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I. Executive summary

Professor Mariana Mazzucato and research fellow Matteo Deleidi provide their response to the Treasury Select Committee inquiry on the “Effectiveness and impact of post-2008 UK monetary policy”. The response focuses on two areas identified in the inquiry terms of reference:

- The effectiveness of monetary policy in meeting the inflation target
- The unintended consequences of monetary policy

This submission discusses monetary policy implemented in the UK after the financial and economic crisis which began in 2008. We focus on the Quantitative Easing (QE) programme, the money creation process in the modern economy, the determination of interest rates and the effect of these on firms’ and households’ credit demand. The key points are as follows:

- **QE does not affect loans provided by commercial banks** since the credit market experiences a lack of demand rather than constraints on the supply of finance;
- **A decrease in interest rates results in an increase in loans granted to households** for the purchase of consumption goods and houses;
- If this is not accompanied by a rise in real disposable incomes, consumption led growth leads to an **unsustainable rise in private debt** (possibly triggering another financial crisis);
- Neither low interest rates nor the purchase of corporate bonds increase firms’ investments;
- Rather, **investments are stimulated by expectations about future opportunities that are positively influenced by aggregate demand and by strategic government investments;**
- We suggest that **an expansive fiscal policy, aimed at achieving investment and innovation- led growth, is the best way to foster economic growth, stimulate investments and meet the inflation target.**

Bios of authors

Mariana Mazzucato (PhD) is Professor in the Economics of Innovation and Public Value at UCL, where she will direct a new Institute for Innovation and Public Purpose (IIPP). She is author of *The Entrepreneurial State: debunking public vs. private sector myths* (Anthem, 2013) and co-editor of *Rethinking Capitalism: Economics and Policy for Sustainable and Inclusive Growth*. She advises policymakers around the world on innovation-led growth. Mazzucato’s current research is funded by the Open Society Foundations and two European Commission Horizon 2020 grants: DOLFINS - Distributed Global Financial Systems for Society (6407720) and ISIG - Innovation-fuelled, Sustainable, Inclusive Growth in Europe (649186).

Matteo Deleidi (PhD) is Research Fellow in Finance and Innovation at the Bartlett School, UCL. He obtained his PhD in Political Economy in May 2016 at Roma Tre University, where he wrote a doctoral dissertation on the money creation process and the theory of investment. During the PhD, he also was a visiting researcher at LUBS, Leeds University Business School. His research activity is currently funded by the EC Horizon 2020 DOLFINS grant (above)

II. Quantitative Easing: an old tale.

- **The effectiveness of quantitative easing and whether it has met diminishing returns**

- 1 The 2008 financial and economic crisis resulted in a severe slowdown in money and credit markets. Central banks of developed countries have responded to this and related issues (such as tight credit market conditions caused by macro-prudential regulation, the spectre of a general deflation and the massive increase in unemployment) with a set of monetary policy interventions in order to restore the macroeconomic situation to its pre-crisis state. The introduction of Quantitative Easing (QE) by the Bank of England (BoE) in March 2009 followed a failure of conventional monetary tools – primarily the continual decrease of the bank rate of interest from 5% to 0.5% between September 2008 and March 2009, and then again to 0.25% in August 2016. QE was mainly based on the purchase of financial assets (e.g. government securities and corporate bond) by means of new money created by the BoE and was intended to boost nominal spending and economic growth, thereby achieving a 2% inflation target by injecting money into the economy.
- 2 QE is aimed at influencing the quantity of money in the economy by increasing the quantity of available reserves retained by commercial banks at the BoE^[1] and thus stimulating the quantity of loans granted by commercial banks to borrowers and the size of deposits. QE is assumed to foster spending and inflation by means of three main transmission channels^[2]:
 - (i) **Asset price:** The purchase of financial assets by the central bank leads to a rise in asset prices directly purchased, growing the total value of assets and thus generating a wealth effect which is assumed to stimulate current expenditures^[3], and a fall in the corresponding rate of interest, reducing borrowing costs and allowing private sector debt – consumption and investment expenditures – to rise.
 - (ii) **Bank lending:** increasing the supply of reserves should mean that banks are more willing and encouraged to increase their illiquid assets (i.e. loans) through granting new credit to their borrowers (households and firms), thus fostering spending and investment.
 - (iii) **Expectations:** an increase in available reserves should enhance expected economic growth, improving the confidence of consumers and investors and allowing them to increase their expenditures. An improvement in confidence could have a further long-term effect on interest rates, lowering risk premiums and thus leading to a further increase in asset prices.
- 3 However, although in the few last years the BoE has implemented a QE programme by electronically issuing new money, **the effect on loans provided by banks to firms and households has been insignificant compared to the size of reserves created**. As shown in Figure 1, after the beginning of the financial crisis and the implementation of the QE program, the total credit to the private Non-Financial sector (Blue line in Figure 1) has experienced a relatively stationary path. Analysing the other two lines – the total credit to Non-Financial Corporations (Green line in Figure 1) and the total credit to Households and Non-profit institutions serving households (Red line in Figure 1) – we can affirm that, while the outstanding amount of loans provided to households has increased after 2012, the outstanding amount of loans granted to Non-financial corporations experienced a fall.^[4] In summary, the problem is not whether the effect of QE has reached diminishing returns, but whether it has had an effect at all. **QE does not stimulate loans or consequent private expenditures; nor does it affect the price level of goods and services**. It has, however, sustained the demand for financial assets

allowing an increase of asset prices and a decrease in the corresponding rates of interest, thus **decreasing the cost of debt**, especially for government.

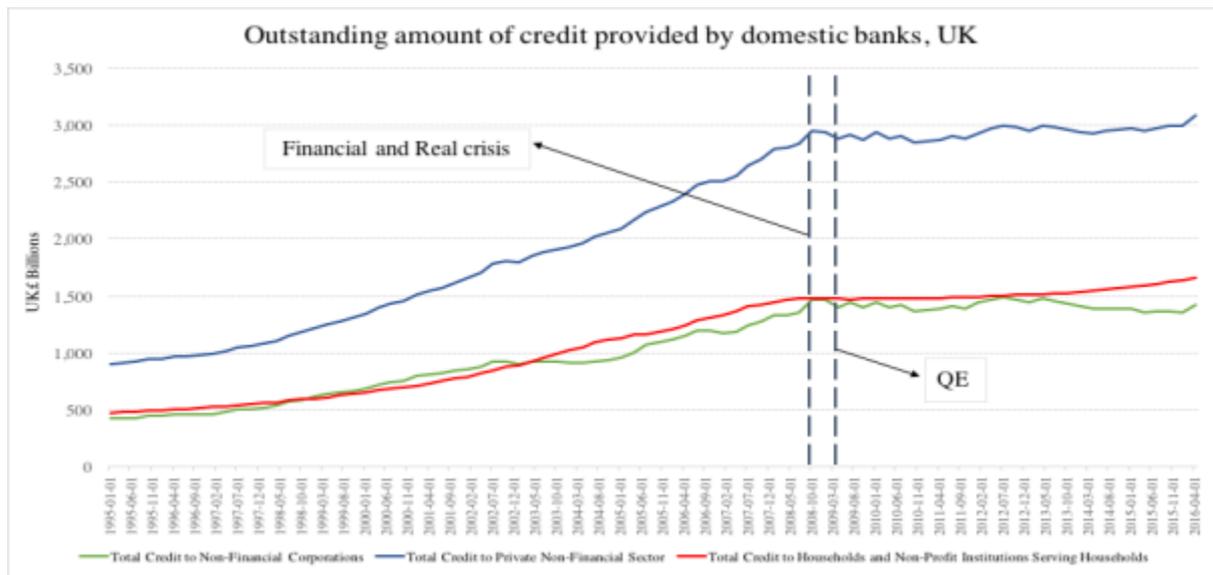


Figure 1. The outstanding amount of credit provided by domestic banks to private Non-Financial sector, UK. Source: FRED Economic Data, Federal Reserve Bank of St. Louis.

III. The money creation process in the modern economy: a new theoretical background

- The effectiveness of holding Bank rate near zero and whether extremely low rates can encourage more, rather than less, saving

- Traditionally, the money supply was considered to be set by central banks: by controlling the supply of reserves, they determine the quantity of deposits and loans supplied by commercial banks to households and firms.^[5] As such, the money supply was seen to be independent from the production of goods and services, and any increase in the quantity of money increases the price of commodities. An emerging alternative view is that the money supply is determined by the demand for commercial banks' loans,^[6] with reserves thus a consequence of commercial banks' lending activity rather than a cause of it and money supply being dependent on economic activity, i.e. influenced by the effects of the real economy on the demand for loans.
- Interest rates are affected by the decisions of both central and commercial banks – interest rates set by commercial banks depend on the central bank interest rate, and when the central bank cuts the rate of interest, a decrease in interest rates on commercial bank loans follows.^[7] The money in circulation also depends on interest rates because credit demand could be stimulated by the rate of interest, changing costs of borrowing. **It is important to distinguish between households, where a decrease in the rate of interest can affect the quantity of loans provided by banks to households for the purchase of houses and consumption goods,^[8] and firms, where loans to finance investment projects are influenced by the actual and expected level of aggregate demand rather than by the rate of interest.** This is consistent with the data shown in Figure 1 (a decrease in the bank rate and in interest rates applied by commercial banks on loans has increased the quantity of loans granted to households and thus their debt levels, but no positive effect has occurred on credit provided to firms to finance their investment projects). This also confirms the idea that UK has experienced a consumption led growth driven by households' debt. However, as shown by the recent US financial crisis, such type of growth is **unsustainable since the rise of private debt without increasing disposable income of households (especially workers) could lead to another**

financial crisis. In 2016, the Office of Budgetary Responsibility (OBR) reported that household spending continues to “significantly outpace the growth of labour income” and that consumption led growth has been driven by the Bank of England’s “extremely accommodative monetary policy” [\[9\]](#). The OBR concludes that such a rise in household debt is the highest it has even been since the 1960s, since the data began to be collected.

- 6 We maintain therefore that low interest rates have shown a weak effect (and only on loans granted to households). Furthermore, a growth in the supply of reserves has not led to an increase in loans. In order to increase economic growth, to enter money in the real economy, and to raise inflation, **it is necessary to stimulate greater loan demand by means of policies aimed to revive aggregate demand (AD) and increase disposable income of households.**

IV. How can we stimulate credit demand?

- **The use of macro-prudential, fiscal and other policy to counterbalance any unintended consequences of monetary policy**
 - **The scope for further expansion of "qualitative easing" (e.g. corporate bond purchases)**
- 7 We argue that since QE does not foster spending and inflation and interest rates have a partial effect on the demand for loans, an alternative view has to be considered to explain what can stimulate money to enter the real economy.
- 8 In order to stimulate loan demand, **policymakers have to increase aggregate demand by running expansive fiscal policies**, as the US did after the financial crisis. **Such policies should be mainly driven by an increase in government spending**, rather than a cut in taxes or an increase in monetary transfers to firms and workers. [\[10\]](#) This guarantees a greater effect on GDP since the government spending multiplier is greater than tax and transfer multiplier. [\[11\]](#)
- 9 **A greater multiplier can be achieved by increasing workers’ wages** since their propensity to consume is greater compared to that which is earned as capital gains or profits. In addition to this, a rise in workers’ disposable income is desirable since increases their solvency towards the banking system.
- 10 A persistent growth of Government investment (e.g. in infrastructure, R&D, renewable energy) can increase business expectations and thus also lead to an increase of business investments. **Private investments are driven by expectations about future growth opportunities, which are in turn mainly driven by strategic public investment (e.g. through innovation or industrial policy) and government expenditure.** [\[12\]](#)
- 11 Austerity based fiscal policies are recessive since they decrease the actual and expected GDP, triggering a negative chain reaction on consumption and investment since the Keynesian multiplier also operates in reverse. [\[13\]](#) In particular, as suggested by a recent publication of the International Monetary Fund (IMF) [\[14\]](#), the multiplier has assumed a value of about 1.5, meaning that a decrease of £1 of public expenditure leads to a fall in real GDP by £1.5.

V. Final remarks

- 12 In conclusion, we summarise the arguments set out above as follows:
- Central and commercial banks set the rates of interest that affect loans demanded by households;
 - However, private investments and the demand for business loans are not influenced by interest rates but by expectations about future growth opportunities, mainly shaped by public financing and government investment;
 - The demand of credit-worthy borrowers influences the value of loans granted by commercial banks;

- Loans create bank deposits;
- The size of deposits generates a corresponding demand for reserves, fully accommodated by the central bank.

13 Analysing the current situation experienced by the UK, we conclude that:

- QE is a monetary policy tool that has been unable to relaunch the credit market, spending and inflation.** The reasons behind QE's weakness can be understood by analysing the money creation process of the modern economy. In particular, we assert that the UK banking system is not "starved of cash"^[15] and the simultaneous creation of reserves do not increase loans, spending and eventually inflation. In order to stimulate the credit market, the UK needs to foster the demand for loans which is positively influenced by the level of actual and expected AD.

- **The interest rate applied on loans by commercial banks are directly influenced by the interest rate set by the central bank.** Accordingly, in order to allow a decrease in rates of interest set on loans, an increase in the size of reserves is not required. However, QE fosters the decline of interest rates on securities with long-term maturity (e.g. 10-Year Treasury Bonds) by sustaining the demand for those financial assets.

- **Low interest rates affect the loans demanded by households for the purchase of consumption goods and houses,** since a decrease of consumers' borrowing costs fosters their spending, thereby dangerously increasing their level of debt.

- The same does not apply to firms – a fall in interest rates does not stimulate investments and credit demand by business. On the contrary, **investment and firms' loan demand are driven by the level of actual and expected AD.**

- In order to emerge from a period of low economic and investment growth, government investment is required to stimulate business expectations about future growth areas, rather than a monetary policy focused on the purchase of financial assets. **An expansionary fiscal policy is strongly recommended since this increases actual and the expected demand, thus stimulating investment and inflation.** The fundamental challenge now is to understand which kind of public expenditure generates the greatest positive impacts on GDP growth and on investments. The attention of the current government on industrial policy is a positive sign, and it should be focussed on stimulating productivity and innovation across multiple sectors.^[16] In particular, there is the opportunity to target innovation policy to tackle societal and technological challenges such as climate change and the care crisis. Our own research is currently looking at the relative multipliers of different types of government expenditure programmes.^[17]

3 March 2017

^[1] Bedford, J., Berry, S., Nikolov, K., Young, C., & Robson, M. (2009). Quantitative easing. *Bank of England. Quarterly Bulletin*, 49(2), 90.

^[2] Haldane, A., Roberts-Sklar, M., Young, C., & Wieladek, T. (2016). QE: the story so far. Bank of England, *Staff Working Paper No. 624*; Joyce, M., Tong, M., & Woods, R. (2011). The United Kingdom's quantitative easing policy: design, operation and impact, Bank of England, *Quarterly Bulletin Q3*.

^[3] A further indirect increase in assets prices can occur by means of the portfolio balance effect. The new money could stimulate the demand for further financial assets allowing agents to rebalance their portfolios to the desired composition.

^[4] Total credit to the private Non-Financial sector is the sum of Total credit to Non-Financial Corporations and the Total Credit to Households and Non-profit Institutions Serving Households.

^[5] This can be termed the orthodox exogenous view (EXV) (Krugman, P. R., & Obstfeld, M. (2000). *International Economics, Theory and Policy*. Reading, MA: Addison-Wesley Publishing Company).

^[6] This can be termed ENV (Fontana, G. (2009). *Money, uncertainty and time*. London, Routledge; Wray, R. L., & Nersisyan, Y. (2016), *Understanding Money and Macroeconomic Policy*. In Jacobs, M., and Mazzucato, M. (Eds.) *Rethinking capitalism: Economics and policy for sustainable and inclusive growth*. John Wiley & Sons). Some aspects of the ENV have been recently endorsed by prominent monetary authorities, including the BoE (McLeay, M., Radia, A., & Thomas, R. (2014). Money creation in the modern economy. *Bank of England. Quarterly Bulletin*, 54(1), 14; Jakab, Z., & Kumhof, M. (2015).

Banks are not intermediaries of loanable funds—and why this matters, [Bank of England, Working Paper No. 529](#)). Especially, in a recent BoE quarterly bulletin, it is argued that: “In the modern economy, most money takes the form of bank deposits. But how these bank deposits are created is often misunderstood: the principal way is through commercial banks making loans. Whenever a bank makes a loan, it simultaneously creates a matching deposit in the borrower’s bank account, thereby creating new money.” (McLeay et al., 2014, p. 1)

[7] McLeay et al., 2014.

[8] Garegnani, P. (2015). The problem of effective demand in Italian economic development: on the factors that determine the volume of investment. *Review of Political Economy*, 27(2), 111-133.

[9] Households are expected to spend £34bn more than they earn this year, rising to £49.6bn in 2021 as they borrow more or sell assets such as shares to fuel spending. (Office for Budget Responsibility (OBR). (March 2016), Economic and fiscal outlook, Cm 9212, <http://cdn.budgetresponsibility.org.uk/March2016EFO.pdf>)

[10] Qualitative easing (e.g. corporate bond purchases) could be treated as a fiscal transfer to firms. However, if firms do not perceive a growth of market opportunities they will hoard money rather than make investments.

[11] Batini, N., Eyraud, L., Forni, L., & Weber, A. (2014). *Fiscal multipliers: Size, determinants, and use in macroeconomic projections* (No. 14). International Monetary Fund.

[12] Mazzucato, M. (2013). *The Entrepreneurial State: Debunking the Public Vs. Private Myth in Risk and Innovation*.

London: Anthem Press; Mazzucato, M. (2016). From market fixing to market-creating: a new framework for innovation policy. *Industry and Innovation*, 23(2), 140-156; Mazzucato, M., & Perez, C. (2015). Innovation as Growth Policy. *The Triple Challenge for Europe: Economic Development, Climate Change, and Governance*, 229.

[13] Kelton, S., (2016), The Failure of Austerity: Rethinking Fiscal Policy. In Jacobs, M., and Mazzucato, M.

(Eds.) *Rethinking capitalism: Economics and policy for sustainable and inclusive growth*. John Wiley & Sons.

[14] Blanchard, O. J., & Leigh, D. (2013). Growth forecast errors and fiscal multipliers. *The American Economic Review*, 103(3), 117-120.

[15] Wray, R. L., & Nersisyan, Y. (2016), Understanding Money and Macroeconomic Policy. In Jacobs, M., and Mazzucato, M. (Eds.) *Rethinking capitalism: Economics and policy for sustainable and inclusive growth*. John Wiley & Sons. p. 57.

[16] See evidence submitted [joint written evidence](#) by M. Mazzucato and J. Watson to the [Business, Energy and Industrial Strategy \(BEIS\) Committee](#) inquiry into industrial strategy on 3 October

2016. <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/business-energy-and-industrial-strategy-committee/industrial-strategy/written/39044.html>

[17] Deleidi, M. & Mazzucato, M. (2017). Government spending and the super-multiplier, Working Paper forthcoming, EC Horizon 2020 DOLFINS grant (6407720).