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ECONOMIA MONETÁRIA E FINANCEIRA

TRABALHO FINAL DE MESTRADO

DISSERTAÇÃO

MONEY CREATION IN THE EURO (2007-2013)
AN ESSAY ON THE THEORY OF MONEY

LUÍS MANUEL MOUTINHO SEIXAS

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ORIENTAÇÃO:

PROF. FRANCISCO LOUÇÃ

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Luís Manuel Moutinho Seixas
Supervision: Francisco Louçã
Master's in Monetary and Financial Economics

Abstract

The economic and financial crisis hit the US, British and Euro economies, in the post 2007 time. The activity of central banks gained new contours, in response to the markets turmoil, and unconventional measures were set up. Central banks' monetary base expanded, in defiance of orthodox reasoning. In crisis, the agents' errors proved the errors of theory, and vice-versa. Money is still a veil for the neoclassical mainstream, whereas the European austerity talk is all about the euro currency. Here will be made a reassessment of the theory of money and added a proposal for the creation of a common European Treasury, aimed at state-debt restructuration and application of economic regulation on base-money capital access.

Keywords: base-money; treasury; institutions; realism.

Acknowledgement

Àqueles e àquelas que dão a ver pelas Belas-Artes. Que têm por isso a arte do conhecimento.

"O sol não sairá do seu curso. Ou as Fúrias, guardiãs da justiça, descobri-lo-ão" ["The sun won't leave its course. Or the Furies, keepers of justice, will find it"]

Heraclito
[Heraclitus]

"The author of the present essay does, however, make one reservation in advance. The practical man tend to look down with great complacency upon the political theorist as a mere academic. The theorist's abstract ideas, the practitioner believes, cannot endanger the state, since the state must be found upon principles of experience; it thus seems safe to let him fire off his whole broadside, and the worldly-wise statesman need not turn a hair. It thus follows that if the practical politician is to be consistent, he must not claim, in the event of a dispute with the theorist, to scent any danger to the state in the opinions which the theorist has randomly uttered in public. By this saving clause, the author of this essay will consider himself expressly safeguard, in correct and proper style, against all malicious interpretation."

Immanuel Kant, Perpetual Peace

Foreword

Except for anecdotal changes, this dissertation was written between March and November 2013, so relevant chronological references shall be perceived in that time-axis.

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I. Introduction

The economic and financial crisis hit the United States, Euro and Britain economies, during the year of 2007. The disclosure of the first subprime losses surprised financial markets, and the public authorities. Bubbles in real the estate prices, and huge credit expansion, had been the reality driving the economic dynamics in recent years. After the debt-crises of the 1980s, the episodes of capital-accounts crises in the 90s, and against the dominant view of market's efficiency, these would reveal themselves as the ultimate signs of recurrent financial destabilization.

James Tobin's failed proposal on short-term transnational capital transfers, or Greenspan's paternalism in respect to the casino bets, had shown already the difficulties in regulating the wall-street current-accounts traders, or financial-portfolios managers, and their world-economy duplications. The crisis only brought the latest of their avatars.

European reality had been dominated by the economic boom that the euro, the new common currency, allowed. But National Current Account balances were neglected and the loss of structural productive capacity in some countries, due to capital relocations, was concealed by the flood of credit. Increasing institutional sectors indebtedness was the generalized trend, in the euro as well as in other major economies. The Bank for International Settlements released, in March this year, time-series of private debt that allow for an elucidation. In US, the private debt was around 150% of 2012 GDP. Twice in absolute value from nine years before. In the euro, the same debt-income ratio is above 180%, twice from seven years before. Debt has unequivocally reached a historical peak, a frontier for the economic understanding.

Public authorities responded to the financial crisis with massive money creation by the central banks. Bankruptcies and capital losses in the banking sector made the US Federal Reserve to lend money at ultra-low interest rates. Bernanke further established a program of massive private and public bonds purchase that elevated money-base to unprecedented levels. In the United Kingdom, the central bank's balance sheet also expanded heavily, to safeguard the values of broad financial assets. Periphery liquidity problems in the euro, likewise obliged the ECB to print money. To get a glimpse in these increases, US money base is, in July 2013,

$3.310 billion, whereas in the same month 2007 it was just around $851, nearly 4 times less. For a scale: Portuguese GDP will be of around $200 billion in 2013. As regards the euro, in August 2013 money-base was at €1.269 billion, one and half times more than in July 07. In its 2012 peak, it reached two times this value. The US green notes or euro ones only keep their small fraction yet, as most of this money is held at current accounts or balances at central banks. Money is then more fiat than ever, most of this hoarding besides coming directly from central banks money creation.

The euro, as well, was marked by the sovereign debt crisis and the institutional foreign loans to the states of the periphery. Although public debts had not increase, in earlier years, as much as private debts, hence in 2009, they were only 80%, and in 2012, 90% of the euro-area GDP, the divergence between countries is notable, and these are currently the times of budget austerity. Still the programs of economic and financial assistance do not deliver a clear outcome. Part of Greek public debt was already wiped-out in 2012, but economic recovery did not take place. Portugal also has difficulties in correcting its budget balance. And money policy by the ECB does not accomplish much in terms of reducing the euro area sovereign bonds spreads.

This essay is aimed at the proposal of the creation of a common European Treasury for sovereign debt redemption and restructuration with central-bank money emissions. It is an original proposal that would oblige to an institutional resetting of the European Union. It will gain form by means of this introduction, a revision of the route to the euro (section II), a revision of the theories of money in an heterodox fashion (section III), an enlightenment of the established legal and operational process of the ECB (sections IV.1, IV.2), the outline of the proposal (section IV.3) and the appropriate conclusion.

II. A time-table to the euro creation[1]

The formation of monetary unions in Europe is a persistent historical phenomenon, since at least 19th century, most notable being German (1838), Latin (1865) and Scandinavian (1873) unions, with only the first being fully succeeded. The closest impulse for a common European currency goes back to 1969/70, at the time when the European community sets in motion a plan to a monetary and economic union being established in three stages[2].

In October 1970, the Werner Report is presented and, two seasons ahead, the 1971 March European Council approves the execution of stage one: macroeconomic coordination and reduction of exchange rate fluctuations. If the other two stages come to execution in due time, a single European currency could be a reality by 1980.

Meantime, international monetary relations revolve. In May 1971, the Bundesbank decides to no longer observe the agreed deutsche mark parity vis-à-vis the dollar, and in August, US President Nixon suspends foreign dollar conversion to gold, setting in motion the end of post-war Agreement of Bretton Woods. The dollar goes free floating, until in December, world currencies are realigned at the Washington Conference.

It is agreed an 8% devaluation of the dollar and a new band of variation of 2.25%, but convertibility into gold isn't restored. Fort Knox becomes closed to the world-economy. US economy however does not give insurances to mobile money capitals and, in February 1973, US are forced to a new 10% devaluation, placing the price of gold in 42.2$ per once. Dollar goes free floating in the markets once more and set the final end to international exchange rate parity agreements. In 1976, the Jamaica Conference would formalize it.

That still remains the official American price of gold, but money-gold conversion by the treasury is no longer routine and global foreign exchanges free floating are now the norm. Further: the Bretton-Woods Agreement was supported by an American official gold price of 35$ per once, the Roosevelt's price of 1934, and the two devaluations were made in reference to this official value. At present, market

[1] This introduction has its main sources in Vanthoor (1996) and Eichengreen (2008). Specialized information was accessed locally.

[2] In this text, European community refers to broad European countries, whereas European Communities (EC) to the common institutions.

price is above 1300$. Ending the dollar convertibility to gold as part of Bretton-Woods meant the full recognition to the world of the dollar as fiat money.

In this economic and monetary context, the six countries of the European Communities continued to reinforce monetary cooperation. In 1972, a mechanism for intervention in the foreign exchange market is established. Central Banks of eleven European countries cooperate to reduce the margins of fluctuation between their currencies to +/-2,25%, the design of the 'snake' inside the 'tunnel'. Deutsche Mark has the central parity. Monetary cooperation carries on, with central banks reserves pooling for market intervention – the European Monetary Cooperation Fund (EMCF), the forerunner of ECB, starting operations in 1973. Short/medium-term credit assistance is successively renewed by the Council of Ministers, and the first European unit of account (the EUA) introduced in April 1975, used only as an accounting unit in few European Institutions.

In 1978, the European Monetary System (EMS) is established, in order to unite the process. A new european account unit is introduced from the same weighted basket of currencies values as EUA, the ECU – European Currency Unit. At the center of this system is the exchange rate mechanism (ERM), a framework of fixed but adjustable national currencies exchange rates to the ECU, with two intervals of variation (+/- 2.25 or +/-6%), to be supported by short/medium-term credit facilities and the operations of EMCF. This cooperation fund functions as a compensation chamber for market intervention, by way of which, Central Banks use revolving swaps to convert gold and dollar reserves into ECUs in order to settle transactions. Credit facilities are performed ad-hoc, a prerogative shared between the Commission and the Council of Ministers, in the form of mainly community loans in the first instance and balance of payment assistance in the second.

The new European Communities members, Greece (in 1981), Spain and Portugal (both in 1987) also become part of EMS, but the commitments to the ERM rate are difficult. Realignments of the fixed parities are frequent in time, which attests the evolving nature of the process of nominal convergence within the European space: central rates are modified on average once every eleven months in the 1979/87 period. In the 90s, the realignments of Spain and Portugal are notable. Greece would only be part of ERM in 1999. Hence the differentials in fundamental macro aggregates evolution remain, adjustments in the ERM are

used as correction on the convergence benchmark. As the time goes by, Council of Ministers resolutions never recognize the full execution of EMS, given that the ad-hoc financial assistance remains in place, still achievements in nominal convergence are recognized and celebrated. Then, in 1989, the Delors Report gives a new leap to the process of integration.

Delors Report presented a new three stages plan to the common european currency. Stage one, starting 1 July 1990, establishes the full elimination of restrictions to capital transactions. This will soon permit that speculative transactions in the foreign exchange markets affect the EMS operations, as it makes for more ins and outs of the currencies from the fixed parity. In a number of episodes during the 1992/93 crises, speculators tried to align exchange rates in anticipation to political decisions and a framework of economic fundamentals course.

Stage two coincided with the entry into force of the Maastricht Treaty (1993), which stated countries´ nominal criteria to the economic and monetary union in inflation, long-term interest rates, budget deficit and public debt levels. Notably, short/medium-term interest rates criteria are absent, object of Central Banks sometimes antagonist cooperation in the EMS. Additionally countries' currencies would have to verify a prior two years of exchange rate stabilization within ERM, criterion which would be considerably reformed, as in July 1993, in response to speculative turmoil, EMS countries decide to widen the bands of fluctuation to the limit of +/-15%, a record interval in regulated foreign exchange markets. At this stage, credit links from Central Banks to national states are also abolished.

This process of transition and convergence succeeded in its objectives, although several countries do not fully comply with criteria. European Central Bank (ECB) is constituted the 1st June 1998, with capital being subscribed from a pool of reserves from national central banks' balance sheets, according to a quantified key written in its statute. In May, a decision had been taken to lock the parities of exchange to the ones in operation on ERM. The Euro is created on the 1st January 1999 and the Eurosystem starts monetary policy operations in 11 countries.

III. Money in theory

Monetary theory is a subject of numerous ramifications. Neoclassical mainstream nevertheless made money an absent object of inquiry, which still has no correspondence in the economic day to day. The influence of Friedman's work in the practice of chief Central Banks also made the *alibi* for the economic and social focuses on the general prices index, sidelining other proprieties of the real-world economics, such as financial stability. Society should there onwards be only vindicated on the pace of the statistical co-ratios.

This section of the essay shall then review chief topics in the theory of money in an heterodox fashion. It is proposed a new interpretation of the money multiplier, the review of Keynes' original work on economic theory; made the appraisal of Marx's fundamental contribution to the study of the money functions, and presented basic principles of a theory of the economic circuit.

There is the purpose of clarification of concepts in the theory of money and their social circulation as knowledge. The stress is set in the notion of credit-money, which orthodox theory does not recognize. This has been contemporarily brought to the fore by the so-called post-keynesian political economists[3]. Nevertheless the same concept is also fundamental for understanding Marx's economic works. A realist practice of economic science should then apply it, and allow for theoretical reconstruction. The following description shall be one of its instances.

III.1 The money multiplier

The money multiplier schema is one of the initial topics in any scholar curriculums of money economics. It is a simplistic conception of money creation regulated by a mathematical dynamics. Its descriptive powers are scarce and the main appeal to the scientist practice comes from the propriety of quantification.

It would then be straightforward to recognize a relation between base-money, money circulation and inflation as part of Friedman's work in the quest for a modern monetary standard. Still, money is not a full numeric relation, it is an

[3] For a worthwhile assessment of these, see Mortágua (2011).

economic relation with broader practical links. This subsection will here perceive the model of the multiplier as a practice for the quantitative measurement of money as a bodily commodity.

A. Accounting of the measures

In a small Portuguese book, Noel Monteiro (1979) delivers a fair history of accounting. In an attempt for the origins, we refer that Ancient Egypt accounting documents relate to stocks and money-stocks delivers to the treasury (ibid: 41), being well known the economic centrality of the temple and the palace in ancient times. The economic life of the Greek market and the activity of *trapezitas,* bankers and dealers in the diversity of money coins that circulated in the Hellenic World, and later the Roman exercise of patrimonial administration by the *Codex,* gave a new élan to accounting registers (ibid: 43-44). Medieval urban artisan economy, and the expansion between centers of production and consumption that followed, mark the appearance of accounting commercial registers in the form of single entry (ibid: 53).

Further, we would only accept a material theory of accounting and an objective theory of value, the object of the account, portuguese "*conta*", french "*compte*" regarded as "all measurable material greatness with a monetary expression" (ibid: 85), its predominantly form of register being the double entry. Accounting (or bookkeeping) then is essentially viewed as a practice of economic control with material and concrete application.

T	M/D
	(100€)

T: Treasury

M/D: Money/Documents

In the very long-run account of history, money started being physical. Money was an objective, gathered in nature commodity, of which proprieties of matter and weight rendered it use-value for circulation (Vilar, 1974: 29). Copper, silver and gold metallic *oeuvres* are monetized due to their substantial, physical proprieties, namely conservation and divisibility. These artifacts are the synthesis of a composite metallic weight, with sometimes subjective and fetishist proprieties, namely in hoarding and trade or sometimes as adorn (ibid: 28-31). Further: in the 19th century, gold and silver articles are the basis for the monetary standards, from Japan to the United States. The *agio,* the relative prices of the official and the market metal, having a regulative character between national commodity-money stock and broad money-stock, as circulation never is 100% metal backed[4].

Banking started as reserve regulated by accounting activity. The first holders of the reserve are bankers themselves and bank money is then added to the balance sheet. In modern times, bank/credit money is then function of "capital requisites" and the "reserve ratio", with conspicuous 17th century modern banks being started with a virtual 100% reserve ratio, functioning as exchange banks, with none credit creation. Prior, bankers themselves had started dealing in money or lending their own reserves, as is the case of the famous renaissance *gentes*, or the back Greeks. The ascent of fiat money gave gradually the origin to the fractional reserve banking system (Fergusson, 2008:41-52).

Money is in a sense a double institution: it represents economic acquisitive power as wealth, at the same that it is its measure, i.e., the measure of the economy. Measures and man, moreover, went a long way, their domain being occasionally termed metrology. While an extended account of this subject would consider the Ancient Greek World, related achievements in mathematics and euclidean geometry, and the performance of first economic equivalences, the contemporary economist Philip Mirowski (Idem: 101-139) presents a valuable three stages process that rendered measurement autonomous for the practice of modern science[5].

In stage one, which is related to the scholastic medieval concept of just price, measures of value have an anthropomorphic character. Unit of measurement are

[4] This is the sense of the classical compute of *agio*, for an opposite view, that relates it to countries' external balances, see Salazar (1997:4).

[5] For a glance on Greek metrology, 1946's Livio Stecchini *The Origin of Money in Greece.*

in the body, as the unit is the elbow, the foot, harm or hand. As stated "anthropometric measures were not related by any set of fixed conversion factors (…) were not isomorphic to the system of natural numbers (...) prices in these situations are not fully quantitative" (Ibidem:110).

In stage two, measurement gains more autonomy vis-à-vis the subject, and is best related to the stipulation of the cartesian referential; there "rational mechanics renounced all quotidian metrics and instituted the system of cartesian coordinates to express motion on any scale" (ibid:112). In economics, this matches with the measurement of the commodities value becoming autonomous of a man's metrics, so "while individual quantitative indices do exist, they are not united by any global quantitative synthesis [… as] it was the norm that the apothecary's pound was miniscule, the spice merchant's pound somewhat larger, the butcher's pound somewhat larger still, and so on" (ibid:113); and with the reification of a market mechanism, where reification stands for a market mechanism operating above the subjects, being "decreed by fiat that value was constant, the way this happened was that market pressures were not expressed in money prices, but rather by changes in the physical magnitude of the commodity to which the price referred" (ibid:113).

Stage tree runs from an historical event. The French Revolutionaries wanted to erect a "system of measurement based upon nature rather than upon man" (ibid:114), the meter, namely 1/40.000.000 part of earth's meridian, would rest its cornerstone. This stage will made the full ascent of quantification in physics, with the stabilization of the concept of energy, and in economics with the (neoclassical) failed attempt to institute money as a standard of value apart from any particular commodity. Quantification and invariance principles, even though ultimately always man guaranteed, become essential for scientific explanation.

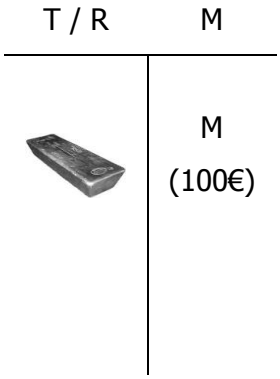
B. Civilization and fiat money

Fractional reserve banking is the other side of fiat money. Money has both the nature of commodity and standard of value. Mirowski (1989: 101-139) presents money as a concept of economics, analogous to energy in physics, for the unification of three proprieties: body, motion and value. Hence this scientist thesis

is also that economics emerged as social physics and accounting is an activity pertained both by scientific and finance practice. Further: the fiat nature of money assuming equivalence or conversion to a particular commodity poses a problem for civilization as difficult as the measurement of the atom. Mirowski quotes the famous physicists James Clerk Maxwell reflecting this shared search for the appropriate standard

> "instead of reducing economics to physics, I endeavor to impress upon beginners in physics the principles of bookkeeping (…) the whole of the value of the object arises from its exact conformity to a given standard (..) the whole system of civilized life may be fitly symbolized by a foot rule, a set of weights, and a clock." (quoted in Mirowski, 2004: 152, 414)

This essay shall bear that this shared quest for an invariable standard can be located, within economics, on the physical greatness of money, and the money multiplier model will be represented has a failed synthesis of the above three stages, inspired by the classical mechanics of bodies, to its concretization.



T/R: Treasury/Reserve
M: Money

The gold bar representing money is the body/mass that reunites the three proprieties above. It is a measure of a bodily greatness that is fully quantitative, monetary accounting providing the metric for the invariable standard. Motion works by money displacement, one of the forms of mechanic motion, in the chambers of the banking system. Mathematics regulates the numeric dynamics of

the process. To find a link for this, we may further refer that American practice in money economics traditionally refers to its subject as "money mechanics" (FED, 1994).

C. The workings of the multiplier

In the multiplier model, money is function of reserve money and motion is represented in the balance sheet diagrams of the banking system chambers. At time zero, money starts as exogenous and all goes to reserve. Thus money equals reserve

T/R	M
R_O	M_O
(100€)	(100€)

We will here pursuit on the workings of the money multiplier, where Treasury, Central Bank and Commercial Bank are equal and the same, the banking system having a reserve ratio (r) of 10% and doing currency emissions (c) of 5%. Reserve ratio functions as retaining credit money accumulation.

T/R	M
R1	M0
(10€+90€)	(100€)
L1	M1+C1
(90€)	(85,5€+4,5€)

At time one, reserve is shared out: the Bank makes endogenous emissions of both bank/credit money and currency. Credit-money is money ("a bank-account") created by the credit operation. Bank money is its balance sheet retention.

Money is transformed into an independent quantity in displacement in the banking system, regulated by the mathematical law, its value being expanded and conserved. Quantitative and the invariance of the standard render this model causal explanation propriety. Time two follows. As there is only one bank in the economy and currency circulation is Central Bank balance, all the money created is then absorbed by reserve, so the accounting identity can be maintained.

T/R	M
R2	M0
(10€+90€+81€)	(100€)
L1	M1+C1
(90€)	(86,5€+4,5€)
L2	M2+C2
(81€)	(76,95€+4,05€)

Money in the balance sheets and currency in the hands of the public, both meaning potential circulations of means of payment, hence the locus for another mechanic analogy, that of money rotation and its velocity, become supports of value. In a simple mm=1/r case, money (M) is the final identity between credit and bank money, as banking is a closed system. In the mm=(1+c)/(1+r) case, reserves are drained from the control of banks in form of currency, still we remain in a closed economy.

The limit to this iteration, in which there is not a proper representation of economic time, or economic agents who demand credit or bank money, is set by the initial money/reserve stock and the ratio of reserve. Bank has no detached capital account.

T/R	M
R	M0
(100€)	(100€)
L1	M1+C1
(90€)	(85,5€+4,5€)
L2	M2+C2
(81€)	(76,95€+4,05€)
L(..)	M(..)+C(..)

Maths: M = Mb x mm

Where: mm=(1+c)/(1+r)

R: Physical treasury

L: Multiplier financial treasury

Money is obviously fiat.

This accomplished, the model does not give a realist account of the genesis of the bank reserve, bank/credit money or currency, and thereof does not account for a real-world economics, notably "losses" or "gains" in the various sorts of money: base money reevaluations or the more modern loans/assets financial imparities. The money multiplier model is, therefore, presented as a partial migration from the mechanics of bodies to economics, in order to generate scientific explanation.

There is a reification of a causal process for money creation, where reification shall stand for the specification of a mechanical law operating autonomously of the economic subjects. Thus compelling us to a reassessment of the role of mechanical assumptions in economic reasoning, and by extension renders an indication for the rejection of the money multiplier model.

Accounting should, the same token, also solely rest a method of conference between the commodity and its value.

III.2 The market model

John Maynard Keynes is one of the most famous economists of the 20th century, its magnum opus being 1936's The General Theory of Employment, Interest and Money. There, the economist intended to deliver a new account of the Cambridge tradition and make fundamental departures from the orthodox theory. In this sub-section, we will follow his work in the 1935/1939 time-line, in order to recover a monetary theory of production. This will imply a review of the economist insights in economic theory and philosophy of science. The concepts of hoarding and credit-money will also be vital.

A. Departing the Classics

J. M. Keynes starts differing between monetary and direct-exchange economies.

Already in a 1935's article, the economist stated that "money plays a part of its own and affects motives and decisions (...) events cannot be predicted in the long period or in the short, without a knowledge of the behavior of money between the fist and the last" (Keynes, 1935:408). Some authors pointed that Keynes' formulation was "too psychological", as if one could infer that money had a behavior of their own, laying in the minds of people either than in an institutional setting.

This criticism will not be found pertinent, as money/cash is to be referred to its institutional holdings: be it bank-notes hoarded in fear under the mattress or central-bank cash retained has store of value, the more modern type of liquidity. Money has economic relevance, then, because it is a fraction of total wealth, vis-à-vis other assets. It is indeed the base for a "standard of liquidity", "not a scale", as Keynes will later put it in The General Theory (Keynes, 1936:239); i.e., people build stocks of money/cash, of the liquid financial resource.

Therefore "liquidity" isn't primarily a propriety of an asset, as some keynesians will put it (Hicks, 1991: 64-71)[6]. It is not a veil on market transactions, or a matter

[6] John Hicks eventually had another perspective. See Hicks (1974:57).

only related to the general price level; propositions which mark the first departure from classical theory.

John M. Keynes is equally one of the few modern economists that attempted for a global theory of production. And this further obliged to a second departure from the Benthamist utility maximization agent and what he calls "the classical", "orthodox" or "traditional" theory, because this has "the apparent conviction that there is no necessity to work out a theory of demand and supply of output as a whole" (Keynes, 1937a: 120), and consequently makes *tabula rasa* of the concept of effective demand, which comprises investment and consumption expenditure. Since in a keynesian economy expenditure and income are the other side of each other,

> "incomes are created partly by entrepreneurs producing for investment and partly by their producing for consumption. The amount that is consumed depends on the amount of income thus made up. Hence the amount of consumption goods which it will pay entrepreneurs to produce depends on the amount of investment goods which they are producing. If, for example, the public are in the habit of spending nine-tenth [9/10] of their income on consumption goods, it follows that if entrepreneurs were to produce consumption goods at a cost more than nine times [9x] the cost of the investment goods [1] they are producing, some part of the their output could not be sold at a price which could cover its cost of production. For the consumption goods on the market would have a cost more than nine-tenths of the aggregate income of the public and would therefore be in excess of the demand for consumption goods, which by hypothesis is only nine-tenths. Thus entrepreneurs will make a loss until the contract their output of consumption goods down to an amount at which it no longer exceeds nine times their current output of investment goods." (Keynes, 1937a: 120)

Hence this extended reasoning, included in the 1937 essay response to the rush criticism to General Theory, should lay the foundations for a regulated two-sectors

economy, where Say's Law and full employment in markets are not given assumptions[7].

Money, still, has a major role in Keynes's thought, which newly causes a third fundamental departure from the orthodox,

> "it should be obvious that a rate of interest cannot be a return to saving or waiting as such; for if a man hoards his savings in cash, he earns no interest, though he saves as much as before (…) the rate of interest is not the 'price' which brings into equilibrium the demand for resources to invest with the readiness to abstain from present consumption; it is the 'price' which equilibrates the desire to hold wealth in the form of cash with the availability of cash [.. so] the reward for parting of liquidity for a specific period [.. and] nothing more that the inverse proportion between a sum of money and what can be obtained for pertaining with control over the money in exchange for a debt for a stated period of time." (Keynes, 1936:166)

Aside the workings of a productive sector seen above, we must then think of a monetary and financial sector where money has "motives", or even a "schedule", so the economic theory can be reunited. Being linked to the financial sector, money is not a veil, or a mirror, of the transactions in the goods and assets markets.

One further assessment to understand J.M. Keynes economics and finance is the recognition that the economy is subject to uncertain knowledge. Starting from the rejection of a perfect calculable economic future, the economist marks that

> "the game of rolette is not subject, in this sense, to uncertainty; nor is the prospect of a Victory Bond being draw[8]. (…) The sense in which I am using the term is that in which the prospect of an European War is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention (…). About these matters there is no

[7] For the sake of clarity one should read in the names of "classical", "orthodox" and "traditional" an all range of figures, since Keynes' time characters of Pigou or Fischer, to 19th century Jevons, and necessarily that of Jean-Baptiste Say.
[8] Victory bonds were I World War time state-debt emissions.

scientific basis on which to form any calculable probability whatever." (Keynes, 1937a:113)

Of course this will not imply that calculation is absent of economic day-a-day routine, combined with what Keynes calls conventional judgment in the market-place (ibid: 114). Keynes' economic system is nevertheless regulated by what the economist calls psychological laws, enunciated in the 1936's book, which give to its economy a decisive moral character, as propensity to consume, capital efficiency and liquidity preferences have a systemic role, beyond individual motives[9].

B. Money supply and policy[10]

Hoarding is a long-view economic practice and Keynes reflects about it in The General Theory. Treasuries of metal have always been a practice for storing wealth. Mercantilism is the modern state practice for pursuing such act, by means of enhancing a country's commercial leverage in external trade.

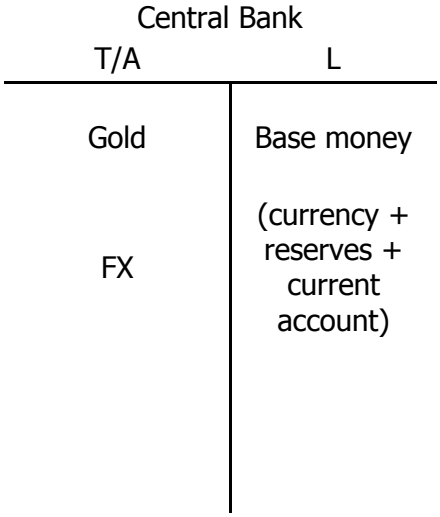
We could find their embodiment in figures such as Jean-Baptiste Colbert, the 17th century French finance minister of Louis XIV, the absolute king. Or in Oliver Cromwell, the 1649/1660 republican ruler of The Commonwealth of England. State treasuries, besides, are old igniters of cross-frontier campaign wars or economic/political dispute[11].

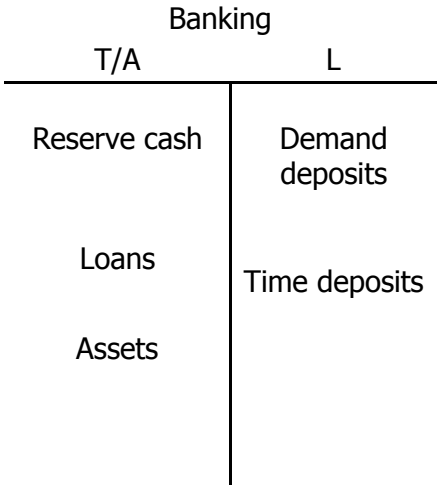
In a modern economy, money is essentially fiat and hence its supply is an attribute of bank institutions. Money being fiat means that both state and private treasuries are not entirely physical-commodity treasuries, but also financial treasuries, money having origin in both bank and credit money. Traditionally, the monetary authority only keeps treasury assets, the highest share of control over money balances being, *par excellence,* banks' and individuals'.

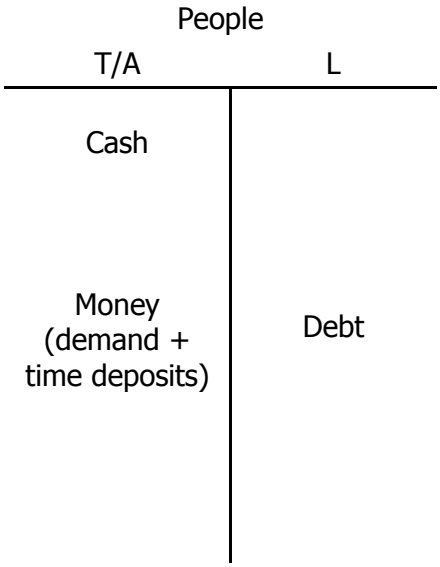
[9] The moral character of Keynes' economics is also presented in Louçã (2006).
[10] We would here rather prefer the term "offer" to "supply", approaching it to the microeconomic sense of "money offers", because of a rationale that is the one that best suites a discipline of macroeconomics and Keynes' money balances reasoning. This way, the convention is kept.
[11] Neo-mercantilism became presently part of economic and political speaking in Europe, as an imputation for the economic result of Germany euro policies.

If we still intend for a "scale" of liquidity, the money asset shall not be, in respect to firms or individuals, only cash or demand deposits at the commercial banks; current accounts (or balances) at the central bank, for commercial banks themselves. Keynes discusses this in the book, when considers a moving definition of money, which comprises demand and time-deposits with the banks (Keynes, 1936: 167). This way: idle hoarding is only the limit case of direct control over money.

A figurative structure of such reasoning is left here.







Modern central banks have a prerogative of both currency and reserve-money emissions. Banks demand cash from central bank in exchange for assets in balance; and individuals or firms demand both bank and credit-money, form commercial banks, these meaning opposite wealth positions. In Keynes' saying,

> "the quantity of money is not determined by the public; all that the propensity of the public towards hoarding can achieve is to determine the rate of interest at which the aggregate desire to hoard becomes equal to the available cash." (ibid: 174)

This is, in opposition to the economics of the "free market banking", as in the austrian school, the amount of cash, currency, deposits at commercial banks or central bank reserves, are not defined by the public, banks or individuals, but ultimately a sanction of the monetary authority[12].

Hoarding or liquidity preferences are further the reason why Keynes rejects orthodox theory. This is ruled by an equation of exchange, where

[12] 1976's *The Denationalization of Money* from Friedrich Hayek for a glance in the Austrian School thought and the reasonings of market eruptions of credit-booms that are then followed by the stage when "excesses" of financiers and other risk-lovers are tamed and purified, in correlation with the liquidation of economic capital.

> "there is no occasion to hold inactive balances and prices must be constantly at a level which merely to satisfy the transaction motive." (Keynes, 1937: 223)

In Keynes' theory, money is rather considered by means of the transaction, precautionary and speculative motives. This is: in the first instance, people need cash for personal or business exchanges, in the second desire to hold a fraction of its total wealth in form of a "cash equivalent" – sic (Keynes, 1936: 170) –, and third, may be willing to speculate from the present and future relative value of money vis-à-vis other assets (ibid). Classical theory will then only be a particular case of Keynes' theory, its *differentia specifica* laying in the why of these three motive. Transactions motive won't be here directly dealt, as most part of it applies to the above productive sector.

Money, being a share of total wealth, it's a bridge between uncertain economic time. In Keynes' economy, future is linked to capital assets (investment goods) and its prospective yield. Money is brought to firms by the investment decision: prospective yields of an investment are matched against its cost of production (ibid: 135). Uncertainty disturbs individual decisions, and precautionary motive raises liquidity preferences, this is, hoarding. J. M. Keynes envisages capital markets as one form of reducing individual risk because there

> "investments that are 'fixed' to the community are thus made 'liquid' for the individual [.. once that] if individual purchases of investments were rendered illiquid, this might seriously impede new investment, so long as alternative ways in which to hold his savings are available to the individual; this is the dilemma; so long as it is open to the individual to employ his wealth in hoarding or lending money, the alternative of purchasing actual capital assets cannot be rendered sufficiently attractive, except by organizing markets wherein these assets can be easily realized for money." (ibid: 152, 160)

The alternatives in holding wealth are then to hoard money, to lend it or to acquire investment assets in capital markets. The chief form of money is cash hoarding which renders no interest, so money has return only being debt: loan or

financial asset. Bank and credit money are to be entitled to interest, primarily set in banking, financial assets to a yield, set in the broad market.

The speculative motive is the rationale for the money policy, conducted by the central bank by means of money-market debt transactions with banks, because "it is by playing on the speculative-motive that monetary management is brought to bear on the economic system" (ibid: 196). It may well here be found an harsh paradox of economic design, because this, synthetically performed, is nothing more than "the object of securing profit from knowing better than the market what the future will bring forth" (ibid: 170), so that money creation by the monetary authority to deal in bonds would always have to manage and move price/interest-rate expectations of "bull" and "bearish" individuals in the asset markets.

Keynes obviously dedicates long and repeated reasoning to this matter, looking to then current practices of central banks open-market operations and correlative activity of dealing, effective monetary policy shifting both the quantity of traders/banks money holdings, and their expectations about upcoming bond prices (ibid: 197-199). The 1930s pictures of this are the anglo-saxons short-term bonds deals, where the monetary authority bids small amounts in securities' markets, creating and canceling money in the process (ibid:197). This is so since

> "to the quantity of money created by the monetary authority, there will, therefore, be cet. par. a determinate rate of interest; (…) our reason for supposing that there is such a special connection arises from the fact that broadly speaking, the banking system and the monetary authority are dealers in money and debts and not in [physical] assets or consumables." (ibid: 205)

Time uncertainty in economic data is, further, always pending, though does not affect all folks the same manner. Speculative motive has to count with agents' opinion regarding the future and their willingness to deal in assets, and hence the economic system becomes

> "dependent on the existence of a variety of opinion about what is uncertainty" (ibid: 172)

because changes in money holdings are to be effective only by ways of market transactions, and only

> "in so far as the changes in the news is differently interpreted by different individuals will there be room for any increased activity of dealing in the bond market [.. so] where everyone is similar and similarly placed, a change in [monetary] circumstances or expectation will not be able of causing any displacement of money whatever" (ibid: 198)

since bonds prices will adjust forthwith to the new situation without effective transactions by the central bank being required.

Still, in general, Keynes admits that news change "will cause some realignments in individual holdings of money [.. so these] will influence the ideas of different individuals differently [..and] the new equilibrium interest rate will be associated with a redistribution of money holdings" (ibid: 199), the real problem of monetary policy then being which quantity of money printing and transactions by the central bank is needed to reach a certain market interest-rate, where the standard name of "liquidity trap" only is one particular instance.

John Maynard Keynes' reasoning does not stop here either, subsequently envisaging an extension of central bank practice, as "the banking system may undertake to purchase debts at a certain price but not necessarily to sell them at a figure near enough to is buying price to represent no more than a dealer's turn, though there is no reason why the price should not be made effective both ways with the aid of open-market operations". Because the monetary authority often tends

> "to concentrate upon short-term debts and to leave the price of long-term debts to be influenced by belated and imperfect reactions from the price of short-term debts", though there will be no reason to do so, since "if the monetary authority were prepared to deal both ways on specified terms in debts of all maturities, and even more so if it were prepared to deal in debts of varying degrees of risk, … the complex of rates of interest would simply be an expression of the terms on which the banking system is prepared to

> acquire or part with debts; and the quantity of money would be the amount which can find a home in the possession of individuals who prefer the control of liquid cash to parting with it in exchange for a debt on the terms indicated by the market rate of interest" (ibid: 205)

the British economist stating for posterity that

> "perhaps a complex offer by the central bank to buy and sell at stated prices giltedged bonds of all maturities, in place of the single bank rate for short-term bills, is the most important practical improvement which can be made in the technique of monetary management" (ibid: 205)

monetary policy losing its sole feature as a directive interest-rate credit-money provider and aiming at time-specter intervention in a variety of market-rates. Keynes (ibid: 207-208) will further discuss its limitations.

C. Money market and level of activity

J. M. Keynes envisages the workings of the economy as a composition, which is not the sum of the parts, because this reasoning is indeed one fallacy of composition, and hence to expect a satisfactory economic result from the juxtaposition of goods and assets markets is not part of his philosophy[13]. Otherwise, the economist expected to see the state taking "greater responsibility for directly organizing the investment" (ibid: 164) and obviously pursuing a more active role in money affairs. This means the state pursuing a role as an economic institution.

Money in Keynes' thinking is not only a standard of liquidity, a liquid fraction of wealth with a range of economic time-related performances[14]. It is also a standard of value. And it is the standard of value in the sense that its price will be more related to output and employment than any other asset. So it shall

[13] For the related subject of Keynes' participation in the 30s debate on econometrics and its applications in economics see Louçã (2007).
[14] Paul Davidson (2006:141), a contemporary keynesian economist, thus appropriately calls liquidity the "time-machine function" of money.

> "play a peculiar part in setting a limit to the level of employment, since it sets a standard to which the marginal efficiency of a capital-asset must attain if it is to be newly produced." (ibid: 222)

The economist next discussing the proprieties of money that makes this so, interest-rate being once again nothing more than the "percentage excess of money contracted for forward deliver, e.g. a year hence, over what we may call the 'spot' or cash price" (ibid), that theoretically could be rivaled by other assets such as houses, wheat or copper, that can be stored-up and traded by spot-forward prices, thus "for every durable commodity we have a rate of interest in term of itself, a wheat-rate of interest, a copper-rate of interest, a house-rate of interest, even a stell-plant-rate of interest" (ibid: 223).

Still Keynes states finding reasons for being money interest-rate the relevant and also importantly the greatest. These relate to money production response to its price, in both regimes of gold-standard and the modern inconvertible paper-standard, with its unique exchange-value as representing purchase-power, and with money being the standard where debts and wages are set. These will also latter comprise a discussion as regards the choice of units in Keynes' economy, notably the wage-unit and the relation with full employment (ibid: 41-43, 213-214).

In a 1937's article in honor of Irving Fisher, we find a progress of the above reasoning hence

> "if we know the relation between the present and expected prices of an asset in terms of money we can convert the measure of its marginal efficiency in terms of money; (…) the effort to obtain the best advantage from the possession of wealth will set up a tendency for capital assets to exchange [for money], in equilibrium (…) [so] relative prices move until the marginal efficiencies of all kinds of assets are equal when measured in common unit; and consequently that the marginal efficiency of capital is equal to the rate of interest [y=r]." (1937c:101)

This being the most prominent equilibrium condition of the keynesian economy. Expected time returns between holding money and holding debt ruling it, and money market being the place where assets of all maturities, representing debts, are exchanged for money, and vice-versa. Money market is then the place where money expectations are played and asset prices set. To point this, one would remind the pervasive modern influence of low directive interest-rate in assets-price "bubbles" of world stock-exchanges.

J. Maynard Keynes is also further concerned with the transition from "a lower to a higher scale of activity" starting in the banking system. Here he will also make further departures from the Classics, once

> "nothing is more certain than that the credit 'or finance' required by ex-ante investment is not mainly supplied by the ex-ante saving" (Keynes, 1937b: 664)

and hence the interest-rate required to the present investment decisions has foremost to do with the current stock of money and the current state of liquidity preferences. And these are shared between active and inactive demands, combined with the use of overdraft facilities (ibid: 669), so a corollary can be shortly reached, when stating that

> "dishoarding and credit expansion provides not an alternative to increased saving, but a necessary preparation for it; it is the parent, not the twin, of increased saving" (Keynes, 1939: 572)

equality between saving and investment only having meaning in the transition between ex-ante and ex-post time[15].

[15] That's the notion of 1954's Michel Kalecki *The Problem of Financing Economic Development* effectively applies.

D. Organics of the society

It is commonplace that Keynes' economics was seized by the neoclassic synthesis. The 30s IS-LM formalization and the more modern computational models of optimization sidelined others practices of keynesian reasoning. The works of British Joan Robinson on economic information, Norwegian Ragnar Frisch on business cycles or Polish Michael Kalecki about economic development are usually forgotten in the history of the economic thought. It may well be said that all these, as Keynes' himself, defied the mainstream episteme in economics.

Since Descartes minded about his passions in 1649 and further made the certainty of subjective cogito the locus of perception that modern science gain anchor[16]. Economics is surely affiliated with that, with their theorizing of means-ends "maximizing agents". This social science rapidly gained an atomistic view of society, the correspondent practice resting in methodological individualism. Popperian positive science method also made the normative a demand of the positive, hence human morality is a problem *au-dehor*s the lab.

J. Maynard Keynes enunciates another philosophy when asserting that

> "as against [Lionel] Robbins economics is essentially a moral science (…) it deals with introspection and with values (…) with motives, expectations, psychological uncertainties" (quoted in Nunes, 1998:101)

and because there is a diversity of individual minds in society, which do not represent a pure atomic uniformity, scientific generalization depends on questioning the method of probability induction and on the need to deal with the problems of an organic whole.

The bulk of the insights from Keynes' work here presented, then also, repeatedly refer to money balances or holdings, psychological motives and economic dynamics. It combines the quantitative setting, with the analysis of the institutional practice, and the broad cognitive process of the economic humanity; which makes the appeal for a keynesian theory of knowledge apart from the current standard econometricians' probabilistic modelization that rules the routine and practice of major central-banks.

[16] René Descartes' same date *The Passions of the Soul* for the literary enclosure.

III.3 The historical model

The economic functions of money are the starting point of the study of monetary economics, in any academic curriculum. Still, they are rarely united to a broader perspective of economic and social action in the way of concrete historical characters. Economics loses sight of a discourse about social classes, institutional setting and struggle. This sub-section shall review Karl Marx's writings about money as a fundamental contribution to the action of modern economic subjects.

A. Restarting the economic problem

Economy, a name different from economics (science), is the working of historical subjects. Human labor is the social activity by which man transforms and evolves in nature and then

> "no production [is] possible without an instrument of production, even if this instrument is only the hand. No production [is possible] without stored-up, past labour, even if it is only the facility gathered together and concentrated in the hand of the savage by repeated practice. Capital is, among other things, also an instrument of production, also objectified, past labour. Therefore capital is a general, eternal relation of nature; that is, if I leave out just the specific quality which alone makes 'instrument of production' and 'stored-up labour' into capital." (Marx, 1857:81)

This is Hegelian Marx in a preparation text of his chief *oeuvre*: Das Kapital. Karl Marx was a classical economist of 19th century. A time when industrial and political revolutions spread across continental Europe. Classical economists are labor-value political economists that recognize economy inside a social class set. It is Marx himself, in an 1856 article ironically synthesizes this, against a journal's editorial,

> "(...) Mr. [David] Ricardo, commences his celebrated work on the principles of political economy with the principle that the three fundamental classes of society, i.e., of English society, viz.: the owners of the land, the capitalists,

> and the wages labourers, are forming a deadly and fatal antagonism; rents rising and falling in inverse ratio to the rise and fall of industrial profits, and wages rising and falling in inverse ratio to profits. If, according to English lawyers, the counterpoise of the three contesting powers is the keystone of the constitution of England, that eighth marvel of the world; according to Mr. Ricardo, who may be presumed to know something more about it than *The [London] Times*, the deadly antagonism of the three classes representing the principal agents of production is the framework of English society" (Marx, 1856).

Classical economists then study economy as a social problem. And the economic problem is of course that of production, distribution (comprehending circulation and exchange) and consumption of economic resources/products. Marx makes it elegantly at start

> "the first spontaneously evolved form of wealth consists of an overplus or excess of products, i.e. of the portion of products which are not directly required as use-values, or else of the possession of products whose use-value lies outside the range of mere necessity" (Marx, 1859:129)

to get that

> "in the process of production members of society appropriate (produce, fashion) natural products in accordance with human requirements; distribution determines the share the individual receives of these products; exchange supplies him with the particular products into which he wants to convert the portion accorded to him as a result of distribution; finally, in consumption the products become objects of use, i.e. they are appropriated by individuals." (ibid: 217)

Karl Marx's particular eye of history, as classical economist, is that classes pursuit adversary economic interests. Modern politics is the field where these are played, with social revolution accounting for a latent happening. Hence the

famous reference to the 1848 "specter", a year of political upheavals across european nations.

We will here recover some of his work in relation to the money functions, being today still well recognized that his theory of money is one of major contribution to economics (Brunhoff and Duncan, 2006).

B. The money of account

In the 19th century european economy, mankind produces commodities for material reproduction. Marx calls commodity the "cell" of his study, as this is the basis for economic circulation. Marx intends to pursuit a study from what he calls the simple (or commercial) circulation to one of general (or capital) circulation. Money serves as mediation inside both the circuits an in the transition between. The commodity is the origin of money, commodity-money having a pivotal role in simple circulation and credit money only intervening in the general circuit (Marx, 1859:75).

In the classical and also marxian sense, the value of commodities is an entity of two sides: exchange-value and use-value. The money-commodity is the general equivalent for all commodities, exchanging equal labor-time, so

> "gold becomes the measure of value because the exchange-value of all commodities is measured in gold." (ibid: 77)

Metallic pieces of gold – although others like silver or copper (ibid) could theoretically perform monetary proprieties –, form a unit of price, value and weight so "gold as materialized labour-time is a measure of value, as a piece of metal of definite weight it is the standard of price" (ibid: 81), with this reasoning, Marx envisaging a gold-standard, that was a *de facto* monetary regime of 19th century world-economy.

The reunion of this two money functions gave gold a monetary expression (a name) and allowed for the rise of the money of account, "the price of a commodity, or the quantity of gold into which it is nominally converted, is now expressed therefore in the monetary names of the standard of gold; thus, instead

of saying a quarter of wheat is worth an ounce of gold, one would say in England it is worth £3 17s. 10/2d[17]; all prices are thus expressed in the same denomination; the specific form which the exchange-value of commodities assumes is converted into denominations of money, by which their value is expressed; money in turn becomes money of account" (ibid:82).

Nineteen century economies are conditioned by the action of the modern westphalian nation-state, the result of the 1648 trans-european peace agreement that ended the Holy Roman-Germanic Empire. Through history, state treasuries have always been linked to state prerogatives regarding money seigniorage, and 19th gold-standard shall be no different, as "in order to prevent its circulation from being hampered by technical difficulties, gold is minted according to the standard of the money of account; (…) both the establishing of the mint-price and the technical work of minting devolve upon the State; coined money assumes a local and political character, it uses different national languages and wears different national uniforms" (ibid:112).

The circulation of the european moneys of account – british sterling, portuguese real, french franc, etc. – is encircled by state intervention in the faces of minted coins, state paper-money and bank paper-money. The sovereign metallic coin has the oldest course, its price being established by state legislation, which allows for metallic debasements and royal manipulations to bring tensions and "shadows" to it value (ibid: 116). Further needs in circulation made the arrival for subsidiary and paper-money, this is, the locus for modern currency, English name for French "courant". Money ceases to circulate with the body of a commodity, it becomes a token of value, "a piece of paper, which functions as a coin, represents the [same] quantity of gold indicated by the name of the coin; (...) the gold token represents value in so far as [sic] a definite quantity of gold, because materialised labour-time, possesses a definite value; but the amount of value which the token represents depends in each case upon the value of the quantity of gold represented by it" (ibid:120). State paper-money is also a token of value of forced circulation, still here Marx restricts its role to the sphere of simple circulation.

[17] Three pounds, seventeen shillings, ten pence half penny.

This accomplishes the first three functions of money, and its evolved economic faces. Following Marx's plan, we will study money's other functions in the stage of simple circulation and add a role for credit money in the general one.

C. The medium of circulation

In simple circulation, which Marx calls commodities "metamorphosis", money is exchanged for other commodities. In the market, "two commodities, i.e., units of exchange-value and use-value, confront each other; but in the case of the commodity exchange-value exists merely nominally as its price, whereas in the case of gold, although it has real use-value, its use-value merely represents exchange-value and is therefore merely a formal use-value" (Marx, 1959: 86).

The commodity exchanges place with the money-commodity, gold, in the hands of the economic subject/agent. Marx represents this by his famous figures of C – M / M – C, money playing the function of mean of circulation. We will denote this too as market transactions. Although this was not part of Marx's terms, markets are a feature of real world economics and the economist inclusively recurs to clear exemplifications of market's commercial crisis when saying,

> "that there are times when it is impossible to sell all commodities, for instance in London and Hamburg during certain stages of the commercial crisis of 1857/58 there were indeed more buyers than sellers of one commodity, i.e., money, and more sellers than buyers as regards all other forms of money, i.e, commodities. The metaphysical equilibrium of purchases and sales is confined to the fact that every purchase is a sale and every sale a purchase, but this gives poor comfort to the possessors of commodities who unable to make a sale cannot accordingly make a purchase either" (ibid: 57-58)

which circumscribes money, in the sphere of merchandise circulation, as something with acquisitive power, a mean of purchase (ibid: 106) and as we have just seen is not indifferent to economic crises.

The expansion of output and input markets was an enduring and vital condition to the 19th century bourgeois economy ascension. This involved a transformation of the tradable qualities of labor, land and money, and the nature and performance of social and individual contracts[18]. Inside these, economic relations of creditor-debtor gain new insights, as in the modern economic circuit, commodities are exchanged for money, but the monetary settlements of these transactions are made time dependent,

> "when money circulates simply as a means of circulation and hence as a means of purchase, this presupposes that commodity and money confront each other simultaneously (...) no proof in detail is needed to show that such purchases on credit, in which the two poles of the transaction are separated in time, evolve spontaneously on the basis of simple circulation of commodities.... owing to differences in the period and length of time required for the production of different commodities, one producer comes to the market as a seller before the other can act as a buyer (...) this gives rise to relations of creditor and debtor among commodity-owners. These relations can be fully developed even before the credit system comes into being, although they are the natural basis of the latter." (ibid: 141-143)

In the sphere of simple circulation, commercial debts give rise to the money of payment, whereas the – real, sic (ibid:145) – commodity money only circulates in order to settle the final compensated negative and positive balances of merchandise exchange. Commercial crises - the ones distinctive of this sphere - are the time when the tension in the medium of circulation between money as mean of purchase and mean of payment reveals itself: merchants cease to perform new credit in their books, as the old ones are in default.

[18] We put this in modern language. It is well known Marx's criticism against bourgeois law. To get a reason for this one could or should think of 19th century laws on Poor's Workhouses or of bourgeois economic competition translating in codex the access of others to effective means of production.

D. Treasuries of money

D1. Money only plays its role as a mean of circulation by its own circulation – the money circulation. Marx promptly cuts a simple illustration of what we could call 19th century street circulation of money when

> "for instance, with the money which the manufacturer receives from his banker on Friday he pays his workers on Saturday, they immediately hand over the larger part of it to retailers, etc., and the latter return it to the banker on Monday. […] the movement of the circulation of commodities is therefore represented by the movement of money as the medium of circulation, i.e., by the circulation of money" (ibid: 106)

so we cannot endorse a classic separation of economic and monetary course in Marx's work, although his reasoning has elements – velocity, mass, prices, exchange - of the quantitative theory of money, as this is the one that best suits his labor-value theory. At instances, the economist will inclusively present an inversed prices-money causality when saying that

> "commodity circulation is the prerequisite of money circulation; money, moreover, circulates commodities which have prices […] the quantity of gold required for circulation is in the first place determined therefore by the sum of the commodity-prices to be realized […] If the velocity of circulation is given, then the quantity of the means of circulation is simply determined by the prices of commodities. Prices are thus high or low not because more or less money is in circulation, but there is more or less money in circulation because prices are high or low" (ibid: 109-111)

hence "rise or fall of commodity-prices corresponding to an increase or decrease in the volume of paper notes" (ibid:124) would result from direct contradictions to money's function as measure of value and standard of price, i.e., as money of account.

Whereas the use-values of other commodities are to be destroyed in consumption, the "use-value of gold as money is to represent exchange-value"

(ibid: 129), and hoards are a "universal practice extending from the individual to the State" (ibid), money being the universal form of wealth,

> "since all commodities are (...) merely notional money, money is the only real commodity; gold is the material aspect [das materielle Dasein[19]] of abstract wealth; (...) so far as use-value is concerned, each commodity represents only one element of physical wealth, only one separate facet of wealth, through its relation to a particular need; but money satisfies any need since it can be immediately turned into the object of any need; its own use-value is realized in the endless series of use-values which constitute its equivalents; all the physical wealth evolved in the world of commodities is contained in a latent state in this solid piece of metal; thus whereas the prices of commodities represent gold, the universal equivalent or abstract wealth, the use-value of gold represents the use-values of all commodities; gold is, therefore, the material symbol [der materielle Repräsentant] of physical wealth." (ibid: 127)

Immobilized gold does not pursue the complete C - M - C circuit, remaining in what Marx calls the "gold chrysalis state", later igniter of its own circulation, hence

> "the coin [[20]] itself becomes money [Geld] as soon as its movement is interrupted. In the hands of the seller who receives it in return for a commodity it is money, and not coin; but when it leaves his hands it becomes a coin once more. ... so that money as coin may flow continuously, coin must continuously congeal into money; the continual movement of coin implies its perpetual stagnation in larger or smaller amounts in reserve funds of coin which arise everywhere within the framework of circulation and which are at the same time a condition of circulation; the formation,

[19] The original German term allows for a more precise reading. Dasein means literally "being there", in Portuguese "ser/estar aí". It is usually translated by "existence", "existência". The term has nevertheless a philosophical register in Hegel's and Heidegger's works, which are philosophies of the Being. Dasein is what "is there", commodities or the gold commodity in Marx's work, which points to more than just their material revetment or aspect.

[20] In German, *Münze*. One marks that here we could or should read already "currency" (notes and coins). Marx, in the original German writings applies, at least once, the English term, see below (ibid: 297), whereas the proper German equivalent, *Währung,* appears to be lacking.

> distribution, dissolution and re-formation of these funds constantly changes; existing funds disappear continuously and their disappearance is a continuous fact; this unceasing transformation of coin into money and of money into coin was expressed by Adam Smith when he said that, in addition to the particular commodity he sells, every commodity-owner must always keep in stock a certain amount of the general commodity with which he buys." (ibid: 128-129)

Treasuries of variable magnitude are thus the locus for money to function as store of value, such that bourgeois economy is capitalist in the sense that represents the valorization of accrued money-capital by value extraction from labor productive capacity. This reasoning further marks the transition from the simple to general circuit,

> "the [money] exchange-value can realise itself as such only by confronting the use value - not this or that - but the use value correlated [in Bezug[21]] to itself. This is labor. (...) the condition for the transformation of money into capital is that the owner of the money can exchange money for the alien labour capacity as a commodity; in other words, that within circulation the labour capacity is offered as a commodity for sale, since within the simple circulation the exchangers confront each other only as buyers and sellers; the condition is, therefore, that the worker offers for sale his labour capacity as a to-be-used commodity and, so, is a free worker." (ibid: 335)

Marx's economics then continuing to the *théma*[22] of simple and enlarged reproduction, constant and variable capital, fixed and circulating capital in the general economic circuit, however this essay will be limited to the subject of credit money.

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[21] Once again, the original "Bezug" points to a notion of social relation that would not be retained by the English "correlated".

[22] We make a transcription from the Greek root of the English "theme". *Théma* has then the original meanings of "proposition", "deposit", and is akin to *tithénai* "to put", "set down". This would have implication for a circuit analysis and an accounting approach in Marx's economics, as accounting and economic objects are at first and foremost "deployed", "deposited". For a defense of the use of etymologic interpretation in the pursuit of knowledge, see Steiner (2013).

D2. Money is acquired in the economic circuit by exchange with other commodities and becomes use value as such (ibid: 297) but, at the same time, it is a useless use value, because does not re-enter circulation as a mean of purchase or mean of payment. Marx calls this a "contradiction" and so,

> "the only reality [einzige Realität[23]], economically [ökonomische[24]], which hoarding has in circulation, is a subsidiary one for the function of money as means of circulation (in the two forms of means of purchase and means of payment) – the formation of reservoirs which make it possible to expand and contract the currency." (ibid)

In this in and out of circulation, hoarding represents "a phase in the life of the commodity, in which it can remain for a shorter or longer period" (ibid). Yet, Marx points first that, with the expansion of bourgeois production, enrichment loses the ancient close relation with monetary hoarding and both the formation of reserve funds outside circulation and the technical stagnation of currency acquire a downward historical tendency (ibid: 146). Second, that with the expansion of transactions and exchanges on credit, and so of creditor/debtor relations in the sphere of commercial circulation (this is, even before the full development of the credit system in the general circuit), money as mean of payment gains standing, in detriment to as mean of purchase (ibid: 143). Although, this will make further necessary the accumulation of reserve funds of money, entitled to serve as final mean of payment (ibid: 146).

Within simple circulation, the realm of sales and purchases, commodities are hence sold not only for money, but also for written promises of payment in due time. Marx puts

> "all these promissory notes under the general head of bills of exchange" (..) that circulate as mean of payment until the day they fall due (..) [and] form the actual commercial money (...) [later] the basis of credit-money proper, of bank-notes, etc." (Marx, 1894:262)

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[23] Marx is a philosopher of the Being, of reality. His writings and his theory necessarily assume to directly refer it. The german original stresses it.

[24] The german language has two nouns to "economy": Ökonomie and Wirtschaft. Why Marx appears to apply only the first would require a further inquiry that will not be made here.

With the development of capitalist production, large amounts of money-capital become concentrated in bankers' hands, hence "in place of the individual money-lender, the banker confronts the industrial capitalists and the commercial capitalists as representatives of all money-lenders" (ibid: 265). Capital of different sources, "idle money of all classes" (ibid: 266), concentrates in a common treasury, "the reserve fund of the commercial world" (ibid: 265). Bankers turn money-dealers and managers of interest-bearing capital, gaining linkage to all branches of production.

These funds in hands of banks are, as expected, "reduced to its necessary minimum" (ibid) and managed as loanable capital. In a sign of great modernity, Marx presents already the ways of these doings,

> "the loan is made (we refer here strictly to commercial credit) by discounting bills of exchange — by converting bills of exchange into money before they come due — and by advances of various kinds: direct advances on personal credit, loans against securities, such as interest-bearing paper, government paper, stocks of all sorts, and, notably, overdrafts against bills of lading, dock warrants, and other certified titles of ownership of commodities and overdrawing deposits, etc. ." (ibid: 266)

The credit performed by a banker assumes various exiting gates, "such as bills of exchange on other banks, cheques on them, credit accounts of the same kind, and finally, if the bank is entitled to issue notes — bank-notes of the bank itself" (ibid: 266), these latter being nothing more than a draft upon a bank, and the visible face of credit-money. This breaks

> "out of the confines of mere commercial circulation into general circulation, and serves there as money." (ibid: 266)

Still, as monetary emission is not centralized, so it runs from a "peculiar mixture of national and private banks", circulation is only "more or less legal tender", having "the national credit" to back it (i.e., the circulation of bank and credit-money in

the banking system, compensation chambers and clearing houses), allowing then for the entrance, – fabrication, sic (ibid: 273) – of fictitious capital.

The bourgeois economy, likewise, recognizably envisages a world expansion, a world market. Money is the universal equivalent, and gold bullions the international mean of payment, this is, the world money, the terminal of Marx's money functions,

> "in the trade between the markets of the world, the value of commodities is expressed so as to be universally recognized. Hence their independent value-form also, in these cases, confronts them under the shape of universal money. (...) Money of the world serves as the universal medium of payment, as the universal means of purchasing, and as the universally recognized embodiment of all wealth. (...) Its function as a means of payment in the settling of international balances is its chief one. (...) Just as every country needs a reserve of money for its home circulation so, too, it requires one for external circulation in the markets of the world. The functions of hoards, therefore, arise in part out of the function of money, as the medium of the home circulation and home payments, and in part out of its function of money of the world." (Marx, 1867:89)

This relation between national-treasuries, world gold treasuries, bankers and their dealings rested an economic feature until the 70s of the 20th century.

E. Remarks

Karl Marx has the intellectual formation of a German philosopher. It is known that the economist applies a method of study to classical political economy caught from hegelian dialetics – (1859: 228-241) – later dubbed dialectical materialism. Hegelian dialectics is the historical-logical philosophy of thinking, the theory of knowledge of the spirit. Karl Marx's political economy categorization (a critique – subtitle of his chief oeuvre), is indeed encircled by those movements of the

"universal and the particular", "abstract and concrete", "ideal and material" (german: ideele und materielle) around an object of inquiry[25].

Although within this dialectical base, his study of political economy has influences of Aristotle's thinking, and an extreme abundance of metaphoric reasoning from modern sciences (chemistry, biology, physics), the purpose of which has to be further inquired[26]. Additionally, Marx does not proceed to a full exhaustion of the role of accounting in capitalist production. This technic, nevertheless, is of prime role both in the organization and control of production, and the valorization and devalorization of physical-financial treasuries[27]. Marx's theory acquiles heel is obviously – with recognized better *acquis* as regards Adam Smith or David Ricardo works (Denis,1976: 9-76) – labor-value theory in terms of labor-time, still shall there rest the elements of an objective theory of value and the categorization of the dynamics of capitalist production.

The substance should rest in productive capacity proper, and the best of it is that it travels in time. Hence labour is not the source of all actual economic value and time has relevance outside the realm of production. Land production (nature) is regulated by a natural and cyclical time, physical capital by, in the limit, a continuous mechanical-activity time, human labor by man and woman day by day time (or a life time); finally finance capital by an full autonomous time, a reificated economic time, where reification stands for pure financial calculus and return[28,29].

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[25] It would be here worth mentioning Lenine's famous sentence that "it is impossible to understand completely Marx's Capital, and especially its first Chapter, without having thoroughly studied and understood the whole of Hegel's Logic" (quoted in Barata-Moura, 2007: 203). The same idea is reproduced by Frederick Engels (1859).

[26] We could already find an impressive statement from Henri Denis in relation to these matters, when the french wrote that "en examinant attentivement ces chapitres [the firsts of Book II of Capital], on constate que Marx s'efforce d'aplliquer à l'economie capitalist le schema hégélien de la vie, que est aussi celui qui commande l'étude de l'organisme animal" (Denis, 1984:97).

[27] The relation of Marx to accounting is made object of inquiry in Chiapello (2007: 283-293).

[28] To stick to this, we will remind the pervasive influence of an axiomatic math of finance, in both schools and banks/traders practices. For sake of clarity, it can be here stated that Oxford's Dictionary fairly attributes "reify" to "make (something abstract) more concrete or real". The term has nevertheless roots in the critique and contra-critique of the enlightenment tradition: for a pertinent criticism, "the purely intellectual process of science transforms man into an abstract unit, integrated in a system, (and) this reflects the real metamorphosis of man performed by capitalism" (Kosík, 1976:V).

[29] In reference to finance capital, contemporary dialectical readings of Marx's Capital also make valuable insights in the importance of time for its economic role and understanding: "The crisis is then the opposition between the capital as a movement [/a circuit] in search of valorization and time, mainly the time of circulation as the obstacle that appears against

It was the purpose of this sub-section of the essay to point to the synthesis of the money functions in terms of money of account, medium of circulation and economic treasury, approaching them of the canonic view. To make the update of Marx's work to present time will have to tackle the problem of the monetary standard, the new modern facets of the mean of circulation and the role of modern central banks and banks in general as economic treasuries of money.

Treasuries are an economic locus for the owner of economic/financial resources, a form of store of value. Economic reserves have a relevance of their own, and economic science should make equal status of enquiry to reserve money, labor reserve (Marx's industrial army of reserve) and space (land and territories). In a further stance, this would signify an inquiry about the rulings of economic and social power.

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that end. The interest-bearing capital allows capital to surpass its limits and, in a certain way, beat time. Hence it puts itself in the service of capital's *hubris* as the pure [/abstract] movement of capital as commodity. Nonetheless, this overrun of time may has as consequence a dependence of time, and thereof the obliviousness may be inverted to dependence upon it" (Oliveira, 2004: 74).

III.4 Theories of money emissions and circuit

Money circulation is of course a theme of its own. Circulation is part of the object of economics, hence a realist account of the economy cannot depart from it. Apart from the marxist theory, there are age-old theories of the economic circuit, that go back to french physiocrats. Presently, these can be recognized in French and Italian academic schools (Rossi, 2006; Gnos, 2006). This subsection will refer some of these in the subject of money emissions and circulation.

A. The dyadic operation of banking

The full ascent of fiat money ceased to relate money to any particular commodity. Modern banking and payment systems further dematerialized the mean of circulation and exchange. This surely contributed to the improvement of ex-nihilo theories of money creation. These relate with the already seen notion of credit-money. However, a further learning shall be made inside theories of money emissions and circuit, with an endogenous view of money and banking

> "the theory of money emissions sets off from a new analysis of money, which it conceives of as a purely numerical thing, a double-entry record in a bank's bookkeeping for the settlement of economic transactions (…) the starting point of the analysis is a book-entry money, and in particular the relationship between banks' double-entry bookkeeping and money's emissions [.. it is argued] that money and payments are one and the same thing, because, in [this] view the emission of money occurs within payments, while money balances (bank deposits) exist between payments. In fact, banks keep books in which they record all debt obligations for further reference and settlements." (Rossi, 2006: 122)

Bank money, which of course comprises central-bank money, is then an entity that attends the two purposes of money payments and stock of wealth, mediated by the *arts* of bookkeeping; moreover, in the case of the central bank, market intervention. It is further worth noting that emission of both money base, bank

and credit money are historically legal attributes, that come be recognized in the workings of the "national banking systems" – central compensations chambers are modernly replaced for Central Banks operated electronic settlement systems. More

> "what banks do independently of production is to write in their books a mere 'bipolar', or 'dyadic', operation: for instance, client I may be entered on the liabilities side of a bank's balance sheet for any given amount in so far as the same client is simultaneously entered and for the same amount on the assets side of the balance sheet [.. as shown] before production is taken into account, a bank can only give rise to an asset-liability relation with the same non-bank agent

	Bank			
	Assets		Liabilities	
t=0 (emission of credit money)	Loan to client I	+€x	Deposit of client I	+€x
t=1 (after the payment order)	Loan to client I	+€x	Deposit of client II	+€x

> such an operation, which is indeed an off-balance-sheet record that banks never book [t=0], depicts the credit line that a bank may open to one of its (creditworthy) clients […so] the emission of money must indeed not be mixed up with a credit operation that the issuing bank may undertake in favour of the economy: the bank is neither a creditor nor a debtor of the economy when it issues money, because it is simultaneously debited and credit with the number of (x) money units that it issues. Money is therefore an 'asset-liability' (…) strictly speaking, then money never leaves the bank issuing it [t=1]." (ibid: 122-123)

Currency, coins and notes proper, finally shall gain further distance from this *réseau* of affairs, as most of the people don't keep commercial legal books, or have financial obligations and direct links with the monetary authority. Modern activities of investment banks or money funds, likewise, introduce different standards, as these are the places for "new intermediations" and "shadow banking", still this theory makes the valuable insight that

> "also when transactions occur on the financial market only the agent buying securities [is] simultaneously a seller of claims on an equivalent bank deposit." (ibid:127)

B. The ensuing theory of production

The theories of circuit further envisage a comprehensive analysis of production remitting to Keynes' thinking

> "the measurement of output is therefore equivalent to the determination of national income, on the ground of Keynes' [Treaty of Money] definition, 'to mean identically the same thing by the three expressions: (1) the community's money-income; (2) the earnings of the factors of production; and (3) the cost of production" (ibid:125)

this going once more to the encounter of a global and monetary theory of production, already proposed by the British economist

> "theory of money emissions conceives of a monetary economy of production as composed by firms and workers (that is, wage-earners) in an environment where banks provide them with money (…) firms decide and organize production activities, while banks 'monetize' them, the banking system providing the unit of account and mean of payment needed to measure output (…) income is thus the result of banking and production activities working together for the production, circulation and final consumption of goods and services (…) income defines an exchange-value that exists in the form of a bank deposit, which is the result of a loan that banks grant to firms to finance production, and that can be paid bank when firms have been able to sell output in the goods market (ibid: 126)

which will allow for new insights in the principle of effective demand, full employment, and a new analysis of functional income distribution and capital accumulation.

Capitalist economies are economies of money. Banks naturally play a central role in the impetus of production. The theories of circuit have the plus-value of never detaching the analysis of production and capital accumulation of the explanation of the particular role of banks

> "in order to start a process of capital accumulation, any economic system has to form a profit that is net in the economy has a whole. This profit must be in the form of a bank deposit, in order do firms to finance investment and hence raise the capital stock in the economy. Both the analysis of profit formation and that of capital accumulation may therefore proceed by an investigation of bank's bookkeeping: any transaction implies a payment, and any payment can be traced back in a bank's ledger" (ibid: 128)

where the explanation for profits arises from firm's marking up the production cost of the goods the wage-earners purchase, this is, wage or consumption goods. This will make the authors to propose a reevaluation of the inflationary and deflationary phenomena, related to the act of recording the new accumulated wealth in banks' books that will not be pursuit here (ibid: 130, 131).

C. Transnational money settlements

More interesting are the succeeding proposals about international money issues. It is recognized that "today all international settlements take place using a few local currencies – the yen, the euro and the US dollar" (ibid: 134), with currencies' foreign exchange free floating market subject to speculative and erratic sales and purchases. It is proposed a

> "a truly international bank money, say bancor, so as to comply with the instantaneous circular use of money as a mean of payment at the international level. This new, international money must be issued by an international central bank, that is, the central bank of national central banks, every time a payment involves a country or a currency area for the final settlement of cross-border transactions [..this] international settlement

> institution would issue the mean of final payment by which country A can finally pay R for its nets imports of foods and services, by an exchange in which country A is simultaneously a net exporter of securities to R" (ibid: 134)

where a "logical identity of sales and purchases" makes for "each currency being simultaneously supplied and demanded against the same amount of bancor, its exchange rate never being affected by international transactions – be they on product or financial markets" (ibid). This setting, the proponents say, will dispense with the famous Mundell's 'incompatible triad', and allow for full capital mobility, money policy autonomy, as well as stable yet not fixed exchange rates.

However, the proposal is considered, even by their proponents, as utopian in the context of states' foreign relations, whereas its effectiveness could be tested at the level of regional integration; notably in an European Union short of a full monetary unification, where a parallel European institution of clearing for the final settlement of cross-border transactions might be established. We find this one of the more robust proposals ever achieved that should be further considered.

IV. History and Institutions

Economy is a historical subject. It is not the purpose of this essay to restore the view that the economy is the lone determining stance of human action. The inquiry on the evolution and the workings of social systems must rely on a multidisciplinary approach. Nonetheless the reunion of the legal and the political-economic topics in the European Union Institutions routine cannot be here ignored. This section shall at first make the reference to two pivotal rulers of the social dynamics in crisis: the European Treaties and the ECB.

The second part is dedicated to setting a proposal to the establishment of a common European Treasury aimed at state-debt redemption and restructuring, at the same time that points to an enhanced process of ECB intervention in the markets and a reform of international monetary affairs.

IV.1 Architectures of the European law

European Union is a peace project. Second World War human and material losses urged the need for a common project of cooperation amidst European states. Political guidance, treaties signing, and the building of common institutions were the respective modus operandi.

The common European currency was indeed an ancient goal, even if time changed the design of the plans. In the nineties, The Treaty of Maastricht was the first treaty on European Union proper, its section on economic and monetary policy ruling for years ahead. Besides its famous criteria, articles expressly prohibiting "overdraft facilities", "direct purchase of debt instruments" or "supply of reserves" (Article 104) gave the motto for an statutory independent European Central Bank (ECB)[30]. State deficits will now have a rule of administration independent of the affairs of the central bank.

It is known that its prime goal will be "to maintain price stability" (sic, Article 105) thru the execution of monetary policy, although for this no definite design is

[30] This feasibly made already at that time the locus for a *cadrave exquis* of an economic institution. Barry Eichengreen (2013) referring to the Outright Monetary Transactions (OMT) program of sovereign debt purchases recognizes it presently as part of the "steps expected of a normal central bank".

laid on ink. Further, the ECB "shall have the exclusive right to authorize the issue of bank notes" and states may only "issue coins subject to approval by the ECB", although the Council, after consulting with the ECB, may "adopt measures to harmonize the denominations and technical specifications of all coins intended for circulation to the extent necessary to permit their smooth circulation" – few and short legal dispositions to settle centuries of money acrimony.

The top of ECB organization is the Governing Council, which comprises the members of the Executive Board (the President of the ECB, the Vice-President, and four others) plus the Governors of the national banks pertaining to the Eurosystem. Nevertheless, the President of the European Council and an element of the Commission may participate in the meetings of the Governing Council, without the rights to vote, disposition which has always remained in place, in the subsequent revisions of Maastricht: Amsterdam, Nice, Lisbon. Moreover, the President of the ECB is also invited to participate in Council meetings, "discussing matters relating to the objectives and tasks" of the Eurosystem.

The President of the ECB and other members of the Executive Board, the one responsible for conducting monetary policy, may at request or on their own initiative be heard by competent committees of the European Parliament.

IV.2 ECB base money

European Central Bank acquires its prominent stance because it is the "monopoly supplier of monetary base" (ECB, 2013a). This is nothing else than the reunion of currency in circulation, reserve money and the deposit facility. These are liabilities in the Eurosystem balance sheet and the locus for managing market intervention. For an illustration on an Eurosystem balance sheet from present time, see Annex A.

It is well known the "monetarist" influence in this policy devise, grounded on modeling the separated course of nominal and real variables, where the standard procedure is to have a look on the financial sector and other on the "real economy" (idem) with the a-priori made that "inflation is a monetary phenomenon". This, still, would surely be an equivocal sentence of the positivist science of economics, as this also relies on the a-priori exclusion of "phenomenon" and "essence" observations, result of their mutual identity in the language of maths[31].

ECB decisions are mainly about interest rate setting and the extension of market intervention and policy do not represent much more *que des affaires du mecánisme*. We will go, next, thru the reasonings of open market operations, standing facilities and the money reserves to be able to make a quantitative and qualitative appreciation of policy in these crisis years.

A. Open market operations

Pre-crisis common policy operations consisted mainly of auctions of central bank credit-money in order to regulate the level of liquidity reserves of eurosystem counterparts, and target short-term interest rates. These have the english names of main refinancing operations (MROs) and longer-term refinancing operations (LTROs), with chronological extensions from one week to three months. Currently these operations lost its central role to ones with longer duration: from one to thirty-six months. Additionally, debt market purchase operations were established to soften the market woes of sovereign titles.

[31] 2010's Jacques Sapir conference *Why mainstream economists have been unable to understand the current crisis* applies similar reasoning as ours, based on the ontology of economics of the British Tony Lawson.

B. Standing facilities

Standing facilities worked in pre-crisis years as overnight operations to manage short-term deficits and excesses of liquidity from the ECB counterparts – marginal lending facility and deposit facility, respectively. Currently, these are combined with the weekly auctions collecting the liquidity originated from market bonds purchase.

C. Reserves maintenance

Eurosystem is nominally a fractional reserve system, but its central banks became some of the monetary authorities with the lowest reserve requirement in the world, when in 1999 set a reserve coefficient, to mainly deposits and "money market paper" of banks, of 2%. Crisis also changed the accomplishment of this institute, as the macro-level of excess reserves become higher than required reserves.

D. Appreciation

D1.The framework of the money policy setting proceeds from the ECB's economic and monetary analysis: mainly GDP figures in the first case and the evolution of monetary aggregate and credit growth in the second. The bankers' addresses to the public also systematically draw on fiscal policy instructions to euro-states, and broader market economy policies,

> "as regards fiscal policies, governments should not unravel efforts to reduce deficits and put debt ratios in a downward path .. in terms of economic policies product market reforms to increase competitiveness will facilitate the creation of new business, support the tradable goods sector and foster job creation, while high unemployment rates require decisive structural reforms to reduce rigidities in labor markets and to increase labor demand." (Draghi, 2013)

The nature of this speech does not vary much in time

> "all countries should take advantage of the current economic recovery to consolidate fiscal balances (...) as regards structural reforms the Governing Council stresses the need to raise the potential growth rate of the euro area, to foster incentives to work and to strengthen the euro area's capacity to absorb chocks. Comprehensive reform measures to ensure a fully operational internal market, a higher degree of wage and price flexibility, and a more favorable business environment would offer new opportunities for firms and workers and promote investment, innovation and job creation." (Trichet, 2006)

The instrumental view of policy is focused on a trade-off between GDP growth and inflation. Their stances are labeled as "accommodative", "neutral" and "tight", where the first is to be the most favorable to growth and the last aimed at reduce inflation. The key instruments are ECB interest rates and, in this crisis time, enhanced support of money-liquidity to counterparts. More recently, the ECB communication introduced "forward guidance", whereby the Governing Council signals a time commitment to interest rates

> "the Governing Council confirms that it is expected the key ECB interest rates to remain at present or lower levels for an extended period of time" (Draghi, 2013)

where the sensible difference to former *posture* is made

> "as I have said several times, we are in a posture of strong vigilance today. I also remind you that, as far as the medium term is concerned, we will do what is necessary. We do not pre-commit ex ante, neither to doing nor to not doing something." (Trichet, 2006)

The European Central Bank received much criticism in the upspring of the financial crisis, as it maintained it exclusive focus in "price stability", threatened by rising oil prices, whereas financial markets already endured several stress. The first cut to the main refinancing operations rate only occurred in 8 October 2008.

The ECB (2013a) site presents a time-line of the interaction of ECB and ECB officials with the crisis worth noting. The first revelations of assets losses occurred in the end of 2006. The Financial Times quotes Trichet in January, the following year Davos Conference, where these events where then also first valued, saying that

> "current conditions in global financial markets look potentially 'unstable', suggesting that investors need to prepare themselves to a significant 'repricing' of some assets .. the recent explosion of structured financial products and derivatives had made it more difficult for regulators and investors to judge the current risks in the financial system." (FT, 29.01.2007)

Pricing and repricing is a core business of finance these days, a tiny proof of speculation. The article proceeds, quoting others making the conscious assessment of the true reality

> "many investment bankers - and some regulators and economists - argued in some sessions at last week's meeting in Davos that the growth of the $450,000bn derivatives sector has been beneficial, since it has helped reduce market volatility this decade and made the system more resilient to shocks by spreading credit risk… However, other officials fear that these instruments may now be raising leverage and risk-taking in the system to dangerous levels, and keeping the cost of borrowing at artificially low levels - thus increasing the chance of future financial crises. A host of senior policymakers admitted that it has become hard for them to track the risks created by these products because the sector is opaque, much activity occurs in unregulated hedge funds, and products shift across markets rapidly - and between the boundaries of national central banks… Malcolm Knight, managing director of the Bank for International Settlements, said: 'Financial innovation has produced vehicles for leverage which are very hard to measure'." (ibid)

Above mentioned Jacques Sapir (2010) delivered a good reasoning of this result, pointing to "a new consensus" in macroeconomics making chief central banks to focus their attentions in a inflation target, and assuming that deregulation and liberalization of financial markets would promote pricing efficiency from rational expectations agents. This eventually undermined the capability of public authorities to respond to situations of stress, as risk distribution of portfolios and financial links between institutions become unknown. This ultimately would also point to the failure to incorporate the view that economic uncertainty is not reducible to the calculation of individual risk, *en route* with Keynes' philosophy[32].

One of the most prominent manifestations of this is the retraction of financial transactions, as money-liquidity holders hoard it in fear. During 2007, the ECB established thereof re-financing operations with longer maturity and also US dollar liquidity-providing operations.

The year of 2008 brings the bankruptcy of Lehman Brothers, the american investment bank. The ECB further decides on new liquidity-providing operations and in October decides to lower interest rates. The directive-rate of main refinancing operations will reach a minimum of 1% in May 2009. See Annex B for the time-table of ECB rates. In June 2009, an asset purchase program for the amount of €60 billion, is established

> "the purchase will be conducted in both the primary and secondary markets … in order to be eligible for purchase under the programme, covered bonds must be eligible for use as collateral for Eurosystem credit operations (…) the counterparties eligible to the purchase program are those eligible for the Eurosystem's credit operations, as well as euro area-based counterparties used by the Eurosystem for the investment of its euro denominated portfolios" (ECB, 2009)

this program will have two extensions, the first in May 2010, whereby the ECB decided

[32] Sapir himself finalizes his reflection advocating for another notion of rationality, this having the proper name of "good reason" (Sapir, 2010).

> "to conduct interventions in the euro area public and private debt securities markets (..) to ensure depth and liquidity in those market segments which are dysfunctional (…) in order to sterilize the impact of the above interventions, specific operations will be conducted to re-absorb the liquidity injected .. this will ensure that the monetary policy stance will not be affected" (ECB, 2010)

and the second in November 2011. The September 2012 announce of the establishment of the Outright Monetary Transactions (OMT) program is the last valuable demarche as regards market intervention. These are

> "eurosystem's outright transactions in secondary sovereign bond markets that aim at safeguarding an appropriate monetary policy transmission and the singleness of the monetary policy." (ECB, 2012)

D2. There is now need to see some of these developments explained by ECB officials' eyes before making a more detailed quantitative assessment of Eurosystem balance sheet. In December 2011, Vice-Governor Constâncio (2011) made a speech in a Frankfurt Conference, where he recognized the Eurosystem "responsibility to contribute to financial stability", by providing liquidity to sound institutions in stress times. Still more saying that "most central banks have performed such a role as financial lender of last resort to the banking sector in history" (ibid). The official further stresses the difference between unconventional measures used by ECB that are a "complement other than a substitute, of standard interest rate decisions" and others', notably FED, "because quantitative easing is designed as a substitute for standard interest rate policy when central bank rates have reached levels close to their zero lower bound" (ibid).

Making a comparison of balance sheets at that time, marks also that assets purchase programs of central banks, amount to 1,9% of euro GDP, against 13,7% in England, and 11,4% in US. The total expansion of balance sheets is nevertheless of 88% in Eurosystem, 219% for FED, and 191% as regards BoE. Hence, in order to synthesize these evolutions, further points

> "central bank reserves are held by banks and are not part of money held by the non-financial sector, hence not, per se, an inflationary type of liquidity. There is no acceptable theory linking in a necessary way the monetary base created by central banks to inflation. Nevertheless, it is argued by some that financial institutions would be free to instantly transform their loans from the central bank into credit to the non-financial sector. This fits into the old theoretical view about the credit multiplier according to which the sequence of money creation goes from the primary liquidity created by central banks to total money supply created by banks via their credit decisions. In reality the sequence works more in the opposite direction with banks taking first their credit decisions and then looking for the necessary funding and reserves of central bank money." (ibid)

the Portuguese making the deepest insight in the economic theory, when recognizing the non-inflationary nature of central banks reserves and revoking the outdated theory of the money multiplier.

More recently, another member of the executive board (Coeuré, 2013), reflects on the announce of the OMT program. It is recognized that it *per se* had a positive impact in finance markets, without "printing a single euro". The official resuming that

> "in any economy, the government bond market plays a prominent role in the transmission of monetary policy and ultimately matters for the effective achievement of the central bank's objective – in our case, price stability [.. nevertheless] OMTs are not going to interfere with the pricing of sovereign bonds on the basis of economic fundamentals and the respective credit and liquidity risk of the sovereign." (ibid)

Or like the ECB bankers are now used to recognize, the program must be "market led", further arguing for assigning to the market the correct "incentives for reform", although it would seem that this reasoning fails some aristotelic principles of identity and no-contradiction

> "the argument on incentive compatibility goes as follows: sovereign bond markets act as a disciplining device; if governments adopt imprudent economic policies they face higher interest rates in the market; as a consequence, they are forced to take corrective action. But the incentive for such corrective action is undermined if the central bank shields governments from market pressure. In this case, governments can, to some extent, choose whether they adopt painful fiscal and structural adjustment – or delay their reform efforts and just count on further support from the central bank. On a general level, this argument is convincing. Certainly, the euro area needs an active and freely functioning government bond market, and lack of market discipline was one of the failures that have led to the crisis." (ibid)

Or this is just tricky phraseology. Markets cannot be the ones that failed and at the same time the only capable of delivering the discipline. Here ideology lacks the support of accurate thinking. Nevertheless, the *oikos'*-professional[33] proceeds revealing the state of the art over the two relevant economic balances

> "the economic rationale of the monetary financing prohibition is clear: as history has shown, central banks cannot ensure price stability if they have to permanently make up for weak performance in other policy domains. (…) Hence, the design of OMTs clearly prevents a scenario of harmful central bank support, or fiscal dominance over the central bank that has motivated the monetary financing prohibition; (…) To be clear: OMTs would never be used to indiscriminately push down government bond spreads. (…) central bank independence and a clear focus on price stability are necessary but not sufficient to ensure monetary dominance. The fiscal authority must be ready and willing to adjust its revenues and primary spending to stabilize its debt at any level of the interest rate that the central bank may choose. In academic parlance, for monetary policy to remain active, fiscal policy needs to be passive, or 'Ricardian'." (ibid)

[33] Once again we would point for the etymology. Economy comes from the Greek *oikonomos*, to manage an household, *Oikos* is house, which would necessarily make us sensible to the influence of the "house" established mental setting in judging reality and policy.

Where mainstream economics, now making a rare appeal to the historical dominium, reinforces itself, few hopes resting over at first promissory changes in a more active role of the ECB intervention in market rates.

Annex C shows the evolution of Eurosystem balance sheet figures. These are only end period shots, which will be able to direct us a sense of trend composition. We choose to take 2006. Item 5 of Assets show us ECB lending. This is credit-money against collateral, or in old saying "rediscount" of assets. Notable, on this, are the relative values of MROs and LTROs operations. From €450 billion of lending, the firsts account for 73%, and the seconds for 26%. The marginal lending facilities for less than 1%. As we know, those weights will be inverted in crisis times. Their reasoning is simple. Pre-crisis ECB money policy is structured for managing the levels of liquidity in the banking system in aiming at a short-term, or in ECB (neoclassical) parlance, "money-market interest rate"[34], whereas in crisis time, liquidity was fabricated to occur to the balance sheet difficulties of (most) euro periphery banks.

It is worth pointing, just for the historical detail, that coin is not part of Eurosystem balance sheet liabilities. Item 1 only contains banknotes in circulation. As seen above, coins are issued by states, under the approval of the ECB. In Portugal, the institution responsibly for their manufacturing is INCM – The Mint and Official Printing Office. The coins become an asset of the State and are then acquired by Bank of Portugal that puts them in circulation by means of the banking system. The difference between the cost of production and the facial-value renders the state budget a slight direct seigniorage revenue[35]. Item 2 show us other components of base money. Current accounts covering the 2% minimum reserves amounted to 99% of total, with €174 billion.

The time evolution speaks for itself. At the end of 2012, ECB lending was peaking at €1.126 billion, LTROs making for about 90%. Euro values of current-accounts and other deposits facilities reached to €924 billion, whereas the reserve coefficient was lowered to 1% in January 2012, and the absolute euro basis-requirement for its application had only a tiny increase (see Annex E: points 1,2).

[34]The overnight interest-rate is, as we know, the prime dear target for measuring policy effectiveness. See ECB (2013b: 6-9) for more details.

[35] See Annex D for a sheet of Bank of Portugal 2012 Financial Report. Metallic coins in vaults and balance, this is, not in circulation (Item 11.1), amount to over €50 million.

This annex further shows us what we could call, with an analogy, the panelboard of the central bank. Point 3 systematizes the origin of ECB liquidity, much of it from credit-money of refinancing operations; and in the following page, point 2, the ways of liquidity absorption, much of it from fixed-term deposits tender operations.

A last remark for the gold asset reevaluation in balance. Since the outset of crisis that the market-price of the metal climbed. Balance sheet value came from €176 billion in December 06 to €438 billion at end of 2012. In a stock-flows approach to money and financial values, there should be considered the impact of this valorization in the composition of ECB balance sheet: because what fundamentally matters is always to be acquainted with the treasury in hands.

IV.3 Money Emissions

History can only rely in the institutions as well as in the people. History is further not solely the motives of the economy, and economics is not the imperial science engulfing sociology, law and/or philosophy. Besides, neoclassical mainstream appears not to rely on other than the scarce intellectual of playing with the models. Understanding social action needs more conceptual resources to be able to tackle the concrete problems.

The literature review of the founding texts of modern economics, as in Keynes' or Marx's, the appraisal of accurate alternative views of economic functioning as in the theories of circuit, are an indispensable enquiry to a more realist knowledge. This section puts forward a proposal and a method for a new common European Treasury, and a kind of capital regulation, grounded on the above expositions.

A. The crisis of fiat money

Capitalist economic crises are historically recognized as times of overproduction. Marx's economics is one that seeks to enquiry these modern phenomena. His realism could, even today, be found striking

> "it is clear that there is a shortage of means of payment during a period of crisis. The convertibility of bills of exchange replaces the metamorphosis of commodities themselves (…) In a system of production, where the entire continuity of the reproduction process rests upon credit, a crisis must obviously occur – a tremendous rush for means of payment – when credit suddenly ceases and only cash payments have validity. At first glance, therefore, the whole crisis seems to be merely a credit and money crisis. And in fact it is only a question of the convertibility of bills of exchange into money. But the majority of these bills represent actual sales and purchases, whose extension far beyond the needs of society is, after all, the basis of the whole crisis. At the same time, an enormous quantity of these bills of exchange represents plain swindle, which now reaches the light of day and collapses; furthermore, unsuccessful speculation with the capital of other

> people; finally, commodity-capital which has depreciated or is completely unsaleable, or returns that can never more be realized again. The entire artificial system of forced expansion of the reproduction process cannot, of course, be remedied by having some bank, like the Bank of England, give to all the swindlers the deficient capital by means of its paper and having it buy up all the depreciated commodities at their old nominal values." (Marx, 1894:336)

Overproduction of commodities to the quantity of means of payment existing would lead to pressures of devaluation. Prices would fall, as producers and merchants want to get rid of accumulated stocks. Credit expansion will drop, because merchants and bankers will made a different assessment of risk in their books and balance sheets. Capitalist speculation and economic crisis will materialize as an irreducible risk to fiat money. So Marx additionally discards the possibility of money creation by central bank to remedy the crises with "its paper", buying all the devaluated (past) commodities or, one could add, financial assets, shadows of the latter, because in Marx's economics it is the commodities' labour-value the final guarantee of the objective value, not money *per se*. As expected, this feature of Marx's economics appears to be no longer pursuit in contemporary monetary economics, although it is still admitted that money is the general accepted general equivalent, "through which commodities express their underlying exchange-value" (Brunhoff and Duncan, 2006: 202).

The breakdown of Bretton Woods Agreement made the full recognition of world money as fiat money, but did not end the dollar's leading role. We shall say that reinforced it, as it lost its metal back and all moneys in the world went actually fiat. American external deficit continued to increase over time, and state-debt emissions were a prime mean of funding. The United States become the consumer of last resource of the world-economy. And dollar is still the money of account for main international commodities, Boston and New York stock exchanges playing the indexes of essential commodities, from oil to wheat.

Recovering Marx's view of money functions, it shall be said that state-debt replaced gold as the real money of account, mean of circulation and store of value in the world-economy, as state still is the ultimate locus/institution of the economic ruling and central banks also pursued an increase and diversification of

foreign money holdings. This reasoning is in some degree shared with Brunhoff and Duncan (ibid: 202-203). Inside the theories of circuit seen above, it can also be said that the state-debt title is the security that is deemed to be exchanged for the key local currencies responsible for international settlements.

Money base is historically then a state prerogative linked to state treasury and running deficits. Medieval control over coinage gave the sovereigns additional revenues from changing the physical or legal value of money in circulation. The arrival of modern paper-money added another revenue functional, with state-treasury agencies and later *state related banks* making emissions of paper-money of forced circulation. In the Portuguese experience, e.g., the paper-money consists at first of promissory notes representative of state debt allowed to circulate as mean of payment. Afterwards the national or Treasury bank (*Banco de Lisboa* later Bank of Portugal) become the subscriber and first dealer of public-debt titles, concomitantly having privileges as regards bank-notes emissions in a national space where unification of fiat money emissions is not present[36].

Money was and is part of national identity. The historical prestige of the British pound, the international acceptance of the American dollar, or the post-war intrinsic value of Deutsche mark are a matter of fact in money affairs. Money (coins and notes) has the symbols of countries' history, and notes in particular the signature of state personnel. Only the fall of Bretton Woods Agreement, the closure of Fort Knox as world gold reservoir, and modern central banks technical independence, shielded in the "monetarist" *doxa,* made the opportunity for disturbing money reasoning in social practice, as this is also the time of "financialization". We will next extend our essay and add a proposal for the creation of a common European Treasury, comprising a euro monetary fund.

B. The sovereign state-treasury

The economic treasury of a constitutional nation is a sovereign entity. State direct patrimony and central bank vaults are to be considered their material revetment. State is an economic entity that, for our here made purposes,

[36]Characteristics of the 19th century Portuguese monetary history are documented in Nunes and Valério (2005) and Silva and Pereira (1997).

manages state-budget and sovereign patrimony and debt. The last decades of the 20th century, and the first of 21st, where nonetheless marked by the restatement of the role of the state in the economy. "Supply-side" politics, "processes of privatization" of state-enterprise, were applied under the global name of the Washington Consensus.

The detachment of central banks from state direct finance further improved this process and the Euro is surely its frontier. State treasury also ceased to be a matter of direct hoarding, as physical vaults don't accrue and central banks become "independent". Treasury nevertheless keeps a certain status in the economic, and foremost, political speaking, still mainly in the subject of debt issuance and managing. There is a new (an opaque, for the sake) state finance that backs it, and has to come to light. It shall be denoted part of this new functional, by interweaving the modus operandi of state sovereign emissions, and the primary and secondary debt dealers role.

Difference makes the substance. Primary dealers in US are foremost related to the activities of the Federal Reserve System, in the euro to the national states debt agencies in performing state-debt emissions with no connection with the central bank. A primary dealer is mostly a bank that participates in auctions of state debt. They are market-makers, the agents that fill the book with orders of transactions and improve their efficiency. As primary dealers, their market performance is to re-sell the titles to others. In US moreover, they are FED's counterparts for monetary policy, hence one of the flanks of Bernanke's swift money-printing response to financial and economic turbulence, whereas the Euro stood in the "hands of the markets". Secondary dealers are the panoply of agents who deal in the market transactions of assets between investors and once more their role should be to add efficiency to market-transactions price, once evolving market structures are theorized as generating computational equilibriums, in the financial assets holders perpetual seek for the best return.

State prerogatives as regards the money were then purposely withdrawn in the euro build-up, but only *stictu sensu*. State never has an unbiased role in the economy. Nevertheless, the ideologues of the economics *savoir* praised central banks independence, whereas general people only late found animosity for the market finance *rapaces*. Money is after all social and economic power: for the self and in the relation to others. It is then social capital. The usurer's figure moreover

detaches itself and travels history since ancient times. In modernity, bankers are a recurring focus of social criticism. The Jew, the historical man deprived of a land-nation, being recognized in both characters, with Hitler's nazi politics of III Reich rise that made the german Jewish community one of the scapegoats of harsh economic times. The Treasury and money treasuries are thus a recurring locus of social confrontation and reactive sentiment.

History appears not to repeat itself. The political economy of austerity make the poorer, be it nations in continental Europe or the low-income classes in Britain, the targets of compulsory budgets slashes. Institutions keep playing a lovely ornament, whereas outside life becomes part of what the german philosopher Theodor Adorno once called the *beschädgit*[37] world. Herr *Schuld* surely elevating itself to the new spirit of European modernity[38]. And the human archaic punishment coexisting with the appearance of avant-garde intellect.

C. The Euro Monetary Fund

Central banks are entities of the balance sheet. Then they are also entities of double-party accounting. In the limit, they are indeed commercial entities. Their present distinctive role is that they are the monopoly suppliers of money base by means of credit-money creation.

Sovereign debt crisis inside the euro were tackled always with retard. ECB exclusive focus in the nexus interest-rates inflation, still promptly accompanied with the transient monetization of periphery banks debts (bonds, customers deposits), within the role of lender of last resort of the financial system (Constâncio, 2013), left the weakest euro-states with little support for finance. The ensuing exclusion from market direct funding, made Greece, and then Portugal, appeal to the so-called official lenders. A pool of European state loans to Greece was first established, and then replaced for the finance of the European common funds (EFSF, EFSM). Presently these are going to be replaced by the European Stability Mechanism (ESM), an emanation from an inter-governmental treaty. As seen above (Coueré, 2013), the ECB role towards the euro-states did

[37] Damaged.
[38] Schuld is a german noun for both the meaning of debt and fault.

not fundamentally change, thus compelling them to the exclusive focus in the adoption of a ricardian rule of state-budget equilibrium. This is further in line with the so-called budget-treaty. More austerity measures, spiral cuts of expenditure and income leading to accumulated recession in the economies. Besides, the European Commission plan to establish a so-called redemption fund, if agreed, would not be much more than a debt-mutualisation fund dependent on market money for mainly overindebted countries.

The Euro Monetary Fund shall then be a sovereign-debt redemption fund paid with money-base emissions. These emissions shall be of central-bank money, subject to regulated access for finance and banking settlement purposes. According to Maastricht principles of long-term debt ratios, they shall be made for debt titles above the 60% threshold. The central-bank money holdings shall hence replace the debt titles in the balances of the institutional sectors and European Treasury further be the agency for restructuring the titles with national treasuries. The Treasury shall retain the attributions of the *european stability mechanism* and replace it. It shall also acquire a close relation with European Investment Bank.

European Treasury
(ECB + EMF)

T/A	L
Gold FX Sovereign titles	Base money (currency + reserves + current account + redemption emissions)

If we should apply a metaphor in the realm of economics: debt is to be recycled in money base, not financed. That already occurred in the past. The targets will be to devaluate finance capital price-time, i.e., interest, and form a new strata of money reserve for the settlement of investment goods acquisitions, *en route* with a theory of the economic circuit.

D. *Arts* for the debt redemption

D1.There must be faced the concrete of it. Presently, euro-states obligations are in the form of negotiable and non-negotiable titles. The first are the traditional debt-obligation titles, either short or medium/long-term bonds. The second are the loans made by the official creditors: the IMF and the European Funds. These later funds make market emissions of rated-debt and then carry the money to the states in need. The IMF has a very particular form of finance that won't be dealt here, as this institution also makes the non-essential part of the lending.

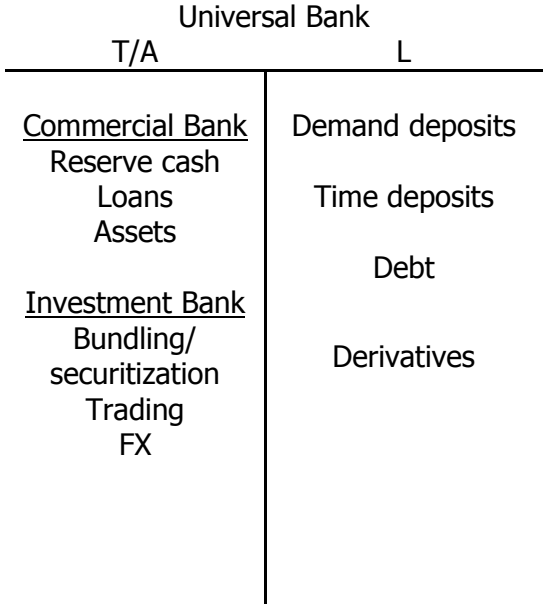
Redemption must start with buying these titles from their holders. The extension of redemption and the countries first applying should be matter of political decision. The technicalities of it are to be here already dealt. For: Greece has few or any negotiable debt. Portugal has already a considerable part of non-negotiable titles. The European funds (notably their reunion under ESM) are not a counterpart of the ECB and presently cannot be paid with central bank money. Also, these funds do not have any activity other than state lending, as part of financial rescues, and then are not in line with the principles of redemption here proposed. The European Investment Bank shall then acquire these funds and gain access to be ECB/EMF counterpart.

European Investment Bank

T/A	L
ECB/EMF money Investment loans State Loans	Capital Bank debt MEE Funds debt

European treasury shall after enhance the purchases of the debt/loan titles and be responsible for their restructuring and re-calendarization. State loans shall also progressively regain the nature of sovereign titles for market-place negotiation. In

an extended form, redemption shall comprise the broad banking apparatus, so it must here be restated its essential features



The Treasury, by means of the monetary authority, shall then "aim at the quantitative regulation of money" (Keynes, 1937b: 668), where liquidity is to rest in the active and inactive balances of banking, the first "depending on the actual and planned scales of activity" (ibid), and the second "on the state of confidence of the inactive holder of claims and assets" (ibid) or, one would further add, the overall confidence of the economic system[39]. Money reserves, i.e., liquidity preferences, will then gain a new historical proportion to aggregate wealth, a new strata for the Keynes' notion of the "cash equivalent", still in central-bank money.

The purposes of these operations are clear. The state-debt transfer to the European Treasury balance will allow for a planned restructuring of state-debt titles, importantly also their market re-dealing, and make available to the institutional sectors a reserve of money for financing investment. It is indeed a new credit-money advance by central-bank to the economy "from the back" that the banking sector shall carry on. It shall allow for appropriate regulation of productive investment, as "circuit theory, with its focus on the production process that is initiated by investment (advances) and is fully completed only after a lapse

[39] State of confidence is a prominent concept of Keynes' economics, used to be recognized in indexes of the "economic sentiment". We would point that this tends presently to be replaced for the influence of rating agencies' classification reports.

of time" (Gnos, 2006), will make the monetary authority to have a different interaction with the so-called "real economy".

This shall furthermore entail a mitigated arrangement of control for base-money capital access – which could comprise an enhanced role for the minimum or legal reserve. Also the European legal standardization of the primary and secondary dealers for sovereign-titles finance, a renewed intervention in market interest-rates, and an improved practice of international cooperation in monetary affairs.

D2. Economy is all about institutions. We are both apart Rousseau's *bon sauvage* or Defoe's *yard and book-keeper*. Money is surely one of the most institutional sides of economic life. Its role in the economic history and the integration within a more broad theory of social action shall be unequivocally explored[40]. Still, Charles Goodhart (1998) timely presented a reflection about the theory of money, when opposed the perception of the rule of power of the issuing authority, to a market-based approach of a (metal back) value of currency in pursuit of transaction costs minimization in barter. Optimal currency areas theory should then profile for the second. The economist arrives to the conclusion that this

> "has little or no predicative or explanatory capacity (…) it is unable to account for the close relationship between sovereignty and currency areas [.. its main advantages] appear to be technical, in that it leads itself better to mathematical formalization, and ideological, in that it is based on a process of private sector cost minimization, rather than a messier political economy process. (...)
>
> If, then, the key issue is the (political) relationship between control over money and sovereign power, we need to consider carefully what problems this may portend for the future Euro single area. In the Euro area, the traditional historical links between money creation and sovereignty will be broken to a unique extent." (ibid:425)

[40] Recent study *O Ouro do Brasil* by Freire Costa et all (2013) has valuable affinities with this direction, whereas in the historical past.

Time surely proved that Goodhart was right in making this alert. Institutional paralysis in European Union, and the lack of effectiveness in dealing with financial turmoil had the opposite sign to the effectiveness of British or American responses. The euro lagged behind. Its building-up did not learn with history and the proper role of institutions. This has to be tackled.

What this essay will then further propose is to set a more direct link between central bank activity, the level of liquidity reserves in the euro and the setting of market interest-rates. It goes to the encounter of the already seen Keynes' view of money authority dealing in the full range of the yield curve and a variety of titles (Keynes, 1937: 205). The favorite instrument for this policy shall be euro-states sovereign debt titles. These transactions shall also apply for regulating the euro trans-national capital flows and a more effective target of the spreads' differential. Still we assume that here we enter *terra incognita*, which obliges to a new design of money policy and market perception. These operations should complement debt redemption and restructuring.

The core statement of the proposal is then that it shall be arranged an intervention by the European Treasury to a medium/long term transfer of the euro-states debt titles above the 60% threshold to its balance on the criteria of countries' state-debt levels and their relative economic malaise. Once more, this shall not imply monetary finance of the debt stock, as at the end of planned calendar maturities, states shall serve them with market money. This will also further require a more detailed arguing. Then: a sovereign bond, as a particular instance for the general concept of "security" which comprises also companies stocks, has the intrinsic features of displaying a nominal (or face) value and a coupon-rate return. This is besides the source for much of the math finance of traders and bonds-markets dealings rooted in Keynes's speculative-motive rationale.

An illustration follows. Picture a sovereign bond of 100€ nominal value, coupon-rate of 3,5% and 5 years maturity. Inflation in the economy is 0%. The market yield is also dealing at 3,5%. The holder then is entitled to an annual return of 3,5€. The market price is obviously 100€ and has let's assume that there are no down or upward pressures. If the central bank comes to the market to purchase the bond, it will press the price to rise, and the yield to fall. The transaction is made at a slight higher price than 100€: 100,5€ or 101€. But the holder is now

holding cash and has lost the right to the coupon-rate. Nevertheless, he made the transaction arriving to the bond "present-value", because is playing same scheme of "rational expectation" as regards the future influence of the central bank activity in money interest-rates and bonds-market price/yields. Now, if he cannot find an alternative use for the cash received, matching the implicit expectation of the transaction for the short/medium term market yields, in the comparison between had keeping the bond and holding, e.g., central-bank cash, he is lowering his intertemporal wealth. Because hoarding, as in Keynes' insight, renders no interest[41]. Much of the present hoarding at the chief central-banks comes from and represents precisely this. The state treasury then becomes the locus for hoarding, for securing money-value, a mean of anchoring expectations as regards the general economic and financial risk. These being other names for the concept of liquidity preferences.

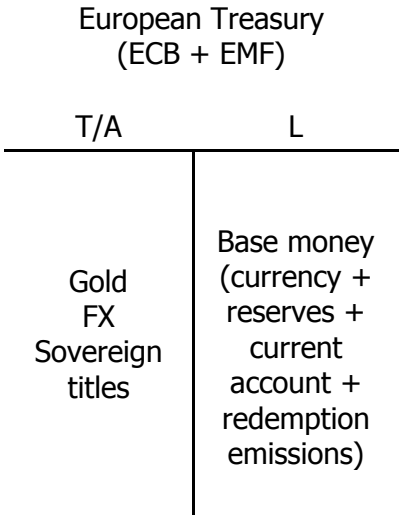
Nevertheless, once hoarded at the Treasury, money can then be the starting point for alternative regulated uses. In our proposal, the prime target of the bonds purchases is to restructure them, lower the inscribed interest-rate, i.e., cupon rate and give Treasury counterparts a regulated access to liquidity reserves for productive finance. Once more: Treasury would only loose revenues if the new cupon-rates are lower than the interest-rate of the new central-bank cash, which given the expected low central-bank base-money rates would not be the applicable[42]. Also, it shall be retained that the cost of production of this central-bank scriptural money is virtually zero, which makes for this difference to be almost net[43].

Hence newly

[41] In fact, hoarding at central banks has sometimes positive interest rates. ECB, e.g., presently combines deposits of 0% interest with others of a slight positive value – those from liquidity absorption auctions.

[42] The Treasury could inclusively in the time to come set both the assets' and liabilities' key-rates in line with the broad money policy. The realization of sterilization operations can, moreover, also be thought in this terms.

[43] Note also that this proposal refers central-bank money to both the emissions of the ECB and the EMF. If this second is to be an economic-legal entity autonomous of the first, it shall necessarily have issuance powers.



Two strata for money policy and regulation are then formed. From the assets side of the Treasury, sovereign titles serve as ECB instrument to influence market interest-rates, cross-euro capital transfers and their influence on spreads, tackling the so-called "fragmentation" of the financial market. The central role of state-bonds, as risk-free assets, for money-policy effectiveness was *ab-initio* pointed by the former Coeuré (2013). From the liabilities side as well, the creation of the new liquidity serves the purposes of EMF to influence the level of economic activity by means of investment plans and the role of the EIB. This is in accordance with the reasoning put forward by Constâncio (2011) that sets aside the money multiplier theoretical view, and shall adopt principles of the workings of financial relations of the opposite direction, where banks first make their credit decisions and then look for the necessary funds and reserves at central-bank money, this then being activated for regulated circulation as final mean of payment.[44] The insight for an active and non-neutral role of economic institutions in response to major economic depressions as the way of reducing financial and transaction costs in a market setting was furthermore long ago put forward by Bernanke (1983).

These proposals will however require a change in the conventional reasoning of the market-place, that must be political and state lead. Further, it should also comprise a reinforced cooperation in international money affairs, which obliges to an historical knowledge of the money and monetary regimes problematic.

[44] State in memory that, *by definition,* all central bank money created is to be held by the immediate counterpart, and/or ultimately, any other.

D3. Barry Eichengreen teaches that the gold-standard was a "socially constructed institution whose viability hinged on the context in which it operated" (2008:29). Cooperation between central banks was a matter of fact, be it for the Bank of England central role in rate setting (ibid:33) or currency loans between European central banks, prominent during the famous 1890 crisis. Arrangements between central and commercial banks of countries adhering to the regime (US, Germany, France, Canada, Russia, etc.) are also present. The economist hence concludes that

> "international cooperation, while not an everyday event, was critical in times of crisis. It belies the notion that the gold standard was an atomistic system. Rather, its survival depended on collaboration among central banks and governments." (ibid: 34)

The Bretton-Woods Agreement also relied in international cooperation. It accomplished the establishment of the International Monetary Fund (IMF) but also of the European Payments Union (dismissed in 1955). The dollar was the anchor currency and the US treasury exerted regulation over money-liquidity provision to the world-economy. The London Gold Pool, a cooperation between eight central banks, intervened in gold market-price from 1961 to 1968. It inclusively prompted the arrival of the swap setup, when FED-New York (as the execution authority for the US), plus nine foreign central banks and the BIS – Bank of International Settlements – opened credit lines for each other

> "the 'swap' arrangement began in the early 1960s (..) if a loan was made it had to be paid off within three months, at the same rate of exchange that had been used in the initial transaction. They were customarily used for official interventions on the international exchange market in order to counter speculative movements of hot capital. This was a very successful arrangement. At the end of 1962 the american swap network already amounted to $900 million, and in 1976 it had grown to $20 billion." (Van Der Wee, 1987: 460)

The Central Banks cooperation carries on these days. The last 2013 G-20 Summit in St. Petersburg made a revival of the swap agreements issue. These have substantially increased in crisis time. Now BRIC countries envisage to set up a 100$ billion FX Fund for foreign exchange intervention. Brazil and India also enhanced FX swap deals to respond to recent currency price woes. In light of these changes it can be envisaged that countries could be able to found a setting to disconnect reserves variation from the exchange-rate management, which would be an astonishing breakthrough in international money affairs, and another way to dispense with the Mundell's Triad.

Made this reflection, the change in market routine and judgment here proposed could at first imply erratic capital transfers between economic spaces. International cooperation would be important, because only this is able to give a top regulation and harmonization of finance relations, as in the above historical examples. Moreover, most plans for the reform of international monetary architecture rely on a supranational entity providing liquidity with supra-national money. This is for instance the proposition of the circuit theory seen above. It was also the initial role of IMF, though we few application, as in Bretton-Woods, world-liquidity was furnished *via* the American Balance of Payments. Sixties Triffin's plan also

> "envisaged the creation of a supranational bank [..that] would function as lender of last resort for the various central banks which would deposit their existing reserves there. The new bank would also issue its own international currency and this would function as the sole official reserve currency for the whole world." (ibid: 457)

The 1969 Special Drawing Rights (SDRs) creation within the IMF was the last worth noting demarche to such a supra-national liquid-asset to cope with worldwide money settlements. Otherwise with we adopt a marxist view of the money functions, the state-debt titles shall be the real-money of account, payment/purchase and hoarding in the world-economy[45].

[45] This assertion remits to the Sections III.3 / IV.3 – A, of this essay. The appropriate substance of it in marxist terms will not be total without a proper inquiry over the actual monetary standard. As a way of overcoming this lack, it can transiently be thought of worldwide state-debt titles as rendering the economic structures a propriety of

Presently, world merchandise and securities exchanges are directly settled in a few key currencies and world-liquidity is furnished directly by the main central-banks. This goes in a different direction from the traditional proposals. We are here sensible to that. Liquidity providing *via* central banks creation of credit-money and temporary swap agreements between them found now the way to ease international capital transfers. This in some way sidelines the IMF role, yet it can be held that these cooperative agreements could gain a more effective fashion, and be the starting point for a new reform in managing world-liquidity reserves. Our proposal for the workings of a European Treasury approaches also to the circuit theories' design of a European Clearing House with the difference that the regulation is exerted in a common currency by mean of banks' balances at the European Treasury. Nevertheless, the effects of the interaction with broad economic spaces cannot be ignored, the effective and calm resolution of the euro crisis requiring proper international coordination, as in a certain light, the emergent "European state", or European states alone, still lack the prominence or autonomy for critical action in the world-economy.

isomorphism. This feature is well established in the areas of mathematics, biology or sociology, still interestingly not in economics.

V. Conclusion

The world-economy, *Weltwirtschaft,* is *ein Welt für sich*; a world in itself and for itself. This is Braudel (1985:87) reasoning, which emerged from the study of historical economic life and leaves some of the dialectic of the Spirit.

The historian will also make the difference between the world-economy and the market of the world. Rome, Venice, Genoa, Amsterdam had their established distances and routes of fundamental exchanges, though products could be collected from a great variety of commercial circuits. United Kingdom had later the empire where the sun never set, and New York was the center of post II World War capitalist pole. The 21st century presents us the reality where the same Portuguese multinational can operate in inner Congo and costal China, same time that management occupies a building in Lisbon's downtown. It is the time of globalization, and the two concepts are possibly merged. The planet shows itself in capital and media-images of global circulation.

Fernand Braudel further mentions about finding the first derivative contract in the ancient Babylonia, of the payments clearing function of the medieval European fairs, or about the Italian Renaissance *élite of money*. His added value is then the endeavor to make the accurate references to the *society of the economy*, and further teach us to see a material process of life, exchanges, structures and routines. The historian is this way incapable of departing from *a desire of reality* – which also has great affinities with the spirit of this essay.

In another reflection about historical time, Braudel (1972) alert to the economic and political fools of the short-term. History is rather about tendency, where quantification is not apart from relating the structural, the conjunctural and the episodic. Social sciences are sciences of history. Economy is after all about time. If we borrow it from linguistics, it is about the synchronic and diachronic, if envisaged a social ecology, it is about routine and change. In the dialectic collective/individual it is administration (Oikonomos). Science is also part of culture and history shall give back to economics the perspective of a discipline that is within the realm of the humanities, and point to a general theory of social action.

This essay was about the euro, about reviewing the theory of money and approaching it to the present time. It is hard to find universal laws in economics. History has already proven that there is always multiple ways ahead. The

contribution we leave has no precedent, it shall be a renewed point to think the way sovereign debt crisis in the euro is being dealt and allow for different measures. Theoretically there is still ample research to be made. Nevertheless, the euro has today two major problems: the high level of public indebtedness of some countries and the so-called "fragmentation" of the financial market. This essay presents proposals in correcting both. The competent authorities should now lay an appropriate quantitative framework. Further reforming the institutions of finance is therefore the result of collective and organized action.

Annexes

1.1 Consolidated financial statement of the Eurosystem
(EUR millions)

1. Assets

	9 August 2013	16 August 2013	23 August 2013	30 August 2013	6 September 2013
Gold and gold receivables	319,968	319,968	319,968	319,969	319,969
Claims on non-euro area residents in foreign currency	250,097	250,113	250,429	249,648	251,420
Claims on euro area residents in foreign currency	24,230	22,691	22,806	23,960	23,151
Claims on non-euro area residents in euro	20,846	21,876	22,275	22,304	22,273
Lending to euro area credit institutions in euro	793,600	790,931	790,349	790,549	786,512
Main refinancing operations	99,413	97,561	97,729	97,126	95,621
Longer-term refinancing operations	693,974	693,258	692,604	693,292	688,642
Fine-tuning reverse operations	0	0	0	0	0
Structural reverse operations	0	0	0	0	0
Marginal lending facility	212	111	15	131	2,249
Credits related to margin calls	0	0	0	0	0
Other claims on euro area credit institutions in euro	84,322	82,123	80,848	79,674	75,181
Securities of euro area residents in euro	602,661	603,863	602,535	603,118	604,244
Securities held for monetary policy purposes	252,499	252,499	250,597	250,139	250,139
Other securities	350,162	351,364	351,938	352,979	354,104
General government debt in euro	28,356	28,356	28,356	28,356	28,361
Other assets	255,242	248,601	243,266	243,062	245,564
Total assets	2,379,322	2,368,521	2,360,832	2,360,639	2,356,675

2. Liabilities

	9 August 2013	16 August 2013	23 August 2013	30 August 2013	6 September 2013
Banknotes in circulation	922,944	924,226	918,346	919,379	920,395
Liabilities to euro area credit institutions in euro	553,550	555,261	535,929	533,479	539,639
Current accounts (covering the minimum reserve system)	284,035	281,539	256,148	272,260	269,181
Deposit facility	76,997	81,202	87,224	70,569	79,934
Fixed-term deposits	192,500	192,500	192,500	190,500	190,500
Fine-tuning reverse operations	0	0	0	0	0
Deposits related to margin calls	17	20	56	149	24
Other liabilities to euro area credit institutions in euro	6,431	6,476	6,139	5,565	6,303
Debt certificates issued	0	0	0	0	0
Liabilities to other euro area residents in euro	91,206	81,443	109,457	108,765	94,559
Liabilities to non-euro area residents in euro	135,755	136,797	131,783	135,006	136,406
Liabilities to euro area residents in foreign currency	1,895	1,422	1,590	1,840	1,662
Liabilities to non-euro area residents in foreign currency	5,156	5,797	5,870	5,762	6,554
Counterpart of special drawing rights allocated by the IMF	54,240	54,240	54,240	54,240	54,240
Other liabilities	233,047	227,759	222,378	221,504	221,819
Revaluation accounts	284,680	284,680	284,680	284,680	284,680
Capital and reserves	90,419	90,419	90,419	90,419	90,419
Total liabilities	2,379,322	2,368,521	2,360,832	2,360,639	2,356,675

Source: ECB.

- Annex B

1.2 Key ECB interest rates

(levels in percentages per annum; changes in percentage points)

With effect from: [1]	Deposit facility		Main refinancing operations			Marginal lending facility	
			Fixed rate tenders	Variable rate tenders			
			Fixed rate	Minimum bid rate			
	Level	Change	Level	Level	Change	Level	Change
	1	2	3	4	5	6	7
1999 1 Jan.	2.00	-	3.00	-	-	4.50	-
4 [2]	2.75	0.75	3.00	-	...	3.25	-1.25
22	2.00	-0.75	3.00	-	...	4.50	1.25
9 Apr.	1.50	-0.50	2.50	-	-0.50	3.50	-1.00
5 Nov.	2.00	0.50	3.00	-	0.50	4.00	0.50
2000 4 Feb.	2.25	0.25	3.25	-	0.25	4.25	0.25
17 Mar.	2.50	0.25	3.50	-	0.25	4.50	0.25
28 Apr.	2.75	0.25	3.75	-	0.25	4.75	0.25
9 June	3.25	0.50	4.25	-	0.50	5.25	0.50
28 [3]	3.25	...	-	4.25	...	5.25	...
1 Sep.	3.50	0.25	-	4.50	0.25	5.50	0.25
6 Oct.	3.75	0.25	-	4.75	0.25	5.75	0.25
2001 11 May	3.50	-0.25	-	4.50	-0.25	5.50	-0.25
31 Aug.	3.25	-0.25	-	4.25	-0.25	5.25	-0.25
18 Sep.	2.75	-0.50	-	3.75	-0.50	4.75	-0.50
9 Nov.	2.25	-0.50	-	3.25	-0.50	4.25	-0.50
2002 6 Dec.	1.75	-0.50	-	2.75	-0.50	3.75	-0.50
2003 7 Mar.	1.50	-0.25	-	2.50	-0.25	3.50	-0.25
6 June	1.00	-0.50	-	2.00	-0.50	3.00	-0.50
2005 6 Dec.	1.25	0.25	-	2.25	0.25	3.25	0.25
2006 8 Mar.	1.50	0.25	-	2.50	0.25	3.50	0.25
15 June	1.75	0.25	-	2.75	0.25	3.75	0.25
9 Aug.	2.00	0.25	-	3.00	0.25	4.00	0.25
11 Oct.	2.25	0.25	-	3.25	0.25	4.25	0.25
13 Dec.	2.50	0.25	-	3.50	0.25	4.50	0.25
2007 14 Mar.	2.75	0.25	-	3.75	0.25	4.75	0.25
13 June	3.00	0.25	-	4.00	0.25	5.00	0.25
2008 9 July	3.25	0.25	-	4.25	0.25	5.25	0.25
8 Oct.	2.75	-0.50	-	-	-	4.75	-0.50
9 [4]	3.25	0.50	-	-	-	4.25	-0.50
15 [5]	3.25	...	3.75	-	-0.50	4.25	...
12 Nov.	2.75	-0.50	3.25	-	-0.50	3.75	-0.50
10 Dec.	2.00	-0.75	2.50	-	-0.75	3.00	-0.75
2009 21 Jan.	1.00	-1.00	2.00	-	-0.50	3.00	...
11 Mar.	0.50	-0.50	1.50	-	-0.50	2.50	-0.50
8 Apr.	0.25	-0.25	1.25	-	-0.25	2.25	-0.25
13 May	0.25	...	1.00	-	-0.25	1.75	-0.50
2011 13 Apr.	0.50	0.25	1.25	-	0.25	2.00	0.25
13 July	0.75	0.25	1.50	-	0.25	2.25	0.25
9 Nov.	0.50	-0.25	1.25	-	-0.25	2.00	-0.25
14 Dec.	0.25	-0.25	1.00	-	-0.25	1.75	-0.25
2012 11 July	0.00	-0.25	0.75	-	-0.25	1.50	-0.25
2013 8 May	0.00	...	0.50	-	-0.25	1.00	-0.50

Source: ECB.

1) From 1 January 1999 to 9 March 2004, the date refers to the deposit and marginal lending facilities. For main refinancing operations, changes in the rate are effective from the first operation following the date indicated. The change on 18 September 2001 was effective on that same day. From 10 March 2004 onwards, the date refers both to the deposit and marginal lending facilities and to the main refinancing operations (with changes effective from the first main refinancing operation following the Governing Council decision), unless otherwise indicated.
2) On 22 December 1998 the ECB announced that, as an exceptional measure between 4 and 21 January 1999, a narrow corridor of 50 basis points would be applied between the interest rates for the marginal lending facility and the deposit facility, aimed at facilitating the transition to the new monetary regime by market participants.
3) On 8 June 2000 the ECB announced that, starting from the operation to be settled on 28 June 2000, the main refinancing operations of the Eurosystem would be conducted as variable rate tenders. The minimum bid rate refers to the minimum interest rate at which counterparties may place their bids.
4) As of 9 October 2008 the ECB reduced the standing facilities corridor from 200 basis points to 100 basis points around the interest rate on the main refinancing operations. The standing facilities corridor was restored to 200 basis points as of 21 January 2009.
5) On 8 October 2008 the ECB announced that, starting from the operation to be settled on 15 October, the weekly main refinancing operations would be carried out through a fixed rate tender procedure with full allotment at the interest rate on the main refinancing operations. This change overrode the previous decision (made on the same day) to cut by 50 basis points the minimum bid rate on the main refinancing operations conducted as variable rate tenders.

- Annex C

2006

5 CONSOLIDATED BALANCE SHEET OF THE EUROSYSTEM AS AT 31 DECEMBER 2006

(EUR MILLIONS)

ASSETS	31 DECEMBER 2006	31 DECEMBER 2005
1 Gold and gold receivables	**176,768**	**163,881**
2 Claims on non-euro area residents denominated in foreign currency	**142,288**	**154,140**
2.1 Receivables from the IMF	10,658	16,391
2.2 Balances with banks and security investments, external loans and other external assets	131,630	137,749
3 Claims on euro area residents denominated in foreign currency	**23,404**	**23,693**
4 Claims on non-euro area residents denominated in euro	**12,292**	**9,185**
4.1 Balances with banks, security investments and loans	12,292	9,185
4.2 Claims arising from the credit facility under ERM II	0	0
5 Lending to euro area credit institutions related to monetary policy operations denominated in euro	**450,541**	**405,966**
5.1 Main refinancing operations	330,453	315,000
5.2 Longer-term refinancing operations	120,000	90,017
5.3 Fine-tuning reverse operations	0	0
5.4 Structural reverse operations	0	0
5.5 Marginal lending facility	88	949
5.6 Credits related to margin calls	0	0
6 Other claims on euro area credit institutions denominated in euro	**11,036**	**3,636**
7 Securities of euro area residents denominated in euro	**77,614**	**92,367**
8 General government debt denominated in euro	**39,359**	**40,113**
9 Other assets	**216,728**	**145,635**
Total assets	**1,150,030**	**1,038,616**

Totals/subtotals may not add up due to rounding.

LIABILITIES	31 DECEMBER 2006	31 DECEMBER 2005
1 Banknotes in circulation	**628,238**	**565,216**
2 Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	**174,051**	**155,535**
2.1 Current accounts (covering the minimum reserve system)	173,482	155,283
2.2 Deposit facility	567	252
2.3 Fixed-term deposits	0	0
2.4 Fine-tuning reverse operations	0	0
2.5 Deposits related to margin calls	2	0
3 Other liabilities to euro area credit institutions denominated in euro	**65**	**207**
4 Debt certificates issued	**0**	**0**
5 Liabilities to other euro area residents denominated in euro	**53,374**	**41,762**
5.1 General government	45,166	34,189
5.2 Other liabilities	8,208	7,573
6 Liabilities to non-euro area residents denominated in euro	**16,614**	**13,224**
7 Liabilities to euro area residents denominated in foreign currency	**89**	**366**
8 Liabilities to non-euro area residents denominated in foreign currency	**12,621**	**8,405**
8.1 Deposits, balances and other liabilities	12,621	8,405
8.2 Liabilities arising from the credit facility under ERM II	0	0
9 Counterpart of special drawing rights allocated by the IMF	**5,582**	**5,920**
10 Other liabilities	**71,352**	**67,325**
11 Revaluation accounts	**121,887**	**119,094**
12 Capital and reserves	**66,157**	**61,562**
Total liabilities	**1,150,030**	**1,038,616**

2007/2008

5 CONSOLIDATED BALANCE SHEET OF THE EUROSYSTEM AS AT 31 DECEMBER 2008

(EUR MILLIONS)

ASSETS		31 DECEMBER 2008[1]	31 DECEMBER 2007[2]
1	**Gold and gold receivables**	**217,722**	**201,584**
2	**Claims on non-euro area residents denominated in foreign currency**	**160,372**	**139,030**
	2.1 Receivables from the IMF	13,192	9,057
	2.2 Balances with banks and security investments, external loans and other external assets	147,180	129,973
3	**Claims on euro area residents denominated in foreign currency**	**234,293**	**41,975**
4	**Claims on non-euro area residents denominated in euro**	**18,651**	**18,822**
	4.1 Balances with banks, security investments and loans	18,651	18,822
	4.2 Claims arising from the credit facility under ERM II	0	0
5	**Lending to euro area credit institutions related to monetary policy operations denominated in euro**	**860,312**	**637,178**
	5.1 Main refinancing operations	239,527	368,607
	5.2 Longer-term refinancing operations	616,662	268,477
	5.3 Fine-tuning reverse operations	0	0
	5.4 Structural reverse operations	0	0
	5.5 Marginal lending facility	4,057	91
	5.6 Credits related to margin calls	66	2
6	**Other claims on euro area credit institutions denominated in euro**	**56,988**	**23,798**
7	**Securities of euro area residents denominated in euro**	**271,196**	**143,983**
8	**General government debt denominated in euro**	**37,438**	**37,062**
9	**Other assets**	**218,134**	**264,454**
	Total assets	**2,075,107**	**1,507,887**

Totals/subtotals may not add up due to rounding.

1 Consolidated figures as at 31.12.2008 also include the Central Bank of Cyprus and the Central Bank of Malta which have been members of the Eurosystem since 01.01.2008.

2 Comparative data as at 31.12.2007 has been restated to include reclassifications which took place on 31.12.2008.

LIABILITIES		31 DECEMBER 2008	31 DECEMBER 2007
1	**Banknotes in circulation**	**762,921**	**676,678**
2	**Liabilities to euro area credit institutions related to monetary policy operations denominated in euro**	**492,310**	**379,183**
	2.1 Current accounts (covering the minimum reserve system)	291,710	267,337
	2.2 Deposit facility	200,487	8,831
	2.3 Fixed-term deposits	0	101,580
	2.4 Fine-tuning reverse operations	0	0
	2.5 Deposits related to margin calls	113	1,435
3	**Other liabilities to euro area credit institutions denominated in euro**	**328**	**126**
4	**Debt certificates issued**	**0**	**0**
5	**Liabilities to other euro area residents denominated in euro**	**91,077**	**46,183**
	5.1 General government	83,282	38,115
	5.2 Other liabilities	7,794	8,069
6	**Liabilities to non-euro area residents denominated in euro**	**293,592**	**45,094**
7	**Liabilities to euro area residents denominated in foreign currency**	**5,723**	**2,490**
8	**Liabilities to non-euro area residents denominated in foreign currency**	**10,258**	**15,553**
	8.1 Deposits, balances and other liabilities	10,258	15,553
	8.2 Liabilities arising from the credit facility under ERM II	0	0
9	**Counterpart of special drawing rights allocated by the IMF**	**5,465**	**5,279**
10	**Other liabilities**	**166,500**	**123,076**
11	**Revaluation accounts**	**175,735**	**147,123**
12	**Capital and reserves**	**71,200**	**67,101**
Total liabilities		**2,075,107**	**1,507,887**

6 CONSOLIDATED BALANCE SHEET OF THE EUROSYSTEM AS AT 31 DECEMBER 2010

(EUR MILLIONS)

ASSETS		31 DECEMBER 2010	31 DECEMBER 2009
1	**Gold and gold receivables**	**367,402**	**266,919**
2	**Claims on non-euro area residents denominated in foreign currency**	**224,001**	**195,479**
2.1	Receivables from the IMF	71,319	62,799
2.2	Balances with banks and security investments, external loans and other external assets	152,681	132,680
3	**Claims on euro area residents denominated in foreign currency**	**26,940**	**32,151**
4	**Claims on non-euro area residents denominated in euro**	**22,603**	**15,193**
4.1	Balances with banks, security investments and loans	22,603	15,193
4.2	Claims arising from the credit facility under ERM II	0	0
5	**Lending to euro area credit institutions related to monetary policy operations denominated in euro**	**546,747**	**749,890**
5.1	Main refinancing operations	227,865	79,277
5.2	Longer-term refinancing operations	298,217	669,297
5.3	Fine-tuning reverse operations	20,623	0
5.4	Structural reverse operations	0	0
5.5	Marginal lending facility	25	1,289
5.6	Credits related to margin calls	17	27
6	**Other claims on euro area credit institutions denominated in euro**	**45,655**	**26,282**
7	**Securities of euro area residents denominated in euro**	**457,415**	**328,652**
7.1	Securities held for monetary policy purposes	134,829	28,782
7.2	Other securities	322,586	299,870
8	**General government debt denominated in euro**	**34,954**	**36,171**
9	**Other assets**	**276,493**	**252,288**
Total assets		**2,002,210**	**1,903,024**

Totals/subtotals may not add up due to rounding.

LIABILITIES		31 DECEMBER 2010	31 DECEMBER 2009
1	**Banknotes in circulation**	**839,702**	**806,522**
2	**Liabilities to euro area credit institutions related to monetary policy operations denominated in euro**	**378,008**	**395,614**
	2.1 Current accounts (covering the minimum reserve system)	212,739	233,490
	2.2 Deposit facility	104,458	162,117
	2.3 Fixed-term deposits	60,784	0
	2.4 Fine-tuning reverse operations	0	0
	2.5 Deposits related to margin calls	27	6
3	**Other liabilities to euro area credit institutions denominated in euro**	**2,808**	**340**
4	**Debt certificates issued**	**0**	**0**
5	**Liabilities to other euro area residents denominated in euro**	**79,792**	**129,730**
	5.1 General government	71,685	120,495
	5.2 Other liabilities	8,107	9,235
6	**Liabilities to non-euro area residents denominated in euro**	**47,703**	**46,769**
7	**Liabilities to euro area residents denominated in foreign currency**	**1,995**	**4,032**
8	**Liabilities to non-euro area residents denominated in foreign currency**	**14,346**	**9,616**
	8.1 Deposits, balances and other liabilities	14,346	9,616
	8.2 Liabilities arising from the credit facility under ERM II	0	0
9	**Counterpart of special drawing rights allocated by the IMF**	**54,480**	**51,249**
10	**Other liabilities**	**172,388**	**164,082**
11	**Revaluation accounts**	**331,510**	**220,101**
12	**Capital and reserves**	**79,479**	**74,969**
	Total liabilities	**2,002,210**	**1,903,024**

CONSOLIDATED BALANCE SHEET OF THE EUROSYSTEM AS AT 31 DECEMBER 2012

(EUR MILLIONS)[1]

ASSETS		31 DECEMBER 2012	31 DECEMBER 2011[2]
1	**Gold and gold receivables**	**438,686**	**423,458**
2	**Claims on non-euro area residents denominated in foreign currency**	**250,771**	**244,623**
	2.1 Receivables from the IMF	86,980	85,655
	2.2 Balances with banks and security investments, external loans and other external assets	163,791	158,968
3	**Claims on euro area residents denominated in foreign currency**	**32,727**	**98,226**
4	**Claims on non-euro area residents denominated in euro**	**19,069**	**25,355**
	4.1 Balances with banks, security investments and loans	19,069	25,355
	4.2 Claims arising from the credit facility under ERM II	0	0
5	**Lending to euro area credit institutions related to monetary policy operations denominated in euro**	**1,126,019**	**863,568**
	5.1 Main refinancing operations	89,661	144,755
	5.2 Longer-term refinancing operations	1,035,771	703,894
	5.3 Fine-tuning reverse operations	0	0
	5.4 Structural reverse operations	0	0
	5.5 Marginal lending facility	587	14,823
	5.6 Credits related to margin calls	0	97
6	**Other claims on euro area credit institutions denominated in euro**	**202,764**	**176,490**
7	**Securities of euro area residents denominated in euro**	**586,133**	**618,764**
	7.1 Securities held for monetary policy purposes	277,153	273,854
	7.2 Other securities	308,979	344,910
8	**General government debt denominated in euro**	**29,961**	**33,926**
9	**Other assets**	**276,582**	**248,860**
	Total assets	**2,962,712**	**2,733,270**

1 Totals/subtotals may not add up due to rounding.
2 Comparative data as at 31 December 2011 have been restated to include reclassifications which took place in the week ending 20 April 2012 in order to harmonise under asset item 6 the disclosure of the emergency liquidity assistance (ELA) provided by Eurosystem central banks to domestic credit institutions (see also the press release accompanying the weekly consolidated financial statement of the Eurosystem as at 20 April 2012).

LIABILITIES		31 DECEMBER 2012	31 DECEMBER 2011
1	**Banknotes in circulation**	**912,592**	**888,676**
2	**Liabilities to euro area credit institutions related to monetary policy operations denominated in euro**	**925,386**	**849,477**
	2.1 Current accounts (covering the minimum reserve system)	447,112	223,539
	2.2 Deposit facility	280,219	413,882
	2.3 Fixed-term deposits	197,559	211,000
	2.4 Fine-tuning reverse operations	0	0
	2.5 Deposits related to margin calls	496	1,056
3	**Other liabilities to euro area credit institutions denominated in euro**	**6,688**	**2,423**
4	**Debt certificates issued**	**0**	**0**
5	**Liabilities to other euro area residents denominated in euro**	**135,655**	**79,726**
	5.1 General government	95,341	65,590
	5.2 Other liabilities	40,314	14,137
6	**Liabilities to non-euro area residents denominated in euro**	**184,484**	**156,876**
7	**Liabilities to euro area residents denominated in foreign currency**	**3,629**	**4,546**
8	**Liabilities to non-euro area residents denominated in foreign currency**	**6,226**	**9,027**
	8.1 Deposits, balances and other liabilities	6,226	9,027
	8.2 Liabilities arising from the credit facility under ERM II	0	0
9	**Counterpart of special drawing rights allocated by the IMF**	**54,952**	**55,942**
10	**Other liabilities**	**237,605**	**209,646**
11	**Revaluation accounts**	**407,373**	**394,013**
12	**Capital and reserves**	**88,122**	**82,918**
	Total liabilities	**2,962,712**	**2,733,270**

- Annex D

2. DEMONSTRAÇÕES FINANCEIRAS

BALANÇO DO BANCO DE PORTUGAL

ATIVO	Notas	31/12/2012			31/12/2011 Reexpresso	31/12/2011
		Ativo bruto	Depreciações, amortizações e imparidades	Ativo líquido	Ativo líquido	Ativo líquido
1. Ouro e ouro a receber	2	**15 509 114**	-	**15 509 114**	**14 964 159**	**14 964 159**
2. Ativos externos em ME		**1 663 495**	-	**1 663 495**	**1 524 468**	**1 524 468**
2.1. Fundo Monetário Internacional	3	1 241 500	-	1 241 500	1 262 970	1 262 970
2.2. Depósitos, títulos e outras aplicações externas em ME	4	421 995	-	421 995	261 497	261 497
3. Ativos internos em ME	4	**448 673**	-	**448 673**	**332 363**	**332 363**
4. Ativos externos em euros	5	**511 637**		**511 637**	**693 923**	**693 923**
4.1. Depósitos, títulos e empréstimos		511 637		511 637	693 923	693 923
4.2. Ativos res. facilidade de crédito ao abrigo do Mec. taxa de câmbio II (MTC II)		-	-	-	-	-
5. Financiamento às IC da área euro relacionado com operações de política monetária em euros	6	**52 783 910**	-	**52 783 910**	**46 001 500**	**46 001 500**
5.1. Operações principais de refinanciamento		3 523 000	-	3 523 000	6 976 000	6 976 000
5.2. Operações de refinanciamento de prazo alargado		49 260 910	-	49 260 910	39 025 500	39 025 500
5.3. Operações ocasionais de regularização de liquidez		-	-	-	-	-
5.4. Ajustamento estrutural de liquidez		-	-	-	-	-
5.5. Facilidade marginal de cedência		-	-	-	-	-
5.6. Créditos relacionados com valor de cobertura adicional		-	-	-	-	-
6. Outros ativos internos em euros	5	**58 435**	-	**58 435**	**164**	**164**
7. Títulos internos denominados em euros		**14 816 394**	-	**14 816 394**	**15 925 261**	**15 925 261**
7.1. Títulos detidos para fins de política monetária	7	6 984 254	-	6 984 254	7 268 817	7 268 817
7.2. Outros títulos internos denominados em euros	5	7 832 140	-	7 832 140	8 656 444	8 656 444
9. Ativos sobre o Eurosistema	8	**26 346 681**	-	**26 346 681**	**23 018 975**	**23 018 975**
9.1. Participação no capital do BCE		201 933	-	201 933	172 760	172 760
9.2. Ativos reserva transferidos para o BCE		1 008 345	-	1 008 345	1 008 345	1 008 345
9.3. Ativos relacionados com contas *TARGET* (líq.)		-	-	-	-	-
9.4. Ativos relacionados com a emissão de notas (líq.)		25 024 918	-	25 024 918	21 820 552	21 820 552
9.5. Outros ativos sobre o Eurosistema (líq.)		111 485	-	111 485	17 319	17 319
10. Valores a cobrar		**4**	-	**4**	**17**	**17**
11. Outros ativos		**7 548 177**	**280 388**	**7 267 789**	**7 307 536**	**7 307 536**
11.1. Moeda metálica		50 097	-	50 097	46 537	46 537
11.2. Ativos fixos tangíveis e intangíveis	9	333 662	206 478	127 184	123 065	123 065
11.3. Outros ativos financeiros	10	5 822 689	-	5 822 689	6 144 941	6 144 941
11.4. Variações patrimoniais de operações extrapatrimoniais		-	-	-	-	-
11.5. Acréscimos e diferimentos	11	910 240	-	910 240	775 872	775 872
11.6. Contas diversas e de regularização	12/19	431 488	73 910	357 579	217 121	217 121
Total de depreciações e amortizações		-	206 478	-	-	-
Total de imparidades	19	-	73 910	-	-	-
Total do ativo		**119 686 522**	**280 388**	**119 406 134**	**109 768 366**	**109 768 366**

Milhares de euros

Passivo, diferenças de reavaliação, provisão para riscos gerais e capital próprio	Notas	31/12/2012	31/12/2011 Reexpresso	31/12/2011
1. Notas em circulação	13	21 003 305	20 451 773	20 451 773
2. Responsabilidades para com as IC – Operações de política monetária em euros	14	8 135 794	5 691 371	5 691 371
2.1. Depósitos à ordem de IC (suj. a controlo de reservas mínimas)		3 846 051	3 284 118	3 284 118
2.2. Facilidade de depósito		4 289 742	2 406 403	2 406 403
2.3. Depósitos a prazo		-	-	-
2.4. Acordos de recompra – regularização de liquidez		-	-	-
2.5. Depósitos por ajustamento colateral em op. de cedência		-	850	850
3. Outras responsabilidades p/ com IC da área euro em euros		-	-	-
5. Responsabilidades internas p/ com outras entidades em euros	15	5 483 618	4 869 372	4 869 372
5.1. Responsabilidades para com o setor público		5 223 337	4 743 253	4 743 253
5.2. Outras responsabilidades		260 282	126 119	126 119
6. Responsabilidades externas em euros	16	426	336	336
7. Responsabilidades internas em ME		-	-	-
8. Responsabilidades externas em ME		-	-	-
8.1. Depósitos e outras responsabilidades		-	-	-
8.2. Responsabilidades res. facilidade de crédito ao abrigo do MTC II		-	-	-
9. Atribuição de Direitos de Saque Especiais pelo FMI	3	940 110	957 046	957 046
10. Responsabilidades para com o Eurosistema	8	66 025 846	60 964 229	60 964 229
10.1. Resp. com o BCE pela emissão de certificados de dívida		-	-	-
10.2. Responsabilidades relacionadas com contas *TARGET* (líq.)		66 025 846	60 923 110	60 923 110
10.3. Responsabilidades relacionadas com a emissão de notas (líq.)		-	-	-
10.4. Outras responsabilidades para com o Eurosistema (líq.)		-	41 120	41 120
11. Diversas		355 091	597 677	516 119
11.1. Variações patrimoniais de operações extrapatrimoniais		-	-	-
11.2. Acréscimos e diferimentos	17	63 247	85 848	85 848
11.3. Responsabilidades diversas	18	291 843	511 829	430 270
12. Provisões	19	7622	23 334	2 947 338
13. Diferenças de reavaliação	20	12 657 389	12 061 292	12 061 292
14. Provisão para riscos gerais	21	3 191 622	2 924 004	-
15. Capital próprio		1 156 156	1 196 549	1 278 324
15.1. Capital		1000	1000	1000
15.2. Reservas e resultados transitados		1 155 156	1 195 549	1 277 324
16. Resultado líquido do período		449 154	31 382	31 165
Total do passivo, diferenças de reavaliação, provisão para riscos gerais e capital próprio		119 406 134	109 768 366	109 768 366

O DIRETOR DO DEPARTAMENTO DE CONTABILIDADE E CONTROLO
José Pedro Silva Ferreira

Nota: Os totais / subtotais incluídos nas demonstrações financeiras e nas notas explicativas podem não coincidir devido a arredondamentos, uma vez que os valores estão apresentados em milhares de euros.

- Annex E

1.4 Minimum reserve and liquidity statistics

(EUR billions; period averages of daily positions, unless otherwise indicated; interest rates as percentages per annum)

1. Reserve base of credit institutions subject to reserve requirements

Reserve base as at (end of period):	Total	Liabilities to which a positive reserve coefficient is applied[1]		Liabilities to which a 0% reserve coefficient is applied		
		Overnight deposits and deposits with an agreed maturity or notice period of up to 2 years	Debt securities issued with a maturity of up to 2 years	Deposits with an agreed maturity or notice period of over 2 years	Repos	Debt securities issued with a maturity of over 2 years
	1	2	3	4	5	6
2009	18,318.2	9,808.5	760.4	2,475.7	1,170.1	4,103.5
2010	18,948.1	9,962.6	644.3	2,683.3	1,335.4	4,322.5
2011	18,970.0	9,790.9	687.7	2,781.2	1,303.5	4,406.8
2012	18,564.7	9,971.7	637.5	2,583.9	1,163.1	4,208.4
2013 Feb.	18,689.3	9,899.3	635.7	2,562.3	1,368.4	4,223.7
Mar.	18,689.6	9,951.8	626.1	2,580.0	1,382.3	4,149.5
Apr.	18,676.1	9,928.0	626.5	2,574.1	1,437.0	4,110.5
May	18,639.0	9,884.9	610.0	2,571.8	1,496.7	4,075.6
June	18,540.3	9,948.3	593.5	2,531.5	1,426.0	4,041.1

2. Reserve maintenance

Maintenance period ending on:	Required reserves	Credit institutions' current accounts	Excess reserves	Deficiencies	Interest rate on minimum reserves
	1	2	3	4	5
2009	210.2	211.4	1.2	0.0	1.00
2010	211.8	212.5	0.7	0.5	1.00
2011	207.7	212.2	4.5	0.0	1.25
2012	106.4	509.9	403.5	0.0	0.75
2013 9 Apr.	104.9	346.0	241.1	0.0	0.75
7 May	104.9	322.2	217.3	0.0	0.75
11 June	105.3	300.3	195.0	0.0	0.50
9 July	105.1	286.5	181.4	0.0	0.50
6 Aug.	104.5	269.6	165.1	0.0	0.50
10 Sep.	104.9	.	.	.	.

3. Liquidity

Maintenance period ending on:	Liquidity-providing factors					Liquidity-absorbing factors					Credit institutions' current accounts	Base money
	Monetary policy operations of the Eurosystem											
	Eurosystem's net assets in gold and foreign currency	Main refinancing operations	Longer-term refinancing operations	Marginal lending facility	Other liquidity-providing operations[2]	Deposit facility	Other liquidity-absorbing operations[3]	Banknotes in circulation	Central government deposits with the Eurosystem	Other factors (net)		
	1	2	3	4	5	6	7	8	9	10	11	12
2009	407.6	55.8	593.4	0.7	24.6	65.7	9.9	775.2	150.1	-130.2	211.4	1,052.3
2010	511.1	179.5	336.3	1.9	130.4	44.7	70.8	815.9	94.4	-79.1	212.5	1,073.1
2011	622.1	238.0	389.0	4.4	260.3	253.7	200.5	869.4	63.8	-85.9	212.2	1,335.3
2012	708.0	74.0	1,044.1	1.6	277.3	231.8	208.5	889.3	121.1	144.5	509.9	1,631.0
2013 12 Mar.	655.7	130.5	843.2	0.9	269.9	145.3	205.5	880.5	78.8	187.1	403.0	1,428.8
9 Apr.	656.8	123.7	782.9	0.5	269.1	133.8	205.5	889.2	89.7	168.7	346.0	1,369.1
7 May	657.3	113.0	749.9	0.9	265.7	114.5	204.3	897.1	82.5	166.2	322.2	1,333.8
11 June	656.0	104.7	728.4	0.5	259.9	90.5	199.4	904.1	83.1	172.3	300.3	1,294.9
9 July	615.9	108.8	708.0	1.3	256.4	92.1	195.0	909.3	92.5	115.1	286.5	1,287.9
6 Aug.	532.3	104.5	698.6	0.2	255.0	82.6	195.5	917.6	97.1	28.2	269.6	1,269.8

Source: ECB.

1) A coefficient of 1% is applied as of the maintenance period beginning on 18 January 2012. A coefficient of 2% is applied to all previous maintenance periods.
2) Includes liquidity provided under the Eurosystem's covered bond purchase programmes and the Eurosystem's Securities Markets Programme.
3) Includes liquidity absorbed as a result of the Eurosystem's foreign exchange swap operations.
For more information, please see: http://www.ecb.europa.eu/mopo/liq/html/index.en.html

1.3 Eurosystem monetary policy operations allotted through tender procedures [1), 2)]

(EUR millions; interest rates in percentages per annum)

1. Main and longer-term refinancing operations [3)]

Date of settlement	Bids (amount)	Number of participants	Allotment (amount)	Fixed rate tender procedures	Variable rate tender procedures			Running for (...) days
				Fixed rate	Minimum bid rate	Marginal rate [4)]	Weighted average rate	
	1	2	3	4	5	6	7	8
	Main refinancing operations							
2013 29 May	103,192	63	103,192	0.50	-	-	-	7
5 June	103,020	70	103,020	0.50	-	-	-	7
12	108,332	70	108,332	0.50	-	-	-	7
19	102,040	73	102,040	0.50	-	-	-	7
26	117,310	99	117,310	0.50	-	-	-	7
3 July	107,696	78	107,696	0.50	-	-	-	7
10	102,064	70	102,064	0.50	-	-	-	7
17	104,427	73	104,427	0.50	-	-	-	7
24	102,302	76	102,302	0.50	-	-	-	7
31	109,163	78	109,163	0.50	-	-	-	7
7 Aug.	99,413	73	99,413	0.50	-	-	-	7
14	97,561	71	97,561	0.50	-	-	-	7
21	97,729	64	97,729	0.50	-	-	-	7
28	97,126	63	97,126	0.50	-	-	-	7
4 Sep.	95,621	66	95,621	0.50	-	-	-	7
	Longer-term refinancing operations [5)]							
2013 13 Mar.	4,208	19	4,208	0.75	-	-	-	28
28	9,113	46	9,113	0.61	-	-	-	91
10 Apr.	5,159	17	5,159	0.75	-	-	-	28
25	2,977	40	2,977	0.53	-	-	-	98
8 May	5,230	17	5,230	0.50	-	-	-	35
30	5,830	36	5,830	0.50	-	-	-	91
12 June	3,591	20	3,591	0.50	-	-	-	28
27 [6)]	9,477	50	9,477	.	-	-	-	91
10 July	3,536	21	3,536	0.50	-	-	-	28
1 Aug. [6)]	2,683	43	2,683	.	-	-	-	91
7	3,910	24	3,910	0.50	-	-	-	35
29 [6)]	6,823	38	6,823	.	-	-	-	91

2. Other tender operations

Date of settlement	Type of operation	Bids (amount)	Number of participants	Allotment (amount)	Fixed rate tender procedures	Variable rate tender procedures				Running for (...) days
					Fixed rate	Minimum bid rate	Maximum bid rate	Marginal rate [4)]	Weighted average rate	
	1	2	3	4	5	6	7	8	9	10
2013 29 May	Collection of fixed-term deposits	235,125	89	197,000	-	-	0.50	0.15	0.07	7
5 June	Collection of fixed-term deposits	276,043	106	197,000	-	-	0.50	0.09	0.07	7
12	Collection of fixed-term deposits	278,426	101	195,000	-	-	0.50	0.08	0.07	7
19	Collection of fixed-term deposits	251,866	102	195,000	-	-	0.50	0.08	0.07	7
26	Collection of fixed-term deposits	215,280	83	195,000	-	-	0.50	0.45	0.18	7
3 July	Collection of fixed-term deposits	239,734	91	195,000	-	-	0.50	0.13	0.09	7
10	Collection of fixed-term deposits	250,588	105	195,500	-	-	0.50	0.13	0.09	7
17	Collection of fixed-term deposits	239,283	102	195,500	-	-	0.50	0.12	0.10	7
24	Collection of fixed-term deposits	231,318	106	195,500	-	-	0.50	0.14	0.11	7
31	Collection of fixed-term deposits	229,883	112	195,500	-	-	0.50	0.20	0.13	7
7 Aug.	Collection of fixed-term deposits	269,313	123	192,500	-	-	0.50	0.13	0.11	7
14	Collection of fixed-term deposits	259,301	126	192,500	-	-	0.50	0.12	0.10	7
21	Collection of fixed-term deposits	283,979	123	192,500	-	-	0.50	0.11	0.10	7
28	Collection of fixed-term deposits	287,539	123	190,500	-	-	0.50	0.13	0.11	7
4 Sep.	Collection of fixed-term deposits	314,840	133	190,500	-	-	0.50	0.10	0.09	7

Source: ECB.

1) The amounts shown may differ slightly from those in Section 1.1 owing to operations that have been allotted but not settled.
2) With effect from April 2002, split tender operations (i.e. operations with a one-week maturity conducted as standard tender procedures in parallel with a main refinancing operation) are classified as main refinancing operations.
3) On 8 June 2000 the ECB announced that, starting from the operation to be settled on 28 June 2000, the main refinancing operations of the Eurosystem would be conducted as variable rate tender procedures. The minimum bid rate refers to the minimum interest rate at which counterparties may place their bids. On 8 October 2008 the ECB announced that, starting from the operation to be settled on 15 October 2008, the weekly main refinancing operations would be carried out through a fixed rate tender procedure with full allotment at the interest rate on the main refinancing operations. On 4 March 2010 the ECB decided to return to variable rate tender procedures in the regular three-month longer-term refinancing operations, starting with the operation to be allotted on 28 April 2010 and settled on 29 April 2010.
4) In liquidity-providing (absorbing) operations, the marginal rate refers to the lowest (highest) rate at which bids were accepted.
5) For the operations settled on 22 December 2011 and 1 March 2012, after one year counterparties have the option to repay any part of the liquidity that they have been allotted in these operations, on any day that coincides with the settlement day of a main refinancing operation.
6) In this longer-term refinancing operation, the rate at which all bids are satisfied is indexed to the average minimum bid rate in the main refinancing operations over the life of the operation. The interest rates displayed for these indexed longer-term refinancing operations have been rounded to two decimal places. For the precise calculation method, please refer to the Technical Notes.

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