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1. INTRODUCTION

Schumpeter’s and Keynes’ birth year coincided (1883). Both men have also designed grand economic theories of a very general sort. They are also both reckoned to the group of most outstanding economists of the 20th century. Schumpeter is most famous for his theory of economic development and entrepreneurship\(^1\). He cast the innovative entrepreneur in the role of economic and social leader akin to the military commander and the feudal knight of former days. These leaders led their societies into new territories and designed novel social arrangements. The entrepreneur leads the economy into new ways of doing things, although not by military means. Capitalism singled out innovative instead of military capable individuals to climb the social ladder. Schumpeter’s theory of economic growth and social ascent can be seen as inspired by his intricate social roots. His father died, when Schumpeter was four years old, whereupon his mother moved to Graz and later to Vienna. She married an old lieutenant marshal, which gave her access to the higher circles of Vienna and secured Joseph a place at the famous Theresianum Gymnasium\(^2\). Schumpeter was an academic nomad and held many posts during his life. He taught in Cnernowitz, Graz, Bonn and at Harvard. He was also a politician, a banker and an advisor of an Egyptian princess. Keynes - in contrast - was born into an upper class English family. His role in life seemed carved out for him from the beginning. His father was the registrar of Cambridge University, his mother mayor of Cambridge. He was educated at Eton and King’s College Cambridge. He served two years at the India Office in London and then moved back to Cambridge. He became a fellow of King’s in 1909, a post which he kept until his death in 1946. Keynes fulfilled several important political missions. He entered the Treasury in 1915 and was sent as their main representative to the Peace Conference in Paris. Fame as a political commentator came to him, when he published his ‘Economic Consequences of the Peace’ after his resignation from the Treasury in 1919. He entered the treasury again in 1940 and was an important advisor to Churchill and a main designer of the Bretton Woods Plan.

His most famous contribution to academic economics is ‘The General Theory’ that was published amidst the world depression in 1936\(^3\), in which he expressed the view that the

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\(^1\) J.A. Schumpeter, 1912 ‘Theorie der Wirtschaftlichen Entwicklung,’ Duncker & Humblot Leipzig/Vienna
Capitalist system was incapable of securing full employment. Moreover, he also criticized the inequality of capitalism and the –in his view- more or less parasite status of the ‘rentier’ stratum. Schumpeter -in contrast - considered wealth the fully deserved reward for the talented. Keynes was pessimistic about the stability and growth potential of capitalist societies, whereas Schumpeter considered the era of capitalism the most prosperous period of mankind. Schumpeter saw infinite opportunities ahead for productivity growth that would be unleashed although with fits and starts by entrepreneurs. Keynes –in contrast- was a stagnationist who considered a lack of investment opportunities inherent to capitalism.

We can, therefore conclude that these two contemporaries held opposite views on the virtues and vices of capitalism. Keynes considered capitalist irrationalities at the root of the evil of unemployment, whereas Schumpeter praised capitalism as the most economically progressive system of all times. Later in life, Schumpeter reached the conclusion that capitalism would not survive. However, he did not contribute capitalism’s bleak future to its lack of possibilities for growth, but to capitalism’s eroding political support.

This paper seeks the reasons for the different views that Keynes and Schumpeter held on investment and capitalism. It also sets Schumpeter’s and Keynes’ views in a historical perspective by comparing their contributions with contemporary authors on the subject of entrepreneurship and economic development such as Weber and Knight.

2. SCHUMPETER AND KEYNES ON UNEMPLOYMENT EQUILIBRIUM

A main message of the ‘General theory’ was that full employment equilibrium was exceptional. Schumpeter, however, held the classical view that unemployment constituted a disequilibrium phenomenon. He elaborated on the characteristics of a static full employment equilibrium in his description of the circular flow. Economic processes are repeated period after period without any change in a stationary economy. Neither growth nor contraction occurs in such an economy, which –in his view- finds itself in stable equilibrium. Prices and quantities do not vary in a stationary state and can be completely deduced from the data. The interest rate is equal to zero and net investments are absent.

His concept of the circular flow had many predecessors as can be concluded from the various references to a stationary state that can be found in Schumpeter’s ‘History of Economic Analysis’. The first reference is to Plato’s utopian vision of a perfect state, as described in his

‘Republic’. Born out of dissatisfaction with the changes he saw occurring in Athens, Plato sketched the conditions for what he saw as Utopia; a stationary state. These involved; a stationary population, constant wealth, division of labor according to ability and limited freedom of speech. Schumpeter described Plato’s state as a regime enforcing a strict regulation of individual life; as a corporative state that was led by a ‘classe dirigente’ ⁵. Schumpeter’s circular flow had many characteristics in common with Plato’s Perfect state, but lacked its authoritarian features. The circular flow is not directed by command but by markets and routines.

Several economists had preceded Schumpeter in describing such a competitive stationary economy such as J.S. Mill, D. Ricardo and K. Marx. Ricardo taught him that a stationary state could be treated dynamically, namely as a form of period analysis. Marx’s simple reproduction -the scheme of an economy that merely reproduces itself in time- was admired by Schumpeter as a picture of a stationary state that –in his words- went much deeper than Mill’s. Schumpeter departed from the physiocratic idea of `advance economics’, meaning that societies live on past production or advances made by either landowners or capitalists.

Schumpeter – in contrast- followed Walras and J.B. Clark in their notion of ‘synchronized economics’, wherein it is assumed that ‘once a stationary state has been established the flow of consumers goods and of productive services are synchronized so that the process works as if society lives on current production’ ⁶.

Investments would neither grow nor contract in the stationary state. Firms would put an amount equal to depreciation allowances into a fund that was emptied on the moment when capital goods were replaced by new but otherwise identical capital goods. Investments would be equally distributed in time, if the capital stock had been built up gradually. Cash flows consisting of depreciation allowances would just suffice to finance replacement investments.

The impetus to invest would not falter and production would remain constant. Schumpeter thus adhered to the classical opinion that full employment would prevail in equilibrium as long as competition was perfect and rigidities were absent.

Some of Schumpeter’s critics have argued that cash flows would be consumed instead of saved, if the interest rate equaled zero. Paul Samuelson -one of his students- has clarified that

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⁶ J.A. Schumpeter, 1954, op.cit. p. 565
a zero interest rate can only exist, if business owners have a long term view extending beyond their own life-time.\footnote{Paul A. Samuelson, 1943, 'Dynamics, Statics and the Stationary State' \textit{Review of Economics and Statistics}, pp. 58-68.}

3. SCHUMPETER ON ENTREPRENEURSHIP AND ECONOMIC EVOLUTION

Schumpeter built his model of a progressing economy on the ground-work of the circular flow. Net investments will occur, when the circular flow is broken up due to the introduction of innovations, which cause economic evolution or productivity growth that needs to be distinguished from economic growth, which occurs through the mere deployment of more production factors. Innovations are introduced by new businesses and require net investments to be implemented. Net investments upset prevailing equilibria and cause inflation. Production factors are re-allocated away from consumption and towards production goods industries. The bunch-wise appearance of innovations generates cyclical movements of the economy with net investments featuring in the positive phase and disinvestments in the negative phase of the business cycle. Inflation ensues because net investments are financed by credits granted to entrepreneurs by the banking system, whereas deflation occurs in the negative phase, when entrepreneurs repay their debts. The banker is rewarded by market rates of interest. Entrepreneurs receive profits minus interest payments, which would leave all entrepreneurs except the least talented one (the marginal entrepreneur) with positive profits.\footnote{J.A. Schumpeter, 1912. `Theorie der Wirtschaftlichen Enbtwicklung`. 383}

The positive phase of the business cycle and therewith inflation reaches its upper turning point when the stream of innovative investment ceases. Profits evaporate during the downturn due to deflation. Nominal wages are assumed constant, so that real wages will decrease with inflation and increase with deflation. Old firms that could remain in existence during the positive phase are ousted in recession. A process which Schumpeter labeled creative destruction.

Keynes – in contrast – wanted to demonstrate that capitalist economies were inclined to establish equilibria below their potential. He designed a model, in which total income is determined by effective demand that is composed of consumption and investment expenditures. Consumption is determined by the marginal propensity to consume of wage earners and capitalists. The amount of investment is determined by the (expected) marginal efficiency of capital. Keynes defines the marginal efficiency of capital as the differential
between the expected prospective yield of investing one more unit of capital and its supply price or replacement costs. Investment will stop at the point where the marginal efficiency of capital equals the discount rate at which the present value of the investment equals the supply price. The expected marginal efficiency of capital equals the market rate of interest in equilibrium.

Hence, Keynes’ theory diverges from Schumpeter’s on several points. Most importantly; Keynes does not explain economic growth, whereas Schumpeter made this the kernel of his theory. Secondly, Schumpeter did not include expectations, whereas expectations were vital to Keynes’ theory. Expectations involve not only present conditions but all future conditions that will emerge during the life-time of the investment. His concept of expectations makes Keynes conclude that innovations instead of boosting investment will actually curb it. That is because the expectation that prices will decline due to future innovation will depress the (expected) marginal efficiency of capital. In so far as such developments are foreseen as probable, or even as possible, the marginal efficiency of capital produced to-day is appropriately diminished.

Present investment will also be curtailed, if interest rates are expected to fall. It is then expected that present equipment will have to compete with younger vintages that are content with a lower remuneration. Expected inflation, however, stimulates investment, because younger vintages then need to pay more for the same capital goods, whereas it alleviates the debt burden of incumbent enterprises.

Keynes’ work conveys his conviction that the capitalist economy, if left to itself, would tend to work below full capacity and will not achieve full employment. That is because the interest rate cannot decline to a sufficiently low level to generate full employment. The interest rate is kept from falling beyond a certain point, because people prefer liquid to illiquid assets (liquidity trap). Moreover, the desired marginal efficiency of capital is also kept above a certain level, because of risk premiums of a threefold nature. The first is the risk of default and the second is a moral hazard risk, which Keynes labeled voluntary default. The third risk involves adverse changes of the monetary standard (deflation).

Wage flexibility also did not qualify as a remedy according to Keynes. Declining money wages would curtail consumption without boosting investment. In fact, the decline of consumption could actually reduce the inducement to invest. Moreover, declining wages

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11 J.M.Keynes, 1936 op. cit. p. 144
could ensue deflation and, thereby, increase the debt burden. Deflation hurts, whereas (expected) inflation accelerates investment. But, a decline of real wages that is caused by an increase of the quantity of money could spur investment due to the inflationary effect of such a policy (GT, 266). Keynes’ appreciation of real wage changes therefore depended on the cause of a real wage decline. It may, however, be noted that Keynes’ observations only hold for existing businesses. Incumbent firms would see their debt burden grow by deflation, but new businesses formation could be assisted by deflation, if they could acquire capital goods at relatively low prices. The same applies to people who hold cash balances. Their money would become more worthwhile due to deflation, which could spur spending. However, the positive effects of deflation would only apply, if the economy is expected to have hit bottom. New firms would otherwise refrain from investing and wait until capital goods would have become even cheaper. Inflation, however, would hurt new businesses, which now need to buy their capital goods at more elevated prices than their incumbent counterparts.

We can conclude that Keynes detected several failures in the workings of capital markets, which could not be remedied in his view. This meant a departure from the view he had purported in the ‘Treatise on Money’ (1930), where he had defined the natural rate of interest as the rate at which full employment was attained. He stated in the ‘General Theory’ however that each level of employment would have its own natural rate of interest (GT, 242). Hence, the system could be stuck in an unemployment equilibrium, of which it could not be liberated by its own force.

4. KEYNES, SCHUMPETER AND KNIGHT ON THE BUSINESS CYCLE

Schumpeter’s theory of economic development tried to explain the recurrence of investment booms and busts that were supposed to appear regularly. He adopted a 3-cycle scheme that was based on 3 business cycle theories. Juglar, Kondratieff and Kitchins had all three attempted to discern some regularity in the recurrence of booms and busts, although their periodization differed. Juglar opted for the 7-9 year cycle, Kondratieff for the long wave of 45-50 years duration and Kitchins for the short wave of 3-4 years length. Schumpeter undertook a painstaking effort in his ‘Business Cycles’ to support his theory by an analysis of time series. However, this enterprise was doomed to fail as will be explained below.

Schumpeter assumed that bankers would only select ‘good’ entrepreneurs that were capable to repay their debts plus interest payments. Business failures –in his view- would increase interest rates and curb investment due to the risk premium imposed by failures. Keynes’ view on this matter accords with Schumpeter’s. Their views are plausible, if we assume that innovative investments are financed with bank credits. The situation changes, however, if we assume that investments are financed with equity capital.

Frank H. Knight had formulated a theory twenty years before the ‘General Theory’ appeared, wherein he had stated that uncertainty stimulated investment instead of restraining it\(^{13}\). In Knight’s view, uncertainty needs to be sharply distinguished from risk. Risk is calculable a priori, and can, therefore, be treated as costs. Insurance premiums are cases in point. ‘\textit{It is true uncertainty and not risk, which forms the basis of a valid theory of profits.}’\(^{14}\). ‘\textit{If profits could be calculated before the act, or even if there is a mathematical or a-priori type of probability of success, these risks can be insured and will be changed into costs.}’ True uncertainty is the only source of profits in Knight’s view, since profits would disappear as soon as change would become predictable. ‘\textit{If any of these changes takes place regularly, whether progressive or periodically or according to whatever known law, their consequences in the price system and the economic organization can be easily disposed off}’\(^{15}\).

Knight’s observations imply that business cycles of fixed length are impossible, which directly confronts Schumpeter’s theory of business cycles. Knight –in contrast to Schumpeter- casted the investor in the entrepreneurial role. The investor was, therefore, entitled to residual income. Schumpeter’s entrepreneur, in his view- was merely an employee, who was rewarded by wages and did not share in the residual. Knight’s theory differed from Schumpeter’s on another essential point. Schumpeter’s theory did not deal with selection problems. Bankers would always choose the most capable entrepreneurs without much effort. We can, therefore, conclude that uncertainty was largely absent from Schumpeter’s scheme. Consequently, bankers did not need to be rewarded by (excess) profits in Schumpeter’s view. Knight, however, made uncertainty the heart of his theory on investment and profits. Not all ventures would turn out to be successes; some would fail. However, the failures cannot be distinguished from the successes beforehand. Knight’s theory depicts investment as a discovery process. Many new ventures are launched of which only some will survive and prosper. Knight’s vision seems to fit actual developments. Many new businesses are launched

\(^{13}\) F.H. Knight, His doctoral dissertation was published at Cornell in 1916 and appeared in 1921 as ‘\textit{Risk, Uncertainty and Profit}’.  
\(^{14}\) F.H. Knight 1921. ‘\textit{Risk, Uncertainty and Profit}’, p.20.
especially in ‘high tech’ sectors, of which many die prematurely and only a few become extra-ordinarily successful.

Knight developed a psychological theory of profits, in which expectations played a central role. He stressed that successful entrepreneurship can only emerge unexpectedly. This applies to both the date of entrepreneurial arrival and to the person that will become the (successful) entrepreneur. He contended that profits are more abundant when they are less expected. The average profit rate will be low, if men generally judge their own and other abilities well. (Knight, 1921, 284). Investors will then just obtain ‘normal’ rates of return on investment. Profitability will drop, if investors are too optimistic. Too much will then be invested and rates of return will be below expectations. The reverse applies, if investors have been too cautious (Knight, 1921, 285). The same line of reasoning applies to individual investment projects. Differences of opinion on the prospective valuation of an individual investment project can only exist, if its outcome can not be predicted with certainty. All residual income would accrue to the managers and other employees, if profits could be accurately predicted. Knight thus emphasized that only the originally underestimated project or the underestimation of projects in general can generate profits.

Knight’s emphasis on uncertainty seems to foreshadow Keynes ‘General Theory’, in which expectations took center stage. However, Knightian expectations are destined to be illusory, whereas Keynesian expectations have the character of self-fulfilling prophecies. Optimism –in Knight’s view- will entail excessive investment and a low or even negative rate of profit. Keynes –in contrast- held the view that optimism stimulated investments and occasioned savings to match these investments. Keynes referred to ‘animal spirits’, which he defined as an ‘unwarranted’ degree of optimism as a precondition for the occurrence of full employment (GT, 162). We can conclude that Knight’s and Keynes’ views on uncertainty are exact opposites. Knight stated that uncertainty lied at the heart of all profits and were the main motivating force for the launching of new ventures. Keynes did not clearly distinguish between risk and uncertainty, but put them all under the heading of risk, to which he attributed a negative effect on the volume of investment.

5. KEYNES, SCHUMPETER AND RECEIVED DOCTRINE

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15 F.H. Knight, 1921 op cit, pp. 147-8.
Keynes’ *General Theory*, meant a radical break with several notions that had been part and parcel of economic doctrine until that day. This applies to the English classical economics that stood in the Ricardian tradition. Keynes main point is that saving and investment do not need to equilibrate at full employment equilibrium, but in general will strike equilibrium far below that. Hence, there are no tendencies in market economies that work towards full employment and the economy should therefore, not be left to itself.

Keynes’ lack of appreciation of saving also meant a break with previous economic theorizing. Economists preceding Keynes had seen saving as a virtue bolstering economic growth. The virtuousness of thrift stood central in Weber’s theory of the relationship between economic development and the Protestant Ethic. Saving had also played an important role in the work of Austrian economists such as Boehm-Bawerk and English economists such as Marshall and Pigou. In fact, no economist before Keynes had dared to put saving in an unfavorable light. He not only discards English classical theory, but also American views on this point, such as those expressed by Fisher and Taussig and Frank Knight and French economists such as Walras (GT, 176-7).

Keynes succeeded to indict thrift and to put this bourgeois virtue on the defense. Schumpeter had stressed entrepreneurship and innovation as the main engines of economic development and not capital deepening or saving. Personal savings did not need to precede investment, in his theory, but could be financed by credits. This gave people from all walks of life the opportunity to become entrepreneurs. Credits would be repaid from profits caused by innovation.

Keynes’ theory meant a departure from theories on economic development wherein the entrepreneur fulfilled a central role. Schumpeter stood in a long tradition of writers on entrepreneurship. He was preceded by Cantillon, Weber and Sombart and was succeeded by Knight. Weber, Schumpeter and Knight all held the view that entrepreneurship furthers economic growth, because the entrepreneur acted as an agent of economic change\(^\text{16}\). That is because these three authors identified entrepreneurship with business formation and hence with (net) investment. However, Keynes conveyed the pessimistic view, that entrepreneurship belonged to the past. He associated entrepreneurship with long term commitment, which—in his view—had become outdated. The entrepreneur who owned his own business had vanished and was replaced by a managerial class that was much less devoted to the firm. Moral hazard, which had not played a significant role in the past, had grown in importance due to the

separation of management and ownership. Moreover, old style entrepreneurs had embarked on business as a way of life and did not coldly calculate profits and losses beforehand as did modern managers (G.T., 150). Keynes departs here from Webers’ description of capitalism. Weber had associated capitalism with rationality and calculability, which just suited the frugal Calvinist business man, who wanted to prove his worth in God’s eye, by amassing a fortune on this earth. However, the Calvinist did not just hoard money but also invested it -preferably in his own business17. Schumpeter’s entrepreneur was less frugal, but more innovative than Weber’s Calvinist. Schumpeter depicted the entrepreneur as a leader whose innovative capacities had now replaced military capacities as the vehicle for social ascent. Hence, we can also say in Baumol’s words that capitalism had opened up opportunities for constructive entrepreneurship instead of destructive entrepreneurship18. Keynes – in contrast- contended that individual investment initiatives will only be adequate, when reasonable calculation is supplemented and supported by animal spirits (GT, 162). He argued that the demise of the entrepreneur was imminent and that investors had become short termists who sold their assets at a whim on financial markets that had developed to a high degree of liquidity. Hence, Keynes wrote the entrepreneur out of the economic play. He suggested that economic performance could be improved, if investors would take a long term view. ‘The spectacle of modern investment markets has sometimes moved me towards the conclusion that to make the purchase of an investment permanent and indissoluble, like marriage, might be a useful remedy for our contemporary evils’ (GT, 160). He abhored speculation because of the alleged misallocation it brought19. ‘When the capital development of a nation becomes the by-product of the activities of a casino, the job is likely to be ill-done. The measure of success attained by Wall Street, regarded as an institution of which the proper social purpose is to direct new investment into the most profitable channels in terms of future yield cannot be seen as one of the outstanding triumphs of laissez-faire capitalism. These tendencies are a scarcely avoidable outcome of our having successfully organized ‘liquid’ investment markets. 20 He held the opinion that investing should be left to experts and that the general public should be kept from buying equity shares. ‘That the sins of the London Stock Exchange are less than

19 He defined speculation as the activity of forecasting the psychology of the market and enterprise as the activity of forecasting the prospective yield of assets over their whole life (GT, 158).
20 J.M.Keynes, 1936 ‘op. cit..159
those of Wall Street may be due to the fact that Throgmorton Street is compared to Wall
Street inaccessible and very expensive’ (G.T., 159-160).

Keynes here seems to support the view, that an increase of transaction costs would have
beneficial effects. However, Keynes was also fully aware of the investment increasing
properties of liquidity as is demonstrated by the following quote. *If individual purchases of
investment were rendered illiquid, this might seriously impede new investment*’ (GT, 160).

He then proceeds to conclude that the main vice of speculation is not that it contracts
investment, but that it causes instability.

Keynes does not suggest to improve stability through the development of more sophisticated
financial markets. Monetary policy is also of no avail, because it cannot guarantee success
due to the uncertain reaction of liquidity preference to changes of the interest rate. The only
way out is state intervention in investments: *I expect to see the State, which is in a position to
calculate the marginal efficiency of capital goods on long views and on the basis of the
general social advantage, taking an ever greater responsibility for directly organizing
investment; since it seems likely that the fluctuations in the market estimation of efficiency of
different types of capital will be too great to be offset by any practicable changes in the rate
of interest* (GT, 164).

6. SCHUMPETER AND KEYNES ON THE STABILITY OF CAPITALISM

Schumpeter held the view that a static capitalist system would generate full employment in
competitive equilibrium. A progressive economy would break away from equilibrium but
would always steer towards a new equilibrium. His opinion on the inherent stability of
capitalism was also voiced in his 1928 contribution to the *Economic Journal*, in which he
stressed that capitalism was stable at least economically, but might give way under the weight
of increasing political pressures. 21 This view was expressed eloquently and at much greater
length in his famous *Capitalism, Socialism and Democracy* (1942). Most of the classical
authors such as Mill and Walras also considered capitalism inherently stable. But, both Marx
and Keynes developed a breakdown theory of capitalism, as Schumpeter records in his
comments on Keynes. *With Marx capitalist evolution issues into breakdown, with Keynes it
issues into a stationary state that constantly threatens to break down*. Hence, Marx and

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Keynes both held the view that capitalism was subject to endogenous decay\(^{22}\). Schumpeter records that Keynes pessimism was not caused by the economic depression of the 30s. He had already articulated his pessimistic world view in 1920 in his 'Economic Consequences of the Peace'. The 19th century –in Keynes’ view- had only constituted a brief intermezzo in a world that was ultimately subject to Malthus’ law. ‘What an extraordinary episode in the economic progress of man that age was that came to an end in 1914, when escape from poverty and entry into the middle and upper classes was possible for any man of capacity or character exceeding the average.’\(^{23}\) However, the abolition of Malthus’ law due to rapid industrialization and international trade could only be of a temporary nature. It was based –in Keynes’ view- on a peculiar psychological make-up of 19th century individuals, who were willing to give up current consumption in order to secure the maximum accumulation of capital. Keynes attributed 19th century investments such as the railways to relatively low wages and high savings ‘the work of labor was not free to consume in immediate enjoyment the full equivalent of its efforts, whereas the capitalist class refrained from eating their cake’. ‘Thus this remarkable system depended on a double bluff or deception’ (Keynes, 1920, 17).

The vast accumulation of fixed capital that was built up during those times could never have come about in a society where wealth was divided equitably. However, the capitalist class refrained from consuming the surpluses, but invested it instead. Keynes contributed the lack of conspicuous consumption by the capitalist class to puritan instincts. Saving and investing was carried out with an eye directed on the future. ‘Society was working not for the small pleasures of to-day but for the future security and improvement of the race, - in fact for ‘progress’. (Keynes, 1920, 18). We can detect some allusions to Weber’s theory of the Protestant Ethic in these observations. But, Keynes –in contrast to Weber- considered 19th century economic progress a brief intermezzo in a world that ultimately could not defy Malthus’ law. The fertility of the species would catch up with saving and investment and do away with progress. Moreover 19th century progress –in his view- was not sustainable because it was based on unstable psychological conditions. ‘It was not natural for a population, of whom so few enjoyed the comforts of life, to accumulate so hugely ‘ (19).

Keynes’ view on 19th century developments is also eloquently expressed in the General Theory:


'During the nineteenth century, the growth of population and of invention, the opening up of new lands, the state of confidence and the frequency of war seem to have been sufficient together with the propensity to consume, to establish a schedule of the marginal efficiency of capital which allowed a reasonable satisfactory average level of employment to be compatible with a rate of interest high enough to be psychologically acceptable to wealth-owners. There is evidence that for a period of almost hundred and fifty years the long run typical rate of interest in the leading financial centers was about 5 percent, and the gilt-edged rate between 3 and 3.5 percent; and that these rates of interest were modest enough to encourage a rate of investment consistent with an average rate of employment which was not intolerably low. To-day and presumably for the future the schedule of the marginal efficiency of capital is, for a variety of reasons, much lower than it was in the nineteenth century. The acuteness and the peculiarity of our contemporary problem arises, therefore, out of the possibility that the average rate of interest which will allow a reasonable average level of employment is one so unacceptable to wealth-owners that it cannot be readily established merely by manipulating the quantity of money (G.T, 307-9).

We can thus conclude that Keynes considered capitalist progress a transitory state. The motives that were operative during the 19th century were exceptional and incommensurate with human nature, which in Keynes’ view leaned more heavily towards hedonism.

7. KEYNES AND HIS AMERICAN CRITICS

The publication of the ‘General Theory’ in 1936 was followed up by a host of articles. Keynes’ work was intensely discussed at the other side of the Atlantic, as many contributions both pro and contra Keynes that appeared in the late 30s issues of the Quarterly Journal of Economics testify. Many participants in the debate were (former) students or colleagues of Schumpeter. This applies to Leontiev, Taussig, Lerner, Lange, Hansen and Samuelson. Some contributions attempted to cast Keynes’ system in exact form and to make his model more general\(^\text{24}\). This applies foremost to Hicks, but also to Hansen, Lange and Samuelson. Modigliani wrote a critical assessment of Keynes’ General Theory in Econometrica, on which Schumpeter based his (uncompleted) assessment of the General Theory in his ‘History of

Economic Analysis’ 25. Modigliani contended that one equation is missing in Keynes’ system of equations; the equation relating the wage rate and the labor supply. Modigliani states that Keynes ‘implicit’ function of labor supply is perfectly elastic at the historically ruling wage rate and becomes only flexible upward after every one who wants so has found employment. Hence, Keynes’ labor supply function differs from that of the classics, who assumed that the supply of labor depended on real and not on money wage rates. Modigliani continues by stating that Keynes’ theory is just a special case, namely that of nominal wage rigidity and that his theory, therefore, could not be called general. This was also the gist of Schumpeter’s assessment of the ‘General Theory’ 26. Keynes never allowed that either (wage) flexibility or perfect competition could do the job of restoring full employment equilibrium.

Another line of critique was developed by Allan Meltzer, who emphasized the dire consequences Keynes attached to uncertainty 27. Keynes assumed that rational expectations were unattainable and that the system could never attain an optimum. He attributed the dismal performance of capitalist economies to the increasingly uncertain nature of investment. He explicitly stressed these points in his February 1937 article in the Quarterly Journal of Economics 28. Keynes records in this article that investment has become ever more uncertain and has become uncalculable under capitalism.

‘Ricardo, Marshall, Edgeworth, Pigou and more recent writers were dealing with a system in which the amount of the factors employed was given and the other relevant facts were known more or less for certain. At any given time the facts and expectations were given in a definite and calculable form; and risks were supposed to be calculable and capable of an exact actuarial computation’ 29.

He continues by stating that the fact that our knowledge of the future is fluctuating, vague and uncertain, renders wealth a peculiarly unsuitable subject for methods of the classical economic theory. The classical economic theory thus falters –in Keynes’ view- as soon as uncertainty becomes pervasive. All economic theorizing that does not take uncertainty into account –in his view- is redundant.

‘I accuse the classical economic theory of being itself one of these pretty, polite techniques which tries to deal with the present by abstracting from the fact that we know very little about

The orthodox theory assumes that we have a knowledge of the future quite different from that which we actually possess. This false rationalization follows the lines of the Benthamite calculus. The result has been a mistaken theory of the rate of interest' (QJE, 1937)

Keynes never refers to Knight’s magnum opus, but seems to be very well aware of the distinction between risk and uncertainty, as can be deduced from the following quote from his QJE article: ‘By uncertain knowledge, let me explain, I don not mean merely to distinguish between what is known for certain from what is merely probable. The game of roulette is not subject, in this sense, to uncertainty. The sense in which I am using the term is that in which the price of copper or the obsolescence of a new invention are uncertain. About these matters there is no scientific basis on which to form any calculable probability whatever (op. cit.).

Keynes—in contrast to Knight—perceives uncertainty in a very unfavorable light. The desired marginal efficiency of capital would always exceed that required for the establishment of full employment equilibrium. Too little investment will be carried out due to the risk premium. Knight, by contrast, held the view that uncertainty would spur investment.

8. KEYNES, EXPECTATIONS AND UNCERTAINTY

I want to contend that Keynes’ (and Schumpeter’s) negative views on uncertainty apply, if investment is financed by debt. Uncertainty would then indeed raise the interest rate and curb investment. However, equity finance would make it possible to defer payments to investors until enterprises have become profitable. We can think of ‘high tech’ start-ups that are financed by venture capital and many of whom will fail. Only the few successful companies will achieve positive rates of return for their investors. However, uncertainty would not curtail investment, if the realized average rate of return on such investment does not exceed the riskless rate of return. Knight—in contrast to Keynes—considered this a distinct possibility.30

We may elucidate our thought by way of the following, simple example. It was mentioned above that a high degree of uncertainty will raise desired rates of return. Hence, the desired rates of return will amount to fifty percent if nine out of every ten ventures are expected to fail and investors want a market rate of return of five percent. The ex post rate of return on investment does not need to exceed the five percent mark. An average rate of return of five

30 F.H. Knight, 1921 op cit, p 284.
percent for all investments can be achieved, if only one investor obtain a rate or return of fifty percent, whereas all other investors just receive their principal. Our numerical example mainly applies to investment that is financed by equity capital. Investments that are financed by debt would be negatively affected by uncertainty. Indeed, an interest rate of fifty percent would curb the amount of investment significantly. Uncertainty becomes an even greater hindrance to investment that is financed by debt, if investors could completely lose their loans in the case of default. The (ex ante) rate of return on investment needs to exceed the fifty percent mark in the above mentioned example by a wide margin, if assets would be completely lost in the case of default. We will assume that an investor invests in 10 projects, and invests 1000 dollars in each project. It is also assumed that he will receive no reimbursement at all in the case of default. We will only take a one year period into account to facilitate calculation. Only one project turns out to be successful after one year. Hence, our investor has lost 9.000 guilders on the nine failures. The successful project, therefore needs be worth 10.500 guilders to achieve a five percent rate of return on his total portfolio. This means that the rate of return on this one successful project amounts to 950 percent. Keynes’ contention that uncertainty affects investment would be plausible under the condition of complete irrecoveralibity of investment. We can also say that investment will be negatively affected if investment is completely sunk. If ninety percent of investment brings a zero rate of return, but keeps its (second hand) value, an average rate of return of five percent can be obtained if the successful project achieves a rate of return of fifty percent. Sunkness of investment, however, does not need to have equal dire consequences in all cases. The effect of sunkness will differ between sunk investment of a physical and of a non-physical nature. Sunk physical investments such as plant and equipment will stay in the industry as long as price exceeds average variable costs. The presence of those firms will depress price as long as they have not actually left the industry. The same does not apply to sunk investment of a non-physical nature, such as R&D expenditures. A failed R&D project or an unsuccessful market campaign will not exert an adverse effect on other firms. The successful firm, e.g. the firm that introduces an innovative product can establish a monopoly and does not need to fear competition. It is, therefore, much easier to obtain high rates of return on investment in the ‘high tech’ sector with its largely intangible investment than in industries belonging to the ‘old’ economy where investments are tangible. Many successful ‘high tech’ start-ups that were launched at the stock exchange are worth more than ten times their initial investment and so make up for the many failures in these industries that come and go without leaving
many traces. Hence, contemporaneous investment in the `new’ economy seems to fit our
description of investment that is not curtailed by uncertainty rather well.
Investments are negatively affected by uncertainty, if competition is lacking between
investors. A monopolistic investor will reduce investment in order to increase its rate of return
just like a monopolistic producer will reduce output in order to raise price and increase
profits. Competition among investors, however, would increase the amount invested and
hence decrease the average rate of return. Rates of return on capital invested of course will
vary in times of booms and busts. But, business cycle fluctuations do not need to have an
upward effect on the long term rate of return.

9. CONCLUSIONS

Schumpeter and Keynes held different views on the inherent stability of capitalism.
Schumpeter based his initial optimistic opinion on the future of capitalism on the vigor of
entrepreneurship that got unleashed after feudalism and nationalism had given way to
liberalism. Keynes –in contrast- considered capitalism an unstable system that would never
operate according to its potential due to uncertainty.
Both Schumpeter and Keynes held the view that capitalism’s bright past could not be
extended into the 20th century. Schumpeter saw the political support for capitalism erode,
whereas Keynes thought that modern corporations were unable to continue capitalism’s 19th
century successes. Both Keynes and Schumpeter largely ignored Knight’s analysis of
uncertainty.

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