl. Central Bank) Sterling Loans to Private and Public Sector (straight line, left-hand axis) and in Bank of England Banking Department Sterling Reserve Balance Liabilities (dotted line, right-hand axis): Moving Three-month Averages, Billions of Pound Sterling.**



**Source:** Bank of England

Thus we find no link between QE and its intended outcome. We may also probe the monetary mechanisms through which this outcome is to be achieved. The more sophisticated accounts of QE explain that it may affect spending via rising prices of corporate assets, which helps firms to collect money for investment in the markets. Benford et al. (2009: 3) write that companies who hold deposits obtained from the selling of gilts “may use the money to purchase other assets” and that “this process should bid up asset prices.” Congdon (2009) likewise writes that QE will cause “an excess supply of money and an excess demand for equities, which will put upward

pressure on equity prices.” And “once the stock market starts to rise because of the process just described, companies find it easier to raise money by issuing new shares and bonds.”

Below we address the empirical question of whether this occurred; first we note a logical problem with this scenario. The equity market effect assumes “an excess supply of money and an excess demand for equities” (Congdon 2009) pushing up equity prices and investment, and so purchasing power and spending. But this reasoning seems to suffer from a fallacy of composition. It may be possible for one firm to raise money and spend it by investing, so increasing other people’s deposits and their purchasing power. But this does not mean that total purchasing power has thereby increased. For where would the money come from that companies would collect with new IPOs? Even if higher stock market prices led to IPOs, and the money raised would be used for spending (i.e., it would be purchasing power), the question is where does the money come from used to buy the new equities? There are three possibilities—the source of finance could be:

- (i) money in circulation, so that net purchasing power is not affected;
- (ii) new lending; or
- (iii) money obtained by selling other equities (or securities generally).

In the case of (i), net purchasing power is not affected. For (ii) to work, we should see a link between QE and new lending (which we did not; see figure 2). That leaves (iii) as the only possible mechanism for QE to lead to an increase in purchasing power. However, this cannot exist in the QE account, since a general desire to sell equities is exactly the opposite of “an excess supply of money and an excess demand for equities.” There is no logical case for QE to boost spending via an equity market effect.

We now look into the empirical evidence on the equity market effect. The UK equity markets indeed rallied from spring 2009 onwards, and for the sake of argument we may put aside the logical problems and (partly) ascribe the rally in equity prices to QE. (One problem is then that equity markets returned to losses in 2010, supposedly undoing QE’s beneficial effects the moment it stopped.) But did QE cause more money to be raised by new IPOs being floated? The London Stock Exchange publishes IPO data in its New Admissions Summary (London Stock Exchange 2010). We summarize the figures in table 1, below, where we compare March 2009–February 2010 to the two preceding years, March 2007–February 2008 and March 2008–February 2009. For comparison, we also add March, April, and May 2010, where our observations series end.

**Table 1: Money Raised from New Admissions to the London Stock Exchange, March–February**

	<b>March 1–February 28</b>			<b>March 1–May 31</b>
	2007–2008	2008–2009	2009–2010	2010
# IPOs	320	118	73	39
# nil observ.	42	35	30	11
<i>in mn of £</i>				
average per IPO	£88.3	£84.7	£53.8	£130.8
sum	£24,535.7	£7,029.8	£2,314.5	£3,661.7
top3 value	£5,721.5	£2,838.3	£1,045.3	£2,312.9

**Source:** London Stock Exchange (2010).

**Note:** Averages are computed over positive observations only.

We see that compared to previous years, in the QE year fewer IPOs were attempted, percentage-wise more IPOs failed to attract any money, among those that succeeded the average value of money raised was much lower, and more of it came from the three top IPOs. One would like to make a more complete analysis of determinants of IPOs, which is beyond the scope of the present paper, but such analysis is unlikely to overturn the conclusion from these data against the idea that QE caused more money to be raised in the equity markets. It may have caused a stock market rally, but no discernable knock-on effect on corporate issues, investment, and economic activity as in the QE storyline. This is understandable if corporate borrowing in the markets is driven by the investment climate, not by monetary policy.

Is it possible that the outcome was actually the opposite of the intended effect? We have argued above that QE may decrease rather than increase bank lending, and a similar argument may be made for IPOs, which is the public's lending to firms. If anything, nonbanks are plausibly even more sensitive to the negative balance sheet effects of QE. A first perusal of the data in the last column appears to support this. In the three months after QE was discontinued (March, April, and May 2010, where our observations end), there were twice as many IPO's per month than in the QE year, percentage-wise fewer failed, and, for those that succeeded, the average sum raised per IPO was larger. It should be noted that the three largest IPOs account for two-thirds of all money raised in these months; even subtracting these, money

raised per month in March–May 2010 was £449.6mn, more than twice the rate that prevailed in March 2009 to February 2010 (£192.9mn, even including the top three IPOs in this year).

We have now traced the intended effects of QE—more bank lending and more equity issues—and found both without support in the data. In view of these findings, what is striking is that throughout the episode, no one seriously questioned the theoretical effectiveness of the mechanisms of QE as applied in the UK. Debate concerned only whether it would work in practice; that it could work in theory was not in doubt. Duncan (2009) reports that critics worried that gilts might primarily be purchased from foreign institutions, and thus that the money would be flowing abroad, not into the British economy (to which then Treasury Secretary Darling replied that this would still benefit the exchange rate). But no one questioned that increasing reserves was tantamount to increasing the money supply. Others urged the Bank to shift the focus of the scheme and buy more corporate debt in an attempt to stimulate corporate lending markets, but no one queried if the scheme would bring banks to increase lending and so create the additional purchasing power.

The facts are that bank lending—and therefore purchasing power and spending—did not in any perceptible way respond to gilt purchases under the QE program, and that it was much weaker in February 2010 than the BofE would have liked. The best one can say is that no one knows how bad things would have been without QE—or as Stephanie Flanders, the BBC’s economics editor wrote: “Quantitative easing may well have saved the economy from a credit-led depression. We will never know” (BBC 2010). Such are the ways in which innocent frauds are perpetuated. The last words on this—at least in this place—are therefore, perhaps fittingly, Galbraith’s:

The difficulty is that this highly plausible, wholly agreeable process exists only in well-established economic belief and not in real life. The belief depends on the seemingly persuasive theory and on neither reality nor on practical experience. ... How good this simple, painless design, free from politics in the hands of responsible and respectable professional public figures free from political taint. No disagreeable debate, no pointless controversy. Also, and uncelebrated, no economic effect. (Galbraith 2004: 41 and 43–44)

## 6. PARALLELS TO EARLIER MONEY CONTROL ATTEMPTS

The recent attempt to expand the money supply by quantitative easing is the reverse of the 1970s attempts to control the money supply by reserve assets (as promoted by the Monetarists) or by special deposit. Under the UK special deposit system in the 1960s and 1970s, banks were forced to deposit more money with the BoE than they might otherwise prefer, which could be used neither for normal business nor for reserves. To see why QE failed, it is helpful to understand why earlier attempts at control of the money supply by reserve assets or by the special deposit system did not succeed. We draw on Gardiner's (2006) discussion of both control attempts.

The first reason for the lack of success was regulatory oversight. For instance, so-called "fringe" banks (such as building societies) were exempted from the 1946 Control (Borrowing and Guarantees) Act by a Statutory Instrument issued in 1958. Thus they were also exempt from reserve asset regulations and through them the money supply could (and did) freely grow. It is tempting to dismiss this oversight as incidental and redeemable, but it may well be a systematic problem. Modern financial systems may well be too complex to be truly and discretionarily controlled by regulation. The market is always ahead; small oversights may always have significant consequences. In the 2008–2009 RBS bailout, just before a combined £37bn was borrowed from Lloyds HBOS Bank and the government, the Debt Management Office sold £40bn of new government stocks, so removing all the new liquidity from the banks before it had even been created. In 2009 it again undid about a quarter (£50bn) of quantitative easing. Policy coordination is a tricky thing.

The second reason is that even without regulatory oversight, it is unlikely that the government or the BoE could have discretionary control over the money supply by controlling reserve assets or reserves (Wray 1998). Government debt, and thereby reserve assets, are created when the government is running a deficit financing by the issuing of public debt by the government's DMO. Liquidity is created when the DMO buys up debt, increasing banks' balances in their BoE accounts. So the supply of both these control instruments fluctuates all the time due to broader government policies. In theory this can be balanced by "open market operations"; in practice it is unlikely that the supply of control instruments can be fine-tuned for purely monetary policy aims.

The third reason is fundamental: history shows that when an attempt is made to limit the supply of the officially recognized form of the credit supply, the public invents another one (Gardiner 2006: 72). Conversely, attempts to make the public accept more money than it is

willing to hold will also fail. In both cases banks respond to the discrepancy between regulation aims and economic reality—in the 1970s by the growth of money in “fringe” bank accounts, in 2009–2010 by their “failure” to significantly boost the money supply in response to the quadrupling of reserves. Both these episodes are, of course, straightforward illustrations of Goodhart’s Law. Other examples of such endogenous responses include the nineteenth-century emergence of bills of exchange as general means of payment, and the growth in “plastic” money (credit cards and consumer credit) globally since the 1990s. An economy’s total money supply is equal to its total credit supply, which goes beyond M1, M2, M3, M4, or whatever monetary aggregate the statistical office chooses to define. There is no theoretical limit to what forms of credit the public uses and invents, and no monetary authority can stop these new forms of credit from becoming fungible with “real” money, and thus becoming part of the money supply. Therefore the money supply is, in principle, not under the discretionary control of the monetary authorities.

## **7. SUMMARY AND CONCLUDING REMARKS**

This paper discussed recent UK monetary policies as instances of Galbraith’s “innocent frauds.” It combined a case study of the 2009 RBS bailout with a study of the quantitative easing (QE) experiment in 2009–2010. It argued that both were based on a number of “innocent frauds,” including the idea that money is a thing rather than a relationship, the fallacy of composition that what is possible for one bank is possible for all banks, and the belief that the money supply can be controlled by BoE reserves management. We suggested that a closer look at the accounting sequences that the policies involved may clarify confusions about their effectiveness. The origins of the idea of QE, and its defense when it was applied in Britain, were analyzed through this lens. An empirical analysis of the effect of reserves on lending was conducted; we do not find evidence that QE “worked” either by a direct effect on money spending or through an equity market effect. These findings are placed in a historical context in comparison with earlier money control experiments in the UK. Overall, we conclude that policies with serious flaws continue to be supported because of their link to powerful innocent frauds, which have great intuitive appeal and are widely upheld. We also conclude that these policies fail because of “Goodhart’s law” that any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes.

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