

The Nature of Capital and the Rate of Return

In 2009, there are close to seven billion humans on the planet. This level of population, defying Malthusian pessimism, would not have been possible without capital accumulation, increased productivity and significant advances in science and technology. The use of all forms of capital, including energy, and advances in all fields of endeavor have resulted in productivity levels beyond anything that Malthus could have dreamt of, promoting mass production, faster and faster communication, expansion of urbanism, better health and nutrition, dramatically higher standards of living and increasing life expectancy. The leaps in capital and labor productivity are undeniable. Economic growth models have demonstrated the role of capital accumulation and technical change in enhancing economic growth. Economic growth depends on savings, which are transformed into investment. Savings are defined as consumer goods, essentially food and necessities that are spent on employed labor in producing capital goods. New capital goods serve to replace amortized capital and add to existing capital. New investment incorporates innovations and new technology (technical change) that enhance productivity and hence economic growth. In the Harrod model, economic growth depends on investment and capital productivity, or on the capital-output ratio. More generally in most economic models of growth, economic growth is determined by capital (both physical and human), technology (or technical change), labor and natural resources.

Two different strands of thought have dominated the definition of capital: capital as physical goods or real assets; and capital as a pool, or fund, of money or financial assets. Both concepts are intimately related and are essential to capital theory and financial stability. A pool of money is the money counterpart of physical commodities, and vice-versa. In a barter economy, capital is a set of commodities. In a money economy, money serves as a medium of exchange and a store of value. Commodities are exchanged for money capital through trade; and, in turn, money is exchanged for

commodities. The capital of a nation includes social and economic infrastructure such as ports, airports, hospitals, schools, and housing; it also includes machinery, plant, raw materials, and inventories of consumer goods (mainly food and necessities). Human capital is generally included under labor input. Land, mining (mineral resources), rivers, and sea are classified under land and natural resources. Although capital is a set of heterogeneous goods of varying durability, it is collectively measured and assessed in money terms. The balance sheet of a firm or a household shows capital assets in money terms and not in physical terms. The money value of capital changes with the market prices of goods. Capital may increase in value without a physical increment if asset prices appreciate. It may increase in volume without an increase in value when asset prices depreciate.

Capital is also a pool of money or, in other words, financial assets. Financial intermediation and banking use the notion of capital as a pool of money and not as a set of physical goods or objects. Money can be in gold, any other commodity that is accepted as a medium of exchange, or fiat money. It serves as a medium of exchange and a store of value. Banks mobilize savings and receive deposits in money. They disburse loans in money. Similarly, capitalists own pools of money and loan money capital to borrowers. Money funds change in value as financial assets change in price or valuation. Financial stability could be undermined when banks issue more money claims than are backed by the stock of real capital, or when there is a misalignment between money interest rates and the real return to capital. When financial capital multiplies independent of real capital, inflation results and speculative bubbles in real assets and commodities accelerate. All bubbles eventually burst. They lead to financial instability, real economic recession, and a forced and unjust redistribution of wealth from savers to debtors and speculators.

In this chapter, we review the definition of capital, focusing on the notion of capital as a pool of money or a fund, as opposed to the idea of capital as a set of heterogeneous physical goods. Ricardo regarded capital as a wage fund—namely, food and basic necessities, which are vital to enhance labor input and enable production. Böhm-Bawerk regarded capital as a subsistence fund, which is a larger concept than wage fund, as capital would be required not only to support labor, but also landlords, entrepreneurs, and money capitalists.

The distinction between physical and money capital has its counterpart in the concepts of profit and the rate of interest. Thus, in the same vein, we review the debate regarding the nature of interest and profits. Different theories were advanced to explain interest in terms of the productivity of capital, abstinence, and time preference. A distinction was made between money interest rate, which can be directly influenced by monetary authorities and the availability of loanable funds, and the natural rate of interest, which

equates savings with investment. The natural rate of interest is also called the “free” interest rate and is determined by capital productivity, abstinence, and time preference. The notion of interest rate overlapped with the notion of profit. While interest could be considered unequivocally as contractual income from loan capital, applicable both to a consumption loan yielding no additional product and a production loan yielding additional product, profit is an ex-post concept that applies only to an enterprise in trade or production. Defined as a residual concept, profits arise to the owners of the enterprise and may be seen to reward factors which are not accounted for in the computation of cost, such as entrepreneurship, risk, and uncertainty.

Finally in this chapter we discuss the theory of capital as detailed in the *Qur'an* and the *sunnah*. The notion of capital as a physical asset, whether produced or a natural resource, and the notion of capital as a money fund apply to Islamic finance where money capital is fully anchored by real capital and where overlap between profit and interest is nonexistent because interest is forbidden. Profits in Islamic finance stand unequivocally as reward to capital after allowing for capital amortization. They are distributed in the form of dividends to shareholders. The role of capital in economic growth is fully recognized. Capital is to be invested and not lent for consumption or speculative finance. The most efficient use of capital and the admonition against the wasting of capital are the basic principles of Islamic finance.

The literature on capital theory is vast. It would be impossible to do it justice in one short chapter. However, the definition of capital as a set of real assets and as money funds and the distinction between interest and profit are necessary for appreciating what lies at the core of financial stability.

ON THE NATURE OF CAPITAL

Factors of production have been classified essentially as a triad: land and natural resources; labor (with embedded human capital); and capital (with embedded technology). The remuneration for owners of each factor is another triad: rent; wages; and interest and profits, respectively. While interest was seen as the return to capital, profits (defined as a residual between total revenues and costs) have been either subsumed with interest or treated intrinsically as noninterest income. Savings and capital accumulation could be derived from all income categories. However, the propensity to save could vary according to income class; namely, the savings propensity out of wages could be low, whereas the savings propensity out of non-wage income could be high.

Among all factors of production, capital has been the subject of the most debate. Even before Adam Smith, there had been two broadly different ways

of thinking about capital: one was to view it as concrete physical goods, such as tools and machines; the other, was to see it as a sum of money, or the market value of the capital goods that it represents. In this vein, Smith formulated two concepts of capital: capital as a means of acquisition for the individual, and capital as a means of social production. He defined capital by its contribution to a nation's wealth. Individual or acquisitive capital increases the wealth of an individual owner and not necessarily a nation's national output. Social capital, however, is deployed in the production process and increases a nation's real product. Ricardo defined capital as that part of the wealth of a country that is employed in production, and consists of food, clothing, tools, raw materials, and machinery as the means to enhance the contribution of labor. Hence, according to Ricardo, the notion of capital is intimately related to his *labor theory of value*, which considers labor as the foundation for the value of commodities. Capital may increase in quantity by additions made to food and necessities.

The notion of capital as a wage fund—namely, food and necessities to sustain labor in the production process—dominated early classical capital theory. In particular, the notion of savings was identified with the availability of food and necessities for sustaining workers in investment activities. For instance, labor engaged in building roads would require food surplus made available by farmers over and above their own use. If the labor employed in the production of consumer goods absorbs its entire product, then there are no savings that can be used to free labor and redeploy it in investment activities. Savings are transformed through production processes into capital goods and lead to capital accumulation.

Böhm-Bawerk reviewed many definitions of capital in his classic treatise *The Positive Theory of Capital*. Although he opted for a definition of capital as a subsistence fund that encompasses the Ricardian wage fund, he also saw capital as supporting landlords and money capitalists. In essence, Böhm-Bawerk's definition is an extrapolation of the Robinson Crusoe model to a general economy. Robinson consumes less from his product to keep Crusoe employed in making capital goods. Hence, capital is a set of physical goods; namely, food and other consumer goods made available prior to the start of the production process to enable the survival of labor, landlords, and entrepreneurs during the time interval required for the production process until finished goods are produced, or crops harvested.

John Bates Clark treated capital as a fund rather than as an array of heterogeneous capital goods and offered a general definition of rent as the income from all capital goods, rather than just the income from land. There is a permanent fund of productive wealth, expressible in money but not embodied in money, and it is this which businessmen designate as capital. Clark defined capital as economic wealth whose quantity is expressed in

general value units. There is no place in this definition for a distinction between individual and social capital, or between consumption and production goods. All valuable things of more than momentary duration are intermediate goods and can be defined as capital, in that they are valuable because they are designed to satisfy future wants. While this definition sweeps away any limitation on the content of capital because of a difference in future use, it likewise sweeps away any limitation because of a difference in its origin or in source of its value. Capital is considered only as goods whose value is the result of labor. The prevailing distinction between “natural agents” and “produced agents” of production involves radical defects of logic and is not maintained in practice. In regard to the contending views—first, that capital consists of concrete goods, and, second, that it is the value of goods—the definition harmonizes them by defining capital as consisting of concrete things, but only when considered as homogeneous and comparable units of value.

Jevons considered economics not solely as the science of exchange or value, but also as the science of “capitalization.” His view of capital theory was in fundamental agreement with those adopted by Ricardo. He regarded capital as the aggregate of those commodities that are required for sustaining laborers of any kind or class engaged in work. A stock of food is the main element of capital; but supplies of clothes, furniture, and all the other articles in common daily use are also necessary parts of capital. The current means of sustenance constitute capital in its free or un-invested form.

The single and all-important function of capital is to enable a laborer to await the result of any long-lasting work, to put an interval between the beginning and the end of an enterprise. It is evident that when men make their livelihood from the soil, with output only once a year, their subsistence needs for the whole year must be provided for in advance. The first and most obvious setting where capital is directly used as an input in industry is to enable production that requires considerable time to come to fruition. A man, when aided by capital, can afford to remain at his work until it is finished, and is not compelled to leave it unfinished while he searches for the necessary means of subsistence. If there were no accumulated fund to support the laborer, no man could remain for a single day exclusively engaged in any occupation other than that which would supply his primary wants. Capital allows the employment of labor before labor’s output is produced.

Jevons believed that the definition of capital and the explanation of capital theory must rely on the distinction between free and invested capital. Free capital was defined as the wages of labor, either in its transitory form of money, or in its real form of food and other necessities of life. The ordinary sustenance required to support laborers of all ranks to be engaged in their work is the true form of capital. This is quite in agreement with the ordinary

language of businessmen when they refer to a factory, dock, railway, or ship not as capital, but as *representing* so much capital sunk in their enterprise. To invest capital is to spend money, or the food and maintenance which money purchases, upon the completion of some work. Capital remains invested or is sunk until the work has returned a profit, equivalent to the input or sunk-capital cost plus interest. Accordingly, a railway would not be seen as fixed capital, but that capital is fixed in the railway. The capital is not the railway, but the food of those who made the railway. An abundance of free capital in a country means that there are copious stocks of food, clothing, and every article which people insist upon having—that, in short, everything is so arranged that abundant subsistence and conveniences of every kind are forthcoming without the labor of the country being taxed to provide them. Under such circumstances, it is possible that some of the labor force can be employed in production activities that will yield output only in the distant future while no one feels scarcity at the present.

National income accounts are fully consistent with the classical definition of capital. They measure aggregates in money values and apply the concept of resources (sources) and their uses. Savings S is defined simply as national income Y less consumption C . Savings can be expressed as: $S = Y - C$. It is a resource and finances investment. The national income identity can be formulated as equality of resources (sources of income) and uses: $Y + M = C + I + X$, where I , M , X denote investment, imports, and exports, respectively. This identity can be restated as $S - I = X - M$. If the saving-investment gap is negative, the country is importing capital through depleting gold reserves or borrowing. If it is positive, the country is exporting capital through acquiring gold reserves or lending.

The dichotomy of the definition of capital—real commodities versus money fund—is of paramount importance in the conduct of macroeconomic policy, growth and financial stability. The object of economic growth is to increase the quantity of real capital and output. An overriding goal of macroeconomic policy is to achieve financial stability. Real capital may face constraints on its expansion because of limits to savings, natural resource availability or entrepreneurship. However, money capital can lose contact and association with real capital and may expand disproportionately in relation to real capital when fiscal and monetary policies are unduly expansionary. If fiscal deficits are financed through bank credit (that is, monetization), there will an inflationary expansion of money capital that is inconsistent with the stock of real capital. Similarly, central banks or the banking system may expand credit in an uncontrolled manner, leading to an inflationary expansion of money capital accompanied by slow growth or even a contraction of real capital. In the same vein, financial innovation can lead to the creation of instruments that are pure debt trading instruments and have no

connection to real capital. For instance, through securitization or credit derivatives, money capital can expand at phenomenal rates that bear no relationship to the stock and availability of real capital. A disproportionate increase of money capital has often financed speculative booms in real assets and commodities, with the burst of speculative bubbles resulting in banking bankruptcies and large redistributions of wealth from savers in favor of debtors.

In all cases of a disproportionate increase of money capital, inflation in the price of food and consumer necessities would intensify and could be regarded as an increase in the price of capital and a contraction of real capital. Suppliers of commodities generally reduce real supplies in an inflationary environment and hoard commodities. Inflation reduces real wages. It also reduces real savings and depresses demand for capital goods as well as the demand for non-necessities. Such an inflationary effect acts as a depressant for the real economy and triggers an economic recession.

It will be shown later that in Islamic finance money capital is fully anchored by real capital and maintains full and direct connection to it. There is no inflationary pressure on capital prices and therefore there is full macroeconomic stability. Real supplies of commodities remain always forthcoming in a competitive manner. Real wages are not depleted. Savings remain high in real terms, as do investment and capital accumulation.

ON THE NATURE OF INTEREST AND PROFIT

The conflict over the nature of interest and profit has been pervasive in the literature through time. The confusion arises when interest is thought to be profit, and vice-versa. For instance, Adam Smith suggested the use of market interest rate to form an opinion on the rate of profit and to look at the history of the evolution of interest rates as a way of assessing the behavior of profits. Ricardo considered the rate of interest to be ultimately and permanently governed by the rate of profit. Böhm-Bawerk, Irving Fisher, and Alfred Marshall perhaps best exemplify the notion of interest rate as a rate of profit in the theory of productivity of capital. For instance, Böhm-Bawerk explains interest rates by the greater productivity of roundabout production processes. Wicksell developed the notion of a natural rate of interest as a measure of the profit rate and proposed to analyze the deviation of the money-market rate from the natural interest rate as explaining booms and contractions in bank credit and commodity prices.

Frank Knight defined profit as a residual after inputting rent, wages, and interest for land, labor, and capital, respectively. Hence, Knight considered that interest remunerates capital and, in contrast to classical capital theory, he did not confuse profit with interest. The primary attribute of competition

is the tendency to eliminate profit or loss, and bring the value of economic goods to equality with their cost. Or, since costs are in the large part identical with distributive shares other than profit, the competitive principle may be expressed as saying that the tendency is toward a remainder less distribution of products among the agents contributing to their production. But in reality, cost and value only tend towards equality; it is only by an occasional accident that they are precisely equal; and they are usually separated by the margin of profit. The key to the whole tangle will be found to lie in the notion of risk or uncertainty and the ambiguities concealed therein. Knight believed that a satisfactory explanation of profit would highlight the distinction between perfect competition (in theory) and its remote resemblance to competition in practice, with the difference explained by a thorough examination and criticism of the concept of uncertainty, and its bearings upon economic processes.

Frank Fetter pointed to a major contradiction in Böhm-Bawerk's theory of interest. Namely, Böhm-Bawerk's initial finding that interest stems from time preference for present over future goods was contradicted by his later claim that the greater productivity of roundabout production processes is what accounts for interest. However, when criticizing Böhm-Bawerk's productivity theory of interest, it was not necessary for Fetter to dismiss the important conception of roundaboutness or the period of production. Roundaboutness is an important aspect of the productivity of capital goods. However, while this productivity may increase the rents to be derived from capital goods, it cannot account for an increase in the rate of interest; that is, the ratio between the annual rents derived from these capital goods and their present price. For Fetter, this ratio is strictly determined by time preference.

In discussing the relations between rent and interest, Fetter pointed out the confusions and inconsistencies of previous writers on the theory of rent and interest. In place of the classical distinction between rent as income from land and interest as income from capital goods, Fetter proposed that all factors of production, whether land or capital goods, be considered either as yielding services and thus earning rent, or as saleable at their present worth calculated as a discounted sum of rents, as wealth or capital.

As a corollary, rent must be conceived of as an absolute amount (per unit of time), whereas interest is a ratio (or percentage) of a principal sum called capital value. Rent becomes the usufruct from any material agent or factor. But then there is no place for the idea of interest as the yield of capital goods. Rents from any durable goods accrue at different points in time, at different dates in the future. The capital value of any good then becomes the sum of its expected future rents, discounted by the rate of time preference for present over future goods, which is the rate of interest. In short, the capital value of a good is the capitalization of its future rents in accordance with the rate of time preference or interest. Therefore, marginal utility accounts for the

valuations and prices of consumer goods; the rent of each factor of production is determined by its productivity in eventually producing consumer goods; and interest arises in the capitalization, in accordance with time preference, of the present worth of the expected future rents of durable goods. Such was Fetter's vision of the relative place of rent, interest, and capital value in the theory of distribution.

In sum, Fetter wanted to separate the concept of marginal productivity from that of interest. Marginal productivity explains the height of a factor's rental price, but another principle is needed to explain why and on what basis these rents are discounted to get the present capitalized value of the factor: whether that factor be land, or capital goods. That principle is time preference, the social rate at which people prefer present goods to future goods in the vast interconnected time market (present/future goods market) that pervades the entire economy.

In many economies, interest rates are set by the central bank via a discount or money-market rate. Such setting invariably creates distortions between money interest rate and natural rate of interest and has been seen as a serious cause of financial instability. More specifically, it allows money capital to multiply independently of real or physical capital. The dichotomy of interest rates inevitably led to the theory of two interest rates in the writings of such as Thornton, Ricardo, Marx, and Wicksell: a market rate set by the central bank, and a non-observed natural rate corresponding to capital market equilibrium. If the market rate is below the natural rate, there will be bank credit expansion and a commodity price boom. A speculative bubble invariably reaches a bursting stage and when the bubble bursts financial instability is the end result. If the market rate is above the natural rate, there will be bank credit contraction and falling commodity prices. In prolonged economic crises, a considerable loss in efficiency and a misallocation of resources have been caused by distortionary monetary policies.

CAPITAL THEORY IN THE QUR'AN AND SUNNAH

Economics, finance, social equity, and economic justice are treated extensively in the *Qur'an* and the *sunnah*. Islamic economics is designed for society to attain human prosperity, economic growth, social equity, and economic justice. A main foundation of Islamic capital theory is the enduring presence of *Allah* as the sole creator of everything: "And He has subjected to you, as from Him, all that is in the heavens and on earth: behold in that are signs indeed for those who reflect." (45:13)

Allah has endowed mankind with faculties and knowledge: "... it is He who has created you (and made you grow) and made for you the faculties of

hearing, seeing, feeling and understanding.” (67:23) These faculties, without which a man would be handicapped, are indispensable for survival and for exploiting material resources and building civilizations. Scientific advances are emphasized as a means for the betterment of life and economic prosperity (see, for example, 20:114).

The notion of capital is discussed extensively in both *Qur'an* and *sunnah*. *Allah* warns against loving “wealth with inordinate love” (89:20) and against appropriating unjustly the capital of other people, including the wealth of orphans. Private wealth is fully protected but, ultimately, wealth belongs to *Allah* and men are only temporarily empowered to enjoy it during their lifetime (see 24:33). Besides condemning extortion, cheating, and theft, which is punishable by the cutting off of hands, the misuse of capital is also discouraged. For instance, Surat 3:5 says: “And give not unto the foolish your property which *Allah* has made a means of support for you, but feed and clothe them therewith, and speak to them words of kindness and justice.”

The classical distinction between land and capital is not essential to Islamic capital theory. Land and real commodities could be easily treated as wealth or capital. The distinction between labor and capital, however, is made explicit. Besides designating capital in terms of commodities, capital also has been defined in money terms. In both domestic and international trade, commodities are sold for money. In turn, money reserves are used to acquire commodities. Money eliminates the double coincidence of wants and thus saves considerably on transaction costs. Because of its wide acceptance and its real purchasing power, money is considered as wealth. Money capital is referred to under the general name *quanz* or *qunuz*, and includes gold, silver, other precious metals and jewelry. Capital can be used in trade, production and for lending.

The notion of capital as a roundabout production process and advances in knowledge and technologies are inherent to Islamic capital theory. Capital accumulation sustains economic growth, increases output and enhances human comfort. It expands cities and enriches people. However, classical capital theory's emphasis on capital productivity as an explanation for interest is irrelevant in Islamic capital theory. Loan transactions are perfectly legitimate; however, they have to be *qard-ul-hassan*—free of interest. A loan has to be written by a notary in the presence of two witnesses, irrespective of its amount. The real value of the loan has to be preserved in terms of quantity, quality and time. The debtor should never fail to repay his debt. The repayment of a loan has priority over other spending such as performing the pilgrimage of *haji* or *umra*. It also has priority before an inheritance is passed on to heirs. Thus *trust* is stipulated as a fundamental element of Islamic finance and economics and of how well economics and finance function in practice.

Distribution and redistribution theory is complete in Islamic economics. The remuneration of different factors of production is clearly defined in the *Qur'an* and *sunnah*. The remuneration of labor is called “wage” (*ajr*). Rental and leasing property, be it land or a physical asset such as a house or a machine, earns a contractual rent (*ijar*), which is perfectly legitimate in Islam.

Interest is defined as an income on a loan, be it in kind or in money terms. Interest is totally forbidden in Islam, and all arguments advanced in classical theory for interest as rewarding capital productivity, abstinence, or measuring time preference are irrelevant for Islamic capital theory. The confusion of interest with profit is totally forbidden: “They say trade is like interest, but *Allah* has permitted trade and forbidden interest” (2:275). With interest ruled out in an Islamic economy, the confusion of interest with profit is fully resolved: only profit can be the reward for capital.

Profit is a basic element of Islamic finance. It is a residual that arises to the owner of the enterprise once all costs associated with labor, capital amortization, raw materials, and taxes are deducted. Profit also rewards risk and entrepreneurship. In the absence of loans and interest rates, an economy based on shareholding and profit is always in equilibrium and is immune from instability and inflation. Distortions created by interest rates and undue expansion and contraction of money capital cannot take place in an Islamic economy. The rate of profit is related to the real economic growth rate. The rate of profit is much higher than various interest rates. For instance, for the US over the period 1926–2000 the average annual rate (nominal) of return on T bills was 3.9 percent, long term T-bonds 5.7 percent, large stocks 13.0 percent, small stocks 17.3 percent, and inflation averaged 3.2 percent per annum.¹

In an Islamic economy, consumer loans are negligible or nonexistent. Capital is used efficiently and productively in investment and to enhance economic growth. It is not lost in bankruptcies or in speculation. Savings will be higher than in an interest-based economy. The capacity of an Islamic economy to generate labor employment and growth is substantially greater than that in an interest-based economy. Speculative finance, based on interest loans, is nonexistent in Islamic finance. The economy is, therefore, immune from unjust appropriation of wealth by speculators and from economic and financial dislocation stemming from speculation.

ENDNOTE

- 1 <http://74.125.93.104/search?q=cache:HV6TkxldnLEJ:web.mit.edu/15.407/file/Ch07.pdf+historic+rates+of+return+on+stocks+and+T+bills&cd=2&hl=en&ct=clnk&gl=us>

<http://www.pbookshop.com>