Keynes' Theory of the Interest Rate: A Critical Approach

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SUMMARY

John M. Keynes – the author of General Theory of Employment, Interest and Money – assumed that the interest rate is the price which brings into equilibrium the desire to hold wealth in cash with the supply of cash resources, and the reward for parting with liquidity at the same time. He indicated liquidity preference as the key element of the theory of the demand for money, whereas the supply of money is a discretionary factor, i.e. depending on the policy pursued by monetary authorities. It has been proven that such an approach comes with at least three errors: inconsistency in defining the rate of interest, vicious circle in arguing and departure from the economics of value for functional adequacies.

Key words: interest rate; liquidity preference; demand for money; classical school, Keynes

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INTRODUCTION

For over 50 years the works of John Maynard Keynes have exerted a profound influence on the development of economic thought in Europe and North America. Today Keynesianism is at the cornerstone of the majority of principles of economic policy pursued by states. *The General Theory of Employment, Interest and Money* (first published in 1936) provided the grounds on which a system of political and economic indications has been developed.

The theory of the interest rate is a key element of the Keynes' system. According to Keynes the rate of interest determines the level of employment. It affects the money supply and, thus, the investment processes in the economy. In a system in which the rate of interest is shaped by a central monetary institution, it appears as a powerful tool to influence the allocation of resources, including production.

How did Keynes define the interest rate? Is the theory of interest rate a good cognitive tool? Is the state's interference in the economy by means of the monetary interest rate (i.e. the discount rate) theoretically substantiated? Addressing this seems to be of prime importance for the investigation of the reasons behind today's financial and economic crises.

THE THEORY OF INTEREST RATE

The Keynesian theory of interest rate refers to the market interest rate, i.e. the rate 'governing the terms on which funds are being currently supplied' (Keynes, 1960, p. 165)[1].

According to Keynes, the market interest rate depends on the demand and supply of money. It is the price which brings into balance the willingness to hold wealth in the form of cash with the supply of cash[2]. The author of *The General Theory of Employment, Interest and Money*[3] puts forward the rate of interest as 'the reward for parting with liquidity for a special period of time' (167) or 'for not-hoarding' (182). The interest rate is 'a measure of unwillingness of those who possess money to part with their liquid control over it' (167). Keynes proves that to view the rate of interest as a price which brings the demand for savings into equality with

1 Keynes also uses the concept of the so-called marginal efficiency of capital, maintained at a level equal to the monetary rate of interest. The marginal efficiency of capital curve shows under which terms funds are sought for new investments. The schedule of the marginal efficiency of capital may be said to govern the terms at which loanable funds are demanded for the purpose of new investment (Keynes, 1960, p. 165).

2 'It is a "price" which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash' (Keynes, 1960, p.167).

3 In this paper, when further references are made to *The General Theory…,* henceforth only the page number will be given.

the supply of savings would be a mistake (165, 167)[4]. It cannot be assumed that it constitutes compensation for saving, either[5]. According to Keynes, the key variable determining the interest rate is the form in which the command over future consumption is reserved, i.e. the fact whether an individual wishes to hold it in a liquid form (cash), or if he or she is ready to part with control of cash for a specified period of time (166)[6]. Keynes refers to this "factor" as liquidity preference. Liquidity preference is 'a potentiality or functional tendency, which fixes the quantity of money which the public will hold when the rate of interest is given; so that if r is the rate of interest, M the quantity of money and L the function of liquidity preference, we have $M=L(r)$' (168).

Keynes distinguishes three liquidity preference motives for holding one's resources in cash[7]: the transaction motive[8], the precautionary motive[9] and the speculative motive[10] (170).

If M_1 is the amount of cash held to satisfy the transaction and precautionary motives, and M_2 the amount held to satisfy the speculative motive, then the demand for money is shown in the equation (199):

$$M = M_1 + M_2 \qquad (1)$$

Keynes argues that the demand for money to satisfy the transaction and precautionary motives changes in response to changes in income, while the demand due to the speculative motive is sensitive to changes in interest rate. *The General Theory* ... reads as follows: (...) 'the aggregate demand for money to satisfy the speculative motive usually shows a continuous response to gradual changes in interest rate; i.e. there is a continuous curve relating changes in the demand for money to satisfy the speculative motive and changes in the interest rate as given by changes in the prices of bonds and debts of various maturities' (197).Thus, the categories M_1 and M_2 are attributed by Keynes with two liquidity functions: L_1 and L_2, where L_1 is the function of the level of income Y and L_2 depends on the relation between the current interest rate and the market forecasts[11]. The demand for money is expressed as a function of the choice of liquidity L_1 and L_2.

Liquidity preference takes the following form (199):

$$M= M_1+ M_2= L_1(Y) + L_2(r) \qquad (2)$$

By incorporating the concept of liquidity preference into the theory of demand for money, Keynes argued that money supply in conjunction with liquidity preference determines the rate of interest (Rączkowski, 1948, p. 135; Taylor, 1958, p. 293; Duwendag and others, 1995, p. 188; Schaal, 1996, p. 232). Money supply is predetermined by the state policy – Keynes treats it as a discretionary factor[12].

Although Keynes proposed a purely "monetary" theory of the interest rate, this rate is linked to the marginal efficiency of capital. A decline in monetary interest rate "positively" affects the marginal efficiency of capital: entrepreneurs expand their investments, and global demand, employment and income are on an increase. A high level of interest rate in turn inhibits the production of goods and fosters unemployment.

Given the above, the monetary authorities should – in Keynes' opinion – use the monetary interest rate for stimulating productivity and employment as well as for satisfying liquidity preference L_1 and L_2. Growth in employment can be achieved through changes in the money supply – by lowering the interest rate. A reduction in the interest rate increases investment rates and changes the propensity to consume, i.e. liquidity preference. A rise in income Y translates into a rise in cash resources L_1, and a declining interest rate into an increase in cash inventories which secure funds for speculative purposes L_2.

Keynes emphasizes that monetary authorities influence investment processes not only by regulating the amount of money; they also influence the decisions that individuals make with regard to liquidity, as driven by speculative motive[13]. In his theory of the interest rate

[4] 'The rate of interest is not a "price" which brings into equilibrium the demand for resources to invest with the readiness to abstain from present consumption' (167).

[5] 'It should be obvious that the rate of interest cannot be a return to saving or waiting as such' (166).

[6] In Keynes' theory, psychological time preferences of an individual determine the level of income that will be used for current or future consumption.

[7] A person can maintain their resources in liquid or non-liquid form as capital goods or securities which represent them. Various reasons (three liquidity-preference motives) underlie an individual's desire to hold a certain part of their wealth in cash.

[8] The amount of cash reserves held by households and businesses for current transactions. The transaction motive is related to the consumption of income by households (the income motive) and the need for maintaining liquidity linked with business operation (the business motive).

[9] The amount of cash reserves held for unforeseen contingencies. The precautionary motive encourages people to hold liquid funds to meet unforeseen expenses that might occur.

[10] The amount of cash reserves held for speculative purposes. Uncertainty as regards the future course of the interest rate encourages individuals to enter into speculative transactions. Such transactions are either *bearish* or *bullish* with regard to the rate of interest. In the "General Theory ..." a special place is occupied by the speculative motive, which can be used by monetary authorities as a means for achieving their policy objectives.

[11] The size of demand M_2 is determined not by the absolute level of the interest rate, but by its deviation from the level that is considered safe.

[12] The supply of money is a value that enables influencing (decrease/increase) the level of interest rate.

[13] '(...) it is by playing on the speculative motive that monetary management (or, in the absence of management chance changes in the quantity of money) is brought to bear on the economic system' (196). 'Open-market operations may (...) influence the

Keynes criticized the output of the classics in this area. The criticism focused on an erroneous take on the rate of interest which – according to Keynes – was due to disregarding the impact that income has on the level of the interest rate.

Keynes’ theory of the interest rate was approved by the majority of economists; on the one hand this entailed rejecting the previously held doctrine, and on the other accepting a different way of arguing in economics.

This analysis is a critical study of the theory of the interest rate based on the concept of liquidity preference introduced by Keynes.

THE RATE OF INTEREST AS PRICE AND COMPENSATION

In *The General Theory of Employment, Interest and Money*, Keynes defines the interest rate in three different ways.

The rate of interest is a measure of reluctance to part with money in liquid form and, at the same time, as the price which brings into balance the desire to hold wealth in the form of cash with the supply of cash. Keynes also captures the rate of interest as a compensation for parting with liquidity or as a reward for not-hoarding.

Let us check such a take on interest rate for consistency, i.e. *whether the rate of interest understood as a measure of reluctance to part with cash can be the price which balances the desire to hold wealth in cash with the supply of cash. Can the interest rate be price and compensation at the same time?*

Answers to these questions – if not explicitly negative – indicate that the essence of the theory of interest rate has not been formulated clearly.

If the rate of interest is the price which brings into equilibrium the desire to hold wealth in cash with the supply of cash, then this price cannot represent the actions (valuations) that are opposite (i.e. reluctance to part with cash).

If we assume that the rate of interest is a compensation for parting with liquidity – then how can the amount of this compensation be determined by the desire to hold the command for future consumption in cash*?* Liquidity preference means the choice of liquidity by the individual; not parting with liquidity.

Attention should be brought to the fact that the category of price is related to the category of supply and demand, whereas the category of compensation is not – despite its indirect reference to the concept of profit/annuity from capital. If the rate of interest is a price, its amount should be determined by the relationships between supply and demand which assume the valuation of goods (the importance of desire satisfied by a good) and their rarity. In the theory of economics the category of price is unambiguous. Let us therefore assume for a moment after Keynes that the rate of interest is the price which equilibrates the desire to hold wealth in form of cash with the available quantity of cash. Keynes’ theory of demand for money is brought down to the theory of liquidity preference. The amount of money required to satisfy the transaction and precautionary motives[14] depends on the overall activity of the economic system and the level of nominal income. Thus formulated theory does not relate the demand for money with the goods which satisfy the requirements of individuals, namely the concepts capturing valuation processes. Demand for money should be explained in terms of the demand for goods purchased using the means of exchange, whereas the demand for goods is related to the importance of the desire which a given good satisfies. In this sense, Keynes’ assumption that demand for money depends on income is non-economic. A relationship of functional adequacy exists between demand and income, precluding any causal relationships that could influence valuation processes. A situation in which the demand for money does not grow with an increase in income is possible in theory. The demand for money will not grow unless an individual has needs that could be met through the means of exchange.

Keynes’ theory of the interest rate does not explain why reluctance to part with liquidity (i.e. the choice of liquidity) generates interest rate in the meaning of compensation. *The General Theory* ... only states that the interest rate is compensation for a temporary renunciation of liquidity. Such a take on the matter is a description and provides no clarification; it explains neither the cause nor the essence of interest rate understood as compensation for parting with liquidity. This aspect also challenges the Keynes’ assumption that the rate of interest can be a reward for parting with liquidity (cash), but cannot be a reward for saving (which was assumed by the classical school according to Keynes).

The line of argument above shows that there is no denying the vagueness of the concept of interest rate viewed in terms of the category of price and the category of compensation.

LIQUIDITY PREFERENCE VS. THE RATE OF INTEREST

The concept of liquidity preference is instrumental in Keynes’ theory of the interest rate. Let us summarize

rate of interest through both channels; since they may not only change the volume of money, but may also give rise to changed expectations concerning the future policy of Central Bank or of the Government’ (197).

[14] The speculative motive was disregarded for the purposes of analysis.

– the key insight from this theory is that what determines the rate of interest is the quantity of money in conjunction with the liquidity preference. Liquidity preference is a decisive factor as regards the demand for cash requirements.

The phenomenon of liquidity preference is undoubtedly one of the most interesting elements of the theory of the interest rate by Keynes. The psychological time preferences of an individual determine the level of income allocated for current and future consumption and the form in which the so-called command over future consumption is held. An individual may aim for increasing/reducing cash resources for three motives (see above).

The General Theory of Employment, Interest and Money says that the liquidity preference is a (...) functional tendency, which fixes the quantity of money which the public will hold when the rate of interest is given (...) i.e. $M=L(r)$ (168). It should be noted, however, that the theory of interest rate viewed from such an angle comes with a logical error in proof, widely referred to as *circulus vitiosus* (vicious circle). As a dependent variable the rate of interest cannot depend on itself – the rate of interest is predicated on liquidity preference, which depends on the rate of interest. If r, namely the rate of interest, depends on M, then M cannot depend on r. The rate of interest cannot be dependent on itself. The price of potatoes cannot be explained in terms of the impact that the price of potatoes exerts on the demand for potatoes. The key law of economics is the one which says that a rise in demand for potatoes increases their price, whereas a rise in the supply of potatoes reduces their price. The theory of valuation cannot be tantamount to the description of the phenomenon within the framework of functional dependencies which represent the relationship of adequacy or co-existence of phenomena. A high price of potatoes corresponds to (is accompanied by) low demand, a low price of potatoes corresponds to a high demand. These are the relationships of correspondence, which do not explicate the reasons underlying these phenomena. The same applies to the analysis of the interest rate. If time preference determines the rate of interest, it cannot depend on it.

On top of the above, the mere notion of liquidity preference as a factor influencing the demand for money raises doubts in Keynes' theory of the rate of interest. It should be observed that liquidity preference in Keynes' theory of money is used for explaining the changes in the cash resources held by individuals. The shifts in the individual's liquidity preference which result in renunciation/resignation of or an increase in liquid cash holdings, determine, as a matter of fact, the supply of cash. An individual willing to have more cash for future consumption contributes to reducing the supply of money, whereas an individual renouncing such a possibility contributes to increasing the supply of money. This relationship is confirmed by Keynes himself – *The General Theory* ... states that 'an increased income velocity of money may be a symptom of decreased liquidity preference' (194). As a matter of fact, changes in liquidity preference result in shifts in supply relationships. They release cash resources, which increases the quantity of money in the economic system. If the rate of interest belongs to the category of price, then liquidity preference as a factor conducive to releasing the quantity of money influences the supply of money in the economy instead of demand. Keynes is acknowledged to have developed the theory of the demand for money, which he actually did not. The theory of demand for money should take into account the valuation relationships reflected in the price, which means – according to Keynes – in the interest rate.

KEYNES VS. THE CLASSICAL SCHOOL

It should be stressed at the start that in his criticism of the classical theory of the rate of interest Keynes does not present the output of the classics in this area. He refers to the representatives of neoclassical school instead, highlighting at the same time that their exposition of the rate of interest is vague and ambiguous.

The General Theory of Employment, Interest and Money provides no grounds for attacking the classical school from the standpoint adopted by the author. The classical school approached the concept of interest rate in a similar fashion as it did the issue of the valuation of goods. The rate of interest is the price that equates the demand for savings with the supply of savings. Such a take on the matter seems perfectly viable except for the otherwise reasonable doubt: are savings a good whose valuation determines the level of the rate of interest by way of demand and supply relationships?

The allegation of Keynes that 'traditional analysis is faulty because it has failed to isolate correctly the independent variables of the system' (183) is unfounded. The classics did not investigate the impact of income on savings with a view to expounding the essence and level of the interest rate. According to the classics, income is unrelated to the theory of the interest rate, i.e. it does not contribute to the theory of the interest rate because it is "divorced" from the theory of value. The focus of the classics was on the factors determining the rate of interest, i.e. on the supply and demand for savings. Keynes recognized the functional relationship between the level of income and the rate of interest and captured it as the law of cause and effect. A relationship exists between income and the rate of interest, but rather as a relationship of co-existing phenomena. A causal relationship – a law that would relate the level of income to the interest rate – is nowhere to be found here. The classical school properly recognized dependencies as the relationship of adequacy between the interest rate and the level of savings. The classical school did not address the issue of the categories of interdependence – it searched (with greater or lesser degrees of success) for the laws behind the phenomena.

It should be observed while addressing further significant differences between the approach adopted by Keynes and the classical approach that the author of the *General Theory...* introduced a holistic analysis to the theory of the interest rate in place of the classical teleological analysis. Keynes' theory refers to: '(...) the amount of money required to satisfy the transaction and precautionary motive being mainly a resultant of the general activity of the economic system and of the level of money income' (196) or '(...) to the division of the increment of cash between M_1 and M_2 in the new position of equilibrium depending on responses of investment to a reduction in the interest rate and of income to an increase in investment' (201). Keynes used aggregate quantities in his theory and finally put the theory of the interest rate down to a description of functional adequacies. Such a take on the phenomenon is unrelated to the subjects of exchange relationships, that is, the subjects that determine prices.

It should be added at this point that Keynes' view of the classics' approach to the rate of interest is very narrow and somewhat superficial. The same applies to the output of the neo-classicists in this area – although *General Theory...* leaves the reader with an impression that a comprehensive range of issues related to the interest rate theories is covered exhaustively. It should be observed that the Keynesian theory of interest rate falls in line - to some extent - with the theory of interest rate put forward by Knut Wicksell. Wicksell (1936) was the first to propose a monetary rate of interest that shapes investment processes by way of the state's active monetary policy and a fully-developed capital market.

CONCLUSION

John M. Keynes, in his book *The General Theory of Employment, Interest and Money*, proposed a purely monetary theory of the rate of interest. He assumed that the interest rate is the price which brings into equilibrium the desire to hold wealth in cash with the supply of cash resources, and the reward for parting with liquidity at the same time. Keynes indicated liquidity preference as the key element of the theory of the demand for money, whereas the supply of money was treated as a discretionary factor, i.e. depending on the policy pursued by monetary authorities. Such an approach contains at least three errors.

Firstly, the concept of the rate of interest is lacking in consistency. The interest rate as a measure of reluctance to renounce money in liquid form cannot simultaneously constitute the price which brings into balance the desire to hold wealth in cash with the supply of cash resources – the rate of interest cannot reflect the actions (valuations) that are contradictory valuations. The recognition of interest rate as a price and as compensation at the same time is also unclear. What comes to the fore is that the definition of the rate of interest is evidently ambiguous.

Secondly, Keynes makes the logical error of *circulus vitiosus* that is critical from the point of view of a scientific method – the rate of interest depends on the demand for cash resources, determined, among others, by the speculative motive, whereas the motive itself is strictly determined by the rate of interest. A dependent variable (interest rate) depends on itself. The speculative motive which determines the rate of interest and is at the same time determined by the rate of interest constitutes a fundamental element of the theory of liquidity preference and plays a key role in the theory of money and employment.

Thirdly, the demand side of the theory under analysis is erroneous. The factors which determine liquidity preference according to Keynes release or limit cash resources, which has a direct bearing on the supply of money rather than the demand for it.

While formulating the theory of the interest rate Keynes disregarded the subjects of exchange relations as regards both the theory of interest rate and the demand for money. He departed from the economics of value, i.e. from the economics based both on prices in a classical, or even neo-classical meaning. He accepted the so-called holistic method of analysis of phenomena, which enabled the introduction of the category of income into the theory of interest rate. The causal method was replaced with the analysis of functional adequacies. Keynes was a precursor of a different way of thinking and arguing in economics, fitting very well in a trend in the economics which excluded the teleological character of this science.

The most important conclusion drawn from the Keynes' theory of the rate of interest is far-reaching as regards its implied consequences. A free market does not ensure an efficient allocation of resources. The intervention of the state is necessary to prevent excessive savings that could lead to unemployment. The rate of interest is the chief tool of such an intervention. This is the conclusion that Keynes arrives at with his vaguely and inconsistently explicated rate of interest, as has been shown. This invites further study and discussion on the cognitive value of the theory of the interest rate put forward by this British scholar and politician.

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