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Extraordinary Times Require Extraordinary Action: Boosting European Demand by Means of Investment Helicopter Money

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Abstract

This theoretical contribution analyzes remaining monetary policy tools and their ability to reestablish sound macroeconomic conditions in the euro area. Motivated by the observation of a lack of investment in the macroeconomy and subdued inflation, we review current monetary policy challenges and emphasize the major failure of traditional transmission channels. While interest rates and asset prices often respond to central bank tools, the effects on the real economy, specifically on investments, are often not observable. We suggest Investment Helicopter Money as a tool to directly strengthen investment and boost aggregate demand. This monetary impulse is found to offer a direct real effect without crowding-out investment or rising debt levels. Most importantly, we discuss necessary institutional arrangements and contrast the suggested tool with a simple monetary or fiscal impulse.

Keywords: Monetary Systems, Monetary Policy, Policy Coordination, Investment Decisions, Infrastructures, Other Public Investment and Capital Stock

JEL Classification: E42, E52, E61, G1, H54

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"The financial situation in the euro area has improved dramatically. […] Nevertheless, these positive developments in the financial sphere have not transferred fully into the economic sphere."

(*Draghi* 2014)

I. Introduction: Challenges of Monetary Policy

In the aftermath of the 2008 financial crisis, advanced economies fell into the worst recession since the Great Depression. Monetary policymakers responded with a sequential lowering of interest rates. Once policy rates reached zero, conventional monetary policy (CMP) tools were exhausted. Still aiming to provide economic stimulus, policymakers started to implement unconventional monetary policy (UMP) tools, such as forward guidance to guide inflation expectations. In 2008, the Federal Reserve and the Bank of England introduced quantitative easing (QE). Subsequently, the scale of QE was increased as was the range of assets purchased. In 2014, the ECB even introduced negative policy rates. Consequently, most policy options have already been explored by central banks in an attempt to keep prices stable and support economic growth along with employment.

Are these measures effective? With an inflation rate of 0.8 % in the euro area in September 2019, monetary policy still falls far below its target of "below, but close to, 2 % over the medium term" (ECB 2019). According to *Summers/Stansbury* (2019), Europe and Japan are stuck in a "monetary black hole", where the scope for QE and forward guidance to provide incremental stimuli is very limited. In the euro area, lower nominal and real interest rates have led to higher deficits and national debt levels, accompanied by far slower nominal GDP growth. In the absence of clear and significant evidence to support the effectiveness of these monetary policy tools in the current environment, we suggest a new instrument to boost investment and growth.

We contribute to the debate on the effectiveness of current monetary policy instruments in the euro area and survey the vast literature of the transmission of CMP and UMP tools used by the ECB. These studies mainly focus on effects in the financial sphere, while real effects remain largely a black box. The debate on a more direct impulse, known as helicopter money, is taking place mainly in the popular press and has recently gained pace. We review arguments in the current debate and compare it with other tools. This analysis has led us to suggest a slightly different tool for restoring sound macroeconomic conditions, which we refer to as Investment Helicopter Money. The concept involves shortening the transmission process, directly triggering desired real effects in the economy. We suggest extending the monetary toolbox by an instrument that operates more directly than those already in place, while avoiding the threat of monetary-fi-

nanced government budgets with the help of specific institutional arrangements. This instrument is implemented under particular institutional arrangements, which safeguard an independent decision-making process of the monetary authority as opposed by autonomous national governments' budget plans.

Section II below recaptures the mechanics of the transmission of implemented CMP and UMP tools to the real economy. In Section III, we subsequently review the concept of helicopter money before offering comparisons of all three policy instruments. Although our line of reasoning could be enriched by a standard macro model in the Keynesian tradition, we focus on a reasonable and simple explanation of an idea that could be easily implemented in the current European institutional framework. Section IV clarifies the difference between the monetary and fiscal impulses of the new instrument and it discusses our suggested tool by referring to the mandate of the central bank and its independence. Finally, Section V concludes.

II. Transmission Channels and Real Effectiveness

How is the monetary authority's impulse transmitted to the real economy? Overall, the effect of monetary variables on real variables is still not completely understood (*Freixas/Rochet* 2008). We review the transmission mechanics as well as their effectiveness as described in the empirical literature.

1. Conventional Monetary Policy

Following the CMP impulse of policy rate decisions, the real economy should be affected via various transmission channels, finally leading to desired changes in the price level. In the following, CMP mechanics, associated shortcomings and empirical results are reviewed.

a) Mechanics and Adjustment Time

Traditional economic thinking assumes short-run wage rigidities, price rigidities or limited participation deferring the transmission from policy rates to inflation rates (*Cecchetti* 1999). The cornerstone of the money view is the interest rate channel, where a movement in short-term interest rates directly affects the user cost of capital and credit demand, which in turn changes investment and real output (*Ireland* 2005). Another prominent mechanism is the exchange rate channel, within which a rise in interest rates results in a real appreciation of the domestic currency, in turn reducing foreign demand and domestic output. *Bernanke/Gertler* (1995) challenge this view with the help of empirical analyses and

find magnitude, timing, and composition puzzles. Accordingly, *Bernanke* (1983) introduces the lending view, emphasizing the role of the banking system in the transmission process (see also *Jiménez* et al. 2012). These hypothesized channels refer to, e. g. a credit channel as introduced by *Bernanke/Gertler* (1989), which deals with financial market imperfections and operates through bank loan supply. Additional channels considered in the literature include, e. g. the asset price channel, expectations channel, risk-taking channel, and many more (see, e. g. *Boivin* et al. (2011) for an overview of suggested mechanisms).

While there is generally agreement that each of these transmission channels and their interdependence contributes to "long and variable" time lags (ECB 2019; *Friedman* 1972; *Goodhart* 2001), their exact quantification remains inconclusive. Policymakers such as the Bank of England (1999) refer to a maximum output effect of policy rate decisions after approximately 12 months and a full pass-through to inflation after around 24 months. Similarly, the ECB (2010) refers to a maximum output effect of a rise in the policy rate that materializes between 12 and 24 months afterwards. Consequently, theoretical models usually refer to 12 to 24 months of maximum price responses following monetary policy shocks (*Taylor/Wieland* 2012). By contrast, empirical results vary considerably. On a global scale, *Havranek/Rusnak* (2013) find the average transmission lag of contractionary monetary policy to take 29 months with a maximum pass-through of a 0.9 % price decrease after a 1 % policy rate increase. Regarding the US, *Mishkin* (2010) estimates the time span between the Federal Reserve's policy decision and the price level response in total to take at least 12 months. Likewise, European analyses are inconclusive. An early cross-country analysis by *Ehrmann* (2000) studies the transmission process of 13 EU Member States, indicating a rather quick transmission to prices of between six and 24 months, with the slowest transmission in Italy, France and the UK of 30 to 60 months. Contrary, *Mojon/Peersman* (2003) analyze ten Eurozone countries and find the maximum output response between nine and 18 months after the shock, while the maximum price reaction occurs after 48 to 60 months. *Havranek/Rusnak* (2013) indicate the maximum decrease in prices following a monetary policy shock by the ECB to average around 48 months, with the fastest transmission in Italy (27 months) and the slowest in France (51 months). Controlling for differences in methodological and other aspects, *Havranek/Rusnak* (2013) still find average transmission lags of between 40 and 49 months in the Eurozone. The authors claim that advanced economies generally have greater opportunities to anticipate monetary policy shocks, resulting in greater inertia of the transmission mechanism. In conclusion, the transmission process of CMP is neither fast nor complete with varying speed and degrees of interest rate pass-through across time and countries.

b) Shortcomings and Restrictions

The major shortcoming of CMP tools lies in their indirect nature. As indicated, the transmission process can take usually more than a year (ECB 2010). With policymakers not being able to provide an immediate economic stimulus, policy decisions and their effects cannot be timed to coincide and, thus, are rather uncontrollable. This renders the timing and extent of interest rate movements difficult.

Moreover, a transmission via an intertwined channel system is vulnerable and could end at every single interim agent or market, not or only partly passing through to inflation. Regarding the classification within the channel system, separating and identifying single channels remains a challenging task. Given their mutual interdependence, it is still open to debate which of the channels is dominant (*Freixas/Rochet* 2008). This has led to long-standing controversial discussion over which channels of monetary policy are actually operating (*Egea/Hierro* 2019).

Furthermore, all channels build on interest rate movements and thus are naturally restricted by the Zero Lower Bound (ZLB, cf. *McCallum* 2000). In the current low interest rate environment, the traditional transmission channels seem to be dysfunctional or at least follow other rules as they do in normal times.

c) Empirical Appraisal

The controversy on the effectiveness of monetary policy begins with several empirical studies, which find contractionary monetary policy of the ECB to decrease economic activity (*Boivin* et al. 2009; *Weber* et al. 2011), while others find only small or even insignificant effects (*Kim* 1999; *Leeper* et al. 1996; *Uhlig* 2005).

Empirical investigations on the transmission channels, i. e. ideally the complete pass-through of changes in the policy rate to inflation, have even been termed "generally unfeasible" (*Ciccarelli* et al. 2015: 979). Usually, analyses cover only parts of the whole transmission chain where some interim variables, such as credit demand versus credit supply, cannot be observed at all and, thus, remain a black box.

The analysis is even more complicated with a regional focus on the euro area, covering a set of heterogeneous countries subject to one single monetary policy authority (see, e. g. *Barigozzi* et al. (2014) for the asymmetric effect of monetary policy on northern and southern Member States). This yields ambiguous empirical results on which of the single channels are effectively operating and which

channel is dominant. Pre-crisis analyses find CMP to be predominantly passed through the interest rate channel), transmitting approximately 80 % of all changes in the policy rate (*Clements* et al. 2001) in 'normal times' (ECB 2011). Further, it significantly affected investment spending in Germany, France, Italy, and Spain (*Chatelain* et al. 2001; *Mojon* et al. 2002). Post-crisis, however, research increasingly focuses on the operation of the banking system, providing evidence of a predominant credit channel in pre-crisis years (*Ciccarelli* et al. 2015; *Egea/Hierro* 2019).

More recent studies, e. g. by *Gambacorta/Marques-Ibanez* (2011), show that the transmission channels of monetary policy changed after the 2008 crisis. Results on the operation of the interest rate channel are inconclusive. While *Creel* et al. (2013) find it to be still effectively working, e. g. *Ciccarelli* et al. (2015) provide evidence of a weakening. Regarding the credit channel, they find the balance sheet to still operate effectively. By contrast, the bank lending channel is found to have been relevant only in 2008 and 2009 with heterogeneous effects across Eurozone countries (cf. *De Santis/Surico* 2013). Moreover, *Egea/Hierro* (2019) find the effectively operating and dominating channel to have shifted to the risk-taking channel (*Dell'Ariccia* et al. 2016). Further, negative interest rates also seem to be passed through to bank lending rates, though more sluggishly (*Ball* et al. 2016) with banks facing a loss when they are incapable of fully passing through negative interest rates to customer deposits (see, e. g. *Heider* et al. 2019). Overall, empirical evidence on effectively working transmission channels remains controversially discussed and inconclusive. The emergence of the financial crisis seems to have impaired the operation of the "normal" channels. According to the ECB (2015: 1) this is explained by "dislocations in some financial market segments" through which the impulse is transmitted.

2. Unconventional Monetary Policy

Motivated by the dysfunctionality of the interest rate pass-through considered so-far (e. g. ECB 2010; 2015), policymakers had to find new ways to achieve their inflation target. First, the tool of forward guidance was implemented in order to affect inflation expectations. The effectiveness of this tool is currently not empirically observable, with inflation expectations apparently decoupled from the inflation target on the European as well as international level (see, e. g. *Afrouzi* et al. (2015) for New Zealand). This was followed by the introduction of QE.

a) Mechanics and Adjustment Time

The distinguishing characteristic of the concept of QE is that the central bank actively uses its balance sheet to affect market prices (*Borio/Disyatat* 2009). QE involves the central bank purchasing assets mainly in the form of government bonds from banks or the nonfinancial sector, in exchange for newly created money. This is expected to lead to an increase in bond prices and a larger quantity of money supplied within the economy, ultimately increasing consumption and investment spending (ECB 2019). According to *Haldane* et al. (2016), the academic literature has identified six main transmission channels through which the central bank's asset purchases could potentially be transmitted to the real economy. All of these rely on financial market imperfections, covering information frictions (e. g. *Eggertsson/Woodford* 2003, *Rudebusch/Williams* 2008) as well as market frictions (e. g. *Vayanos/Vila* 2009), which can be overcome with the help of QE. While QE impulses are also passed through some of the transmission channels considered under CMP, such as the exchange rate or bank lending channel, they also run through QE-specific transmission channels. Most prominent is the portfolio rebalancing channel, within which investors rebalance their portfolio towards longer-term and riskier assets. The purchase of assets by the central bank reduces their supply in the economy, leading to a price increase, and reducing their return. The induced reduction in interest rates stimulates aggregate demand, which makes investment more attractive. The liquidity effects of the monetary expansion are captured by the market liquidity channel, under which dysfunctional markets obtain liquidity, encouraging trading and reducing liquidity premia charged (*Krishnamurthy/Vissing-Jorgenson* 2011).

A key question regarding the channels' operation is whether the effect on prices occurs instantaneously or with a lag. In an early contribution *Friedman* (1961) concludes that changes in the stock of money affect general economic conditions only with a long and variable lag. By contrast, recent analyses of QE effects focus on the reaction of government bonds within very short time periods, such as days following QE announcements. *Hachula* et al. (2020) find that during the first phase of UMP interventions in the euro area (2007 – 2014) economic activity peaks after 10 months, shortly before consumer prices respond. Price reactions of medium- and long-term government bonds occur quickly, while reactions in equity occur over several weeks (e. g. *Fawley/Neely* 2013). This seems reasonable, given direct interventions in the financial sphere. However, studies on the effect of UMP generally focus on financial indicators rather than on economic activity (e. g. *Krishnamurthy/Vissing-Jorgenson* 2011; *Wright* 2012).

b) Shortcomings and Restrictions

The effectiveness of this UMP is subject to a heated debate (cf. *Egea/Hierro* 2019). Proponents of UMP claim it effectively stimulated the economy and prevented an even deeper recession, while its opponents focus on negative side effects, such as a favoritism of banks over households, increased inequality and asset prices (e. g. *Wright* 2012). Further skepticism is raised, e. g. by *Martin/Milas* (2012), who claim that QE-supporting literature stems mainly from central bankers using similar methodologies. Negative side effects are identified, e. g. by *Haitsma* et al. (2016) in the form of rising European equity prices over the period 1999 to 2015. Further shortcomings include the destabilization of banks and the financial sector, risk of overshooting the inflation target, danger of asset price bubbles, disintermediation of the banking system when cash is hoarded, challenges of (central) bank profitability, potential loss of monetary policy independence, and perceived distributional impacts (*Ball* et al. 2016). Hence, short-term benefits of QE are opposed to potential long-term costs (*Gern* et al. 2015).

The QE mechanism represents a quite indirect transmission of nominal purchasing power to the real economy (*Belke* et al. 2017), which can be interpreted as a trickle-down effect from financial markets (*Belke* 2018). Furthermore, bank lending is rather loosely related to the availability of central bank money via the associated minimum reserve requirement. For instance, central bank money required for the fulfillment of the minimum reserves can be borrowed from the central bank by pledging adequate collateral, which banks received in exchange for credit supply (e. g. *Borio/Disyatat* 2009).

c) Empirical Appraisal

To date, there is no clear evidence on the effectiveness of UMP. First, the identification strategy of causal effects of UMP cannot be fully applied to traditional identification strategies developed for CMP (*Wright* 2012). Furthermore, the difficult measurement of the effect of unconventional asset purchases on inflation and production complicates a clear-cut analysis. Even the analysis of QE effects on interest rates is challenging with respect to disentangling effects on interest rates caused specifically by QE from those caused by other sources. Empirical investigations of interest rate effects mainly focus on QE announcement effect studies and model-based estimations (*Gern* et al. 2015). Regionally, empirical studies focusing on the Fed's UMP (e. g. *Alpanda/Kabaca* 2020; *Baumeister/Benati* 2003; *Chen* et al. 2012; *Chung* et al. 2011; *Engen* et al. 2015) find that large-scale asset purchases have effectively contributed to economic growth, although there is no consensus regarding the effect's quantification. Analyses of the ECB's UMP are rarely found (*Borio/Zabai* 2016) and less clear-cut (*Hachula*

et al. 2020). *Elbourne* et al. (2018) find heterogeneous responses across EU Member States, with higher responses in financially distressed regions. The ECB's UMP shifted from "credit easing" liquidity provision to the banking sector since 2009, which aimed to support the transmission mechanism (ECB 2015), to asset purchase programs (APP) in 2015, which were intended to fight persistently low inflation. On the one hand, credit easing is found to have significantly contributed to GDP growth. For example, *Darracq-Paries/De Santis* (2015) show that longer-term liquidity injections by the ECB in 2011 and 2012 avoided a deeper credit crunch; it increased growth as well as inflation in the euro area. Similar results are found, e. g. by *Cahn* et al. (2017), *Ciccarelli* et al. (2015), *Gambacorta* et al. (2015), *Peersman* (2011). However, effects vary widely across Eurozone countries with peripheral countries showing stronger responses in the period between 2007 and 2014 (*Hachula* et al. 2020). In a single country analysis, *Andrade* et al. (2019) confirm an increased and longer-term bank credit supply to firms in France. Similar results have been found for Spain (*Garcia-Posada/Marchetti* 2016), Italy (*Carpinelli/Crosignani* 2017), and Portugal (*Crosignani* et al. 2019). Regarding the persistence of these desired effects, the empirical research is inconclusive. Some studies report QE as having temporary effects (see, e. g. *Wright* 2012; *Schenkelberg/Watzka* 2013), while others report permanent effects (see, e. g. *Joyce/Tong* 2012).

On the other hand, studies on the negative side effects of UMP have focused on the "doom loop" between banks' and sovereign bonds. For instance, *Carpellini/Crosignani* (2018) find Italian banks to have used the central bank liquidity injection of the LTRO's[1] primarily to buy domestic government bonds. Similarly, *Acharya/Steffen* (2015) and *Drechsler* et al. (2016) find "credit easing" to have encouraged risky government debt purchases by the weakest European banks. In addition, even the pure announcement of the OMT program is found to have lowered peripheral government bond yields, especially for Italy and Spain by around two percentage points (*Altavilla* et al. 2014; *Krishnamurthy* et al. 2014; *Szczerzbowicz* 2015). By contrast, *Acharya* et al. (2018) find UMP to have led to an inefficient allocation of bank credit, where the OMT program had contributed to "zombie lending" of banks, especially in Italy where 18 % of the loan volume went to zombie firms, as well as in Spain (11 %), and Portugal (11 %), respectively.

The evaluation of the ECB's APPs is still even more open to debate and the effect of government bond purchases on inflation remains unclear (Deutsche Bundesbank 2016). While, e. g. *Gambetti/Musso* (2017) find it to have increased growth and inflation, studies by, e. g. *Lehment* (2019) doubt the effectiveness of

[1] The UMP of the ECB included several programs, such as the Longer Term Refinancing Operation (LTRO), the Outright Monetary Transactions (OMT) program or the APP. Further details can be found in the Appendix.

QE in decreasing interest rates or increasing output in the Eurozone (*Iskrev* 2018, *Elbourne* et al. 2018).

In a speech held in November 2014, *Draghi* (2014) admitted that "*these positive developments in the financial sphere have not transferred fully to the economic sphere. The economic situation in the euro area remains difficult.*"

III. Helicopter Money

In search of a stimulus tool to tackle low investment and growth, we refer to a specific form of the unconventional concept of "helicopter money" (HM) as an alternative to CMP and UMP tools already in use.

The seminal proposal of *Friedman* (1969) introduced the thought experiment of a helicopter flying over the community dropping money from the sky. Today, the concept is still considered a possible policy choice, e. g., by *Bernanke* (2002) or *Buiter* (2014). Besides the term "helicopter money", the concept has also been referred to as "QE for the people" (*Corbyn* 2015), "People's QE" (*Coppola* 2019), "monetary financing" (*Turner* 2013), "Overt Monetary Financing" (*Turner* 2015), "Green QE" (*Anderson/Cato* 2015), "Strategic QE" (*Ryan-Collins* et al. 2013), "fiscal quantitative easing" (*Rogoff* 2017) or "Sovereign Money Creation" (*Jackson* 2013). The basic idea behind all of these slightly different concepts has yet to be refuted. Policymakers take it as potential policy instrument into account with, e. g., *Draghi* (2016) referring to HM as "very interesting concept" or *Praet* (2016) claiming: "All central banks can do it. You can issue currency and you distribute it to people." Consequently, HM is a theoretically imaginable extension to policymakers' toolkit.

1. Traditional Helicopter Money

To clearly distinguish between the HM concepts already proposed and our suggestion, we provide a survey of the forms of HM discussed in the literature so far.

a) Mechanics and Adjustment Time

Having persisted over decades, three theoretical variants of HM have been recently discussed in the academic literature. According to *Belke* (2018), all are based on the following mechanism. The government issues (non-interest bearing) bonds, which are purchased by the central bank, paying with newly created reserves. The government uses this money to invest, hire people, send checks to the people or cut taxes, with the overall aim of increasing spending. Thus, the

intertemporal budget constraint of the government is alleviated by the central bank printing money, which translates into higher demand. Early variants, as proposed by *Bernanke* (2002), involve the ECB buying government bonds with freshly printed money and the government passing it on to taxpayers, resulting in a tax cut. In a second variant, the ECB opens a temporary bank account for every citizen and transfers a fixed amount to every account. For the sake of double bookkeeping, the ECB takes virtual debt onto its books, without an obligation to repay or pay interest. When citizens transfer the received money from their ECB account to their commercial bank account, banks have to increase their minimum reserve holdings. The ECB has to pay interest on these additional minimum reserve holdings, which slightly weakens the effect. Finally, a third variant builds on Keynesian ideas of "government spending" (see, e. g. *Muellbauer* 2014). The ECB would buy interest-free, non-repayable government bonds (e. g. Eurobonds) with newly created money, while the government would invest the funds received. In fact, the ECB would provide loans of unlimited duration to the euro area's governments. The government is assumed to spend all the newly acquired money and to invest it in sustainable projects, such as (long-term) infrastructure investments. The discussion of this modified version of HM primarily takes place in the US and the UK and comes closest to our suggested concept of Investment Helicopter Money in Section III. 2.

How long does it take for HM to achieve the desired effect of GDP growth? Compared with CMP and UMP tools, the direct intervention shortens the lag significantly. The tool is not transmitted via an interdependent channel system nor does it intervene in the financial sphere to then trickle down to the real sphere. Instead, it directly transfers purchasing power to the private sector.

b) Shortcomings and Restrictions

The effectiveness of HM is controversially discussed. According to *Borio/Zabai* (2016) HM creates no additional boost to nominal demand at all. The authors claim that it either results in the undesired effect of interest rates remaining permanently at zero, or that its effects are equivalent to the standard fiscal tools of debt- or tax-financed government deficits – without any additional effect. This would render the introduction of HM as an additional tool ineffective. By contrast, *Buiter* (2014) uses a DSGE model to prove HM effective as long as it offers additional benefits from money holdings to its rate of return, it is irredeemable, and there is a positive price of money. *Buiter* (2014) concludes that a permanent drop of HM always boosts demand. Especially the second variant of a direct transfer of money from the central bank to consumers is often questioned since it hinges on consumers' willingness to spend. Even the most direct transmission of purchasing power to households may fail to be effective if con-

sumers hoard the additionally received money instead of spending it (*Van Rooij/De Haan* 2019). Experimental studies of consumer spending behavior have found that only 50 % of European consumers (*Jannsen/Bright* 2016), 40 % of Australian consumers and 30 % of Dutch consumers (*Van Rooij/De Haan* 2019) would spent the additional money if they actually received it.

Furthermore, the implementation of HM can have negative side effects, which are mentioned, e. g. by *Punzo/Rossi* (2016). Their New Keynesian model with distortive taxation and heterogeneous agents shows much larger redistribution effects from savers to borrowers in this kind of monetary-financed stimulus than a debt-financed one.

The general concept of HM is controversially discussed as it is considered to merge QE with fiscal policy (*Belke* 2018). This view implies very high political and legal obstacles to the use of this policy tool, especially in the Eurozone, which is potentially the most important limitation on its implementation (e. g. *Mayer* 2016). Finally, HM has not yet been subject to extensive academic research, which renders the scarce existing research results less robust. Theoretical models on the implementation of HM are formulated, e. g. by *Galí* (2019), *Buiter* (2014) or *Punzo/Rossi* (2016). *Galí* (2019) uses a New Keynesian model with tax cuts or government purchases. The popular press has also covered this controversial topic, with, e. g. *Giavazzi/Tabellini* (2014) arguing that measures such as QE should always be accompanied by a fiscal component. *De Grauwe/Ji* (2013) find that the central bank can buy government bonds without endangering price stability. *Pâris/Wyplosz* (2013) present debt-monetization as an option to end the crisis in the Eurozone. *Turner*'s (2013) detailed contribution supports monetary-financed fiscal deficits in the current environment. These analyses suggest that the general idea enjoys public support, leading us to consider this concept more thoroughly given the current low-growth macroeconomic environment despite periods of excessive UMP. However, we claim that under specific institutional arrangements HM is not necessarily politically debatable, because it does not disturb the institutional arrangements already in place. In addition, our concept clearly separates the funding decision of the monetary policy authority from the long-term investment decisions of the national government. The next section introduces our concept of Investment Helicopter Money in further detail.

2. Investment Helicopter Money

Following a review of HM and its variants, we now focus on variant three, HM transmission to the private sector via a public investment bank, and introduce our suggested policy tool of HM tied to investment projects, which we refer to as Investment Helicopter Money (IHM).

a) Mechanics of Investment Helicopter Money

The general idea of HM being transmitted to the private sector via a public investment bank is not new. For instance, *Corbyn* (2015) suggests "People's QE": a bond-financed UK national investment bank that would invest in politically favored projects. The idea of a national asset purchase facility in the UK, which receives loans from the central bank and purchases newly issued bonds by financial intermediaries such as a public development bank specialized in infrastructure investment funding, is introduced by *Ryan-Collins* et al. (2013) as "Strategic QE". *Watt* (2015) applies the concept to the euro area. Termed "conditional, overt monetary financing of public investment" (COMFOPI), this concept is a special form of QE under which the European Investment Bank (EIB) issues bonds that are subsequently purchased by the ECB on secondary markets. The EIB would in turn transfer the newly acquired financial means to national governments, which would be obliged to finance investment projects (*Watt* 2015). The advantage of this proposal is that it has a more direct effect than QE, linking the provision of central bank money to actual higher spending in the economy (*Watt* 2015). We extend and firm up Watt's (2015) proposal by explicitly accounting for the European institutional arrangement already in place, while safeguarding the separate decision-making process of the monetary and the fiscal authority.

Our idea is based on a different set of existing European institutional arrangements (ECB, EIB, EU Commission and all EU national governments), which have different policy horizons (long-term, short-term, and immediate stabilization effects). See Figure 1 for an overview of the suggested mechanism.

On the one hand, the monetary authority continues to take an autonomous decision on the adequate long-term money supply to maintain price stability.[2] We assume this plan to refer to the next four to ten years. These policy instruments are transferred to the real economy via various transmission channels with different time lags as described in detail in Section II. Therefore, the transmission of this kind of tool implies a weak and indirect stabilization effect of the real economy with the ECB acting in an uncertain but forward-looking manner.

On the other hand, the European Commission sets up a budget draft within the Multiannual Financial Framework (MFF), which usually consists of a seven-year budget plan. Currently, the European Commission makes a proposal for the next MFF, submits its proposal to the Council, which can adopt it in a unanimous position, and finally obtains the consent of the European Parliament. In

[2] The ECB (2011) claims to achieve its inflation target of below, but close to, 2 % over the medium term. The length of this "medium term" is currently not defined (see, e. g., *Schnabel* 2020).

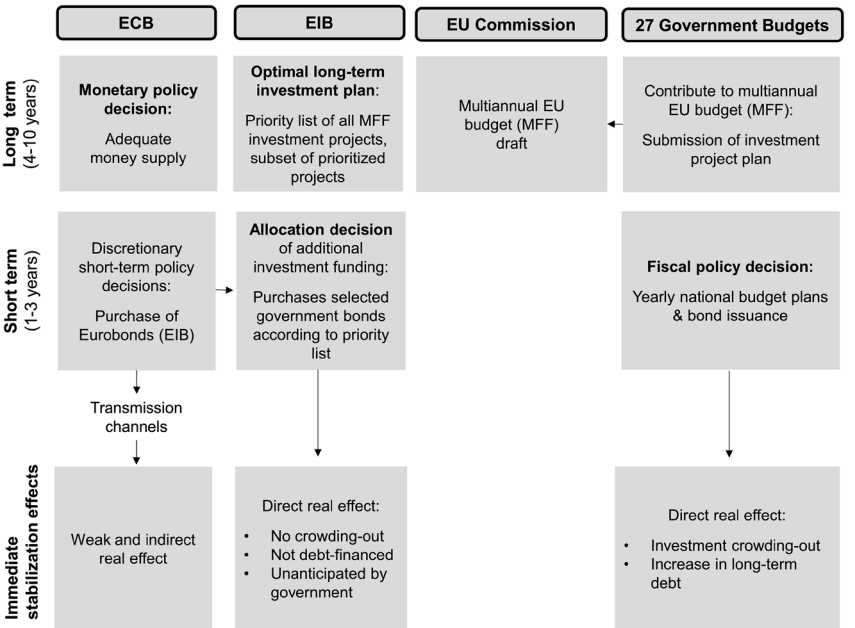


Figure 1: Exemplary Schematic Overview of Investment Helicopter Money

our suggested mechanism, the initial budget proposal of the EU Commission takes national large-scale investment project submissions into consideration. Every national government in the EU contributes to the MFF draft by submitting national investment projects and applies in this way for funding. Besides shaping the MFF, national proposals also enter the set-up of a separate long-term investment plan, which we suggest to be conducted by the EIB. Once the submitted national investment project plans are transferred to the EIB, it independently sets up an optimal long-term European investment plan. Currently, the EIB sets up an operational plan for three years, which we suggest should be extended to the long-term investment horizon. This long-term EU-wide investment plan is assumed to be a subset of all submitted investment projects, which are prioritized by the EIB.

In the short term (defined as the next one to three years) the ECB responds to economic shocks and stabilizes the economy. In addition to existing CMP and UMP tools, our concept introduces a modified tool involving bond purchases. We suggest the ECB purchases ultra-long dated Eurobonds from the EIB with newly created money. The EIB in turn allocates the newly received money from the ECB by providing investment funding. This allocation decision is taken au-

tonomously by the EIB based on the previously set long-term priority list of national investment projects. Thus, the EIB purchases selected non-interest bearing government bonds according to the previously prioritized list of investment projects to finance a fixed amount of national long-term investment projects. In addition, it obliges governments to use the newly acquired money for the respective national investment projects.

In the short term, each of the national governments makes an independent fiscal policy decision according to its national yearly budget plan. The government issues (at least annual) bonds to provide an economic stimulus to the domestic economy. This has a direct effect on the real economy, including a boost to investment spending. However, expansionary fiscal policy supposedly reduces private-sector expenditure due to a higher demand for loans, which increases interest rates and in turn reduces investment (crowding-out effect, see, e. g. *Spencer/Yohe* 1970). In addition, the increase in the annual deficit also increases national long-term debt. By contrast, the investment projects financed within the EIB investment plan (i. e. by IHM) have a direct stabilizing effect on the real economy. In the absence of an increase in long-term government debt as well as a missing crowding-out effect, economic stabilization is promoted. The irregular nature of the monetary policy decision of purchasing Eurobonds from the EIB reassures that governments will not or only partly anticipate the additional funding in their regular budget plans.

Our results point to a double dividend from IHM, resulting from a direct injection of purchasing power to the real sector while avoiding a crowding-out effect of private investment.

Consequently, the suggested concept of an IHM drop via a public investment agency is directly implementable via the existing MFF. This at least five-year budget is regularly agreed on among European governments as laid down in Article 312 of the Treaty of the Functioning of the EU (TFEU 2012). The MFF is composed of six broad expenditure categories ('headings'), which determine its spending priorities as well as maximum annual budgets in total and per heading. For example, the current 2014 – 2020 MFF has a "Smart and conclusive growth" heading, which includes "Competitiveness for growth and jobs", which is, amongst others, associated with infrastructure investments and would be in line with our proposal. However, the overall ceiling is currently limited to 1.20 % of the EU's annual GNI, which renders a potential implementation of IHM particularly effective.

By contrast, IHM is paid for by the central bank printing money rather than the government issuing debt (*Wren-Lewis* 2014). While *Borio/Zabai* (2016) claim that the effect of HM is comparable with debt- or tax-financed government deficits, which would render the introduction of a new policy tool redundant, another strand of the literature claims that the specific advantage of an

investment helicopter is its supposed effectiveness, even under high government debt and/or at the ZLB (*Bernanke* 2016).

Moreover, the adjustment time is rather shorter than with CMP and UMP. Like HM, IHM directly transfers purchasing power to the private sector.

b) Shortcomings and Restrictions

A major concern regarding IHM is a potential substitution effect in national government budgets. In particular, IHM is not a substitute for a general sound economic policy framework, but intended to jump-start an economy with the help of a short-term demand push mechanism.

In the long term, governments will learn from the past, having experienced discrete policy interventions by the ECB. On average, IHM could lead governments to expect a non-interest bearing funding source over their next four to ten years' budgets. In anticipation of receiving investment project funding from the ECB, national governments adjust their long-term budget plan and reduce it by the on average expected monetary intervention. Hence, national governments substitute parts of their fiscal budget. In the short term, the government may also refrain from implementing short-term domestic fiscal stimulus programs, such as the scrapping premium introduced in 2009 in Germany.

Furthermore, a free-rider problem could arise between Eurozone members if IHM were used. In the short term, individual members may refuse to implement fiscal programs aiming to stabilize the domestic economy through national fiscal deficit expansion. In this case, governments could expect to receive non-interest bearing funding from the ECB instead of funding it themselves. In this case, all Member States would have paid for the MFF, while only some benefit. However, this free-rider problem is not new in the history of the EU and has led, e. g. with regard to national deficits, to the introduction of the Stability and Growth Pact.

Moreover, the political decision process on the implementation of IHM is an obstacle. As for the MFF, which is a core part of our suggestion, the adoption of a new MFF is a multistage process and requires political coordination between the European Commission, a unanimous Council decision, and the consent of the European Parliament. This staged process is politically challenging and time-consuming. On the upside, this framework can flag up areas of common interest within which investment projects are mainly financed for a given period of currently seven years. This implies that European investment projects financed by the central bank do not substitute for national annual budgets.

In the long term, an extensive use of IHM can also lead to the risk of high inflation. Thus, it has to be exercised with caution. The time-lag between Eu-

robonds purchased by the ECB and the resulting price response deserves careful consideration when IHM is executed. If inflationary effects are underestimated, short-term benefits of IHM could be outweighed by long-term inflationary consequences. IHM further bears the risk of persistent high inflation if market participants anticipate rising prices, resulting in a detrimental wage-price spiral. Despite a declining trend of labor unions' influence, this long-term threat should be taken into consideration when addressing persistently too low inflation by means of IHM.

3. Comparisons of Helicopter Money with Other Policy Tools

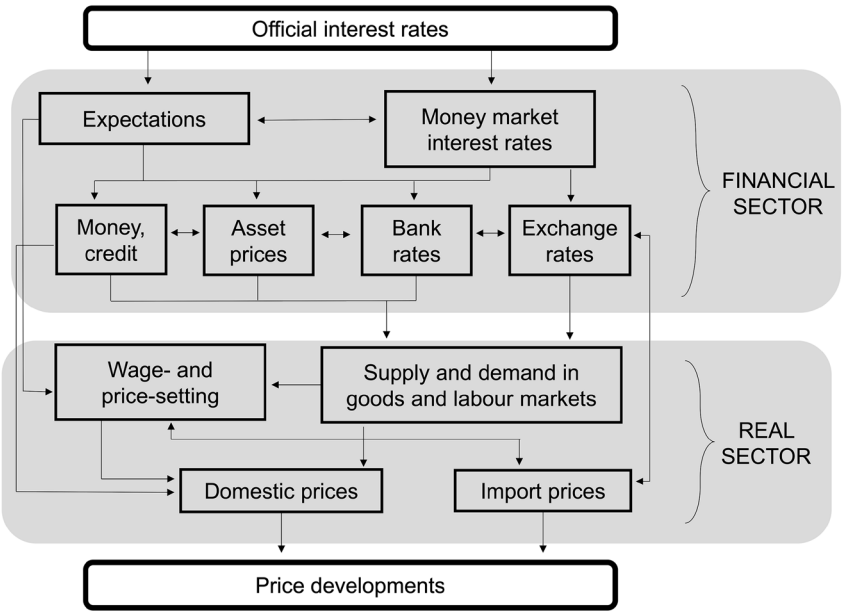
We wish to provide a clear comparison between the concept of HM and other policy instruments without overcomplicating the line of argumentation. Therefore, we compare the advantages and disadvantages of the respective policy tool and provide an intuitive explanation of economic effects as could be explained by a standard model in the Keynesian tradition. Throughout our analysis we explicitly refer to a clear distinction between the effects within two types of sectors: the real and the financial sector.

a) Helicopter Money vs. CMP

Regarding the transmission, the traditional CMP tool starts off from the monetary authority's impulse and channels through to the ultimate goal of inflation. Figure 2 shows how CMP in the form of setting official interest rates, which are passed through to the real sector via various transmission channels according to the ECB (2011).

The transmission channels connecting the financial sector to the real sector are considered the most vulnerable and fragile within the whole transmission process. Although the financial market adjusts relatively fast to its new asset market equilibrium, implying a quick adjustment in the financial sphere, economic effects in the real sector take more time. By contrast, an (investment) helicopter drop of money is directly injected in the economic sphere, without dilution through transmission channels.

What is the aggregate economic effect of traditional HM? The central bank transfers money directly into private consumers' bank accounts, increasing their disposable income. Subsequently, consumers can increase their spending. While the proportion of HM actually spent depends on the individual willingness to consume, generally the additional demand is assumed to pass through to output, increasing demand for investment. Referring to a standard Keynesian model we suggest a real multiplier effect of additional money injected in the economy depending on the money demand of the private sector. According to *Djuric/*



Source: Own representation based on ECB (2011).

Figure 2: Transmission Channels of Conventional Monetary Policy

Neugart (2016) the pass-through to the economic sphere in Germany using this kind of HM is suggested to amount to 40 % of the money injected, depending on consumers' willingness to spend. The effect of IHM is different to that of traditional HM. Any increase in the monetary base as new money created by the central bank is assumed to induce a proportional increase in government investment spending. This implies a 100 % pass-through of monetary policy impulses to the economic sphere. Thus, we see an additional benefit from this kind of helicopter drop. While a multiplier effect arises from the financial sphere in case of CMP and UMP (financial multiplier), it originates in the real sector when HM is considered (real multiplier).

b) Helicopter Money vs. QE

QE asset purchases by the central bank have exchanged government bonds for central bank reserves in banks' balance sheets. A general advantage of QE over HM is that it is easily reversible, at least in theory. To avoid an overheating of the economy, the central bank can use "tapering", i. e. absorb money by re-selling the previously purchased assets to commercial banks. Consequently, interest rates should rise and credit demand would be reduced as well as growth and in-

flation. However, assuming the ECB would like to sell all of the government bonds currently acquired within its APP, its feasibility is questionable. Unlike QE, a traditional HM drop would not be easily reversible, but instead a transfer without return. However, regarding IHM the purchased government bonds by the EIB as well as the Eurobonds purchased by the ECB could be theoretically repurchased.

QE indirectly stimulates aggregate demand by increasing the amount of central bank money in the economy, which still has to be transmitted to the real sphere. An advantage of both forms of HM is their direct impact on the targeted real sector because they circumvent the financial sector as a potential cause of dilution in the transmission process. However, while traditional HM may be saved instead of spent, we suggest the transmission via the EIB. This ensures that the directly received purchasing power translates to additional demand, thereby boosting economic growth.

Regarding the aggregate economic effect, QE alleviates the reserve restriction of the banking sector (*Belke* 2018) and aims at inducing higher credit provision by banks. The aggregate economic effectiveness of this UMP tool is, however, still under discussion (see Section II. 2). In case of traditional HM, the central bank would create money and give it directly to households, which would be a pure transfer. This supposedly increases the likelihood of an increase in economic agents' spending behavior and a boost in aggregate demand (cf. *Belke* et al. 2017). The additional economic effect is even more likely when IHM is considered as governments are regarded as less reluctant to spend than households.

c) Helicopter Money vs. Traditional Fiscal Stimulus

The first variant of traditional HM is considered as a form of expansionary fiscal policy, such as government spending or tax cuts. By contrast, the introduction of IHM is essentially different from a conventional fiscal impulse, which is "measured as the change in the government budget balance resulting from changes in government expenditure and tax policies" (*Schinasi/Lutz* 1991: 111). By contrast, IHM does not originate from a change in the government budget balance resulting from a decision taken by the fiscal authority, but from a change in the central bank balance and is decided on autonomously by the monetary authority.

Traditionally, government spending can be financed by levying taxes or by borrowing from the private sector via bond issuance. In the latter case, the government uses the proceeds to stimulate demand and e. g. invest in infrastructure projects. These debt-financed fiscal programs can be subject to a crowding-out effect. They oblige the government to interest payments to the private sector as

well as to repayment at maturity. The applicable interest rates can rise with increasing deficits, hurting private investment and raising solvency questions. According to the Ricardian equivalence, the desired effect of a tax cut can be partly offset when forward-looking consumers anticipate a future rise in taxation or become more cautious concerning the sustainability of government debt, in turn preferring to save rather than spend. The crowding-out effect of traditional fiscal impulses is avoided thanks to IHM, which is spent via the EIB and the respective pre-determined national investment projects.

According to *Bernanke* (2016), a traditional fiscal impulse is transmitted to the real economy via two transmission channels, aiming to induce a real effect. First, government spending has a direct effect on GDP, employment, and income. Second, tax cuts increase households' income, inducing higher consumption spending. These two channels work for traditional debt-financed fiscal policy as well as monetary-financed (Investment) HM. The advantages of HM result from two additional channels. First, according to *Bernanke* (2016), an increase in money supply will temporarily increase expected inflation. Assuming nominal interest rates are close to zero, higher expected inflation would imply lower real interest rates, which should induce capital investment and spending. Proponents of HM recognize a second specific advantage of this instrument, namely that there would be no increase in future debt service costs and no rise in future tax burdens (see, e. g. *Borio/Zabai* 2016). However, this assumption is controversially discussed as this kind of HM creation implies that the central bank partly foregoes its claim of interest income from conventional money creation, i. e. seignorage (*Belke* 2018). The interest inflow forgiveness is comparable with an obligatory interest payment for debt accumulation (*Borio/Zabai* 2016). The theoretical loss of HM creation materializes once the inflation target is actually reached and the period of QE ends (*Belke* 2018). In this scenario, the central bank has to withdraw the money created via credit operations from circulation, resulting in a lower distribution of interest rate profits to its capital holders (*Belke* 2018; *Sinn* 2017).

IV. Discussion

> "(…) the concept [of helicopter money] runs counter the whole ideological turn of the 20th century in terms of monetary policy."
>
> (*Jourdan* 2017)

This section meets the concerns of a heated debate on the concept of HM. We will first discuss if HM is a monetary policy instrument and then refer to the major concern of endangering the central bank's independence.

1. Concepts: Fiscal or Monetary Policy?

While some concepts, such as the Modern Monetary Theory,[3] regard the monetary and fiscal authority as a joint functional entity, we emphasize the differentiation between fiscal and monetary policy. Following the introduction by *Friedman* (1969), the term "helicopter money" became a keyword in the economic debate, but today its usage is more diverse. The concept is referred to, e. g. as "money-financed fiscal stimulus" (*Galí* 2019) or "fiscal quantitative easing" (*Rogoff* 2017), and more recently, it appears, e. g. in the context of basic income. Consequently, the former monetary stimulus has been regarded rather as a fiscal stimulus in the more recent literature. This section clarifies why we, instead, refer to HM as a monetary policy instrument.

Generally, we can differentiate between fiscal and monetary policy by instruments and objectives. Traditionally, monetary policy sets interest rates and the monetary base (M0), while a fiscal stimulus is implemented via tax rates and government expenditure, financed by tax income or by issuing debt. Monetary policy is regarded to be efficient in preventing inflation, whereas fiscal policy is considered to be efficient in promoting economic recovery (*Mencinger* 2017). While monetary policy has a specific inflation target of below, but close to 2 %, fiscal policy objectives are less specific, covering a wider range from, e. g. income equality to full employment. Both concepts, however, also overlap: According to, e. g. *Mencinger* (2017) central bank policies are traditionally also "fiscal policies" as they change the present value of future government principal and interest payments.

Friedman (1969) viewed this policy as evidence of the potential of monetary policy, even when CMP via interest rate changes has failed: The Pigou effect claims that "changes in the quantity of money can affect aggregate demand even if they do not alter interest rates" (*Friedman* 1968: 2). This made the instrument a monetary one.

Traditional HM is defined as (i) money creation without corresponding assets, which is (ii) distributed to the nonfinancial sector. Emphasizing (i), i. e. an increase in the monetary base, HM is a monetary policy instrument – although

[3] The concept of Modern Monetary Theory (MMT) received increasingly attention in recent years, mainly regarding the monetary financing of fiscal policies (e. g. *Kelton* 2020). According to MMT, the issuer of currency is financially unconstrained (*Mitchell* et al. 2019) as it can create money to pay its own debts. MMT calls for an expansion of government spending until full employment is reached. Afterwards, tax increases prevent inflation (*Palley* 2019). In line with *Lavoie* (2013), we reiterate the institutional separation between central banks and fiscal authorities. This is even more striking in the context of the euro area, which lacks a common fiscal authority. By contrast, IHM is intended as a tool, which can be easily implemented in the euro area's current institutional framework.

in an alternative form. Currently, money is predominantly created by banks' credit provision (*McLeay* et al. 2014), while the minor part, the seignorage of the central bank printing money, is distributed to the government. By contrast, HM would bypass the banking sector and governments would lack the seignorage gain, which makes it a special variation of money creation.

Why is this instrument related to fiscal policy? The term of HM is used in different contexts, ranging from "monetization of public debt" to "money financed fiscal program" (*Bernanke* 2016). All of these views refer to the target of a fiscal stimulus, i. e. the promotion of economic recovery. We will shortly discuss each of these terms, where Section IV. 2 discusses the "monetization of public debt", which is related to the fear of governments printing money to finance their debt, in further detail due to its particular prominence in the debate.

Regarding (ii), HM represents a transfer, a present to the nonfinancial sector, which traditionally is considered as a fiscal stimulus. Exemplary, in the US the Economic Stimulus Act of 2008 granted a tax reduction to households, and the effect resembles to a helicopter drop of money. This explains why the concept of HM is often described as a "monetary-financed fiscal stimulus" by the literature, which refers to a fiscal effect of a monetary policy instrument. According to the former chairman of the Federal Reserve Board *Bernanke* (2016) HM is a fiscal stimulus in the form of a tax rebate, which is money-financed instead of debt-financed. This view is supported e. g. by *Galí* (2019) ("money-financed fiscal stimulus") or *Agarwal/Chakraborty* (2019) ("monetary financing of fiscal deficits"). However, HM is not a permanent instrument, but rather an exceptional one, and therefore constitutes a different policy option (*Jourdan* 2017). In particular, the concept of IHM does not substitute for a generally sound economic policy framework. Instead, national institutions remain still responsible for their own sound long-term structural growth strategies. IHM only serves as a tool to selectively jump-start economic activity with the positive side-effect of shortening the time-lag until the national long-term policy goal can be reached.

Interestingly, the term "helicopter money" is recently also referred to in the discussion on universal basic income (UBI). As both concepts involve an unconditional payment to consumers, the two concepts share a similarity. Moreover, the funding discussion of UBI also separates between a monetary and a fiscal funding (*Mencinger* 2017). However, HM is rather an exceptional tool in unconventional times than a regular payment received from the central bank. Moreover, it is a punctual measure to directly stimulate demand when the economy faces a severe recession. This also results in different institutional frameworks. According to *Jourdan* (2017) the single aim of HM can be targeted by the central bank, while the wide range of UBI objectives suggests rather a governmental control of its design and implementation.

Turning to IHM, we have defined it as the creation of money without corresponding assets and its distribution to the nonfinancial sector via the EIB. We agree that our concept involves elements of monetary policy (e. g. the extension of the monetary base) and fiscal policy (e. g. the submission of national investment plans to the MFF). However, we distinguish between fiscal and monetary policy instruments by the way they are administered (see, e. g. Board of Governors of the Federal Reserve System 2017; *Krugman* 2020). Under the current institutional framework monetary policy remains in the hands of the central bank, aiming to achieve its inflation target, while all other targets are pursued by fiscal policy. In case of IHM, the central bank decides on a monetary expansion. The EIB decides about the allocation of this exceptional availability of additional money, while the government cannot anticipate a permanent additional income. In our concept the central bank has the sole decision-power to create money in order to provide a direct and punctual monetary impulse to achieve its inflation target. Thus, IHM is a monetary policy instrument.

2. Central Bank Independence

Another debate centers on the ECB's independence and a potential monetization of public debt. We recapture historically grown economic stereotypes before we relate them to our concept of IHM.

By definition, central bank independence deals with the degree of central banks' policymaking away from governmental influence (*Walsh* 2008). But why are central banks generally prohibited from financing the government? According to *Neyer* (2019), monetary policy in the hands of governments generally tends to lead to high inflation associated with an overall welfare loss. Key reasons for central bank independence are, thus, the avoidance of inflation bias, to maintain central bank credibility, and the distinctiveness of monetary policy (*Neyer* 2019). First, governments have an incentive to finance spending just by "printing money", as seen in the hyperinflation period in the German Reich in 1923. The *Barro/Gordon* (1983) model explains the time-inconsistency problem of monetary policy decisions, where governments would have an incentive to realize a higher-than-announced inflation target rate, leading to welfare losses. Second, the avoidance of inflation bias is easier under central bank credibility, which currently tends to be undermined (*Buiter* 2017) Third, the distinctiveness of monetary policy calls for central bank independence. According to *Alesina/Tabellini* (2007, 2008) it is advantageous to transfer policy areas to non-elected bureaucrats due to the preferences for re-election of politicians. In particular, contractionary monetary policy decisions are considered to be implemented by politicians in a later period to safeguard re-election (*Jordan* 2017). All of these arguments can be summarized under the idea of the avoidance of excessive in-

flation and the safeguarding of price stability. In addition, the concept of inflation targeting has been questioned following the financial crisis by, e. g., *De Grauwe* (2007), *Giavazzi/Giovannini* (2010) or *Leijonhufvud* (2008). While low inflation is regarded as indicator of economic growth and prosperity, high inflation is supposed to be welfare-harming. However, in practice, today advanced economies are facing the opposite of excessive inflation, even after expansive monetary policy, which has led to a debate about the relationship between inflation targeting and financial stability as well as the optimal inflation rate in general (see, e. g. *Woodford* 2012). According to *Deutsche Bank* (2016), "historical inflation traumas" of many member states have led to the historically grown stereotype of excessive inflation avoidance.

The ECB is strictly prohibited by law from the monetary financing of governments as laid down in Article 123 TFEU (2012), further detailed in Article 21 of the ECB-Statute (2002). It prohibits purchases of government bonds by the central bank in the primary market and bans "overdrafts or any other type of credit facility in favor of Union institutions […] or other public authorities."

However, this prohibition does not apply to other publicly owned credit institutions, such as the EIB (*Deutsche Bank* 2016). Theoretically, the ECB could purchase government bonds indirectly, as long as intermediated by the EIB, using the proceeds "to finance public infrastructure spending, possibly selected from the pool of projects identified under the Juncker Investment Plan. Contrary to standard EIB procedures, the 50 % co-financing requirement could be waived. Politically, any such scheme would likely be controversial, in Germany in particular." (*Deutsche Bank* 2016: 8). Further exceptions of this strict prohibition of monetary financing to governments exist in the form of, e. g. rules on the distribution of central bank profits. Some of the surplus income in excess of the monetary authority's expenditure accrues to national governments. These cash flows are generally regarded as a corollary of pursuing the primary aim of monetary policy (*Sims* 2001).

The independence of the ECB is also questionable regarding the current QE programs with, e. g. the Public Sector Purchase Program and the Single Supervisory Mechanism to be judged critically (*Neyer* 2019). Whereas the OMT program is closest to HM, the European Court of Justice (ECJ) ruling on the OMT clarifies that the ECB has sufficient leeway in conducting monetary policy as long as the policy is considered monetary policy, is proportionate to the nature of the problem, and complies with the prohibition of monetary financing. The OMT is deemed acceptable as long as government bond purchases take place in the secondary market and a price difference between the primary market and the purchase in secondary markets exists [Section 225 of the opinion of the ECJ advocate general]. This reveals that the introduction of the suggested mecha-

nism is not to be groundbreaking debatable, but rather a slight variation of the central bank independence.

V. Concluding Remarks

The extensive usage of an array of CMP and UMP tools has so far failed to deliver the desired economic recovery within the euro area. With investment and growth remaining at low levels, effective monetary policymaking is still a challenging task. This has induced us to review the instruments applied so far, their mechanics, shortcomings and empirical effects. Where conventional measures are subject to time-consuming adjustment lags and apparently dysfunctional, the ECB has chosen to introduce unconventional measures. The effects of this QE policy, however, remain weak and uncertain. While its proponents claim that QE prevented an even worse recession, it has also induced undesirable side effects, such as a dominance of financial over real effects. With the intention to boost employment, output, and growth, we suggest an alternative approach of IHM, directly injected into the real economy rather than the financial sphere. Under our proposal, the ECB would transfer newly created money to the EIB, which purchases national government bonds according to a predetermined priority list. Sovereigns then use the newly acquired money to spend on, e. g. infrastructure projects.

The comparative analysis of the effect of this new tool reveals direct stabilization effects of the real economy without investment crowding-out. Most importantly, it directly increases investment spending as well as aggregate demand. Furthermore, it does not rely on higher credit demand of the private sector to be effective. Indeed, it boosts private sector income, reducing the debt-to-income ratio. This tool would induce firms that benefit from government spending to invest and hire, leading to a real money multiplier including a desired increase in employment and growth. Although subject to a political debate, we claim that this specific form of IHM allocated by the EIB would not violate the independence of the ECB. Furthermore, the given institutional arrangements within the euro area (MFF and EIB) would make it easily implementable, rendering this tool particularly effective. Consequently, if politically enforceable, we suggest this policy tool offers a direct economic effect, boosting investment and accelerating recovery in the euro area.

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Appendix: Timeline of QE in the Eurozone

According to *Trichet* (2010), the ECB's UMP of the Covered Bond Purchase Programme (CBPP) from July 2009 to June 2010 and its successor (CBPP2) from November 2011 to October 2012 are not classified as QE but as "credit easing policy". According to his line of argumentation, sterilized bond purchases do not classify as QE.[4] This also holds true for the Securities Markets Programme (SMP) between May 2010 and September 2012, under which the ECB bought government and corporate bonds on the secondary market in order to fight the dysfunction of the monetary policy transmission mechanism (ECB 2010). The introduction of the SMP is controversially discussed with regard to its legitimacy (the ban of the monetary authority financing fiscal authorities as

[4] The sterilization takes place either via open market operations in the form of a reduced tender volume or via fine-tuning operations, i. e., the collection of fixed term deposits, with the latter primarily used (*Sester* 2012).

laid down in Article 123 TFEU (2012), especially by the German central bank (*Sester* 2012). Furthermore, the LTRO's liquidity provision to the banking sector could have induced banks to invest in high-yield government bonds of distressed countries, which can be used for collateral in further credit relations with the ECB, as such classifying as "backdoor leveraging" (*Sester* 2012: 163), inducing a potential "backdoor bail-out and indirect monetary financing of governments" (*Sester* 2012: 164 f.) when the necessity to recapitalize the ECB materializes. Furthermore, if the ECB would re-sell the purchased bonds with a loss to the ESFS/ESM/issuing government, this would be considered as "monetary financing" (cf. *Draghi* 2012; *Sester* 2012). According to the ECB, the establishment of the SMP is legal and based on Article 127(2) TFEU (2012), Article 12.1 (2) ECB-Statute (2002) and especially Article 18.1 ECB-Statute (2002), which empowers the ECB to "operate in the financial markets by buying and selling outright [securities]". The *ECB* (2010) justified the program's legitimacy whenever market tensions restrain the monetary transmission mechanism and thereby the effective conduct of monetary policy. The smooth functioning of the monetary policy transmission mechanism can be classified as "intermediate monetary objective" based on Article 12.1 ECB-Statute (2002).

The introduction of the Outright Monetary Transactions (OMT) in September 2012 went one step further. The program empowers the monetary authority to conduct open market operations in government bonds, i. e. an unrestricted purchase of government bonds (outright purchase) on the secondary market without sterilization. The OMT is conditional, e. g. on drawing of the ESFS/ESM. The ECB claims that its OMT program does not violate Article 123 TFEU (2012). In a legal dispute before Germany's Federal Constitutional Court in 2013, the ECB (2013) stressed that the new emission of government bonds has blocking periods before the purchase can take place. In either case, the OMT has not been used so far, which renders the discussion theoretical.

In January 2015, Draghi announced an "expanded asset purchase programme" (APP) to support the monetary policy transmission mechanism and provide the amount of policy accommodation needed to ensure price stability (ECB 2019). The purchase of public and private securities on secondary markets started in March 2015 and consists of distinct purchasing programs. The Corporate Sector (CSPP, 2016 – 2018), which continues to reinvest principal payments, the Public Sector (PSPP, 2015 – 2016) was restarted in 2019, the Asset-backed securities (ABSPP, 2014 – 2018) continues to reinvest redemptions as well as the 3rd Covered Bond Purchasing Programme (CBPP3, 2014 – 2018) continues to reinvest principal payments.

With regard to the distinction between QE and HM, the PSPP is of extraordinary relevance. In the PSPP, the Eurosystem purchases assets, aiming to achieve market neutrality in order to avoid interfering with the market price formation

mechanism. Purchases are divided between countries based on the ECB's capital key. National central banks only buy their respective sovereign bonds and not those of other jurisdictions. Some central banks purchase supranational bonds (issued by international organizations and multilateral development banks) to meet the 10 % purchase share of these securities. Securities purchased include government bonds and bonds issued by recognized agencies, regional and local governments (90 %), international organizations and multilateral development banks (10 %) located in the euro area. According to *Lehment* (2019) the PSPP led to negative seignorage gains.

On December 11th, 2018, the ECJ judged the purchase program to be consistent with European law. The ECB neither had exceeded its mandate nor violated the prohibition of government financing.