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PUBLIC DEBT, CENTRAL BANK AND MONEY: SOME CLARIFICATIONS

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Public debt, central bank and money: some clarifications [1]

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Abstract

The purchase of securities, and more specifically government bonds, belongs to the monetary policy implementation framework of many central banks, the Eurosystem being no exception for that matter.

However, as for the euro zone, that tool remained unused until 2010, while present in the Eurosystem's toolkit since its creation. Its implementation in times of crisis raised many debates, comments and even resorts to courts of justice. One of the central issues relates to the monetary financing of the public sector which in turn questions the relations between public debt, central banks and money.

This paper does not aim at providing a definite answer to the many questions, or to offer an arbitrage between the different arguments and schools of thoughts. More simply, in view of the often confused state of discussions, it goes back to the basic concepts of money creation, more specifically to the one of *money creation by central banks for the benefit of the public sector*.

Through a series of "typical cases" of interactions between central banks, commercial banks, public sector and households, the paper favours a better understanding of the quite complex mechanic of money creation through the purchase of public bonds by central and commercial banks. It also addresses a connected topic, i.e. the article 123 of the treaty on the Functioning of the European Union that prohibits the direct purchase by central bank on the primary market of debt instruments issued by the public sector.

Keywords: monetary policy implementation, central bank, money creation, monetary financing, public debt

[1] This paper should not be reported as representing the views of the BCL or the Eurosystem. The views expressed are those of the author and may not be shared by other research staff or policymakers in the BCL or the Eurosystem.

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Résumé – Summary

Depuis 2010 l'Eurosystème a mis en œuvre un instrument de politique monétaire jusque là inutilisé, même s'il faisait partie de son instrumentaire depuis sa création, à savoir l'achat ferme de titres et singulièrement de titres de dettes publiques.

Assez curieusement, car acheter et vendre des titres font partie de l'arsenal de nombreuses banques centrales dans le monde, à commencer par la *Federal Reserve Bank* aux Etats-Unis, cette pratique a suscité de nombreux commentaires, débats et même des recours devant des juridictions. Il est vrai que l'activation de cet instrument s'est déroulée en temps de crise.

Deux thèmes, parmi d'autres, sont régulièrement débattus : le *financement monétaire* ainsi que *l'article 123* du Traité sur le fonctionnement de l'Union européenne (TFUE), qui interdit aux banques centrales de l'Union européenne (pas seulement celles de la zone Euro) notamment l'acquisition directe (sur le marché primaire, donc) d'instruments des dettes publiques.

Les débats sont souvent confus et semblent reposer sur une certaine incompréhension des mécanismes de la création monétaire ou de financement monétaire. Par ailleurs, il semblerait qu'un amalgame s'est opéré entre les deux thèmes : selon certains commentateurs l'article 123, même s'il n'évoque nullement la notion de *financement monétaire*, viserait en réalité à empêcher ce dernier.

Le but de cet article est de clarifier ces concepts.

Il est tout d'abord rappelé que l'article 123 vise à interdire aux banques centrales l'octroi de crédit aux autorités publiques, ainsi que l'achat sur le marché primaire de titres émis par celles-ci ; l'article ne mentionne pas le financement monétaire. Le but de cette interdiction est en fait de favoriser la formation des prix sur les marchés de titres publics, plus particulièrement sur le marché primaire, empêchant les banques centrales d'interférer avec cette formation et, partant, d'offrir un avantage compétitif aux autorités publiques lorsqu'elles cherchent à se financer sur les marchés. Il est aussi rappelé que d'autres dispositions législatives prévoient que cette disposition inscrite dans l'article 123 ne peut être contournée.

Ensuite on s'attache à montrer ce qu'est un financement monétaire, à savoir la création de monnaie aux fins de financer des agents économiques, un phénomène somme toute assez banal résultant de l'activité des banques, aussi bien les banques commerciales (aussi appelées établissement de crédit) que les banques centrales. Au passage on rappelle aussi que le *stock monétaire* (la quantité de monnaie en circulation, mesurée par des agrégats tels M1, M2 et M3, par exemple) doit bien être distingué de la *base monétaire*, élément du passif d'une banque centrale. Cette dernière dénomination est assez malheureuse, puisque la base monétaire n'est pas constituée que de monnaie (les billets en circulation et les dépôts des gouvernements auprès des banques centrales), mais aussi

d'autres éléments non constitutifs de la monnaie (à savoir les réserves obligatoires et autres dépôts des banques commerciales auprès des banques centrales).

Il est ainsi montré que débattre du financement monétaire n'a de sens que si l'on qualifie le thème : *financement monétaire par qui, pour qui* ?

Une série d'exemples illustre des cas de figure assez classiques d'achat de titres de dette publique sur le *marché primaire* d'abord (celui sur lequel de nouveaux titres sont émis, ici par le gouvernement, et achetés pour la première fois) aussi bien par les banques centrales, les banques commerciales, que par les agents économiques non monétaires (sociétés autres que les banques et les ménages). Une seconde série d'exemples est consacrée aux achats par les banques centrales, sur le *marché secondaire* des titres, là où s'échangent des titres existants. Les vendeurs de ces titres sont les établissements de crédit mais aussi d'autres agents économiques ayant acheté initialement ces titres sur le marché primaire.

Les achats sur le marché primaire peuvent conduire à un financement monétaire quand ils sont effectués par des banques commerciales ou par des banques centrales (le cas est illustré même si, dans l'Union européenne, de tels achats sont interdits). Mais il est aussi montré que les achats de titres de la dette publique par des agents non bancaires procurent un financement monétaire au gouvernement si ces achats sont financés par un crédit accordé par une banque commerciale.

Enfin, un financement monétaire, indirect cette fois, du gouvernement par la banque centrale a lieu si l'acquisition par une banque commerciale est refinancée par un crédit accordé à cette dernière par la banque centrale, par exemple au travers d'opérations de politique monétaire.

Quant aux échanges de titres de la dette publique sur le marché secondaire, ils peuvent dans certains cas conduire à une forme de financement monétaire du gouvernement par la banque centrale quand celle-ci « valide » (ou refinance) le financement monétaire initialement créé par un établissement de crédit en faveur du gouvernement lui-même ou encore d'un agent économique non bancaire qui avait initialement bénéficié d'un crédit bancaire pour acquérir un titre de dette publique sur le marché primaire.

Même si d'autres exemples, au-delà de la dizaine explorée, pourraient être développés, il ressort que la notion de financement monétaire doit être envisagée avec nuance : il est pour le moins trop simple de penser que l'absence d'achat de titres de la dette publique par la banque centrale sur le marché primaire garantit l'absence de financement monétaire par cette dernière en faveur du gouvernement.

En effet des achats de titres publics par les banques centrales peuvent donner lieu à financement monétaire alors que l'article 123 et ses corollaires sont respectés.

Il est aussi trop simple de penser qu'il n'y aurait aucune possibilité de financement monétaire par la banque centrale, ou au contraire que tout achat serait forcément source

de création monétaire, quand la banque centrale se cantonne aux achats sur le marché secondaire.

Ces conclusions conduisent aussi à revisiter certaines interprétations de l'article 123 du TFEU : il ne vise pas à empêcher le système bancaire, en ce compris les banques centrales, de créer de la monnaie et d'assurer le financement monétaire de l'économie. Elles conduisent aussi à clarifier ce qu'est, techniquement, un financement monétaire.

Elles ne ferment cependant pas la porte au débat, de politique économique cette fois, quant à savoir jusqu'où l'on peut étendre le concept de financement monétaire.

Public debt, central bank and money: some clarifications

Paul Mercier [2]

1. A confused debate

Among various central bank measures taken in response to the current crisis those qualified as "non-conventional" triggered a debate not immune from emotional content: indeed, the purchase of public debt instruments by the Eurosystem continues to generate intense discussions, publications and even legal actions.

However some confusion about concepts and a misunderstanding of the mechanics of central banks' actions unfortunately pollute the legitimate debate about monetary policy measures.

In particular, the notion of "monetary financing" deserves some attention. Monetary financing of the economy is a very basic feature of banking activity. Central banks play a prominent role in this respect, although they are not alone in providing monetary financing to the economy: the role of the commercial banking sector is at least as prominent. Therefore discussing the notion of monetary financing requires an indispensable answer to the basic question: monetary financing *by whom and for whom*?

One particular form consists in the "monetary financing *of the public sector by central banks*", a notion which is at the core of the debate about public bond purchases by central banks.

Another frequent area of disagreement (and possibly confusion) is the interpretation of some provisions of the Treaties, in particular the Treaty on the Functioning of the European Union (TFEU). It is often argued that the Treaty explicitly prohibits such "monetary financing *of the public sector by central banks*".

Monetary financing obviously relates to the concept of money. Here as well, confusion exists between two concepts, namely *money* (and various measures of monetary aggregates) and *base money* (or monetary base). The latter contains a form of money but also other elements which do not fit the definition of money.

[2] Cédric Crelo, Paolo Guarda, Patrick Lunnemann, Jean-Pierre Schoder and Erik Walch provided very useful comments and arguments. Initial discussions with Paolo Fegatelli also proved helpful. Their input contributed heavily to clarifying some debatable issues. Of course they do not bear the responsibility for the views finally presented here.

This paper does not aim at assessing concrete bond purchasing programs, be it those conducted by the Eurosystem (neither past nor current ones) or by any other central bank of EU Member States that have not adopted the euro, against the dispositions of the Treaty (article 123 and the related prohibition of circumvention contemplated in Council regulation 3603/93, but also article 124 and the related Council regulation 3604/94 specifying definitions for the application of the prohibition of privileged access).

Instead, this paper's main purpose is to deal with the mechanics of money creation and to clarify what leads to money creation and what does not. The resulting improved understanding may then be helpful when it comes to debating whether a specific – concrete – central bank action is to be considered in line - or not – with the Treaty provisions and whether or not it results in what could be described as "massive printing of money" as is frequently heard from some critics.

For the purpose of this analysis "Monetary financing" shall be defined as the creation of money by an economic agent capable of this (hence the central banks and the credit institutions) for a money-holding entity (through the provision of credits or in the context of the purchase/issuance of bonds).

1.1 Some legal provisions

This note does not aim to provide any legal assessment of the compatibility of Eurosystem actions with the Treaties, yet it is worth recalling a few legal provisions.

The Treaty on the Functioning of the European Union (TFEU, "the Treaty" hereafter) provides that the European Central Bank and the National Central Banks of the European System of Central Banks (ESCB) are authorized to purchase debt instruments[3]. Such purchases are common practice in many central banks outside the euro area, both for monetary policy and portfolio management purposes. As for the Eurosystem, outright purchases and sales of assets have belonged to its monetary policy implementation framework since its inception[4], even if the instrument was not actually used until 2010.

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3 Protocol n° 4 of the TFEU (*Statute of the European System of Central Banks and of the European Central Bank*), art 18.1.

In order to achieve the objectives of the ESCB and to carry out its tasks, the ECB and the national central banks may:

– operate in the financial markets by buying and selling outright (spot and forward) or under repurchase agreement and by lending or borrowing claims and marketable instruments, whether in euro or other currencies, as well as precious metals;

– conduct credit operations with credit institutions and other market participants, with lending being based on adequate collateral […]

4 See the latest version of the Guideline (EU) 2015/510 of the ECB of 19 December 2014 on the implementation of the Eurosystem monetary policy framework (ECB/2014/60)

http://www.ecb.europa.eu/ecb/legal/pdf/oj_jol_2015_091_r_0002_en_txt.pdf

This legal framework is generally referred to as: *General documentation on Eurosystem monetary policy instruments and procedures*.

It is however important to note that purchases of public debt instruments have to take place on the secondary market (in which previously issued financial instruments are bought and sold). The Treaty explicitly prohibits direct purchases by central banks of debt instruments issued by the public sector on the primary market[5]. Such issuers are widely defined, as they encompass entities beyond the central governments of the European Union, such as European institutions, regional and local public entities

The distinction between primary and secondary market is important[6]. In short, on the *primary market* an *issuer* (e.g. a corporate, a government, among others) of *newly issued* securities transacts with a buyer who becomes the initial *holder* of the securities. *Money* goes from the buyer to the issuer.

After the issuance of securities, the initial buyer might decide to sell them to another economic agent: such transaction takes place on the secondary market. The exchange of money takes place between the initial and the new buyer and the issuer is not involved in the transaction.

Furthermore, the legal basis regarding the prohibition of purchasing public debt instruments is not limited to the Treaty. Indeed, the legal basis extends to a Council regulation of 1993 that addresses the possible circumvention of the prohibition of primary market purchases of public sector debt[7]. One could indeed imagine a mechanism by which a central bank would decide (or be "forced") to use a commercial bank, or any other actor, to act as a go-between who just intervenes as the formal initial buyer, but would then immediately sell the newly issued government bond to the central bank.

The apparently straightforward distinction between primary and secondary market is thus not always easy to make. For instance, in its ruling about the Outright Monetary Transactions (OMT)[8] programme, the European Court of Justice recalled that although

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5 Article 123 of the TFEU (ex Article 101 TEC)

> 1. Overdraft facilities or any other type of credit facility with the European Central Bank or with the central banks of the Member States (hereinafter referred to as national central banks") in favour of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments.
>
> 2. Paragraph 1 shall not apply to publicly owned credit institutions which, in the context of the supply of reserves by central banks, shall be given the same treatment by national central banks and the European Central Bank as private credit institutions. [6] For a definition of primary and secondary markets, see, among any others: http://finance.mapsofworld.com/capital-market/primary-vs-secondary.html

[6] For a definition of primary and secondary markets, see, among any others: http://finance.mapsofworld.com/capital-market/primary-vs-secondary.html

[7] Council regulation (EC) N° 3603/93 of 13 December 1993 "specifying definitions for the application of the prohibitions referred to in articles 104 and 104 b [NB: since replaced by art. 123 of the TFEU] of the Treaty":

> "[…] whereas Member States must take appropriate measures to ensure that the prohibitions referred to in art. 104 of the treaty are applied effectively and fully: whereas, in particular, purchases made on the secondary market must not be used to circumvent the objective of that article […]"

[8] Under the Outright Monetary Purchases program, announced in August 2012, the Eurosystem would buy on the secondary market, bonds issued by government subject to a strict and effective conditionality attached to an appropriate European Financial Stability Facility/European Stability Mechanism (EFSF/ESM) programme.

secondary market purchases of public sector bonds may to some extent inevitably act as an incentive to investors to purchase bonds on the primary market, "*it is essential that this incentive to purchase bonds should not be disproportionate in relation to the objectives of the measure*". In this respect, the Eurosystem has introduced a so-called "blackout period" " (around the date of issuance) during which it will not acquire newly issued public sector bonds on the secondary market[9]. This feature ensures that a market price can form for the bonds concerned and that the purchases of public sector bonds on secondary markets do not have an impact equivalent to that of a direct purchase of such bonds on the primary market[10].

1.2 Definitions and scope

When analysing and debating the relation between the central bank and the government, the concept of "monetary financing" is widely used, even though the provisions of the Treaties do not refer to that concept, and consequently do not define it, as recalled above.

Moreover, while widely used, the concept of monetary financing is not unambiguously interpreted. In this paper, for the sake of clarity, it is considered that monetary financing suggests a direct link with money: there is monetary financing of the government, through the purchase of government bonds, when such purchases lead to the creation of money held by the public sector. On the basis of this definition, it is shown that monetary financing might take place under various scenarios, including among others, when commercial banks act as the buyer of a government bond on the primary market, but also when the central bank does so (which is prohibited in the European Union).

Money being at stake, it is important to recall its definition: in short, it consists in liabilities of monetary financial institutions, those financial institutions that issue money (a.k.a. *money-issuing institutions*: essentially central banks, credit institutions, as legally defined, and money market funds) that have a certain degree of liquidity, and are held by non-monetary financial economic agents (a.k.a. *money-holding agents*: government, non-financial corporations, households, ...).

For the sake of clarity, in this paper the *money-issuing sector* is the *banking sector* composed of the central bank and commercial banks.

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[9] Article 4 of the Decision (EU) 2015/774 of the European Central bank of 4 March 2015 on a secondary markets public sector asset purchase programme (ECB/2015/10)

Limitations on the execution of purchases

> 1. To permit the formation of a market price for eligible securities, no purchases shall be permitted in a newly issued or tapped security and the marketable debt instruments with a remaining maturity that are close in time, before and after, to the maturity of the marketable debt instruments to be issued, over a period to be determined by the Governing Council ('blackout period'). For syndications, the blackout period in question is to be respected on a best effort basis before the issuance.

[10] Admittedly, determining the appropriate minimum length of such a "blackout period" is not a straightforward task and may be subject to debate. Critics argue that – especially when previously announced – purchases by the central bank on the secondary market may impact on the price formation on the primary market even in the context of rather long black-out periods.

Their monetary liabilities can take different forms, from banknotes and various types of deposits (e.g. current accounts) with banks, to shares of money market funds, for instance[11]. Indeed, banknotes issued by the central bank and held by non-banks also constitute one form of money (excluding banknotes held in the vaults of commercial banks). Yet, in this exercise only one form of money is considered, namely current accounts held either with central banks or with commercial banks. This simplification does not affect the reasoning.

The money issued by the banking sector as a whole is held by other economic agents or, following our simplified definition, by non-banks, constituting the *money-holding sector*. If the government owns a deposit (a current account, for instance) at the central bank, this fits the definition of money, as the deposit is held with a bank (in this case the central bank) by a non-bank.

Similarly, if the government or any other non-bank (household, insurance company, non-financial corporation …) owns a deposit at a commercial bank, this also constitutes money.

It is worth noting that the definition of money adopted here is an economic and monetary one: a short-term deposit held by the government with the central bank is considered part of the stock of money. Indeed, such a short-term deposit, while sufficiently liquid, constitutes a store of value and a means of payment for the government. However, one should not ignore that the *statistical approach* used when calculating monetary statistics is different: from that specific point of view, the central government (as well as non-resident economic agents, but this is not relevant in this paper) is considered as *money neutral*: in other words its deposits with the money-issuing sector (central banks and commercial banks) are not part of the stock of money (it is worth noting that this convention does not apply to regional and local authorities). Ironically, the statistics would not make easy the identification of any monetary financing of the government be it by commercial banks or by central banks[12].

11 For a definition of monetary aggregates, see among many others: ECB, *The monetary policy of the ECB*, Glossary, 3rd edition", ECB, May 2011.

12 For a extended description of money-issuing, money-holding and money-neutral sectors in the compilation of monetary statistics, see:

IMF, *IMF Monetary and financial statistics manual and compilation guide*, chapter 6, Prepublication Draft, 2016

> 6.67. Nonresidents' deposit holdings are, in principle, excluded from broad money, because their deposits are used primarily for international rather than domestic transactions. The potential impact on domestic economic conditions is uncertain as the predominant center of economic interest of the nonresident lies outside of the domestic economy.
>
> […]
>
> 6.70. Deposit holdings of central government are always excluded from broad money. The rationale, often empirically based, for such exclusion is that central government deposit holdings do not respond to macroeconomic influences (i.e., changes in economic activity, interest rates, exchange rates, etc.) in the same way, or to the same degree, as deposits of the money-holding sectors. This is because of the unique nature of the central government's financing constraints, spending decisions, and cash management techniques. The balances maintained by the central government with DCs do not reflect the short term intention of spending because central government's spending is not predetermined and constrained by such balances. Further,

Contrary to the deposits held by the money-holding sector, *bank deposits with other banks* (either the central banks or credit institutions) *do not belong to money.*

Deposits by commercial banks with the central banks, however, do belong to what is often called the *monetary base* or *base money* [13] which is conceptually different from money (often called *broad money*, usually measured with conventional instruments like *monetary aggregates*) and encompasses certain liabilities on the central bank's balance sheet. There is some ambiguity with the wording: the so-called *monetary base* is composed of money (banknotes in circulation and deposits at the central bank held by non-monetary financial institutions[14]) and also deposits from banks, which do not belong to the money stock. The qualification of some central bank liabilities as base money finds its origin in the prominent place put on the money multiplier that would link changes in the base money (hence the size of the balance sheet of the central bank) to the evolution of broad money.[15]

1.3 Assumptions and vocabulary

For the sake of simplicity, this note considers a closed economy composed of the government, one or two credit institutions, a central bank and a non-bank economic agent. The balance sheet of each of these agents is generally quite complex and contains many items. The simplified presentation adopted here considers only the elements relevant for the issue at stake. We assume that all other items cancel out (liabilities including capital

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> inflows exceeding current needs for cash may be used to reduce indebtedness, rather than meet expenses. Vice-versa, insufficient tax and other revenue inflows may be supplemented by borrowing at short notice.
>
> 6.71 Exclusion of central government deposits from broad money can also be explained on the basis of the analytical approach to monetary and fiscal policy formulation. A major element of such formulation focuses on the amount of central government financing that DCs provide, represented by the net claims on the central government—that is, total claims on the central government *less* the central government's deposits and other liabilities to the central government. […]

[13] IMF, op. cit.

> 6.91. The monetary base comprises central bank liabilities that support the expansion of credit and broad money. The monetary base is also called *high-powered money*, because changes in the monetary base support larger increases in credit and money through the money multiplier. The money multiplier indicates the maximum amount of additional broad money that deposit taking corporations can create by a unit of central bank money. The issuance (or creation) of additional broad money by deposit-taking corporations is mainly achieved through the direct extension of loans to money-holding sectors, but can also be achieved through the purchase of assets not included in broad money.

[14] Usually the central bank only accepts deposits from the government, but in principle it could also accept deposits from households. Some central banks do accept deposits from the public at large, although this is no longer common practice.

[15] However the concept is not relevant as far as the Eurosystem is concerned: first the required reserves are fully remunerated, second they do not reduce the capability for banks to lend to the economy. Indeed reserves with the central bank are not withdrawn from deposits held with commercial banks, they are borrowed from the central bank.
See:
ECB, *The supply of money – bank behavior and the implications for monetary analysis*, ECB Monthly Bulletin, October 2011

and own funds, securities issued, credit received,… on the one side, and assets including investment portfolios, credits granted, deposits at other institutions, etc, on the other side). Only the items relevant for the topic treated in this paper are explicitly identified. In the same vein, the rest of the world does not appear in the exercise: its inclusion would not modify the conclusions but would simply make the presentation more complex.

In the following, it is assumed that there is only one form of money: current accounts (sight deposits) held by non-banks with the central bank and credit institutions. The only sort of bond is the government bond[16].

Importantly, monetary financing is defined as money created by a money-issuing economic agent (here the central bank and credit institutions) to the benefit of a money-holding entity through the provision of credit or the purchase of debt issued by the latter. For the sake of simplicity, it is also assumed that the market for government bonds is perfectly liquid and that purchases of government bonds are made at market prices. Finally, the term "government" denotes all public sector entities.

2. Public debt purchases on the primary market

2.1 Government bond purchase by a central bank

Although prohibited by the Treaty, technically central banks could buy public debt instruments directly from the issuer on the primary market.

When the government issues a new debt instrument, for instance a bond (with a value of, say, 100), its liabilities increase by an equal amount, while the proceeds of the sale of the new bond to the central bank would appear as an increase of its current account with the central bank (Fig. 1).

Symmetrically, the central bank's balance sheet would now display a new element among its liabilities, in the form of the current account held by the government while the asset side would report a new asset in the form of a bond.

Beyond the impact on the balance sheets of both the government and the central bank, the main result of this transaction is that the central bank would create money to the benefit of the government by creating a current account (or increasing the balance on an existing account) for the government.

[16] Actually the form of the government liability does not really matter: a very similar reasoning applies if the government contracts a straight loan or uses a credit facility. However such liabilities cannot find their counterpart in the balance sheet of economic agent unable to provide that sort of credit. By considering the issuance of a bond, other economic agents might be considered.

Fig. 1

GOVERNMENT

Assets			*Liabilities*
Government Current account with the Central Bank	100	100	*Government Bond*
	100	100	

CENTRAL BANK

Assets			*Liabilities*
Government Bond	100	100	*Government Current account with the Central Bank*
	100	100	

Moreover, that money creation would result from the provision of credit (in the form of the bond purchase) granted by the central bank to the government[17].

Incidentally, central bank purchases of private sector bonds on the primary market also lead to money creation, but this time for the private sector.

2.2 Government bond purchase by a commercial bank

The previous case, namely a direct purchase by the central bank of a newly issued government bond, is purely illustrative as it is prohibited by the Treaty and therefore is not conducted by the Eurosystem. However, it does illustrate how the central bank can create money by providing credit to a non-bank economic agent.

A similar mechanism is at work when a commercial bank (commercial bank Alpha, for instance) acquires a newly issued government bond. The newly purchased bond appears among commercial bank Alpha's assets (Fig. 2), while crediting an equivalent amount to the government on a current account increases its liabilities.

Apart from the labels, the situation is the same as described in the previous section: in this case bank Alpha provides a credit to the government which leads to the creation of money.

17 Yet another example of the fact that "credits make deposits".

For the government, from an accounting point of view[18] the only differences are that the holder of the bond is not a central bank but a commercial bank and that the government receives a claim on a commercial bank (rather than the central bank).

Fig. 2

GOVERNMENT

Assets		*Liabilities*	
Government Current account with Bank Alpha	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets		*Liabilities*	
Government Bond	100	100	*Government Current account with Bank Alpha*
	100	100	

Whether triggered by the central bank or by a commercial bank, the amount of money created is 100.

2.3 Government bond purchase by a commercial bank: a variant with two commercial banks

In the previous example, bank Alpha buys the government bond and also credits the government on its current account. Of course it might be the case that the government current account is at another bank, say Bank Beta. Consequently, the proceeds of the bond purchase by Alpha must ultimately appear on the current account held by the government with Beta. Decomposing the impact on the respective balance sheets, Alpha acquired a new asset in the form of a bond but lacks the necessary liabilities to finance it: it suffers from a "liquidity deficit" or "liquidity need". Simultaneously, Beta received a new deposit on its current account (a transfer from bank Alpha to bank Beta), and consequently benefits from a "liquidity surplus" or "excess liquidity".

[18] In reality however, it would matter for the government whether it had to pay interest payments to a commercial bank or to the central bank but this doesn't matter here.

Fig. 3

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Beta	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Government Bond	100		***Liquidity need***
	100	0	

COMMERCIAL BANK BETA

Assets			*Liabilities*
Liquidity surplus		100	*Government Current account with Bank Beta*
	0	100	

Of course such a situation has to be settled. Alpha has to find some resources that will compensate its liquidity need, while Beta should find some use for the new deposit it has received.

In principle, the two banks have various instruments to fill their respective gaps: Alpha could raise some capital or issue a bank bond that, in turn, Beta could buy. Alternatively, Alpha could deleverage by selling some of its assets.

However, the simplest and most direct solution would consist in Beta granting a short-term loan to Alpha on the interbank market with a precise maturity and interest rate: then the two balance sheets would be “balanced” again (Fig. 4), and the liquidity surplus of one bank would match the liquidity need or deficit of the other. Let us call such a credit an interbank deposit.

Fig. 4

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Beta	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Government Bond	100	100	*Money market Deposit by Beta*
	100	100	

COMMERCIAL BANK BETA

Assets			*Liabilities*
Money market Deposit with Alpha	100	100	*Government Current account with Bank Beta*
	100	100	

One can extend this stylised description to several banks, with Alpha filling its liquidity needs by borrowing from a third bank and Beta lending to the latter. The model can indeed be generalized to any number of banks.

In monetary terms, the situation has not changed: once the liabilities of the banking sector are consolidated, it appears that the amount of money created is still 100. Consistent with the definition of money, as the deposit that appears on the liabilities side of Alpha belongs to another bank (Beta) and not to a non-bank economic agent, it does not belong to the money at the disposal of non-banks.

2.4 Government bond purchase by a non-bank

Not only banks buy government bonds.

Let us assume that a private individual, Ms X, decides to acquire a government bond on issuance.

As a first possibility, Ms X may simply use a current account she already maintains with her bank, and swap it for a government bond. Consequently, the government sees an increase of its own current account with the same or another bank. In monetary terms, only the balance sheets of the government and Ms X are affected and the money stock is unchanged: only the "ownership" of the account changes. In other words, when a non-bank "provides a credit" (through the purchase of a bond, in this case) to another non-bank, only the ownership of money is affected, but there is no money creation (or destruction). Yet, the existence of the current account owned by Ms X before the transaction with the government raises the question of how and when it was created.

One way to address this question is to consider that Ms X does not hold a current account at the moment she acquires the bond, but applies for a loan from bank Alpha (Fig. 5).

The increase in the money stock is equal to 100, resulting from the credit granted by Alpha to Ms X, but ultimately taking the form of the current account held by the government with the same bank.

It goes without saying that the introduction of another commercial bank (as in section 2.3) would not affect the conclusion.

Fig. 5

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Alpha	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Loan to Ms X	100	100	*Government Current account with Bank Alpha*
	100	100	

MS X

Assets			*Liabilities*
Government Bond	100	100	*Loan by Bank Alpha*
	100	100	

2.5 Recourse to the central bank

Section 2.2 considered the case of a bond purchase on the primary market by a commercial bank with which the government holds its current account (see Fig. 2).

However, governments often maintain their current account at the central bank (as illustrated in section 1.1, Fig 1). Therefore it is possible that when Alpha buys a newly issued bond on the primary market, the payment is deposited in the current account held by the government with the central bank (Fig. 6).

There is some similarity between this case and the one that included two credit institutions, one purchasing the bond, another one receiving the payment on the government current account (section 2.3, Fig. 3). In the current case, however, the second bank is the central bank.

Fig. 6

GOVERNMENT

Assets			*Liabilities*
Government Current account with Central Bank	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Government Bond	100		***Liquidity need***
	100	0	

CENTRAL BANK

Assets			*Liabilities*
Liquidity surplus		100	*Government Current account*
	0	100	

After the purchase, Alpha faces a liquidity need whose counterpart is found on the balance sheet of the central bank.

The only possibility for Alpha to fill the gap between its new asset (the government bond) and a new liability (not yet materialised on its balance sheet) is to access the central bank: Alpha borrows from the central bank through the monetary policy instruments available, usually through loans (Fig. 7).

Fig. 7

GOVERNMENT

Assets			*Liabilities*
Government Current account with the Central Bank	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Government Bond	100	100	***Monetary policy credit from the Central Bank***
	100	100	

CENTRAL BANK

Assets			*Liabilities*
Monetary policy credit to Alpha	100	100	*Government Current account with the Central Bank*
	100	100	

It goes beyond the scope of this note to demonstrate that the banking sector might be "forced" to borrow from the central bank precisely because the central bank receives the current accounts held by the government, issues banknotes and imposes reserve requirements[19].

The amount of money created by the bond purchase, i.e. the credit granted by Alpha to the government, is 100, as it is when the government holds its current account with the commercial bank buying the bond (as described above). However, since the government prefers to keep its account with the central bank, the credit appears on a current account with the central bank rather than with a commercial bank.

19 The necessity for banks to borrow from the central bank is described in: Paul Mercier, *The Eurosystem, the banking sector and the money market*, Cahiers d'Etudes 92 de la BCL, June 2014. This publication illustrates the impact of autonomous factors on the liquidity needs of the banking sector that allow the central bank to conduct its monetary policy operations.

In other words, the commercial bank has initiated or allowed a monetary financing (as defined for the purpose of this article) to the government but would not have been able to sustain that situation without a refinancing by the central bank which has "validated" ex-post the initial money creation. Who has eventually "created" the money? One might consider that this looks very much like monetary financing of the government by the central bank, even if a commercial bank plays the role of intermediary between the central bank and the government and accounting for the fact that the central bank typically has no control over that intermediary. The word "validate" is used on purpose, as one might consider that, formally, the initial creation of money took place at the initiative of the commercial bank.

Incidentally, one may consider that the credit created by the central bank takes the form of a kind of interbank deposit made by the central bank at the commercial bank[20]. However, the counterpart of this short term liability of Alpha is to be found in an asset of another bank, the central bank, and therefore that deposit does not belong to the money stock. This is also the case for commercial bank deposits at the central bank.

Among other activities, commercial banks provide credit to the economy, which creates money, as the beneficiaries of these credits receive a current account that can be used for payment purposes.

This activity might generate liquidity needs for some banks that cannot be compensated by liquidity surpluses generated by other banks. This is precisely the case when the money created by a bank is not held in the form of a deposit with itself or with another bank, but outside the commercial banking sector. We already saw the example of the government holding its current account with the central bank. In such a case the money created by the commercial bank is held outside the commercial banking sector (with the central bank). The same need to have recourse to the central bank occurs when other non-bank economic agents are authorised to hold a current account with the central bank. The creation of money through the credit activity of commercial banks may occur either through the public or the private sector.

Banks may have recourse to the central bank in search of liquidity when the banks benefiting from a liquidity surplus refuse to lend through the money market to the banks with a liquidity deficit. The so-called cash-poor banks will therefore increase their recourse to the credit provided by the central bank, while the cash-rich ones will "park" their deposits at the central bank.

This is the bread and butter of central banking: it validates the money creation through credit provision that does not find its counterpart on the balance sheet of a commercial bank. Unfortunately, by a semantic drift, many consider that this role of lender of last resort only refers to the bailing out of commercial banks that are confronted with liquidity problems, as suggested by Bagehot, or even with solvency problems.

20 This is not the case in the Eurosystem, yet the comment remains valid in principle.

3. Public debt purchases on the secondary market

3.1 Purchase by commercial banks or other economic agents

Basically, purchases of public debt on the secondary market might involve the same economic agents as purchases on the primary market.

Leaving aside the central bank for a while (its role will be addressed in section 3.2) the main actors might be the government (which might buy back its own debt), the banks and the non-banks.

An existing bond may be exchanged between the government and a bank or a non-bank, by two banks, by two non-banks, and finally by a non-bank and a bank.

It would be cumbersome to analyse all the possible impacts of these different transactions. For instance one could imagine Ms X selling the bond she had acquired earlier to another household, Mr. Y, who in turn may or may not ask for a credit to finance his purchase. In turn Ms X might use the proceeds of the sale to acquire another asset (possibly a new current account with a bank), or she may use them to reimburse the loan she initially received from a bank in order to buy the bond. Only considering these different options would require us to analyse a minimum of four possibilities.

Depending on the case at hand, purchases on the secondary market might lead to money creation, might be neutral, or might lead to money destruction[21].

3.2 Purchase by a central bank from a bank

The central bank purchases of bonds on the secondary market are common practice, either for portfolio management purposes or for the conduct of monetary policy operations. In the latter case, purchases offer an alternative to loans: both provide liquidity to the banking sector (see section 2.5). In the United States, the Federal Reserve Bank traditionally used outright transactions as the main monetary policy instrument. Ironically, this practice led to some misunderstanding as many textbooks assimilate open market operations solely to outright transactions.

As for the Eurosystem, while outright transactions have indeed been available in its toolkit since 1999, until 2010 it usually conducted its monetary policy operations through loans (main refinancing operations, longer-term refinancing operations, marginal lending facility) or by collecting deposits (deposit facility).

Of course the two types of instruments are not identical. Outright operations provide liquidity permanently[22], while loans are provided for a specific term (one day, one week,

21 Exchanging a bond on the secondary market can generate either a profit or a loss for the seller, as the bond will not necessarily sell at its initial value. For the sake of simplicity, this possibility is not taken into account.

one month or more). By nature, loans are reversible (hence the qualification of "reverse transactions" often used) while purchases are not. Yet, the central bank might also sell bonds to the banking sector.

Let us start from a situation in which a government bond issue initially leads to the constitution of a government current account with the purchasing commercial bank (section 2.2, Fig 2)

Fig. 2

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Alpha	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Government Bond	100	100	*Government Current account with Bank Alpha*
	100	100	

The central bank might purchase the bond currently held by Alpha, crediting the current account held by the commercial bank at the central bank (Fig. 8).

While balance sheets of both the central bank and the bank Alpha are affected, it is worth noting that the government balance sheet is not affected by this transaction.

The money stock, too, remains unchanged. In this simple model the money stock is composed solely of the government current account with Alpha. Again it is worth recalling that the deposit held by Alpha with the central bank finds its counterpart in a central bank liability. For the consolidated banking sector, these two items cancel out. In other words, Alpha's deposit at the central bank is not money held by non-banks (see section 1.2).

[22] The seller of the bond receives an amount of liquidity that it « owns » and is therefore free to use at his convenience contrary to a debtor who will have to give the liquidity back at maturity.

Therefore, the bond purchase by the central bank does not lead to money creation and, on the basis of the definition applied here, does not constitute monetary financing of the government (contrary to direct purchases of the bond at the initial issuance, on the primary market, as described in section 2.1).

Fig. 8

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Alpha	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Deposit with the Central Bank	100	100	*Government Current account with Bank Alpha*
	100	100	

CENTRAL BANK

Assets			*Liabilities*
Government Bond	100	100	*Deposit by Bank Alpha*
	100	100	

3.3 Purchase by a central bank from a bank: a variant

In the previous section, it is assumed that bank Alpha and the central bank have no relation before the purchase of the bond.

This is not necessarily the case, as illustrated earlier (section 2.5, Fig.7).

Previously, Alpha met its liquidity needs through recourse to credit provision by the central bank.

Fig. 7

GOVERNMENT

Assets			*Liabilities*
Government Current account with the Central Bank	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Government Bond	100	100	***Monetary policy credit from the Central Bank***
	100	100	

CENTRAL BANK

Assets			*Liabilities*
Monetary policy credit to Alpha	100	100	*Government Current account with the Central Bank*
	100	100	

When selling the bond to the central bank, Alpha might deposit the proceeds of the sale at the central bank, but it might also decide to reduce its liabilities generated by a previous monetary policy operation. The choice between the two options depends on various factors, including the contractual features of the monetary policy operation (for instance central banks do not always authorise early reimbursement of a loan).

If the monetary policy credit provided by the central bank disappears from the liabilities of bank Alpha then it must also disappear from the assets of the central bank (Fig. 9). At the same time the bond is transferred from the assets of bank Alpha to the assets of the central bank.

Again, the money stock is not affected by the transaction and is still equal to the balance on the current account held by the government with the central bank[23].

Fig. 9

GOVERNMENT

Assets			*Liabilities*
Government Current account with the Central Bank	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
	0	0	

CENTRAL BANK

Assets			*Liabilities*
Government bond	100	100	*Government Current account with the Central Bank*
	100	100	

Actually the situation at the end of the process following which the initial credit by the central bank to bank Alpha is redeemed thanks to the central bank's purchase of the government bond previously held by bank Alpha, is the same as the one considered above, namely the direct purchase, on the primary market, of a government bond by the central bank (cfr. section 2.1, fig 1). Here as well the central bank, with the benefit of hindsight, "validates" the money creation initiated by Alpha. Considering that the role of the commercial bank is of an intermediation nature, would it make sense considering that there is "monetary financing of the government by the central bank", acting as a

[23] As recalled above (section 1.2), the approach adopted here is an economic or monetary one: central government deposits with the money issuing sector are part of the money stock. By statistical convention, however, such deposits are supposed to be *money neutral*, hence never appear in the money stock.

substitute for the commercial bank? To answer this question one would need to be able to assess, among other things and in order to duly take into account the notion of the prohibition of "circumvention", the intentions of the central bank, the degree of financial stress of the government (its market access, the liquidity of the bond market, the price of the bonds on the secondary market as well as the impact of the purchases at this price), possibly also the liquidity and solvency situation of the commercial bank as well as other factors.

Incidentally, the conclusion will remain unchanged when expanding the banking sector to two or more commercial banks, or when introducing more complex balance sheets and intertwined relations between the different actors.

3.4 Purchase by the central bank from a non-bank

When accessing the secondary market, the central bank usually transacts with commercial banks, the usual counterparts of central bank monetary policy operations. However, banks are not necessarily the owners of the bonds they sell: they might transact on behalf of their clients. Indeed, the actual holder of the bond might be a household, an insurance company, a non-financial corporation or any other economic agent.

Using the example of a private individual (section 2.4, Fig. 5), one assumes that Ms X, who borrowed from her commercial bank Alpha to purchase a government bond at its initial issuance, is now willing to sell the bond to the central bank.

Fig. 5

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Alpha	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Loan to Ms X	100	100	*Government Current account with Bank Alpha*
	100	100	

MS X

Assets			*Liabilities*
Government Bond	100	100	*Loan by Bank Alpha*
	100	100	

For the sake of clarity, the different movements are presented in a sequence that does not correspond to the actual time line (Fig. 10).

When the central bank buys the bond initially held by Ms X, the first impact consists in a transfer of that bond from Ms X's balance sheet to that of the central bank (Fig 10.1).

Fig. 10.1

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Alpha	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Loan to Ms X	100	100	*Government Current account with Bank Alpha*
	100	100	

MS X

Assets			*Liabilities*
		100	*Credit by Bank Alpha*
		100	

CENTRAL BANK

Assets			*Liabilities*
Government bond	100		
	100		

As in the case of the Eurosystem, we assume that the central bank does not accept deposits from economic agents other than the government and credit institutions. Therefore, the proceeds of the bond purchase cannot be immediately transferred to Ms X. One possibility is that the central bank credits the current account of bank Alpha.

Then the commercial bank pays the proceeds of the bond sale to Ms X in the form of a deposit (Fig. 10.2).

Fig. 10.2

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Alpha	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Loan to Ms X	100	100	*Government Current account with Bank Alpha*
Deposit at the central bank	100	100	*Current account of Ms X*
	200	200	

MS X

Assets			*Liabilities*
Current account with bank Alpha	100	100	*Loan by Bank Alpha*
	100	100	

CENTRAL BANK

Assets			*Liabilities*
Government bond	100	100	*Deposit of Alpha*
	100	100	

It appears that the payment resulting from the bond purchase by the central bank leads to an increase of the money stock through the current account Ms X has with bank Alpha, that comes in addition to the deposit still held by the government with the same Alpha[24].

24 Although rather uncommon in a modern economy, Ms X may ask to be paid in banknotes. Central bank issuance of banknotes in exchange for the bond initially held by Ms X would indeed contribute to money creation.

Finally, if contractually possible, bank Alpha and Ms X might agree to use the proceeds of the bond sale to extinguish the debt initially contracted by Ms X to buy the bond at issuance (Fig. 10.3).

Fig. 10.3

GOVERNMENT

Assets			*Liabilities*
Government Current account with Bank Alpha	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Deposit at the central bank	100	100	*Government Current account with Bank Alpha*
	100	100	

MS X

Assets			*Liabilities*

CENTRAL BANK

Assets			*Liabilities*
Government bond	100	100	*Deposit of Alpha*
	100	100	

In this case, money destruction takes place as a credit disappears ("credits make deposits" or "loans make deposits" might be completed by "unwinding credits or loans un-makes deposits"). Under such conditions, no money is created in net terms.

3.5 Purchase by the central bank from a non-bank: a variant

One might develop the last example further and consider the purchase of a bond by a money-holding agent (Ms X as in section 2.4), but (contrary to the example of section 3.4) the government holds its current account with the central bank (rather than with the commercial bank). (Fig. 11.1)

Fig. 11.1

GOVERNMENT

Assets			*Liabilities*
Government Current account with Central Bank	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*

MS X

Assets			*Liabilities*
Government Bond	100		
	100		

CENTRAL BANK

Assets			*Liabilities*
		100	*Government Current account with the Central Bank*
		100	

Ms X would apply for a loan from Alpha which can only finance that loan by making recourse to a loan by the central bank (Fig. 11.2 - through the recourse to a monetary

policy operation for instance, similarly to what is described in section 2.5): then the creation of money is the result of the willingness of a money-holding agent to buy a government bond, thanks to the intermediation of a commercial bank providing a credit which in turn is financed by the central bank through the provision of a loan to the commercial bank.

Fig. 11.2

GOVERNMENT

Assets			*Liabilities*
Government Current account with Central Bank	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*
Loan to Ms X	100	100	*Monetary policy credit from the Central Bank*
	100	100	

MS X

Assets			*Liabilities*
Government Bond	100	100	*Loan by Bank Alpha*
	100	100	

CENTRAL BANK

Assets			*Liabilities*
Monetary policy credit to Alpha	100	100	*Government Current account with the Central Bank*
	100	100	

This case is similar to the one contemplated in section 2.4 and 2.5: a credit is provided by the commercial bank to a non-bank, but because the current account of the government is

no longer with the same commercial bank but with the central bank, the former needs to have recourse to a loan granted by the latter. Yet, one might consider that the actual creation of money is the result of the central bank action. Should it be considered as an indirect *monetary financing of the government by the central bank*?
If now Ms X sells the bond to the central bank and uses the proceeds to extinguish the loan it received from the commercial bank, the situation (Fig. 12) is similar to that of section 2.1. The bond appears only on two balance sheets: on the government balance sheet as a liability and on the central bank's balance sheet one as an asset. Similarly, the counterparts consist in the government deposit as an asset for itself and a liability for the central bank;

From an economic angle, what is the difference between Fig. 1 (section 2.1) and Fig. 12?

Fig. 1

GOVERNMENT

Assets			*Liabilities*
Government Current account with the Central Bank	100	100	*Government Bond*
	100	100	

CENTRAL BANK

Assets			*Liabilities*
Government Bond	100	100	*Government Current account with the Central Bank*
	100	100	

Fig. 12

GOVERNMENT

Assets			*Liabilities*
Government Current account with Central Bank	100	100	*Government Bond*
	100	100	

COMMERCIAL BANK ALPHA

Assets			*Liabilities*

MS X

Assets			*Liabilities*

CENTRAL BANK

Assets			*Liabilities*
Government Bond	100	100	*Government Current account with the Central Bank*
	100	100	

Economically one might argue that the secondary market purchase of bonds by the central bank "validates" the indirect *monetary financing of the government by the commercial bank.*

4. Conclusions

Since 2010 the Eurosystem implements a monetary policy instrument unused until then, even if present in the monetary policy toolkit at the moment of the Eurosystem creation: outright purchases of securities and particularly of public debt securities. The first use of such instrument by the Eurosystem took place in times of crises.

Curiously enough in view of the use of outright purchases and sales by many central banks around the world starting with the *Federal Reserve System*, the Eurosystem purchases raised many comments, debates and even resorts to courts of justice.

Two themes among others are periodically debated namely the *monetary financing* together with the *article 123* of the Treaty on the Functioning of the European Union (TFEU) which prohibits in particular the purchase by European union central banks (not only those of the euro zone) the direct purchase (thus on the primary market) of public debt securities.

The debates are often vague, and seem to rest on a certain misunderstanding of the mechanisms of the monetary creation or the monetary financing. It therefore makes sense clarifying the concepts.

First, monetary financing is defined as an increase in the stock of money held by entities other than money issuers, following the purchase of government bonds. On the basis of this definition, it is shown that monetary financing may take place in different ways and may be triggered by both the commercial banking sector and the central bank.

It should not be a surprise that the direct purchase on the primary market (Fig. 12) of a government bond by a money-issuing entity (sections 2.1, 2.2 and 2.3) would lead to money creation, be it by a commercial bank or by the central bank[25].
In addition, the same purchase by a money-holding economic agent (section 2.4) may be allowed by the monetary financing provided by a bank (in practice by a commercial banks but, conceptually, it would also be the case if the central bank accepted to directly grant some form of credit to economic agents other than banks).

The case of a commercial bank purchasing a government bond financed by having recourse to the central bank (section 2.5) illustrates the scope for *indirect* monetary financing of the government by the central bank, via the intermediation of a commercial bank.

[25] As far as the Eurosystem is concerned, such purchases on the primary market are not allowed, as provided by the art. 123 of the TFEU

Fig. 12

		Buyer	Seller	Creation of money	"Monetary financing" of government by Central bank
Primary market	2.1	Central Bank	Government (issuer)	yes	yes
	2.2 2.3	Commercial bank		yes	no
	2.4	Non-bank		Yes, if credit provided by a bank	no
	2.5	Commercial bank having recourse to the central bank		Yes, initially by the commercial bank	CB "validates" ex-post the money creation

The central bank might also decide to buy bonds on the secondary market (Fig. 13).

If the seller is a bank (section 3.2, Fig. 8) the sale does not lead to money creation, but simply to an exchange of assets and liabilities between the central bank and the commercial bank.

Quite differently, if a central bank buys a bond from a commercial bank that initially bought the government bond thanks to the provision of credit by the central bank and if the commercial banks uses the proceeds of its sale to reimburse the central bank credit granted earlier (section 3.3 fig. 9) then one might argue that the central banks still validated the monetary financing of the government (the comparison of fig.1 and fig.9 is quite telling in this respect). Should this be qualified as an ex-post monetary (re)financing of the government?

Fig 13

		Buyer	Seller	Creation of money	"Monetary financing" of government by Central bank
Secondary market	3.1	Commercial bank or non-bank	Commercial bank or non-bank	Creation, no change, destruction	no
	3.2	Central Bank	Commercial bank	no	no
	3.3			Yes, initially by the commercial bank	CB "validates" ex-post the money creation
	3.4		Non-bank	Yes or no	CB "validates" ex-post the money creation
	3.5			Yes	CB "validates" the money creation

Finally, if the central bank buys the bond from an economic agent other than a bank (household, non-financial corporation, insurance company, etc…) then the central bank may create money (but in some circumstances, that creation might be compensated by the destruction of money resulting from the possibility that the seller of the bond uses the proceeds of the sale to extinguish a debt initially granted by a commercial bank, for instance).

Incidentally one might go further and consider the purchase of a bond by a money-holding agent (Ms X as in section 2.4), while the government holds its current account with the central bank (rather than with the commercial bank). Ms X would ask for a credit from a commercial bank Alpha can can only finance it by a loan provided by the central bank (through the recourse to the main refinancing operations, for instance, similarly to what happens in section 2.5): then the creation of money is the result of the willingness of a money-holding agent to buy a government bond, thanks to the intermediation of a commercial bank whose credit provision leads to money creation. Yet one might consider that the actual creation of money is the result of the central bank action, thereby, it could be considered as *monetary financing of the government by the central bank*.

The chosen examples show that it is not necessarily easy to distinguish between monetary and non-monetary financing of economic agents in general and of the government in particular.

Turning to the second element in the debate, namely article 123 of the TFEU, it is worth recalling that it does not mention, and therefore does not prohibit the *monetary financing of the government by the central bank, but rather prohibits the provision of credit by central banks to public authorities (see the art. 123 for more details) as well as the purchases by central banks of government bonds on the primary market*

> "Article 123 of the TFEU (ex Article 101 TEC)
>
> 1. Overdraft facilities or any other type of credit facility with the European Central Bank or with the central banks of the Member States (hereinafter referred to as national central banks") in favour of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments.
>
> 2. Paragraph 1 shall not apply to publicly owned credit institutions which, in the context of the supply of reserves by central banks, shall be given the same treatment by national central banks and the European Central Bank as private credit institutions. "

Article 123 aims to avoid the provision of credit, either by loans or by the purchase of securities on the primary market, to the public sector.

Public sector securities purchases by central banks on the primary market are prohibited to allow a proper market price formation: public authorities should neither interfere with that process, nor influence it for their own interest.

These clarifications lead to several conclusions.

First, the money creation and monetary financing of the economy are the basic functions of the banking sector composed by both commercial and central banks.

One could even argue that the strict prohibition of any *monetary financing of the government by the central bank* would be dangerous for the financial stability of the banking sector that would no longer be able to make recourse to the central bank in case of a liquidity need that is currently met by the sale of government bond to the central bank or by the recourse to monetary policy operations.

In addition, even if they are of a lesser importance, technical elements are worth mentioning. One might consider that when the central bank buys a government bond[27]

[27] Or any other asset for that matter.

from a credit institution (as it usually works with banks) the latter is not necessarily the initial owner of the bond or even the owner at all. Consequently, the final monetary impact is not necessarily known. The purchase from a bank raises several cases. For instance, the bank may act on behalf of a non-bank client or the bank may have purchased the bond from the client just before the sale to the central bank. In addition, the central bank doesn't know whether the initial purchase was based on a new credit provision by a bank or not.

A second conclusion, as far as the Eurosystem is concerned, is that the purchases of public securities by central banks may lead to monetary creation or financing while respecting the provisions of the art. 123. Conversely, the fact that central banks buy public securities without creating money does not warrant that art. 123 is complied with.

In short, the main conclusion is that the concept of monetary financing of the public sector by central banks on the one hand and the prohibitions laid down in the art. 123 of the TFEU are two different themes that should be considered on their own merits.

Beyond the misunderstanding about the mechanics, that may always be overcome, there is clearly an issue of perception, if not of philosophy, that might explain why the debate on central bank purchases of government bonds on the secondary market remains so passionate.

Bibliography

This is a (by no means exhaustive) list of publications relating to the action of central banks, with emphasis on quantitative measures and monetary financing.

Borio Claudio, Disyatat Piti, *Unconventional monetary policies: an appraisal*, BIS Working Papers, No292, 2009.

Butt Nicholas, Domit Sílvia, McLeay Michael, Thomas Ryland, *What can the money data tell us about the impact of QE?,* Bank of England Quarterly Bulletin, Q4, 2012.

Carpenter Seth B., Demiralp Selva, *Money, Reserves, and the Transmission of Monetary Policy: Does the Money Multiplier Exist?,* Finance and Economics Discussion Series, Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington D.C., 2010.

Choulet Céline, *QE and bank balance sheets: the American experience*, Conjoncture, BNP Paribas, 2015.

Drumetz Françoise, Pfister Christian, Sahuc Jean-Guillaume, *Politique monétaire*, De Boeck, 2d edition, 2015

ECB, *General documentation on Eurosystem monetary policy instruments and procedures.*

ECB, *The monetary policy of the ECB*, Glossary, 3rd edition", ECB, May 2011

ECB, *The supply of money – bank behavior and the implications for monetary analysis*, ECB Monthly Bulletin, October 2011

Fisher Richard W., Speeches by Richard W. Fisher, *Remarks before the Association for Financial Professionals*, Federal Reserve Bank of Texas, 2010.

Galvenius Mats, Mercier Paul, *The story of the Eurosystem framework*, in: Mercier Paul, Papadia Francesco, *The concrete Euro*, Oxford University Press, 2011

Gros Daniel, Alcidi Cinzia, De Groen Willem Pieter, *Lessons from Quantitative Easing: Much ado about so little?,* CEPS Policy Brief, Centre for European Policy Studies, 2015.

IMF, *IMF Monetary and financial statistics manual and compilation guide*, chapter 6, Prepublication Draft, 2016

Krugman Paul, *The Fed Does Not Control The Money Supply,* The New York Times, The Opinion Pages, 2015

McAndrews Jamie, *Will the Federal Reserve's Asset Purchases Lead to Higher Inflation?*, Liberty Street Economics, Federal Reserve Bank of New York, 2011.

McLeay Michael, Radia Amar, Thomas Ryland, *Money creation in the modern economy*, Bank of England Quarterly Bulletin, Q1, 2014.

Mercier Paul, *The Eurosystem, the banking sector and the money market*, Cahiers d'Etudes de la BcL 92, June 2014

Norman Mike, *A Visual Guide to Endogenous Money and the Failure of QE*, Thought Offerings on macroeconomics, markets, MMT, and more. 2011.

Pine Research & Trading, *A Fed Primer: Mechanics Of QE, Money Multipliers And Inflation*, Seeking Alpha, 2013.

Roche Cullen, *Understanding the Mechanics of a QE Transaction*, Pragmatic Capitalism, Practical Views on Money, Finance & Life, 2010.

Roche Cullen, *Milton Friedman misunderstood Quantitative Easing*, Pragmatic Capitalism, Practical Views on Money, Finance & Life, 2011.

Roche Cullen O., *Quantitative Easing: "The Greatest Monetary Non-event"*, Orcam Financial Group, 2010.

Roche Cullen O., *Understanding the Modern Monetary System*, Orcam Financial Group, 2011.

Roche Cullen, *QE isn't adding new liquidity to the market*, Pragmatic Capitalism, Practical Views on Money, Finance & Life, 2011

Roche Cullen, *Yes, The Fed Does Directly Influence the Broad Money Supply Through QE*, Pragmatic Capitalism, Practical Views on Money, Finance & Life, 2015.
Gittler Marshall, *Why Quantitative Easing Isn't Printing Money?*, CNBC, 2013.

Roche Cullen, *There Isn't $10.8 Trillion "Stuffed Under Mattresses" Because of QE*, Pragmatic Capitalism, Practical Views on Money, Finance & Life, 2014.

Saville Steve, *Economics Myths*, Kitco, 2014.

Sheard Paul, *Repeat After Me: Banks Cannot And Do Not "Lend Out" Reserves*, Standard & Poor's Rating Services, 2013.

Thornton Daniel L., *Requiem for QE*, Cato Institute, Center for monetary and financial alternatives, 2015.

The Pragmatic Capitalist, *A Deep Dive Into The Mechanics Of A QE Transaction*, Business Insider, 2010.

Thornton Daniel L., *Monetizing the Debt*, Economic Synopsis, Number 14, Federal Reserve Bank of St. Louis, 2010.

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