THE WANING OF THE QUANTITY THEORY OF MONEY

The Quantitative Easing vindicates its critics.

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The canonical three functions of money

- Unit of account, medium of exchange, store of value
- The standard $MV=PT$, or its modified form $M=kPY$, focus on the medium of exchange function, and the demand of money for transactions
- It relies on the assumptions:
- 1) the velocity of circulation is constant
- 2) the supply of money is exogenous
- 3) variations in the quantity of money have only short period effect on output
- 4) the function of money as store of value can be neglected

Rehabilitation of the QTM in 1970s

- Monetarists claim that QTM was held by Hume, Smith, Ricardo and accepted by the majority of monetary theorists thereafter

- They rehabilitated QTM from the discredit which Keynes had brought to it in the *General Theory*

- For almost 40 years the QTM regained hegemony, until the financial crisis, and the measures which followed, brought back further evidence supporting the criticism by K(eynes)K(ahn)K(aldor)

Outline

- In this paper I address three issues:

- 1) The Quantitative Eeasing (QE) as a controlled experiment which allows us finally dispose of the QTM.

- 2) The soundness of the arguments against the QTM in the KKK tradition.

- 3) The QTM was not the approach shared by all economists before Keynes. Also Ricardo had a different view.

The Quantitative Easing Experiment

- QE experiment is giving us exceptional data to test the validity of the QTM

- The unprecedented expansion of money base by the BOJ, FED and ECB have not produced an increase in the price level

- In face on the evidence of no link between monetary expansion and inflation, "financial frictions" together with "zero-interest rate lower nominal bound" are resorted to as the means to rescue the QTM

- As in the case of the "multiplier", also for the QTM recently there has been a recantation of previously held views.
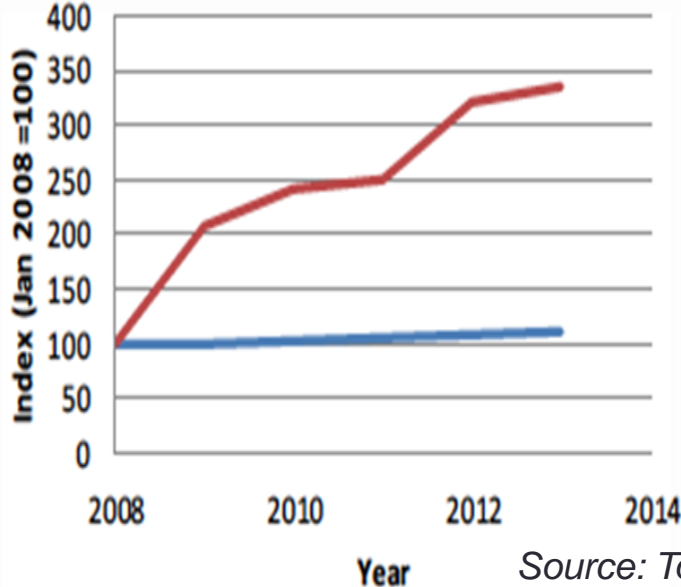
USA since 2008

Japan since 2001

USA
-**H.3**- *FED*
Aggregate Reserves of Depository Institutions
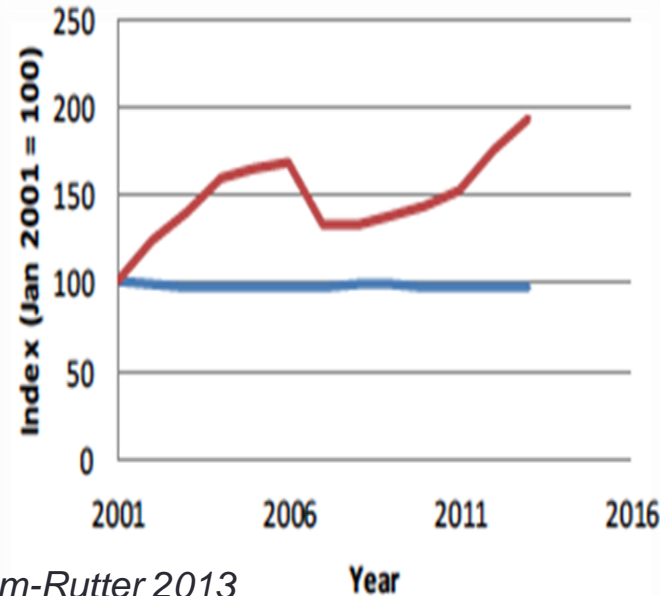-**CPI -** *US Department of Labour Statistics*
Consumer Price Index

Japan
-**Monetary base -** *BoJ*
Banknotes in Circulation + Coins in Circulation + Current Account Balances (Current Account Deposits in the Bank of Japan)
-**CPI -** *Official Statistics of Japan*
Consumer Price Index

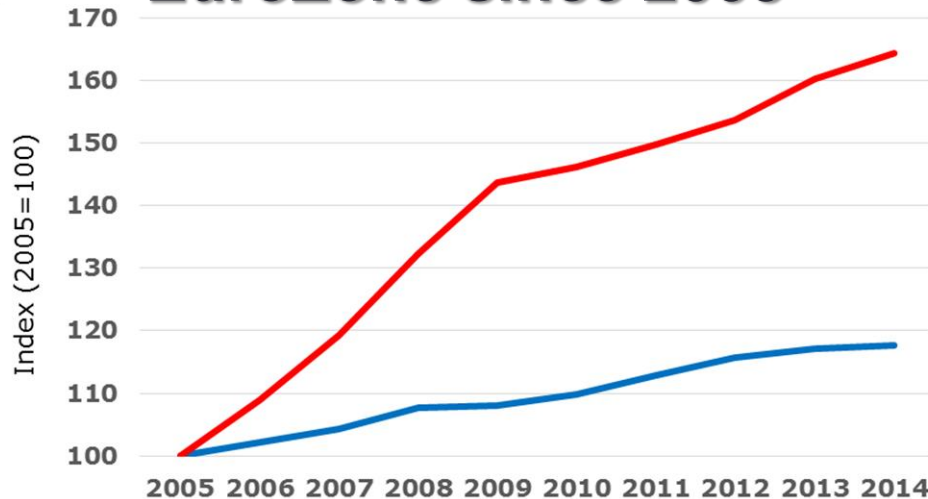*Source: Tom-Rutter 2013*

EuroZone since 2005

EuroZone
-**M2 -** *ECB*
Currency in circulation + Overnight deposits + Deposits with an agreed maturity up to 2 years + Deposits redeemable at a period of notice up to 3 months
-**HICP** -*Eurostat*
Harmonised Index of Consumer Prices

Source: European Central Bank, Eurostat

Liquidity preference vs. QTM

- When money is being held as a store of value at the margin, the money banks receive from QE is primarily padding out their cash reserves, without it ever really entering the economy

- Far from contributing to money creation, the financial system has acted as a bottomless sink for the liquidity injections of the central banks

- Each increase in the supply of money has been absorbed by the increase in the demand for money

- Liquidity preference theory rather than QTM offers better explanation of what has been going on.

Arguments against the QTM in the 1930s

- How did the Liquidity Preference theory develop?
- Keynes: "It was Mr. Kahn who first attacked the relation of the general level of prices to wages in the same way as that in which that of particular prices has always been handled, namely as a problem of demand and supply in the short period rather than as a result to be derived from monetary factors"(*GT*, Appendix 3: 400fn)
- The multiplier article was the first step towards a theory of price level determination based on aggregate supply and demand curves

R.F. Kahn's early opposition to the QTM

- Letter to Keynes from USA (1933):

- "I am thinking that the only way to save humanity is to lead a campaign against the Quantity Theory"

- Paper to the Political Economy Club (1933):

- "the scourge which goes by the name of the Quantity Theory of Money has swept the country"
- "my visit to the United States inclines me to ascribe most of the ills of the world to the Quantity Theory of Money"

Quantity Equation for Hairpins

Kahn's "Quantity Equation for Hairpins" (as told by J.Robinson):

"Let P be the proportion of women with long hair, and T the total number of women. Let $1/V$ be the daily loss of hairpins by each woman with long hair, and M the daily output of hairpins. Then

$$M = PT / V$$

Now suppose that the Pope, regarding bobbed hair as contrary to good morals, wishes to increase the proportion of long haired women in the population, and asks a student of economics what he had best do. The student sets out Mr. Kahn's equation, and explains it to the Pope. "All you need do", he says, "is to increase M, the daily output of hairpins (for instance, you might give a subsidy to the factories) and the number of long-haired women is bound to increase". The Pope is not quite convinced. "Or, of course", the student adds, "if you could persuade the long-haired women to be less careless, V would increase, and the effect would be the same as though the output of hairpins had increased".(Robinson [1933] 1951: 54)

In the General Theory

- Preface to the French edition of the *General Theory:*

"The following analysis registers my final escape from the confusions of the Quantity Theory, which once entangled me. I regard the price level as a whole as being determined in precisely the same way as individual prices; that is to say under the influence of supply and demand […]. The quantity of money determines the supply of liquid resources, and hence the rate of interest." (*GT*: xxxiv-xxxv)

- Chapter 21, *GT*: generalized statement of the QTM, as valid only in very special circumstances

Four Elasticities

- Keynes's "generalized statement" of the QTM:

$$e = \frac{M}{P}\frac{dP}{dM} = e_d\left[1 - e_e e_o\left(1 - e_w\right)\right]$$

- or:

$$e = e_d\left[1 - e_e e_o + e_e e_o e_w\right]$$

- where

$$e_d = \frac{M}{D}\frac{dD}{dM}, \quad e_e = \frac{D}{N}\frac{dN}{dD}, \quad e_o = \frac{D}{O}\frac{dO}{dD}, \quad e_w = \frac{D}{W}\frac{dW}{dD}$$

- D = effective demand, M = money, W = money wages, O = output

QTM applies under very special conditions

- The transmission mechanism from monetary to real factors is broken down into a series of steps, which may lead to very different outcomes.
- The QTM result

$$e = \frac{M}{P}\frac{dP}{dM} = 1$$

occurs under very *special conditions,* i.e depending of particular values of the four elasticities:

- e_d :liquidity factors, which determine the demand for money in each situation;
- e_w :labour factors, which determine the extent to which money-wages are raised as employment increases;
- $e_e e_o$:physical factors, which determine the rate of decreasing returns as more employment is applied to the existing equipment.

- Far from being a general proposition it applies in circumstances which rarely occur

Against Monetarism: Kahn and Kaldor in the 1970s

- Since their Evidence to the Radcliffe Report, both Kahn and Kaldor drew attention to the notion of the *state of liquidity* as opposed to the *quantity of money*

- Kahn: the liquidity preference is not a relationship which the monetary authorities can assume to be stable

- Kaldor: the money supply is not exogenous: it becomes a passive element, varying automatically with the demand for credit

- KKK's approach to the functions of money provides an alternative to the QTM

Rescuing Ricardo from Monetarism

- Ricardo was not the forerunner of the QTM, nor did he approach the determination of the quantity of money on a dual basis:

- a) by the value of gold in terms of commodities and by the prices of commodities to be circulated, both being determined by their cost of production; b) by a strict QTM, when only inconvertible paper money circulated

- The so-called duality in Ricardo's monetary theory is in fact the result of a misunderstanding

- Ricardo was adhering to the *same* theory, whether with convertible or inconvertible paper money, with or without coins in circulation, both in the short and in the long run

The Function of Money in Ricardo

- Gold was not money, but the standard of money
- Role of the standard: to regulate the quantity of money
- Profitability conditions for *arbitraging in gold in the domestic and foreign markets* provided the adjusting mechanism of the quantity of money
- If the price of gold in the domestic market rose (fell) above (below) the official price, gold was bought (sold to) at the Bank or coins were melted and sold on the market, thereby lowering (increasing) its price and decreasing (increasing) the quantity of money in circulation
- If the market rate of exchange, i.e. the price of foreign bills of exchange, fell (rose) relatively to the ratio between the official prices of gold in the two countries gold was exported (imported), the quantity of money was reduced (increased) to what Ricardo called its "natural" level

The role of the standard

- Ricardo defined the "natural" quantity as the "right" level, but he did not specify what this level was, nor did he bring in supply and demand to determine it

- He denied that one could know precisely what the quantity of money ought to be at a given moment of time and his policy recommendations were always consistent with this premise:

- "The issuers of paper money should regulate their issues solely by the price of bullion, and never by the quantity of their paper in circulation. The quantity can never be too great nor too little, while it preserves the same value as the standard" (*Works*, IV: 64)

- The point of having a standard was precisely this: the price signal bypasses the need for a quantity target

Reactions to the evidence from the QE experiment

- Referring to a panel comprising yearly data from 1991 to 2005 across 105 countries, Graaf (2008) wrote:

"these analyses leave no doubt that for our sample period, i.e. the years since 1991, the classical proportionality theorem does not hold."

- Vice President of ECB, Costancio referring to QE, stated:

"No technical traditional monetarist channels were operating. They did not work either in other cases. This implies that QE is not about the traditional monetarist channels but about new ones, namely signalling and portfolio rebalancing due to financial frictions."

Conclusions

- QE experiment : markets have been flooded with liquidity, but rather than inflation we have witnessed a general deflation, because of a liquidity trap environment in which the banking system operated

- The liquidity preference theory offers the explanation *the store of value function of money* -because money is the most liquid asset- is the key determinant of the demand for money in a context of uncertainty

- If money is being held as a store of value at the margin, the money which banks receive from the Central Banks it never really enters the economy and therefore have little impact both on prices and real income

continued

- While all major central banks now, at least in practical terms, have shelved it since the early 2000s, the QTM has not been dislodged in textbooks and in the mainstream economic discourse

- So far, too little acknowledgement has been given to the critics of the QTM

- It is time to set the record straight, as far as Ricardo is concerned, and to re-habilitate the insights of Maynard Keynes, Richard Kahn and Nicky Kaldor