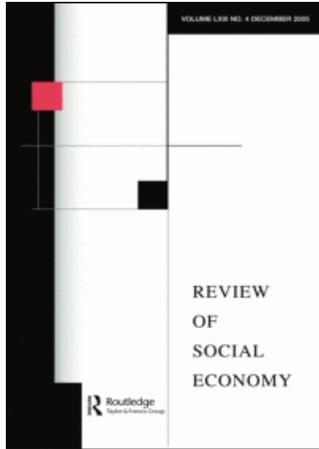


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Usamah A. Uthman ^a

^a King Fahd University of Petroleum & Minerals,

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Schumpeter, The Tax-Like Effect and The Welfare Cost of Interest*

By Usamah A. Uthman**

King Fahd University of Petroleum & Minerals

1. Introduction

Joseph Schumpeter is one renowned economist who is found to share with John Maynard Keynes some major disagreements with economic orthodoxy. One such area of disagreement is about the nature and role of interest in the economy. In *The Theory of Economic Development*, Schumpeter (1961), observes that "Interest acts as a tax upon profit."¹ In the absence of interest-based contracts, the profit share that goes to the suppliers of funds does not represent a cost item to the borrowers because it is not obligatory on borrowers under all circumstances. As an obligatory outlay on borrowers, interest represents a mark up over and above the supply price of capital assets. Schumpeter denies the idea that interest can be explained "as a kind of wages or rent," nor could it be a reward to "a third original productive factor which bears interest as labor receives wages . . ." (1961, pp. 160-61). He explains that since the entrepreneur is not necessarily an owner, "his isolation from the means of production also cuts part of the ground from under the feet of the first two variants (wages and rent)" (1961, p. 160). Interest is not a reward to a third factor like abstinence, "because such an *independent* (italics added) element does not exist, as has already been shown by Böhm-Bawerk . . ." In other words, there is not such a direct proportional relationship between interest and abstinence. Infinite abstinence does not yield infinite interest as Böhm-Bawerk explained. The entrepreneur in the most abstract definition of Schumpeter "is

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¹This paper is not intended to analyze the interest theories of either Schumpeter or Keynes. It is only meant to investigate some of the implications of the proposition that interest acts like a tax upon profit.

never the risk bearer." Entrepreneurs "have done nothing but employ existing goods to greater effect, they have carried new combinations and are entrepreneurs in our sense" (p. 133). An entrepreneur uses funds to carry out new combinations regardless of whether he borrowed them from others or from himself, as Schumpeter explains (p. 132). Also, "produced means of production" does not constitute such a third productive factor simply because of imputation and competition (pp. 161-62). In short, "interest does not adhere to (spring from) any class of concrete goods" (p. 175). What is it then? It is a monetary phenomenon that emerges from the purchasing power of money. In the sixth proposition of his theory, Schumpeter explains that "*Interest is an element in the price of purchasing power regarded as a means of control over production goods*" (p. 184). To recapitulate, *interest in the Schumpeterian theory is a product of development that finds its basis (driving force) in money and, its source in profits.* Interest is exactly like a tax levied by the government, driving a wedge between the supply and demand prices. *It is a peculiar tax as it is levied through the market and not by the government.* But what kind of tax is interest like? Assuming that the purchase of an asset is financed entirely with a loan at a fixed interest rate, the interest charge becomes like an *ad valorem* excise tax. "With *ad valorem* excise subsidy [or tax] the government pays [or charges] a certain percentage of the per unit cost of some good, or what amounts to the same thing, a specific percentage of the consumer's total expenditures on the good" (Browning & Browning, 1983, p. 105). The incidence of the tax (interest payment) depends, of course, on the relative elasticities of the supply and demand curves of capital assets. The objective of this paper is to explain Schumpeter's potent idea and investigate some of the welfare implications of the interest rate and payments.

2. Some Welfare Effects of the Interest Rate

Regardless of who bears what kind of risk of business, the fact remains that the introduction of interest reduces investment, bringing about a welfare cost to society, since it is not compensated by any gain to anybody.

The existence of interest payment is bound to kill many business opportunities because

As soon as it comes into existence many entrepreneurs are eliminated, and as it rises more and more of them disappear. For although possibilities of profit are practically unlimited, they differ in size and most of them are of course only small (Schumpeter, 1961, p. 198).

We should remember that the objective of an interest-based loan contract is to transfer the risk of business speculation from the lender to the borrower. This being the case, it makes the requisite profit rate (by the borrower) always higher than the market interest rate, which includes its own risk premium, by a sufficiently high risk premium to justify the risk of entrepreneurship. The higher the accumulation of capital, the lower the marginal efficiency of capital (MEC), and the higher the profit's risk premium would be. *There is, thus, an element of stickiness in the requisite profit rate, in addition to the element of stickiness in the requisite interest rate. No doubt that the latter reinforces the former and, hence, the existence of interest is bound to kill numerous profit opportunities causing an involuntary unemployment of investment.* This is especially true as borrowers in the low income groups usually pay a higher interest rate than borrowers in high income groups, as the former groups have smaller collateral and hence are considered to be more risky. It is also true that the per unit cost of administering small loans is larger than that for larger loans.

Schumpeter sounds as if he was anticipating Keynes' *General Theory*.² According to the Cambridge School's (of England) explanation of *The General Theory*, Keynes did not understand the causes of unemployment, in capitalist economies, to lay in wage rigidities, but mainly in the stickiness of the interest rate (Leijonhufvud, 1981, pp. 131-202). There are two factors which prevent the decline of the interest rate to zero. First, "the liquidity preference may become virtually absolute in the sense that almost everyone prefers cash to holding a debt which yields so low a rate of interest" (Keynes, 1936, p. 375). Second, lenders usually include a risk premium in the interest rate they ask for. Keynes contended that a rapidly declining marginal efficiency of capital (MEC) coupled with the stickiness of the interest rate (for the reasons outlined above) will prevent investment from reaching its full extent. He has been criticized on the ground that any combination of dynamic forces (such as technological progress,

²Notwithstanding the differences between the interest theories of Keynes and Schumpeter yet they shared an antipathy towards the capitalists/rentiers.

population growth, and geographical expansion of civilization) may “sustain investment demand at a fairly high level,” and thus “there should be no reason to expect the mere accumulation of capital to force down its marginal efficiency below the minimum attainable rate of interest” (Ellsworth, 1936, pp. 767-90).

All of the above sounds plausible, but two remarks should always be kept in mind. First, the halt to investment may be due to either a rapidly diminishing MEC — below the minimum attainable interest rate, as Keynes contended — or due to a rise in the minimum interest rate. But “sticky” interest rates may also imply that though interest rates may fall, they may fall less rapidly than the MEC, so that investment may not rise, despite lower interest rates. Indeed, if interest rates fall, but more slowly than prices, then i/p , or real interest rates, may rise, causing investment to fall, not rise. This may cause, not merely failure to pull out of a slump but descent into deeper recession. Second, and probably more important, the positive dynamic forces mentioned above, not to assume a reversal in their trend, are operative *on a longer run* than the mere accumulation of capital. This implies that as the demand for investment intensifies, due to these favorable forces, the interest rate may adjust upward, before these forces can bring about their full positive impact on investment.

In a dynamic setting, the present value of future net revenues decreases with the distance in time. Starting from a situation where there are no interest charges and where future revenues are discounted at a time rate of preference equal to the profit rate, the *introduction* of interest-based transactions disturbs the optimum time distribution of future net revenues because interest acts as a tax on all such revenues. The further into the future an income receipt is, the greater the number of times it is taxed. As a result the decision makers will try to change the time distribution of net revenues in the direction of the present. This can be accomplished either by redistributing revenues in the direction of the present or by redistributing costs in the direction of the future or through both (Ciriacy-Wantrup, 1952, p. 98).

Revenues are redistributed through redistributing rates of use of resources toward the present. Costs are redistributed by substituting production methods with shorter periods of incubation for those with longer periods. This means a depletion of resources. An *increase* in the interest rate will result in exactly the same effects, as a higher interest rate implies a higher tax rate. (Ciriacy-Wantrup, 1952, p. 98).

The above analysis shows a significant similarity between Keynes and Schumpeter in that both see in interest an obstacle to maximum investment. If interest can be likened to a tax as Schumpeter suggests — a peculiar tax that is levied through the market and not by government — it is curious that the economics profession has so little interest in this problem. The next section is to show, graphically, the welfare impact of introducing interest charges in the economy.

3. The Model

We shall be using here the conventional technique of schedules that is well known in economic analysis. The schedules themselves, however, are not the conventional supply and demand schedules.

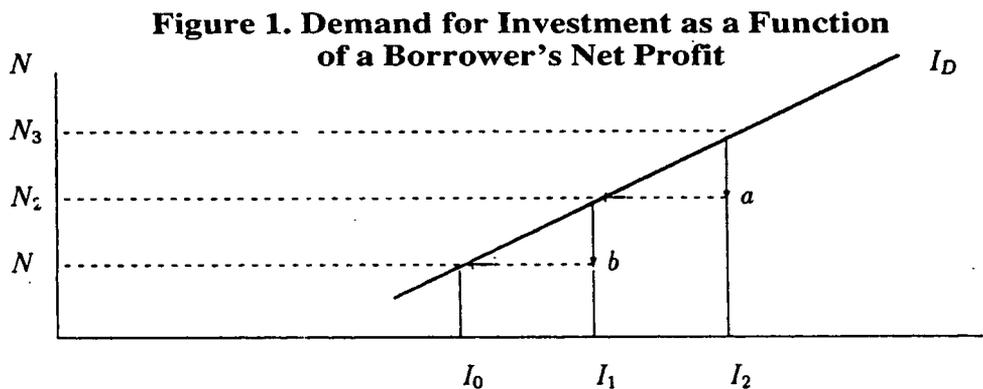
Using the schedule concept, we shall construct a model involving two groups: funds providers (suppliers) and funds receivers (users, demanders). To simplify matters, we shall sidestep some crucial questions such as the source of funds, and the process of pre-interest distribution of gross profit between suppliers and demanders. The point of the model is to show what happens if interest is introduced into a system which somehow (the question is begged) has been without contractual interest-based lending.³ In this way we can make some sense in terms of formal economic analysis out of Schumpeter's claim. This is the point of this somewhat convoluted analysis.

Assume that we denote the expected gross profit rate as g , and the relative claims on g (i.e., profit share of demanders) is N , where both g and N are expressed as rates. In the absence of interest-based transactions, the profit share of funds suppliers will be equal to gross profit rate, g , minus the relative profit share of the claim holders (funds demanders), N , i.e., the suppliers' profit share is equal to $g - N$. It should be noted that all of these rates are expressed on the basis of the already-known capital asset prices and the expected output demand. To simplify matters, both supply and demand relations are expressed in terms of N . Investors (borrowers) will increase their demand for funds as their relative share of profits, N , increases. Thus, the demand for

³Schumpeter's remark is an implicit testimony as to why many theologians, philosophers, and economists of many civilizations condemned interest-based lending. This provides an institutional justification for the above assumption of an economy without contractual interest-based lending.

investment funds will be positively related to N . Conversely, the suppliers of funds (lenders) will decrease their supply as N increases since this decreases their relative share of income, $g - N$. Thus, the supply of investment funds will be negatively related to N . The slopes are of course counter-conventional.

In the absence of interest-based loans, investment demand is represented by the schedule I_D , in Figure 1, and the initial level of investment is I_2 and net profit N_3 .



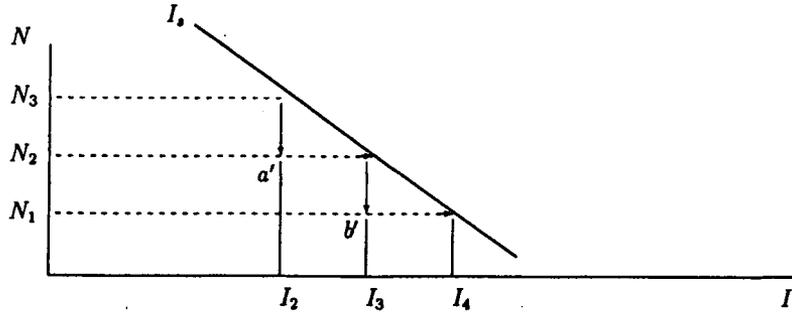
Now assume that finance must be done on the basis of interest and the interest rate is either greater than $g - N$, (the profit share of funds suppliers that was prevailing in the absence of interest-based transactions) or somewhat less than $g - N$ (on the ground that interest income is contractually guaranteed and expectedly less risky). On either account, interest as a fixed cost increases the cost of capital and risk to the firm and reduces the expected value of residual profits to the fund demanders. For the same level of investment, I_2 , the net profit rate (to demanders) will be driven down to N_2 . This locates a point like a , but at point a , where the expected net profit is N_2 , the level of investment will be reduced to I_1 . If the situation was alternatively represented by the coordinates (I_1, N_2) , in the absence of interest, then the introduction of interest drives net profits to N_1 . This locates a point like b . At point b , where expected net profit is N_1 , investment will be reduced further to I_0 . Thus, the introduction of interest, which is a contractually obligatory outlay that entrepreneurs must pay, brings about a new cost item to the firm that did not exist before. It should be noted that the difference between a profit share to the suppliers of

funds, in the absence of interest, and an interest return, after interest is introduced, is that the former does not constitute a cost item to the demanders since it is to be paid only if profits are realized, and the actual rate is to be determined on the basis of those realized profits. The actual size of this amount (or share) is to be known only *ex post*, on the basis of realized profit. Interest payments, however, are the opposite of profit shares. They are contractually specified and obligatory regardless of the size of actual (realized) profits. It can thus be said that the introduction of interest brings about an additional cost over and above the market cost (price) for real capital assets (assumed to be already known). This implies that interest has a similar effect to that of government tax that drives a wedge between the price that demanders pay (for real capital assets) and the price realized by suppliers of real capital assets, driving down the quantity of investment demand. When this is the case, we can say that the introduction of interest brings about a welfare cost in terms of foregone investment.

Let's now turn to the supply side of the problem. I have already indicated that I shall express both supply and demand as a function of the expected net profits of the entrepreneurs (i.e. demanders of investment funds). The supply curve for investment funds will be downward sloping, because suppliers will be willing to supply less funds if the profit share of demanders is increased, and hence their share is decreased.

In Figure 2, I_3 , represents the supply function. In the absence of interest, the supply of investments is I_2 and corresponding to an expected profit rate (to demanders) equal to N_3 . Now assume that finance must be done on the basis of interest lending. But interest-based lending will not happen unless the interest income is greater than the expected value of the suppliers' income from their profit share, $g - N$, that prevailed before interest became a way of doing business. This decreases the expected value of the profit share of demanders from N_3 to N_2 for the same level of investment, I_2 . This locates a point like a. But at a, when expected profit to demanders is N_2 , and the expected profit share to suppliers increased, the level of supply of investment funds will be increased to I_3 . If the situation was alternatively represented, at the beginning, and in the absence of interest, by N_2 and I_3 , a similar reasoning would locate a point like b with expected profit driven down to N_1 and the quantity supplied increased to I_4 . The point to be shown here is how does the introduction of interest affect the supply of funds.

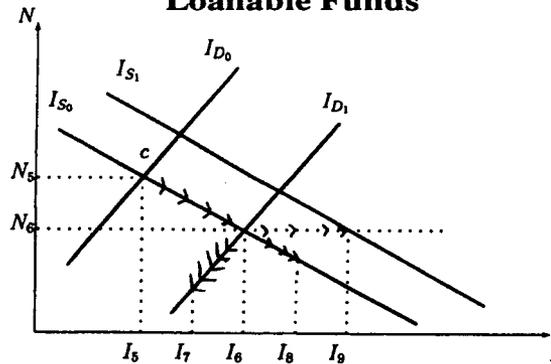
Figure 2. The Supply of Investment as a Function of Net Profit to Borrowers



Since expected net profit, N , is directly affected by changes in the interest rate, a change in the latter will not play the role of the usual parameter that shifts a curve once it changes. Thus, the introduction of the interest rate will be reflected as a movement along both curves simultaneously and in opposite directions. The simultaneous effect on both supply and demand may make it cumbersome to measure the exact size of the welfare cost of introducing the interest rate.

The above analysis sounds as one of disequilibrium. To see how the above schedules of supply and demand may interact, let's assume that we may start from an "equilibrium" point like C (of N_5 and I_5 on Figure 3). Suppose the demand for investment increases, shifting the demand curve from I_{D_0} to I_{D_1} . If the interest rate does not rise, then a new "equilibrium" point (N_6 and I_6) is reached. But if the interest rate rises, the quantity of investment demand may be discouraged somewhat and the quantity of investment supply encouraged somewhat.

Figure 3. The Interaction of Supply and Demand for Loanable Funds



We will notice a movement along both curves, away from the new “equilibrium” point (N_6, I_6). We may wind up on points such as I_7 (on I_{D1}) and I_8 (on I_{S0}). If investment is to be kept at I_6 and investors should expect a level of profits equivalent to N_6 , the money supply may be increased, so that it depresses the interest rate back to its original level. The supply curve will shift from I_{S0} to I_{S1} . Consequently, an excess supply of loanable funds (equal to $I_9 - I_6$) will be available. *Inflation may ensue, creating an indirect tax of the interest-based financing process.* In other words, the increase in money supply, and the depression of the interest rate, does not lead to a further increase in investment. It only leads, and is necessary, to sustain investment at the new level, I_6 . It may be impossible to keep the interest rate permanently depressed without flagellant cost of inflation. As the interest rate is allowed to rise once again, the process will be reversed, and an excess demand of investment will be eventually brought about.

We can think of several reasons behind the disequilibrium scenario just explained. One factor, advocated by Keynes, is the very precarious basis of business expectations. “Being based on shifting and unreliable evidence, they [expectations] are subject to sudden and violent changes” (Keynes, 1936, p. 315). These expectations may not be flexible enough, and even when they change, businessmen’s decisions do not follow suit instantaneously. Such rigidities in expectations and decision making operate both in upside as well as in downside situations.⁴ A second, and probably reinforcing, factor is the relative ease of credit expansion by the banking system and the lure of expected financial leverage to borrowers. Such ease of credit and leverage may give a pseudo-impression of an abundance of profit opportunities, while in reality the situation may be about to change. Under the usual exchange model, suppliers and demanders are assumed to exchange *two different* “goods.” Once a contract is concluded, it is instantaneously clear as to what everybody has parted with. This is not quite the case under interest-based finance. The two parties will be exchanging, or rather competing for, a *like for like*. But the final result of the “exchange” is not really known until the end of the contract period. In the interim, and maybe at the same time, many other such finance contracts are concluded as a result of inertia in expectations. The third

⁴Dixit (1992, pp. 107-32) has shown how “small nominal or real frictions can produce even larger rigidities,” and “a great deal of inertia is optimal when dynamic decisions are being made in an uncertain environment.”

factor has to do with the nature of technology. The production of capital goods usually takes a long time during which the marginal efficiency of capital (MEC) may be high. But once these capital goods are finished and ready to produce, they offer a stream of goods and services at a much faster rate than what was necessary to produce capital goods. If the market is flooded with such goods and services, Keynes's sudden collapse of the MEC may take place.

The above analysis is different from the usual Marshallian supply and demand analysis in several respects. First, instead of price (or interest), investment is a function of net profit rate, N . Although this is not a cost measure, and hence is not a price, yet it plays the same role of a price in the sense it gives a signal as to where investment should be allocated. Second, the demand and supply curves being a function of the net profit rate slope in opposite fashion of the usual supply and demand schedules. The interest rate does not play the role of a parameter for either schedule, as it directly affects the expected net profit rate. It should be noted that the net profit rate cannot be replaced by the interest rate on the ordinate since the analysis assumes the absence of interest as the starting point. Last but not least, the supply and demand schedules of investment funds are affected, simultaneously, and in opposite fashion by both the expected profit rate and the interest rate. Two signals are working in opposite directions.

Consequently, the measurement of the exact size of the welfare cost of the introduction of the interest rate into the economic system may be more cumbersome than what it might be thought of initially. For all of these reasons it can be said that the interest rate cannot be a good measure of the private and social marginal productivity of capital.

4. Summary

Joseph Schumpeter observed that "interest acts as a tax upon profit." In the absence of interest-based contracts, the profit share that goes to the suppliers of funds does not represent a cost item to the borrowers because it is not obligatory on borrowers under all circumstances. Under interest-based contracts, interest has exactly the opposite position and impact. As an obligatory outlay on borrowers it represents a mark up over and above the supply price of capital assets. Interest is exactly like a tax levied by the government, driving a wedge between the supply and demand prices of capital assets. It is a peculiar tax as it is levied through the market and not by the government. The effect of

the introduction of the interest rate will be reflected as a simultaneous movement along both the supply and demand curves of investment simultaneously. As a result, it becomes difficult to measure the exact size of the welfare cost of the interest rate.

The existence of an element of minimum requisite profit rate introduces an element of stickiness in that requisite rate in addition to the element of stickiness in the requisite interest rate. No doubt that the latter reinforces the former, and, hence, the existence of interest is bound to kill numerous profit opportunities and cause an involuntary unemployment of investment. Precariously-based expectations, ease of credit expansion and financial leverage, and long gestation periods of capital goods, all may be disequilibrating factors of investment.

Favorable dynamic forces — such as technological progress, population growth, and geographical expansion — may be impeded for two reasons. First, the interest rate may adjust upward. Second, these dynamic forces are operative on a longer run than the mere accumulation of capital. An upward adjustment of the interest rate, in the interim, may prevent these forces from showing their full positive impact on investment.

The introduction of interest may disturb the optimum time distribution of natural resources usage because future revenues are taxed a greater number of times than the early ones. This may cause resource depletion.

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