mapub.org/mapss

MAP Social Sciences

Volume 2 / Issue 2

MAP Social Sciences (MAPSS) is an international, multi-disciplinary, peer-reviewed journal published two times a year by **MAP** - *Multidisciplinary Academic Publishing*. The journal is a platform for publication of advanced academic research in the field of social sciences.

E-ISSN: **2744-2454**

REVIEW PAPER

PARADOX OF REAL INTEREST RATE AS MACROECONOMIC EQUILIBRATING PRICE WHEN SAVINGS ARE EQUATED TO 'NEW' MONEY

Adisa Omerbegovic Arapovic

***International Burch University**, Sarajevo, Bosnia and Herzegovina*

Correspondence concerning this article should be addressed to Adisa Omerbegovic Arapovic, International Burch University, Sarajevo, Bosnia and Herzegovina.
E-mail: adisa.omerbegovic@ibu.edu.ba

ABSTRACT

We evaluate classical macroeconomic theory IS-LM model and expose the paradox of real interest rate (r) which equilibrates S (real goods and services produced and saved in the domestic economy) and I (investments) if the loanable capital is not coming only from real savings but investments can be financed through the money creation or 'money capital' generated either through the credit expansion in the banking system due to fractional reserves banking or through the open market operations by the government. If r is exogenous and lowered through monetary policy, I is expanded beyond S, which paradoxically require higher r to correct for these disbalances in macroeconomic sense. Economic and financial system should eliminate this exogenous influence on r, by separating money creation from r, so that r is left to play its equilibrating role in macroeconomic sense. Separation of r from interest rate on money is in line with prescribed prohibition of setting any fixed reward on money per se, and in general ex-ante setting of reward in productive endeavors which is also forbidden in Islamic jurisprudence. We show that classic macroeconomic theory does not expose the effect that fresh money has on saving and capital markets from the perspective of macroeconomic balance. Therefore, macroeconomic policy should concentrate on achievement of macroeconomic targets without lowering r as it is paradox to lower the return on capital and savings to promote economic growth as higher r on capital promotes investment. This is possible if ex-ante determination of reward on borrowed funds is adopted. However, the phenomena of fresh capital creation in the form of new money and its use in financing of investments should be rethought from macroeconomic perspective and overall social justice as real savings are not of equal opportunity cost as new money (capital)?

MAP Multidisciplinary Academic Publishing

MAP SOCIAL SCIENCES

Volume 2 / Issue 2

ISSN: 2744-2454/ © 2021 The Authors. Published by **MAP** - *Multidisciplinary Academic Publishing*.

Article Submitted: **12 June 2022**
Article Accepted: **29 June 2022**
Article Published: **30 June 2022**

https://doi.org/10.53880/2744-2454.2022.2.2.8

MAP SOCIAL SCIENCES Volume 2 / Issue 2

HOW TO CITE THIS ARTICLE

Omerbegovic Arapovic A. (2022). **Paradox of Real Interest Rate as Macroeconomic Equilibrating Price When Savings are Equated to 'New' Money**. MAP Social Sciences, 2(2), 8-15. doi: https://doi.org/10.53880/2744-2454.2022.2.2.8

CLASSICAL MACROECONOMIC THEORY AND REAL INTEREST RATE

The classical macroeconomic theory states that in closed economy Y (total income) is equal to total consumer spending (C), Investment (I), and government spending (G). That is:

Y=C+I+G Equation (1)

From this equation it is further derived that any income not spent represents national savings (S):

Y-C-G=S Equation (2)

Rearranging Equation 1 so that Y-C-G=I and replacing left side with S, we prove equality of savings and investment in the closed economy. That is:

S=I Equation (3)

These equations further assume national accounting and time period in which these aggregates are calculated.

It is this macroeconomic background of equality of S and I in the closed economy that is the basis for 'belief' in equilibrium real interest rate - r, which equates S and I, and brings economy to the full employment level. The market forces drive this price up or down if there is inequality of I and S, until the equilibrium is achieved where I=S, and economy is in equilibrium. 'That is the real interest rate is the essential macroeconomic price and it adjusts to clear the loanable funds market, ensuring that full employment saving equal full employment investment' (Palley, 2016, p. 6).

The classical macroeconomic theory so far assumes that all savings are represented in real goods and services produced and therefore exists in the world without money as we know it, or how macroeconomic texts denote as real, as opposite to nominal or monetary terms. The expression of goods and services in terms of their monetary value comes around from using money as medium of exchange and stating the nominal monetary value or nominal value (price) on goods and services. The process of money creation however is not assumed to alter either I or S and these values in the model remain in real terms.

The money creation however has a profound and very direct influence on market for loanable funds which is not registered in IS framework. The process of money creation in the fractional reserve banking as explained by Baeriswyl (2017) is not considered in the classical macroeconomic model. Exogeneity of money is only assumed in determination of Money Supply (MS) by monetary authorities (Wray, 1992) but these funds are not counted as source of funds in market for loanable funds. Also, the exogeneity caused by increases in MS due to credit creation in the banking system are not considered at all in money supply determination and are exogenous to the actions by the monetary authorities. Both are, however, source of money capital in the market for loanable funds.

This fresh capital in the form of money therefore enters the market for loanable funds and finances investments while assumed not to constitute the S curve in macroeconomic (equilibrium) sense. These loanable funds come to exist out of thin air through the process of credit creation by banks and open market operations by the government, and hence disturb equality of saving and investment assumed in the macro-economic framework which is based on the national accounting identity. Hence, the r as an equilibrating price which is based on equality of I and S is a theoretical concept which is taken as an axiom, but it doesn't need to hold on macroeconomic level when this fresh money is added to S as source of investment financing. In fact, money freshly created entering credit market disturbs equilibrium r that would equate saving and investment and creates disequilibrium or non-equality of I and S for a period of time. Increased S versus I which comes due to fresh money entering credit market brings r down (recently also into negative territory), completely demotivating saving and encourages asset price inflation as it encourages borrowing and inflates consumption but not necessarily productive investment. This has been seen in the recent period as negative interest rates have not brought the desired investment levels as borrowing can go towards buying non-productive assets even by firms (Palley, 2016, p. 8). This suggests the need to rethink macroeconomic theory and monetary policy in order to avoid meddling into the credit market via interest rates (nominal interest rate, i) and supports the view of authors who suggest rethinking of money creation process via financial system (Baeriswyl, 2017) in order to separate money creation from interest rates (r), so that interest rate can be left to play its true role of being

equilibrating price which brings balance between S and I. (Which must be equal in macroeconomic sense in the long run) This new r as a pure equilibrating force between I and S is in line with the Islamic economics and finance perspective. This finding is in line with Islamic finance which should avoid creation of new money through the financial system that leads to currency debasement through inflation, and is clearly opposed in Islamic jurisprudence as stressed by authorities like al-Ghazali (Islahi, 2001). Therefore, borrowed funds for investment through the banking/financial system should be guided by r (post fact determined through actual sharing of r earned on investment) to indeed play coordinating role between I and S in the macroeconomic sense.

Even though the macroeconomic theory in explaining the market for loanable funds does not separate the freshly created money funds from savings that come from real value (goods and services) produced in the economy and saved from previous production process in the national economy, these funds finance the investment process and consumption process and hence inflate I, C, and G so that constraints assumed in equilibrium model do not hold. In other words, S does not have to equal I anymore, even in the closed economy, as investment can be made from freshly created moneys by the banking system and government market open market operations (expansionary monetary policy).

Since these moneys enter the loanable funds market in the same fashion as true savings represented in monetary terms the real interest rate as opportunity cost of these funds for investors and real reward on savers is the same on both sources of funds. However, can the same real reward awarded on savings and fresh money, that came out of thin air by the power granted to the banks to generate credit in fractional reserve banking system or government actions through expansionary monetary policy, be fair? Or, in other words, can real reward on savings which are lent (let us denote it with r_s) truly equal to real reward on money (r_m)? What are the consequences of equating reward on saving with reward on money in classical macroeconomic theory? Since there should be no reward on money by itself Islamic finance has a clear-cut rule on preventing money creation and any reward on money by itself from S and reward on savings, r_s. So why does conventional economics not recognize this phenomenon? Therefore, the conventional economics as well should adjust the macroeconomic theory for this flaw in impact that these fresh money funds entering in the market for loanable funds have on the concept of macroeconomic equilibrium and negative impact it has on saving and investment. The other end extreme of this non distinction would be to denounce savings completely and allow for abundant funds to everyone based on some social contract as government and individual consumption and investment could be financed by freshly created money by the government or banking system in its totality. Why do we need savings if we could create fresh money, in other words, is the extreme end of the hidden equating of savings with fresh money.

MONETARY POLICY AND R

Macroeconomic policy states that nominal interest rate adjusted for inflation is equal to r, (or, that nominal interest rate is real interest rate plus expected inflation) which is the basis for monetary policy to manipulate nominal interest rate, i, in order to lower r and hence promote investment and spending. However, the fact that despite the presence of NIRP (negative interest rate policy) we observe that banks pay positive reward on saving (deposits) in countries with negative interest rate there is suggestion that there is difference between r_s (reward on loanable funds) and r_m. This reluctance of commercial banks to pass on negative rates to their depositors (savers) Khayat (2018) sees as presumably out of concern over a possible shift of retail deposits into cash but also it points to the fact that saved money funds equivalents put into the bank by depositor (savings) should not be equated to those funds lent at negative interest rates which abundance of money that central bank policy has created. In other words, when central bank subsidized negative interest rate policy it confirmed absurdity of equating saving and fresh money as source of funding of investment. Hence, we can also conclude that the macroeconomic theory in IS-LM framework unknowingly equates r_s and r_m as it does not recognize fresh money entering these markets when it talks of the price which equates saving and investment. However, these funds are non-existent in the macroeconomic equality of I and S and the difference in opportunity cost of savings and freshly created moneys cannot (and should not) be the same.

If monetary policy promotes lower r, while savings must be positive in order for investment to be positive, given equation 3, we cannot envision

that savings are motivated or positive if the reward on savings is negative. Negative interest rates also result in increased systemic risk (Kurowski & Rogowicz, 2017). If investment is productive and useful for society and indeed, if its usefulness is judged by the ability to grant return to society and hence is seen as desirable by the customers (citizens) in the market through the price they are willing to pay for the products that get created through this investment, then it is truly unnatural and undesirable that return to savers that enable these investments becomes negative. Hence the real reward on saving should not be brought into negative rates by the act of monetary policy.

The promoting of investment once r is determined post fact does not require lowering r as both savers and investors desire higher r once they share in these rewards post fact in predetermined ratios. Therefore, the attempt of monetary policy to promote investment through lowering of the cost of borrowed funds is logical in ex ante determination of r. The change towards post fact determination of r equates lending and investment and does not necessitate lowering of r though the monetary policy to promote investment as this is not any more a 'burden' for investors. With ex post determination of r on savings r should not exceed the r on invested capital (r_k) in the production function at any point in time, irrespective of the fact whether it is debt or equity financing and should be shared post fact or continuously between savers and investors as ICT enable real time knowledge of the economic system, investment returns etc. it will be agreeable to share in returns of the investment on agreed points in time. Future advancements in ICT and its applications to markets could provide these calculations almost in real time.

If r_s depends on r_k in macroeconomic sense, and savers share in rewards in investments, then there is interest in this rate being higher and it is paradox to try to lower the return on saved funds, which in turn demotivates savings and lowers amount available for investments. Therefore, the source of the problem is in the mechanism of ex ante determination of the cost of loanable funds which creates this faulty tendency in monetary policy. Islamic finance therefore solves this problem since it promotes ex post sharing of rewards, which can also be applied to all loanable funds including borrowing of freshly created money funds that enter the market for loanable funds due to expansionary monetary policy and money creation through the loans issued by the banking system. However, since these funds do not come from savings the right to benefit from these rewards should belong to the whole society and not be a privilege of those with rights to create money and obtain this money funds. These are revolutionary changes and political economy around them would bring tectonic changes to capitalism itself, which are in desirable direction of money capital created by the state belonging to all of citizens. It would be fairer capitalism which is desirable from today's standpoint of democracies failing due to bad outcomes from unjust outcomes from financial capitalism which gives rich rewards to those few that have access and manipulate waste amounts of fresh money funds in privately owned financial institutions.

Few authors have treated the nature of positive returns in the economy (profits) that are to be shared by investors and savers, and they connect them to the increased monetary values and treat them as monetary profits. Smithin (2016) points that Marx talked of origins of profits in macroeconomic sense as being result of expanding monetary stock. The real value-added results from new investment but unless there is additional money in the system, there can be no positive realized money profits. (This is too simplified logic as relative prices between goods and innovation award profits to some and take it away from less desirable products). The crucial question for macroeconomics is then to answer the question of how much money in the system should there be in order not to disturb the purpose of the economic activity objective and to promote healthy investments financed by new money capital which we all enjoy in terms of its benefits.

New money which could be created in electronic terms does not impact the question of how much money is held compared to other investments as this question of Money Supply-Liquidity Preference side of the macroeconomic model (demand for real money balances) talks of holding of money irrespective of ease of transfer for the purposes of economic transactions by individual agents in the economic system. However, electronic money changes Money Supply side significantly as government can alter the supply instantaneously and provide 'as much' money as is required for transactions in economic system all the time as velocity of money is very high or even unlimited. So, from classical quantity theory of money perspective where money times its velocity is equal to the nominal value of GDP (price level in the overall economy (P) times quantity of goods and services,

real GDP (Y); and where the demand for real money balances depends on velocity of money (V) and its supply (M) in Equation 4, it is very small M (currency) with very high V that can service all exchange of goods or given the nominal GDP value. Or there is all M needed since it is virtual. But keeping currency value stable so that only relative prices adjust so that there is no debasement of currency is the objective for policy makers. How is this done in this new situation of unlimited velocity (and money supply that is exogenous) remains to be answered. But with infinite velocity there is all money supply for transaction purposes and money itself becomes potentially irrelevant if it is impacting the market for loanable funds.

M*V=P*Y or (nominal GDP value) Equation (4)

Since we have shown that monetary policy which acts to reduce real interest rate on borrowed funds (savings and fresh money capital) in order to promote investment by borrowing cannot be the same rate that equates S and I in macroeconomic sense, we should clearly differentiate saved funds (from saved Y) from fresh capital that enters loanable funds market out of thin air and is hence free or at least not of equal value as savings that came from hard work. Equating the two would be injustice and would bring us to the question of why would anyone save rather than fight for distribution of free money funds to everyone?

New financial system should welcome the idea of pure savings – investment framework and 100% reserve banking while answering the question of money creation outside of the banking system-to whom those funds belong, what is the reason of their creation and what are the limits of creating such funds? That is, the monetary policy should become centered on the question of how much money should there be in the system and how to create this money outside of the banking system, that is, outside of the present system of money creation through the credit creation process by the banks.

The separation of money from interest (loanable funds price) is desirable as manipulation of r in credit market introduced by this mixture of saved and created money funds, leads to financial disbalances and macroeconomic disbalances. Recent work which promotes Aggregate Demand stimulation by directly depositing money into individual citizen accounts, and in such way boosting aggregate spending without manipulating interest rate as equilibrating price in IS framework, supports our hypothesis of macroeconomic paradox of promoting investment via manipulation of r. In fact, Baeriswyl argues that 'central banks could control consumer price inflation better by injecting money through lump-sum transfers to citizens, rather than by manipulating the credit market and interest rates. Lump-sum monetary transfers lead to less inter-sectoral distortion and less intertemporal discoordination than measures aimed at stimulating the credit market. They allow central banks to target inflation without building up financial imbalances.' (Baeriswyl, 2017, p.105)

Therefore, the fact that fresh money gives largest benefit to the first spender in the money creation process through credit generation can be solved by new money entering the system through individual citizen accounts with the central bank. The question is only how much money enters the system and to which quantity is it tied? It is doubtful that new ways of creating currency through data mining (block chain technology) are the solution given the wastes that they generate in energy or the lack of connection to something productive and of true value. But electronic money is only technological change the question of whether we can always spend out our way into the future by boosting C and G through fresh money creation by these transfers of money to citizen accounts is the same as the question of whether we could do the same with money created through credit expansion previously? The answer to this question is the same as saying should we at all keep the economy in macroeconomic balance? so that I = S? We have not been doing this but eventually there is always the real economic crisis which is brought by this disbalance created by the monetary policy? That could be the proof that we need to think through the limits of this game if we are to create stable economic (and financial) system.

CONSTRAINTS ON R_s

Theoretically, r_s can never be bigger than r_k in the Cobb-Douglas production function model. In fact, return to both investors and savers come out of this return on invested capital. Hence r_s is part of this return that invested capital obtains. The new financial system should concentrate on providing solutions for managing these (shared) returns at a system level.

The reason why expansion of money stock disturbs the market for loanable funds, and thus

why it should be avoided, is that it leads to over-consumption in asset markets and not productive investments that are useful for society, and hence, to misallocation of resources. Therefore, if investments are to be useful, they should be beneficial not due to speculative price movements of assets that are prone to bubble creation and bursts.

If we consider that r_s must be higher not lower as there is no reason in the macroeconomic sense that r_k is lower, as both savers and investors have interest that r_s and r_k are higher, then the policy of reducing r (the real cost of borrowed funds which is the other side of return to savings) to promote investment is truly a paradox. And the motivation for lowering r on borrowed funds is only because it is seen as cost which is predetermined. However, r_s must be post factual and based on sharing principle to satisfy the macroeconomic constraints and because only then can it truly be an equilibrating price of capital.

The negative interest rates on borrowed funds which have been observed for the last few years should have promoted unlimited spending and borrowing as borrowers and investors do not have cost of borrowing but receive the reward to borrow and take money now. So, what has the evidence been in terms of the reversed logic on the ex-ante cost of borrowing in the positive interest rates world when we have gone to ex-ante 'reward' on borrowing logic brough with negative interest rates world? If there is negative interest rate on borrowing, we take money today and return lesser amount of money tomorrow in real terms. (?) But with predetermined interest rate and time value of money logic and compounding of interest mechanism in-build into the logic of investors, banks, savers, we are giving back lesser amount of money but also by this logic money is worth more tomorrow compared to today's money?! So, the mechanism itself and not just direction in which it is working is bringing into economic system continuous instability. We also know that this abundancy of loanable capital has not created economic growth, prosperity, and well-being to economic systems, if we observe the outcomes now in 2022 after economic shocks of pandemics and war. The one route of escape from the above described trap is the ex-post determination of interest rates and reevaluation of compounding or time value of money as money in itself has no value and therefore has no value due to passage of time itself but from what it creates through investment and only then it earns the reward on investment which can only then be shared.

IS MACROECONOMIC FRAMEWORK, FIXED EX-ANTE RETURN ON LENDING VS. SHARED EX-POST RETURN (DEBT ALIKE EQUITY FINANCE) ASSUMPTION

If savings and investment are to be equilibrated in the macroeconomic framework through the real reward on saving this real reward cannot be known in advance since the investments return, or reward on investment, is not known in the beginning of the accounting period. The macroeconomic model does not presuppose the lending assumption and pre-determined price on lent saving funds. This construct does not follow the equilibrium logic stated above neither. It can therefore be exchanged for the investment assumption where saved funds participate in real reward on investment obtained which is adjusted until saving equals investment. In this existing ex-ante price of capital framework, the classical macroeconomic theory which assumes that there exists equilibrium between desired saving and investment brought around by real reward on these funds is fundamentally flawed. Promoting reduction of r_s to motivate investment is flawed as investment is not demotivated by the higher r_s when it is not predetermined cost on investment but share of r_k, which is desirable to be higher. Once r_s is shared between investors and savers at an aggregate macroeconomic level society is motivated to promote projects which have high value added and increase return on the saved funds. This is the benefit that prohibition of ex-ante determination of reward on funds 'lent' to investors by the savers would bring. Promoting the concept of sharing returns post factum, it promotes maximization of reward on saving and long-term macroeconomic stability. Especially as pre-determined price on saving cannot be equilibrating price that brings goods market into equilibrium.

Negative (real) interest rate observed today on money funds however assumes that savings and investment meet in the lower right quadrant with positive saving and investment and negative real reward on saving. This is paradox and hence (real reward on (fresh) money capital, r_m,) should clearly be separated from r_s in theoretical macroeconomic framework and equality between r_m and r_s assumption in IS-LM framework needs to be torn and exposed?. Our objective is not to rethink this theoretical framework with financial system of credit creation but to show that going into negative interest rate territory has clearly exposed the paradox of macroeconomic theory that has introduced monetary policy and money creation too easily

to be subsumed into savings curve (saved funds available for investment) in IS framework. In fact, current research into Negative Interest Rate Policy (NIRP) shows that negative (nominal) interest rate on money capital can create instability in the economic system by promoting search for alternate stores of value, reducing future income increase instability and more importantly cannot spur new productive investment if there is presence of other assets with higher returns. (Palley, 2016). This leads us to conclusion that money (capital) indeed should be neutral and that there should be no 'return on money' as money itself earns nothing but is purely medium of exchange and measuring rod and to benefit the economy it should have stable value. In other words, it should not be by its pure existence worth more or less in the future just due to the act of the policy makers. As even though cash is assumed to carry zero interest rate, the fact that fresh money is equal in rights as saved money funds, the money earns interest. Hence, more important is the entering of the freshly created money on equal footing as saved funds in macroeconomic sense representing past real goods and services earned and saved, which requires rethinking of the concept of saving and its usefulness?!

CONCLUSION

The money creation through credit expansion in fractional reserve banking and by government policy and paradox of real interest rate as equilibrating force in macroeconomic framework as price that brings I and S into equilibrium and hence economy into balance if money and savings are not equal, requires rethinking of the overall monetary policy and money creation and of such money funds as source of funding investment in the society. If sovereign creates the money or gives the power of money creation to the banks through the credit creation process in fractional reserve banking system then these money funds and return on them should be shared by the society as a whole and profits that stem from their use in the economy should not become the sole property of the banks and those who get the privilege of the access to these funds but should be shared by the society as a whole, as this monopoly on money creation belongs to all of us (society as a whole). Perhaps the testing of this logic and proof that its time is coming is already seen in money transfers to citizens in pandemics that were result of extremely expansionary monetary and fiscal policy after the global economic shocks caused by COVID-19 pandemics.

Advocating for separation of money from interest rate, as Baeriswyl (2017) proposes is in line with the Islamic economics perspective which claims that money capital by itself cannot earn the interest rate (has no opportunity cost by its existence). But this is not possible without rethinking the concept of ex ante and ex post reward on borrowed funds. As we have shown above, the theoretical macroeconomic framework upon which the management of nominal interest rate has been advocated and conducted through monetary policy, is flawed in assuming that r (that equates S and I) is equal to interest rate on borrowed funds, from that moment in which freshly created money is equated with S.

The time is ripe for rethinking money capital ownership as well and belonging of the rewards that are created using this money capital generated in the banking system. Current setup of financial system, including Islamic finance and banking does not answer this question. The new concept of money creation could become the basis for new capitalist model of neutral money and sharing of returns on investments based on some market mechanisms and motivations that are due to be designed by the sovereign to ensure full employment output. The economic system has to offer market mechanisms of managing real return on investments which are based on real rewards management, which in conventional economics are the closest to equity finance. Banks in the future and hence Islamic banks would also potentially become the managers of information on rewards for the savers and investors on behalf of the society. With electronic money potentially available on our smart phone and with central bank accounts their function of keeping our money balances safe is getting erased. Technological advancement has brough money to where it should be, an abundant medium of exchange neutral of concept of value by itself, and now macroeconomic theory should reinvent itself to separate money from interest rate.

REFERENCES

Baeriswyl, R. (2017). 'The Case for the Separation of Money and Credit' in Heinemann F., et.al. (2017). (eds.). *Monetary Policy, Financial Crisis, and the Macroeconomy.* Springer International Publishing.

Islahi, A.A. (2001). An Analytical study of al-Ghazali's Thought on Money and Interest. *MPRA Paper,* No. 41438.

Khayat, G.A. (2018). The Impact Of Setting Negative Policy Rates On Banking Flows And Exchange Rates. *Economic Modelling*, *68*, 1-10.

Kurowski, L.K. & Rogowicz, K. (2017). Negative Interest Rates As Systemic Risk Event. *Finance Research Letters, 22*, 153-157.

Palley, T.I. (2016). Why Negative Interest Rate Policy (NIRP) Is Ineffective And Dangerous. *Real-World Economics Review*, *76,* 5-15.

Smithin, J. (2016). Endogenous Money, Fiscal Policy, Interest Rates and the Exchange Rate Regime: A Comment on Palley, Tymoigne and Wray. *Review of Political Economy*, *28*(1), 64-78.

Wray, L.R. (1992). Alternative Approaches to Money and Interest Rates. *Journal of Economic Issues*, *XXVI* (4), 1145-1178.