CHAPTER FOUR

FURTHER DEVELOPMENTS IN THE UNCERTAINTY THEORY
The idea that uncertainty is the main source of profit arising in an enterprise economy has appealed to a large number of noted economists leading to a number of contributions to the theory after Knight gave it its classic formulation. Some of these contributions are essentially clarifications and further refinement of the key concepts. Another direction in which the theory's development can be traced is the attempt to analyse the process of decision-making in face of uncertainty. Besides, the uncertainty theory has been incorporated into a broader framework by B.S. Keirstead whose theory of profit seeks to synthesise the Schumpeterian and Knightean theories with the relevant implications of the Keynesian macroeconomics and monopolistic competition theories. Reserving the discussion of Keirstead's theory for a subsequent chapter we shall, in what follows, briefly note some of the main contributions made to the theory after Knight.

HICKS' APPRECIATION

A decade after the publication of Risk Uncertainty and Profit, J.R. Hicks, while affirming that 'that work has laid securely the first foundation on which any future theory
of profit must rest,\(^1\) felt that the theory could not be complete until it was made clear 'what exactly profit is and what are the causes that determine its magnitude'.\(^2\) He was not satisfied with Knight's treatment of these issues, and proceeded to formulate his own analysis. The attempt, however, is not very fruitful. The only distinct conclusion that emerges is that uncertainty is not likely to affect the magnitude of aggregate profits — the share of National Dividend going to entrepreneurs. It would only affect its distribution amongst individuals.

'Many of the groups of persons and resources with which we are concerned in the theory of distribution seem to be large enough for nearly all the risks they bear to cancel out in a moderate period of time. Uncertainty of return will usually not affect the total income of, or return to, a group (however much it may affect individuals) unless the supply of resources and consequently the terms offered for them is affected by the presence of uncertainty .... The important exception to this rule does not happen to be the case of unmeasurable risks'.\(^3\)

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2. Ibid., pp. 170-71.
3. Ibid., p. 187.
Hicks thinks that in the long run aggregate profits accruing due to uncertainty tend to be zero or negative. Those who draw their remuneration in the form of profit will receive a total return that in proportion to the services performed is hardly more, and possibly less, than that received by the investors in safe concerns.  

This is not very different from the position taken by Knight, who holds that aggregate profits will be positive, negative or zero, depending upon the pattern of expectations formed in attempts to forecast the unpredictable shifts in demand and supply which take place. Entrepreneurs as a group will realise a positive profit if they underestimate the prospects of their business relatively to their disposition to venture. If they overestimate their prospects they will, in the aggregate, suffer losses. If the estimates are a matter of pure chance it would seem that the variation in the two directions will be equal, the average correct, and the general level of pure profit zero. Knight thinks it is not possible to arrive at a clear conclusion on inductive grounds, but he is 'strongly of the opinion that business as a whole suffer a loss'.

1. Ibid., p. 183.
3. Ibid., p. 364.
4. Ibid., p. 365.
This, however, only goes to confirm the view that the uncertainty theory is essentially a microeconomic theory and loses its significance when applied at the macroeconomic level, and in the long run. The same is true of the concept of pure profits.

Dismissing Knight's sharp distinction between risk and uncertainty as too uncompromising and finding his treatment of uncertainty unsatisfactory, Hicks proceeds to classify investment schemes according to the risk schemes they offer, the investor's behavior being a result of the reaction to these schemes of his own attitudes toward uncertainty. The return to investment thus studied is a gross return including interest and other elements, not the pure profits of the uncertainty theory. Changes in uncertainty schemes will necessitate changes in the demand for, and supply of productive services, and the final equilibrium position must take these changes into account.

While studying the effects of a change in the chances of reward on the supply of resources for a given employment, Hicks rejects the notion of mathematical expectation: He finds the emphasis on money returns only to be unsatisfactory and thinks that the various uncertainty schemes must be compared on the basis of the 'expectation of subjective satisfaction'. ¹ A taste for

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¹ J. R. Hicks, op. cit., p. 180.
gambling is also relevant in this context. While no
definite conclusions are arrived at, it is noted that there
is 'a definite relation between any given uncertainty
scheme and the quantity of the factor of production that
will be elicited by it'.

Hicks examines the various ways of dealing with
uncertainty as Knight had done earlier. It mainly takes
the form of adjustments in the 'scale and technique' of
production, but the possibilities open to a firm in this
regard are obviously limited. Some risks are transferred
to outside parties such as the insurers. The remaining are
borne by the participants in the production process. These
fall into two categories: those who get a remuneration
depending on the firm's success; and those who receive
contractually fixed payments like wages, interest and rent.
The second group also bears part of the risk, 'in particular
the risk that when the service has been performed, the
payment will not be made'. The difference between the
types of uncertainty borne by the two groups is explained
with the help of frequency curves. The supply of the
services coming from the two groups is influenced by the
difference in their exposition to risk.

1. J.R. Hicks, op.cit., p. 182.
2. Ibid., p. 177.
Analyzing the Decision-Making Process

Despite Hicks’ denunciation of 'metaphysics and psychology' forming the basis of the theory of profit, one of the main offshoots of the uncertainty theory was a greater interest in the analysis of decision-making in uncertain situations. The claims of such analysis to be an essential part of profit theory are, however, highly doubtful. The theory of investment behaviour or decision-making is distinct from the theory of profit. The latter explains profits on the basis of uncertainty whose nature is described and presence explained to the extent it is necessary to show how value residues arise. Exactly how the entrepreneur takes a decision is not relevant. It is sufficient to point out that the decisions taken might not be correct ex post facto.

Nevertheless, a reference to these developments is justified on the ground that by demonstrating the contrast between the decision-making processes in certain and uncertain situations such an analysis further clarifies the

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1. Cf. W. Fellner, 'Distortion of Subjective Probabilities as a Reaction to Uncertainty', Quarterly Journal of Economics, Vol. LXIV, No. 4, November 1951, p. 686. Sidney Wintraub, An Approach to the Theory of Income Distribution, p. 200 fn. and Paul Streeten op. cit. p. 284. That Knight himself did not like to add this dimension to the theory of profit is obvious in the light of his remarks in the preface to the 1957 reprint of his Risk Uncertainty and Profit. He writes that if the book was to be rewritten no more elaborate theory of uncertainty would be offered. That would require a treatise on epistemology and science. It is still my contention that contingency or chance is an unanalyzable fact of nature', p. LX.
nature of uncertainty and the emergence of the consequent value residues.

Attempts to analyse the process of decision-making in uncertain situations have been generally based on 'subjective numerical probability'. The individual, after listing in his mind the whole set of possible outcomes that he can conceive of, assigns to each one of them some proper fraction which are so chosen that they sum to unity, each representing the probability of the outcome in question turning out to be the truth. A choice thereafter is not difficult though a commonly agreed solution is not available. But having defined uncertainty situations in a manner which excludes any measurements, such an approach can hardly be accommodated by the uncertainty theory. Most of the problems facing the decision-maker are unique, in the sense that no similar problems have arisen in the past. In the absence of sufficient similar instances to allow grouping, the frequency distributions which could form the basis of probability calculations are simply not available. Moreover, 'the application of frequency ratios only makes sense if the individual can feel sure that there will be many repetitions, that there will be a divisible experiment in which the immediate act, with which he is now concerned, will be swallowed up.' Many of the truly uncertain situations calling for

1. G.L.S. Shackle: Expectations in Economics, chapter VII.
decision are, besides being unique, also crucial, in the sense that the outcome of the decision will affect the entire future career of the decision-maker by irreversibly destroying some circumstances essential to the situation, thus eliminating the possibility of the same situation arising again. It is obviously absurd to apply probability calculations to such situations. The subjective numerical probability approach is certainly relevant to a large number of situations regarding decision. But it is not these situations in which the theory of profit is interested.

Another important reason why the above mentioned approach must be abandoned in favour of a more suitable one is the failure of the probability measures correctly to depict the state of mind of the decision-maker in face of uncertainty. The mind is charting the possibilities of occurrence of various hypothetical outcomes of any course of action (indeed of many courses of action). Many outcomes appear possible, but some appear more possible than others. The difficulty is that 'probability cannot discriminate or express degrees of possibility'.¹ A number of outcomes may all appear to be perfectly possible. But the probability technique cannot accommodate this idea. Anyone of the many perfectly possible outcomes cannot be assigned a probability

coefficient of one, for the obvious reason that there are many such claimants. Fractions would neither convey the idea of perfect possibility nor distinguish these from less than perfectly possible hypotheses. Even if there was only one perfectly possible hypothesis a unity probability would convey the entirely different idea of perfect certainty.

The truth of the matter is that probability, whether objective or subjective, is a means of organising the 'knowledge' inherent in the situation, and it is no use calling it into service where there is no knowledge at all.

SHACKLE’S CONTRIBUTION

An alternative approach has been developed by G.L.S. Shackle who is convinced that 'Men's knowledge and insight do not usually enable them to specify narrowly what is positively probable, but only to discountenance what is implausible or far fetched'. ¹ Accordingly he has evolved

¹. G.L.S. Shackle: Uncertainty in Economics, p. 3.
the concept of potential surprise — an ingenious device to measure, indirectly, a person's degree of belief in a hypothesis coming true. There are degrees of possibility and there are degrees of surprise. The two are inversely related. The less possible we regard an outcome the more surprised we would feel if it came true, and vice-versa. We would not at all feel surprised if something regarded perfectly possible by us actually comes true. Thus 'surprise provides us with a means of knowing how strongly we doubted the possibility of a given happening or a given outcome of some act of our own'. All the imagined outcomes of a course of action can be assigned positions on a scale of belief by first assigning to each the degree of surprise the person would feel if the outcome were to come true.

An entrepreneur taking a decision in a situation characterised by uncertainty exercises his intuition, intelligent guess, etc. listing the various alternative courses of action open to him, and forming various hypotheses regarding the outcomes of each course of action. Each such hypothesis has two aspects: the size of gain (or loss) anticipated and the degree of potential surprise associated with it. The power of a hypothesis to stimulate the

1. Ibid., Decision, Order and Time in Human Affairs, p. 68.
2. Ibid., Expectations in Economics, pp. 10-11.
3. See Expectations in Economics, pp. 16-17 and Uncertainty in Economics, p. 43. This power is later termed 'ascendancy' of the hypothesis (Decision, Order and Time in Human Affairs, p. 168).
individual into action is an increasing function of the desirability of the outcome (which depends on the size of the gain or loss, being negative in the latter case) and a decreasing function of the associated potential surprise. The Gain-hypotheses attract, and the Loss-hypotheses repel, but their power to do so depends not only on the size of the anticipated gain or loss, but also on their degree of possibility, measured through potential surprise.

Out of the various gain-hypotheses relating to anyone course of action there are some, at least one, whose degree of potential surprise is nil — the individual would not at all be surprised if it came true as he regards it to be perfectly possible. There are others involving some positive degree of potential surprise, yet others involving higher degrees of potential surprise and so on, till we reach hypotheses which the individual regards to be almost impossible. These carry the absolute maximum of potential surprise. While the hypotheses in the inner range of zero potential surprise may differ with respect to the size of gain anticipated it is assumed that outside this range the degree of potential surprise increases with the increase in the size of the gain anticipated.

Similar is the case with the loss-hypotheses. Now out of all the gain-hypotheses the one with the greatest power (to attract) will focus the attention of the individual.
Similarly there will be one loss-hypothesis which will focus his attention having the greatest power (to detract). These are the focus-gain and focus-loss hypotheses. The focus-gain attracts the individual towards the course of action concerned; the focus-loss detracts him away, the decision depending on which of the two is more powerful.

There are many alternative courses of action. A pair of focus values would be obtained for each alternative in the manner described above. A choice is then made in favour of that course of action whose focus-gain's power to attract in relation to the power to detract of its focus-loss is more than it is in case of other pairs of foci.

This may appear to be rather difficult. Shackle, however, has a ready device at hand. These 'primary' focus values are first converted into 'standardised' focus values. The standardised value of a primary focus-gain is such as to exercise equal power (ascendancy) but carrying zero potential surprise. 'We shall suppose the individual to ask himself in regard to each hypothesis of the pair; What hypothesis carrying nil potential surprise would have exactly equal power to stimulate his interest and would afford him the same degree of enjoyment (or distress) by anticipation.'¹ This makes the task of comparing various

¹. Ibid., Expectations in Economics, p. 18.
pairs of foci very easy. As all standardised foci carry nil potential surprise we are left only with the gain or loss magnitudes which are directly comparable. Choice is explained by Shackle with the help of an indifference map of uncertainties, which he calls the 'Gambler-preference curves'.

Each point on the indifference curve indicates a combination of standardised focus-gain and focus-loss which is equally stimulating for the individual. These curves slope upward from left to right, greater gain being required to balance the increasing loss as we move towards left.
The point 0 at the origin indicates zero focus-gain and zero focus-loss, and the same is true of all points on the 0 curve. Any one course of action would be represented on this map as a point on one of the curves. Out of any two courses of action the one whose focus values lie above and to the left of the curve containing the other will be preferred. Thus a choice between several alternatives will be made in favour of the one whose foci are situated highest on the left-most curve.

The shape of the map reflects an individual's attitude towards uncertainty at any time and will differ from person to person and from time to time.

As an individual cannot venture to lose more than his entire fortune, choice is also bounded by a perpendicular erected on the loss axis at a point measuring his entire fortune.

The various focus outcomes indicate the individual's expectations at present. But he might expect a change in his own expectation with the passage of time.¹ Such changes are expected in response to news — new information having a bearing on the action scheme open to the individual. Shackle has studied this aspect of the problem in some details.

¹. See Shackle: Expectations in Economics, Chapter II, Appendix D and chapter III, and Decision, Order and Time, chapters XXIV and XXV.
But we think the essence of Shackle's analysis of choice in face of uncertainty is sufficiently represented by the brief summary given above.

Shackle's analysis underlines the unmeasurability of the outcomes of uncertain ventures, and the role of imagination and importance of the individual's tastes and temperament (his gambler preference) in taking decision in face of uncertainty. As the entire process, from imagining hypothetical outcomes and gauging their degrees of possibility, to the construction of the gambler-preference map is purely subjective, the departure of the actual ex post outcome from the one which formed the basis of action is seen in its true light and seems to be quite natural. As we have already remarked it is in highlighting these aspects of the process, rather than in describing the decision-making process that Shackle's contribution to the uncertainty theory of profit lies.

CRITICS OF SHACKLE'S APPROACH

Shackle's attacks on the 'orthodox' approach and his contention that the probability calculations do not apply to situations characterised by true uncertainty has not gone
unchallenged. There is no need for us, however, to go into the details of this controversy, its rightful place being the theory of decision-making. It would, however, be interesting to note that J. Pen demonstrates that the real basis of the non-applicability of probability calculations to crucial events is the endless character of the series of alternatives and not the crucial nature of the event.¹

Professor Pen thinks that demolishing the orthodox view is not necessary for Shackle's theory which is really relevant to a special case. Weckstein,² who finds Shackle's views 'persuasive but not correct' contends that the concept of logical probability as developed by Carnap is quite suited for unique events. He also regards it an exaggeration to contend, as Shackle does, that the events faced by entrepreneurs are generally unique in nature.

C. F. Carter does not accept Shackle's proposition that a number of 'perfectly possible' hypotheses all carry zero potential surprise.³ He also poses the possibility of more

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than two focus values for the same course of action.\(^1\) Carter is, nevertheless, highly sympathetic to Shackle's innovation and proceeds to suggest some modifications which would remove some of the defects he discovers in Shackle's theory. Another alternative is suggested by James W. Angel. While critical of Shackle's description of how focus values are arrived at, he is, on the whole, in agreement with his criticism of the orthodox approach. His own scheme would measure likelihood directly instead of measuring it through surprise, take notice of the time period involved in various investment schemes and provide for a different method of comparing focus outcomes. Carter thinks that discrete values are more realistic than the continuous variables used for potential surprise and gains (and losses) by Shackle. The mental picture of the decision maker that he builds up comprises a number of steps, each signifying a degree of belief and accommodating a number of hypothetical outcomes differing in their attractiveness. Choice will be effected by comparison amongst the most attractive outcomes one from each step, the degrees of belief contending with the degrees of attractiveness.\(^2\)

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The modification sought in Shackle's theory would not affect its essential nature. It should, however, be noted that in replacing the probability approach by his own Shackle has not absolved the individual of all mental calculations. To assign degrees of potential surprise to various hypothetical outcomes of a number of possible courses of action, to discover the focus-outcomes and convert them into standardised forms and thus to construct the entire 'gambler-preference map' requires a degree of consciousness, subtlety of judgement and imaginativeness that is ordinarily lacking. All these vexed questions have been raised, with the rider that this brilliant solution is after all as tricky as the one it rejects. But what is really significant is not practical feasibility but psychological realism and logical consistency. The practical businessman may be as innocent with respect to the $\theta$ function and gambler-preference map as he is of the subjective numerical probabilities or Carnap's 'possits', but his mental process is certainly closer to Shackle's picture than to the image built by the probability approach.

Shackle's contribution has been fully endorsed by an important contributor to profit theory in the recent times — B.S. Keirstead, as we shall have occasion to mention later.

SHACKLE ON THE NATURE OF PROFIT

Besides analysing the process of decision-making in uncertain situations Shackle seeks further to clarify the profit concept and theory. He emphasises the need of having two distinct concepts of profit and of clearly distinguishing between them throughout any discussion on the nature, role and significance of profit. One concept of profit relates to the thing imagined, that which is the object of expectations and forms the basis of decisions. The other concept relates to the thing actually realised. The first is related to a future interval of time, with a decisive impact on the present moment, the 'moment in being' or the 'solitary moment' in which decision is actually taken. The second is an actuality in the past. It only determines the size of the fund at the entrepreneur's disposal for any future enterprise and influences his future course of action, making him more self reliant, optimistic or otherwise.

The first, the exante profit is by nature not a unique sum but a set of hypotheses — imagined outcomes of alternative courses of action. Each hypothesis has two dimensions: the size of gain (or loss) and the degree of possibility of its realisation. In meeting uncertainty

1. G.L.S. Shackle: Decision, Order and Time in Human Affairs, chapter III.
by taking a decision the entrepreneur is rewarded, simultaneously, by enjoyment or suffering in imagination due to the anticipated gain or loss. This enjoyment by anticipation of the expected gain is the only compensation for the distress by anticipation of the loss feared. Decision presupposes that the former prevails over the latter, in the alternative chosen.

The actually realised profits, however we define them, are unique sums of money — a one dimensional variable — and can be regarded a reward for meeting; uncertainty only in a special sense. ¹

Working with two different concepts of profit has its implications for the traditional maximisation principle. It is hard to conceive how it can be applied to the two-dimensional set of hypotheses which is the first concept of profit. If it is applied to the ex post realised profits it is, once again, in a very special and limited sense.

Shackle distinguishes between a number of types of ex post profits whose economic roles differ from one another. These are: ²

¹ Ibid., pp. 262-263.
² Ibid., Chapter XXVIII.
1. Profits relating to the outcomes of hypotheses carrying zero potential surprise (i.e., those regarded as perfectly possible). These are expected profits.

2. Profits relating to the outcomes of hypotheses carrying more than zero but less than the absolute maximum of potential surprise (which were characterised as less than perfectly possible but not impossible).

The difference in the magnitudes of 1 and 2 can be looked upon as windfalls. They may be regarded rewards of special knowledge and skill in the power of forecasting, as the expected profits are.

3. Profits related to the hypotheses carrying the absolute maximum of potential surprise (i.e., those regarded to be impossible). These are windfalls due to pure luck and specially favourable circumstances.

To the best of the present writer's knowledge, Shackle is the first economist to give a clear definition of profits ascribable to pure luck, as distinguished from expected profits and windfalls in the ordinary sense of the term.

Shackle also tries to distinguish between the different measures which can be applied to the expected profits. The standardised focus-gain of a hypothesis, and the gain-equivalent of a policy measured by the intercept of the relevant indifference curve on the Y axis of the gambler-preference map, are the two absolute measures. Corresponding to these are two differential

1. Ibid., p. 260.
measures yielded by a comparison of the policy under consideration with the next best, or with any other policy. By definition this type of profit is something implicit in the person's expectations existing at a single location of his viewpoint. This is in sharp contrast with the ex post profit which is something arising from the passage of the viewpoint through some time interval.¹

The economic role of decision-making and uncertainty-bearing is played by men to get the prize of profits in the ex ante sense discussed above.²

Shackle also evolves the concept of 'dynamic increment of gain-equivalent' which results from comparison of gain-equivalent of a policy with the gain-equivalent of another (or the same) policy called for by a revision of the individual expectations based on new information made available by passage of his viewpoint over a short interval of time.³ In effect, it is the result of a comparison between the person's ex ante and ex post views of the short time interval separating the two locations of his viewpoint. Shackle's view of the factors influencing businessmen's expectations and resulting in dynamic increments of gain-equivalents leads to the inference that it is mainly the behaviour of macroeconomic variables which is involved.

1. Ibid., p. 235.
2. Ibid., p. 263.
3. Ibid., pp. 264-65.
Shackle's work has, in the present writer's view, served to strengthen the claim of uncertainty theory of being the theory of profit (at the microeconomic level). It has done so by refining the key concepts and taking a clearer position on some of the problems posed by the critics of the theory. The same has been attempted by John Fred Weston.

A RESTATEMENT BY WESTON

J.F. Weston restates the uncertainty theory of profit in a generalised manner, removing a number of misunderstandings and answering some critical questions. He emphasises the fact that the chief contribution of the theory was to clarify the concept of economic profit and distinguish it from other incomes, such as wages, rents and capital gain. It explained how unimputed value surpluses arose, at the microeconomic level, because of errors of

prediction which were due to the existence of uncertainty. Profit is the difference between \textit{ex ante} and \textit{ex post} returns.¹

Weston reexamines the concepts of risk and uncertainty, finds Knight's classification unsatisfactory, and concludes that 'the relevant distinction for profit theory is not between risk and uncertainty but between transformable risks and nontransformable risks'.² He adopts C.O. Hardy's definition that 'risk exists when uncertainty is associated with an undesirable outcome.'³ What Knight calls risk may more informatively be referred to as transformable uncertainty.⁴

A number of false notions attributed to the uncertainty theory are examined and discarded. Thus it is wrong to treat uncertainty-bearing as a factor of production as Pigou does.⁵ Nor does uncertainty-bearing involve a disutility compensated by profit. The proper subject for study by the theory is not profits in the accounting sense, which are a conglomeration of various types of income

1. Ibid., \textit{American Economic Review}, Vol.XL, p. 46
2. Ibid., p. 43
4. Ibid., \textit{Journal of Political Economy}, p.185
5. A.C. Pigou: \textit{The Economics of Welfare}, Appendix I.
but the pure profits, as defined by uncertainty theory, because of their analytical significance. With the non-pure concepts of profit goes the view that profit motive is the major economic incentive. In fact it is their incomes which the economic agents seek to maximise. In a competitive economy income maximisation along with the price mechanism plays the allocative role which some theorists wrongly ascribe to the profit motive. Moreover, 'to attribute a central role to profit maximisation in static, equilibrium analysis must lead to confusion because static analysis abstracts from the very conditions which give rise to economic profit. Profit is therefore a concept which must be analysed in a framework of dynamic analysis'.

The maximisation principle cannot be applied to uncertain residues. This however does not imply that rational behaviour will not be possible or effective, because 'imitation, adaptation, and innovation are all examples of rational behaviour in face of uncertainty'. A further consequence of tearing profit apart from the context of competitive equilibrium is the rejection of the concept of normal profit.

He convincingly argues that the charge that uncertainty theory fails to explain profit as the income of a distinct social class is based on a misconception. Profit is not a distributive share at par with wages or interest. It is a non-functional income, such uncertain income forms a part

of the income of all factors of production.

Weston finds very close similarities in the profit theories of Knight and Schumpeter. Innovating activity is both a source and a product of uncertainty. By admitting that innovation itself is being reduced to routine\(^1\) Schumpeter has come closer to Knight's position that entrepreneurship is basically a judgement of men while innovation and other activities can be delegated to the hired manager. Despite this and other points of agreement the two economists' concepts of profit differ in important respects. The uncertainty theory of profit regards the income from the exercise of innovating function as wage or salary type of functional return. The temporary differential return secured by the successful innovator is a (Marshallian quasi rent; permanent differentials are monopoly revenues or taken as capital gains).\(^2\)

In examining the challenge to the uncertainty theory posed by the rise of macroeconomics Weston submits that the scope of the uncertainty theory is limited but stresses its usefulness in defining economic profit. He does not find the macroeconomic theories of Kalecki and Boulding satisfactory, but recognises the need of such a theory.

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which would supplement rather than replace the uncertainty theory.¹

Brief references to Shackle show that Weston is neither impressed by his new technique nor convinced by his attack on the conventional approach. But his remark that 'if the decision-maker cannot assign probability values to alternative outcomes, it is difficult to understand how he can arrive at degrees of potential surprise'² is obviously prompted by a failure to appreciate the main reasons of Shackle's attack on the application of probability judgements to uncertainty situations. Weston continues to believe in the application of probability theory to uncertain situations despite warning that Knight's theory would lose much of its contents if this is done.³ Weston however finds the problems involved to be too difficult for Shackle's approach to deal with satisfactorily.

WEINTRAUB'S EMPHASIS ON CONTRACTS

Yet another contribution to the uncertainty theory of

profit that deserves mention is that of Sidney Weintraub whose 'analysis builds on the work of Knight and parallels a more recent contribution by Weston'. Though the macroeconomic nature of Weintraub's theory of profit necessitates the postponement of its detailed consideration to a later chapter, some of the points relevant to the theme of this chapter will be noted below.

Weintraub emphasises the contractual basis of modern enterprise as the main cause, along with the presence of uncertainty, of the emergence of profit.\(^2\)

'Contracts usually provide for a rigid temporal payment plan, regardless of economic changes; bankruptcy courts, mutual consent, or expiry dates provide the only escape routes. It is this fact, therefore, of the rigidity of the payment sequence despite economic change, which permits a profit concept to be forged'.\(^3\)

This, Weintraub thinks, calls for elevating the existence of contracts to the status of a source of profits. It is justified to do so because the existence of contracts inevitably leads to the emergence of profits or losses.

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2. Ibid., p. IV; and pp. 191-195.
3. Ibid., p. 192.
'Once contracts appear in the economy a profit trail is almost inevitable. Any change in economic condition from the expectation on which the contracts were based will establish some deviation between imputed values and contractual earnings and it is this discrepancy which creates profits or losses'.

This stress on the contractual base serves an important purpose in Weintraub's theory. It explains the permanence of a profit element in income better than the uncertainty factor left alone could do. Uncertainty relies on chronic change and lagging adjustments for explaining the perpetual existence of profits. The new explanation does not lean so heavily on this element of change because 'whether change is continuous or merely intermittent and occasional, so long as agreements are written with change imperfectly foreseen, then profits will always be interspersed among firms in the economy and will constitute one of the enduring income categories of reality'.

The uncertainty theory as formulated by Knight clearly recognised the contractual basis of modern enterprise and its role in causing profits to emerge. But, complains Weintraub, the tradition following him has perpetuated the

1. Ibid., p. 194.
2. Ibid., pp. 195 and 198.
3. Ibid., p. 198.
belief that unexpected changes constitute the course of profits and that they are condensed through rather rapid equilibrium adaptation. He specially charges Keirstead of having neglected this important element in the theory. But his criticism of Weston for having described profits as the difference between ex post and ex ante returns, presumably because of Weston's failure to mention contracts while making this statement, is based on a misunderstanding. For Weston, like Knight, always proceeds on the assumption that competitive conditions ensure that contractual payments (including payment for own factors) tend to be equal to the ex ante (expected) returns.

While conceding his point regarding the important role of contracts it can be pointed out that uncertainty still remains the ultimate source of profits. For, as he himself recognises, it is uncertainty which necessitates the contractual base.

"Business activity requires the contractual base in order to cope with the uncertainty attendant on economic change".

1. Ibid., p. 207
2. Ibid., p. 192 fn.
3. Ibid., p. 206 fn.
4. Ibid., p. 192.
And 'Diversity of forecast and risk aversion thus account for contractual modes of hire.'

Weintraub agrees with the other uncertainty theorists in rejecting the concept of normal profits. But then he proceeds to attack a concept long cherished in that tradition, that of pure profits. This has become, in his view, 'the most barren pill of all'. For one thing its magnitude (in the aggregate) is always tending to be zero. Then he wonders why there should be pure profits and no pure wages or pure quasi rent, and points out that all incomes are likely to bear the impact of unexpected events. But the concept was meant to guard against the accounting view of profit and the uncertainty theorists can justifiably point out that the need to do so has not diminished by Weintraub's own treatment of the subject.

Weintraub has no sympathy for Shackle's potential surprise approach. In fact as the whole topic 'borders on the psychological and the philosophical', economists alone can hardly arrive at any conclusion.

1. Ibid., p. 193.
2. Ibid., p. 191.
3. Ibid., p. 191.
4. Ibid., p. 200 fn.
Endorsement of the uncertainty theory has, however, been common to all these contributors. Their different approaches only serve to shed light on the different aspects of the theory. This was proof sufficient that the crux of the theory had stood the test of the times and no future theory of profit could afford to neglect it. But further developments, in entirely new directions, still awaited the student of profit theory.