CHAPTER THREE

THE UNCERTAINTY THEORY OF PROFIT
Economists have referred to risk and uncertainty as an explanation of profit since the very early days. But the prototype of these writers was the capitalist-owner of enterprise and they did not clearly distinguish between interest and profit. Both Smith and Ricardo refer to risk as a basis of the capitalist businessman's rewards, but by risk they mean the risk of loss of capital. J.S. Mill distinguishes between interest and the payment for bearing risks, but he also limits this concept to risk of loss of capital.

It was not until von Thünen's *Der Isolierte Staat* that a distinction was made between insurable risks and certain risks, especially changes in values and the chance of failure of the whole enterprise, which cannot be insured against. H.E. Mangoldt dealt with the same point in a more exhaustive manner, including in profits a premium on those risks which, due to their nature, could not be transferred by insurance and had to be borne by the entrepreneur himself. These economists, however, included in profits elements other than payment for risk taking. These elements were wages of management and various kinds of rent.

4. Ibid., p. 28.
A basic departure from this approach was made by F.B. Hawley who saw in the 'risks and responsibilities' of business the essential function of enterprise which he regarded as the only productive factor, land, labour and capital being mere means of production.¹ Risks and responsibilities being the essence of enterprise, profits — defined as the residue after payment of wages, interest and rent to the factors hired or supplied by the entrepreneur — were the reward of this function only. 'Profit is simply the price paid by society for the assumption of business risks'.² 'Every business man's subjective valuation of a risk is greater than his actuarial valuation of the same risk'³ because the assumption of risk is irksome, and gives rise to trouble, anxieties and dis-utilities of various kinds. These must be rewarded by a payment over and above the actuarial value of risk.

Though Hawley distinguished between insurable and non-insurable risks, he did not distinguish between their compensations. Both were rewarded by profits accruing to the entrepreneur, part of the profits being passed over to the insurer in case of insured risks.

1. F.B. Hawley quoted by Knight, op.cit., p. 41
3. Ibid.
A closer examination of risk and uncertainty is due to A.H. Willet. He showed that risk is estimated by applying the laws of chance to the accumulated result of past experience. It is an objective concept. Risk bearing carries no extra reward over and above what is just sufficient to cover the actual losses involved. He distinguishes uncertainty from risk, uncertainty being subjective in nature. But it is capital that is actually involved in business uncertainties, and compensation for uncertainty bearing should be regarded as part of interest, accruing to the owner of capital. He also showed how uncertainties could be reduced by combination.

Hawley held, however, that no significance attached to a distinction between risk and uncertainty as one could not exist without the other and all uncertainties resulted in risks. In distinguishing between insurable and non-insurable risks Hawley noted that the former could be known whereas the latter were not subject to calculations. But he did not go beyond this point to consider why some risks could not be known and what was the theoretical import of this absence of knowledge. He confines himself to the conclusion that such unknown risks had to be borne by the entrepreneur himself who proceeded on the basis of some estimates he himself made. He has some subjective valuation even of the unknown risks which form the basis of his action.

1. Vide James P. Beddy: Profit$, pp.93-96
2. Ibid., p. 92.
KNIGHT'S APPROACH

This is the point of departure between Frank H. Knight and the Risk theorists whose views we have briefly examined above. Knight criticises these economists for having failed to focus their attention on the essence of the whole matter: the fact that some risks were indeterminate and unmeasurable. They were not known and could not be foreseen by the entrepreneur or anybody else. This absence of knowledge did not account only for the fact that they could not be insured against or be reduced by combination. It gave to enterprise its special nature and assigned to the entrepreneur his essential function. This, and no other element in business enterprise was the sine qua non of profits. Bearing measureable risks becomes a routine function rewarded according to cost calculations. It could not claim 'the uncertain residue' that profits were, nor could the function itself be characterised as enterprise. It was true uncertainty — as Knight defined unmeasurable unforeseen risks — which gave rise to residual incomes which could accrue to those whose function lay in bearing uncertainty.

This chapter will be devoted to an examination of Knight's views. We may note here in passing that Willet came closer to this position when he ascribed uncertainties to chances involving lack of knowledge. But he then confused the issue by relating uncertainty bearing with capital and looking at a part of interest as its compensation.
For the fact remains that no compensation is possible for what is neither known nor unknowable. Furthermore, treating compensation of uncertainty-bearing as a part of interest on capital implies the concept of a definite and regular stream of income — a concept to which profits do not conform.

Thus we find that though, like the dynamic theories reviewed earlier, the Risk theories of profit brought the discussion on the subject into the area to which it belonged it still remained to disentangle it from a number of circumstances not genuinely related with it.

In presenting Knight's theory and reviewing it, our starting point is a closer examination of the risks involved in enterprise. Our proto-type is the businessman who hires all productive services other than his own entrepreneurial abilities on the basis of definite contracts stipulating fixed payments to the owners of these services. These commitments along with the cost of raw material add up to a definite amount which will be the total costs he will incur before he brings his product in the market for sale. The product will be sold at the price then ruling in the (competitive) market. By their sale he will realise some amount as his total revenue. Depending on whether and to what extent the total revenue exceeds or falls short of the total costs the entrepreneur will earn profits or incur losses.
There are a number of circumstances attending upon the enterprise. First of all there are the technical aspects of production requiring combination of various means of production in suitable proportions for obtaining the desired product with the desired quality, in the desired quantity, at the desired point of time. Generally the entrepreneur will have adequate knowledge in these respects, or will have hired the services of men who possess the necessary know-how. An element of uncertainty enters in relying upon his own capacity to direct production or in selecting the proper man to do so. Elements of uncertainty increase if the production process involves some innovation. If a new good is being produced, or a new method of producing something has been adopted, or the old, well tried out processes have been modified to any extent, the results become uncertain. The physical output of the new technique may or may not be what the entrepreneur estimated it to be. The entrepreneur is producing in the light of deficient knowledge. There is uncertainty, and he is taking the risk of the physical outcome of production turning out to be less than what he expects it to be.

Secondly there is a danger that fire or some other accident may destroy or damage some of the assets of the enterprise. Certain industries like glass works, crockery manufacturers, etc., face the possibility of breakage of some finished goods or goods in process. There is no method of ascertaining whether such accidents will take place or not,
and if they take place what will be the exact amount of 
damage they would cause. But the entrepreneur has neverthe-
less to take such possibilities into account while estimatin;
his expected total revenue, and making financial commitments 
to the contracting parties.

Last is the uncertainty attached to the price at which 
the product will sell when it is brought in the market. This 
price will be decisive, along with the total volume of sales, 
in determining the gross revenue of the enterprise. While 
there is no way of knowing what exactly this price will be, 
the entrepreneur must make some estimate of the future price 
of the goods whose production he is undertaking. For it is 
only in the light of his anticipated revenue that he can 
plan his enterprise, bargain with the owners of productive 
services and make definite financial commitments to them. 
The process of production extends over time, and the only 
prices which he can know with certainty are the past ones and 
those ruling in the present. In case of new goods even this 
much guidance is not available. Whatever guidance there is 
does not help much as the conditions of demand and supply 
determining the price are subject to change.

There are also a number of other circumstances like 
the uncertainties regarding prices of the raw materials, or 
some of those productive services which are not hired on 
long term basis, which make the magnitude of total cost 
uncertain. But these and the other relevant circumstances 
can easily be subsumed under one of the three types mentioned
above and do not pose any new theoretical problem justifying separate consideration. Our purposes are adequately served by a review of the three typical circumstances listed above.

Starting with the second type of uncertainties it can easily be seen that their nature admits of elimination by consolidation either by an insurer, as in case of loss due to fire, or by the entrepreneur himself, as in case of breakage of crockery, etc. Statistical probability calculations determine, on the basis of past records, with a fair degree of accuracy, the chances of such events taking place.¹ It can never be predicted whether a particular plant will be destroyed by fire in a particular year, yet the insurer can know how many plants out of the very large number of similar plants he is insuring are likely to be affected, and the margin of error in this likelihood can be calculated. Statistical probability calculations are possible where a sufficiently large number of similar instances are available. After some study to ensure that the present instance shares a good number of features with the instances comprising the past records this one is then counted as one amongst many constituting a large group in which the incidence of fire or other accidents can be

¹ F.H. Knight, op.cit., pp. 249-252.
calculated and the extent of the resulting losses assessed. This is the scientific basis for 'insurance' which, dealing with large groups can take over the risk of a particular accident taking place in a particular firm, in return for some compensation which together with similar compensations obtained from others would cover the losses of those members of the group who are actually affected and leave the insurer his rewards as well. Sometimes such grouping is possible for the entrepreneur himself as in case of risk of loss due to breakage, on the basis of past experience, fluctuations in actual incidence being taken care of by a fund set aside for this purpose. The essence of such instances is that, though the outcome for one individual of the group is uncertain, for the whole group of instances it becomes certain and can be known. As a result the uncertainty due to this circumstance is eliminated and the risks involved met by incurring a definite cost.

The type of uncertainty last mentioned is, however, entirely different in nature. No statistical probability calculations are possible as regards what the market price of a commodity shall be at a future date. Conditions on which the determination of that price depends include such changing circumstances as the incomes and tastes of the consumers, prices of competitive and complementary goods, total supply of the commodity in the market and such macro-economic variables as the supply of money, the rate of interest, the
level of national income and employment, etc. It is not possible to foresee what the behaviour of these variables will be and compare it with similar set of circumstances in the past. Each market situation is unique and no grouping is possible. The entrepreneur's own past experience, even if it related to the production of the same commodity, will fail, unless static conditions are assumed, to serve as a guide in view of the changing circumstances. No insurer can take over the risk involved in the entrepreneur's expectations regarding future price as he would not get a sufficiently large number of similar risk-situations to form a group. Statistical probability calculations are possible only when a large group of homogeneous or near homogeneous cases are available. Such homogeneity is not available in price expectation phase of business enterprise.

The same is true of the uncertainty surrounding innovations in production. Past experience is not a sufficient guide to action when new methods of production are being tried. The risk that the physical outcome of the new method might be less than what the innovator expects it to be cannot be eliminated by consolidation as no grouping is possible, each act of innovation being unique.

In certain specific industries price forecast situations may admit, to some extent, of elimination of uncertainty through grouping and expert estimation, because their nature makes their past record more helpful than is
the case with other industries. But this is neither generally the case with economic enterprise nor very relevant to a study of profit. Following Knight, therefore, we shall only note the possibility and the role that 'promoters' and speculators play in this regard, and pass on to consider the more important problem of the implications of true uncertainty which cannot be eliminated.

Knight reserves the term 'uncertainty' for such situations, characterising as risks all those uncertainties which can be eliminated by consolidation or specialisation and thus transformed into 'certainties' so far as the individual entrepreneur is concerned. The economic significance of this distinction lies in the fact that risks can be borne by insuring a definite cost and do not call for exercise of judgement involving assumption of responsibility of the consequences, whereas truly uncertain situations necessitate exercise of judgement involving responsibility of consequences which are vital for the interests of the entrepreneur. Only the latter are really important for the entrepreneur and relevant to the theory of profit. Risk bearing stands at the same footing as the procurement of capital and other productive services on contractual basis and is therefore a problem for management and not entrepreneurship. It is therefore into the nature of uncertainty that we must probe further.

NATURE OF UNCERTAINTY

It follows from the above discussion that involvement of future is a necessary condition for uncertainty to arise. The present can be known — as far as human knowledge can go. It is only the processes extending over time into the future that create situations where knowledge is absent or deficient.

The second necessary feature of uncertain situations is change. If the future was a mere repetition or perpetuation of the present no uncertainties would arise. Knowledge of the present would be applied to the events to be in future and action taken accordingly.

It is also necessary that the change is not known. For a known change would only call for certain adaptations in present behaviour. A knowledge of the laws governing the change does the same as the knowledge of the change itself. Uncertainty requires lack of knowledge regarding the change and the laws governing the change.

A fourth feature of uncertain situations is that the type of changes taking place are unique in the sense of not being identical with or very similar to those which have taken place in the past. It is this feature which rules out elimination of uncertainty by grouping and defies probability calculations. All uncertain situations need not, however, be perfectly unique. The degree of
uniqueness varies inversely with the extent of similarity and the degree of uncertainty depends on the degree of uniqueness.

Lastly, an uncertain situation can remain uncertain only if it is not controllable. If the entrepreneur can control the outcome of an event, even though it is uncertain, he will do so, thus removing all uncertainties.

These five features of futurity, change, absence of knowledge, uniqueness and uncontrollability make an event truly uncertain. And all truly uncertain events exhibit each one of these features. Of these the feature of uniqueness is of special significance as it is the one distinguishing uncertain situations from risky situations. We have noted above that an uncertain event may be less than perfectly unique. We may further note that the degree of uniqueness of an event is also subject to some manipulation through specialisation in handling such events and through handling them in large combinations. Though they are not subject to probability calculations, intuition, intelligent guess and experience gained through trial and error do play an important role in meeting such situations. To the extent the unique situations that an entrepreneur meets exhibit some similarity with other unique situations that he has already come across, he is able to make further progress in reducing the uncertainty involved. Large scale
business enterprises, especially those with a long past and great store of accumulated experience, are in a better position to do so. Modern economy has produced institutions which specialise in dealing with such situations by taking over the task of dealing with them from a large number of entrepreneurs, thus enjoying the advantage of dealing with a large number of unique yet to some extent similar, situations. The activities of the speculators, especially the hedging contract, the taking over of the function of marketing, and the business of promotion may be cited in this connection. These institutions, though different in nature from the institution of insurance, enable the entrepreneur to transfer some uncertainties to be met by experts, thus reducing at a definite cost the uncertainties which he himself will have to meet. Two points must, however, be noted here. Firstly that this transfer is itself a judgement in face of uncertainty and the cost involved has to be balanced against the consequences of bearing these uncertainties directly. In a competitive enterprise this is an important consideration. Secondly the scope of transferring uncertainties in this manner is, at best, limited, and there remain some other truly uncertain situations which the entrepreneur must handle directly.

2. Ibid., pp. 258-259.
In what follows we shall consider these untransferable uncertainties and ignore the rest in the same manner in which we have decided to ignore risks. Our entrepreneur has, therefore, to face such uncertainties which besides the features listed above, have the additional feature of not being transferable to specialists.

**MEETING UNCERTAINTY**

To a person who wants to make money two alternatives are available in a competitive economy: either he sells his services in the market or he assumes the role of an entrepreneur. In preferring the latter over the former alternative the entrepreneur deliberately foregoes a certain income in favour of an uncertain one. This involves exercise of judgement regarding his own abilities and the market opportunities, etc; implies a degree of self-confidence and courage and makes the entrepreneur liable to loss in case the actual earnings from enterprise are less than the price of his services in the market. The decision taken, he has to choose between various lines of activity and plan his project with respect to time, place, scale of operation etc.
All these decisions are directed towards the one objective of maximising his net revenue, are based on some expectations and have all the features of uncertainty listed above, generally speaking.

Having passed through these initial stages and started upon the actual task of organising production the entrepreneur is now face to face with the type of circumstances described earlier. For analysing the meeting of uncertainties by the entrepreneur we shall pick up an instance from out of these circumstances rather than those mentioned in the above paragraph because these are more typical. In essence all uncertain situations exhibiting the features of uniqueness and untransferability pose the same type of problem and an analysis of how one situation is handled applied to all the other situations.

The income of the entrepreneur is the difference between total revenue and total costs. We have seen above how technical uncertainties (those relating to the physical product and belonging to the process of production) and market uncertainties (those relating to the future price of the product and volume of sale) attend upon the entrepreneur's effort to organise his enterprise with a view to maximising this revenue. Concentrating our attention on the uncertainty attaching to the future price of the product, we have noted that the entrepreneur must make some estimate
regarding it to be able to make financial commitments to the owners of the productive services he is hiring. The problem before us now is, in doing so what exactly is he doing and how does he do it?

The only way we can describe what the entrepreneur does in making an estimate of the future market price of his product is that he exercises his judgement. He has no ground to apply probability calculations. He has a knowledge of the present price, and the conditions of supply and demand determining it. He also knows how the price has behaved in the past and how this behaviour has been a resultant of changes in supply and demand and other relevant variables. But he does not know how these variables are going to change between the present and the time his products will enter the market. He can at best make a guess. Perhaps the past indicates the range of fluctuations in the future. May be it goes beyond that range. Drawing upon all his experiences, benefitting from whatever additional guidance is available from other quarters, exercising his imagination, consulting his intuition and what not, he nevertheless does make an estimate.

How does he do so? Can we analyse the working of the entrepreneur's mind in specifying the expected future price? And is it imperative or even proper for economic theory to do so?
The last one is a ticklish question, to be considered at a later stage. As to the main question Knight does not go beyond making some general observations, but later contributions have gone much deeper into the problem. We shall note the contributions of J.L.S. Shackle and others in the next chapter.

In specifying as the future price of his product a definite value, he has to reject alternative hypotheses which suggested themselves as possible estimates. Some of these might have appeared more promising in view of the cost estimates based on the market price of the productive services to be hired. But perhaps they are unlikely to materialise. Some other hypotheses would have been safer to assume but they would have hardly left enough margin, in view of the present cost estimates, to give him some incentive to action. Thus the actual estimate is a result of balancing between the likelihood and attractiveness of the possible estimates. 'Hence it is correct to treat all instances of economic uncertainty as cases of choice between a smaller reward more confidently and a large one less confidently anticipated'.

Men differ in temperament, and this choice will be made by each one according to his taste. No rules can be laid down as regards the balancing of likelihood and

attractiveness by entrepreneurs, as each individual will have his own inclinations which may, and do, differ widely from those of the others.

Once a definite estimate is made about the future price of the product, this, along with similar estimates of other uncertain variables such as the volume of sale, will clearly define the expected total revenue. The prices of the productive services, as also those of the raw material, are, for the individual entrepreneur, fixed in a competitive market. The entrepreneur will continue his activities if he finds the difference between the expected total revenue and the known total cost worth it.

This introduces the other important aspect of meeting uncertainty, besides the exercise of judgment described above: assumption of responsibility. The entrepreneur assumes the responsibility of the consequences of the actual total revenue turning out to be less than expected. The items of cost are all definitely fixed and their payment to the contracting parties guaranteed. These obligations have to be met whatever the outcome of the enterprise. The entrepreneur will have to bear losses in case the total revenue actually turns out to be less than these fixed contractual payments. It is this responsibility which he

1. F.H. Knight, op.cit., p. 276.
assumes. Exercise of judgement in an uncertain situation, which means in this case estimating an uncertain value, is liable to error, and the entrepreneur becomes responsible for the consequences of such an error.

It is a responsibility which only the entrepreneur could assume due to his strategic position in enterprise. Of the two elements of meeting uncertainty — judgement and responsibility — it is the assumption of responsibility which is of crucial importance. Its importance is based on two facts. Firstly, whereas the exercise of judgement can be delegated by the entrepreneur to a salaried manager or some hired agency, the assumption of responsibility cannot be so delegated. Secondly, with the liability to losses goes the possibility of earning profits — the special income of the entrepreneur. Both these facts require careful consideration.

JUDGEMENT AND RESPONSIBILITY

The two elements of meeting uncertainty differ in their nature. While exercise of judgement requires one set of abilities and qualities, assumption of responsibility requires not only self-confidence and willingness but also the capacity to assume liability to losses. It requires
means to meet obligations in case of losses or failure. Responsibility cannot be assumed without ownership.¹

Because of this difference in nature, it is possible to separate them. Taking decisions in uncertain situations becomes separated as control of enterprise while the assumption of responsibility clings to the owner-entrepreneur. The decision-maker-controller exercises judgements and makes estimates regarding uncertain values but assumes no responsibility. The entrepreneur is liable to loss due to errors in judgement by the manager to whom control has been delegated. This does not, however, mean that the entrepreneur exercises no judgement at all. His decision to delegate control, based as it is on his estimate that the manager is a better judge, or/and can devote more time to the problem, is itself a major decision in face of uncertainty. Knight has elaborated at some length upon the theme that entrepreneurial judgements are mainly judgements regarding selection of other men to make judgements.² The assumption of ultimate responsibility which is the essence of the function of entrepreneur is, therefore, inalienably coupled with exercise of judgement in face of uncertainty.

¹ Knight, op.cit., p. 309 and pp. 290; 306.
NATURE OF PROFIT AND LOSS

While an examination of what factors contribute towards an enterprise resulting in profit or loss shall be taken up later, it is now clear how they arise. We have seen in the previous chapter how competitive forces would equalise costs with revenues if uncertainty was absent from the scene. Prices of the productive services would then be equal to their known marginal revenue productivities leaving no residua. A residue occurs only because absence of knowledge rules out such a possibility. Now we may further note that losses arise due to the entrepreneur erroneously making a higher estimate of the total revenue than it actually turns out to be. Similarly, profits accrue because of the correctness of his estimate that the total revenue will be higher than the total cost. But for such an estimate he would neither have undertaken the enterprise nor assumed the responsibility of loss. The possibility of profit or loss, therefore, is due to the existence of uncertainty. Their actual accrual to him is due to the fact that the entrepreneur bears this uncertainty. How far their magnitude depends on the way he bears it, we shall see later.

It is to the entrepreneur that profits accrue. By this we mean that he finds himself in possession of a surplus in case the actual revenue is more than the costs
he had incurred. It is the same with losses. It is a left-
over, positive or negative, from out of the total revenue
after all contractual claims have been met.

SUCCESS IN MEETING UNCERTAINTY

The entrepreneur is regarded as having been successful
in meeting uncertainty if his total revenue turns out to
be larger than total costs. He is regarded as having
failed if the case is otherwise. His actual behaviour in
carrying on the production process is based on the anticipa-
tion that revenue will be larger than costs; but he is not
quite certain as to how much larger it will be. It is
reasonable to assume that expectation of larger and larger
gains are held with smaller and smaller degrees of confidence.
The degree of success can be measured by the magnitude of
the gain but very large gains or losses having been very
little expected should, properly speaking, be classified as
windfalls, indicating fortuitous circumstances rather than
exceptional ingenuity or its lack on the part of the

entrepreneur. Windfall gains or losses can hardly be treated as an index of entrepreneurial ability in meeting uncertainty.

This provides a clue to the factors contributing towards success in uncertainty bearing. The foremost among these are those qualities of heart and mind which make for better judgements in uncertain situations. Knowledge, experience, imagination and foresight; capacity of taking decisions and executing them and the capacity to do it quickly; and skill in interpreting the circumstances and adapting action to suit them, are some of these qualities. A suitable temperament, confidence in one's own judgement, ability to assume responsibility and the willingness to do so are also of crucial importance. The more talented the entrepreneur is in these respects the more successful he is likely to be.¹

But it is not only the absolute degree of these attributes in the individual entrepreneur that matters. His relative position vis-à-vis the other competing entrepreneurs is what is really important. Enterprise is a competitive affair, and one's success in a competitive economy depends on the abilities of others too.² Only the one with a high degree of entrepreneurial abilities can

¹ F.H. Knight, op.cit., pp. 240-43.
² Ibid., p. 281.
achieve success if other entrepreneurs are also highly gifted. Where others have relatively less foresight and inferior faculty of judgement even the mediocre may excell. If the economy is rich in entrepreneurs with a high degree of entrepreneurial abilities the demands of success are far more exacting than in the opposite case. When there is a dearth of men with ideas and initiative and sound judgement, the road to success is easier.

The individual entrepreneur is not competing with the other entrepreneurs only. Prices of productive services are fixed in the market by bargaining between entrepreneurs and owners of the productive services. In demanding productive services entrepreneurs are guided by their estimates about the marginal revenue productivities of these services, while the owners of these services are guided by their own estimates of what the entrepreneurs can pay. 1 If the general climate is too optimistic the marginal anticipation of entrepreneurs as a group of these revenue-products will be high fixing high prices on productive services. 2 If the level of expectations is more realistic, prices offered will be comparatively lower. The estimates made by the owners of productive services involve their faculty of forecasting uncertain values, and will be closer to or farther removed from the actual values of the objects

2. Ibid., p. 285.
of forecast depending upon their abilities.

As the prices of productive services are determined in the market, like any other prices, by demand and supply, the relative strength of demand for and supply of productive services plays an important role, along with the abilities in forecasting and the level of expectations discussed above.

With reference to any given estimate of the future prices of his products by the entrepreneur, the chances of success are greater the lower the market prices of the productive services. The factors entering into the determination of these prices have, therefore, a direct bearing upon the success of the entrepreneur in meeting uncertainty. Yet these factors are not at the same footing as the entrepreneurial abilities in their contribution towards success. These factors provide more favourable or less favourable conditions and the entrepreneurial abilities are exercised in these conditions. Given the relative strength of demand for and supply of productive services and the abilities of the owners of these services, as also of the rival entrepreneurs, it is the individual entrepreneur's own powers and faculties which make for success or failure.

Lastly we must mention luck or sheer chance as a factor accounting for success or failure in enterprise. No analysis

of this factor is possible, but the evidence in favour of its importance is too overwhelming to be ignored. Luck may rectify errors of judgement, or lead men to hit at the right targets in ways which are not always understandable.

Once the entrepreneur has made an estimate of the future prices of his product (or of his total revenue) his success depends on what this price (or total revenue) actually turns out to be. The factors determining the actual magnitudes of the forecasted values might seem, therefore, to be relevant to our discussion. But this is not true. It is these very factors whose behaviour the entrepreneur tries to foresee. What is relevant for us is his ability to foresee them correctly, not the factors as such. They would be quite unimportant were it possible to forecast them with certainty. For competition would then bring costs into equality with prices. It is only the inability of the entrepreneurs and the owners of productive services to foresee them correctly that gives rise to profits and losses.

THE MAGNITUDE OF PROFITS

The entrepreneur's income being of the nature of a 'residual' or 'left-over' after contractual payments are made out of the actual revenue, an enquiry into what
determines its magnitude can proceed only indirectly 'by inquiring into the forces which determine the fixed incomes in relation to the whole product of an enterprise or of society'. The essence of Knight's analysis of these forces has already been presented above. It remains to see how he applies the supply and demand apparatus to the determination of the magnitude of profits by first studying the determination of the prices of productive services.

These prices are determined by demand and supply, the demanders being the entrepreneurs. The demand for a productive service depends upon the steepness of the curve of diminishing returns from increasing amounts of other kinds of services applied to the first ... there is evidently a law of diminishing returns governing the combination of productive services with entrepreneurs. It is based on the fact already stated of limitation in the space range of foresight and executive capacity. The greater the magnitude of operations which any single individual attempts to direct the less effective in general he will be — 'beyond a certain point', as in other cases of the law. The demand for entrepreneurs, again, like that for any productive agency, depends directly upon the supply of other agencies'.

1. F.H. Knight, op.cit., p. 280.
2. Ibid., p. 282.
on which the demand for productive services depends, Knight mentions ability, willingness and self confidence, etc., as the elements involved. Then he concludes that 'The condition for large profits is a narrowly limited supply of high grade ability with a low general level of initiative as well as ability'.

And that: 'The division of social income between profits and contractual income then depends on the supply of entrepreneurial ability in the society and the rapidity of diminishing returns from (other factors applied to) it, the size of the profit share increasing as the supply of ability is small and as the returns diminish more rapidly'.

As profits depend on what the prices of the productive services are, and these are determined by demand and supply, we can, interpreting the supply of productive services as the demand for entrepreneurs and the demand for productive services as the supply of entrepreneurs, say that profits are determined by the supply of and demand for entrepreneurs.

The nature of this analysis demands that the thing determined is, like all prices determined by demand and supply, a uniform rate applicable to all entrepreneurs. Knight himself speaks of the 'general rate of profit' in this context. But he is quite unambiguous in laying down that different

1. Ibid., p. 284.
2. Ibid., pp. 284-85.
3. Ibid., pp. 282-83.
4. Ibid., p. 284.
entrepreneurs earn different incomes depending upon their abilities and the relative scarcity or abundance of entrepreneurs in the economy.¹ The very nature of profits as an uncertain residue excludes the possibility of a uniform rate being established. This is why the validity of applying the supply and demand analysis to the determination of profits has been challenged by competent critics, as we shall note below. Knight does not discuss the contradiction involved in his analysis. He is, however, on surer grounds when he generalizes regarding the share of profit or its size, as in the passage quoted above.

To obtain the rate of profit percent per time unit, relating the residue to the funds invested in the enterprise and taking the time period involved into account, is justified in view of the relation these two factors — funds invested and time — bear to uncertainty. It is reasonable to assume that the more distant the date for which forecasts are made the greater will be the uncertainty involved.² Then as the main object of forecast is the price per unit of the product any deviation of its actual from the estimated value will get multiplied by the total product before the total difference between the actual and estimated revenue is obtained. The size of the residue is therefore related

¹. Ibid., p. 283.
². Ibid., pp. 245 and 265.
directly with the size of the enterprise as measured by the funds invested. This accounts for the significance of the rate of profit. But, for the type of theory under consideration this significance can at best be limited. For it would be wrong to make this rate the object of the competitive process and infer therefrom a tendency for the rate of profit in the economy to equality. The idea of a uniform and universally applicable rate of profit does not fit into the uncertainty theory. Unfortunately Knight does not analyse this aspect of the profit problem very thoroughly, and we must postpone further comments for a later stage of this study.

PROFITS OF THE CORPORATE ENTERPRISE

The analysis of profit based on individual owner-entrepreneur needs some modification before it is applied to the dominant form of enterprise in the present day economy—the corporate enterprise. The distinguishing feature of this form is an apparent separation of ownership and control and diffusion of responsibility and uncertainty-bearing.

1. F.H. Knight, op.cit., pp. 294; 298.
Actual control is in the hands of the salaried managers who take the major decisions but do not own the corporation. The consequences of the decisions they take in uncertain situations are, therefore, not directly borne by them but by the holders of the common stock whose dividends these decisions affect. The corporation is owned by these equity holders in proportion to their holdings. They share the profits but their liability in case of failure is limited to the extent of their holdings.

Knight explains how the shareholder, by electing the directors who appoint the managers and make a few basic policy decisions, do exercise some control. He makes the point that control consists mainly in selecting someone else to do the controlling.¹ In this sense both the ultimate control and ultimate responsibility vest in same agency — the shareholders.

The dividends the common shareholders receive are against the uncertainty they bear by exposing themselves to the risk of loss of the capital invested. Their decision to invest in one corporation rather than the other, and to continue holding its stocks, is a decision in face of uncertainty, being based on their expectations regarding the profitability, etc, of that corporation in comparison with

¹. Ibid., p. 291.
the others. Closer examination further reveals that it is they who really bear the uncertainties as their 'resources are placed in an exposed position with regard to losses in the business and so guarantee the owners of the remaining 'land, labour, and capital' against failure to receive their full contractual remuneration'.

The actual state of affairs is far too complicated, there is a 'complicated division or diffusion of entrepreneur-ship distributed in the typical modern business organisation by a hierarchy of security issues carrying every conceivable gradation and combination of rights to control and to freedom from uncertainty as to income and vested capital'. However, uncertain income and a degree of control always go together.

UNCERTAINTY, PROFIT AND ASSET VALUES

In a later contribution Knight maintains that uncertainty enters enterprise mainly through inventories and appreciation of capital assets, not through future values.

1. Ibid., p. 299
2. Ibid., p. 300
He feels that the theory outlined in his main contribution on the subject needs to be reworked in the light of this idea. He writes:

'The theory of profit developed in my book on Risk, and Uncertainty rests upon the general view of the entrepreneur or the business unit buying productive services 'now' and selling the products in future, and the theory needs to be entirely reworked ... The crucial element in the profit problem in a society in which capital is employed has to do with asset values. It is a question of (expenditures and receipts of) the relative value of assets at the beginning and at the end of the accounting period ... '

'The main point for emphasis is that the outlays and returns compared to determine profits are not separated by any time interval, but belong to the same accounting period, however short it may be. For any outlays in business or production the corresponding returns is not in the future but contemporary. Time and uncertainty enter into profit in a different way altogether — namely, through the capital account, or specifically, through inventories and depreciation. But capital itself is always a matter of anticipation into the infinite future'.

The reworking, however, would not affect the substance of the theory, which would remain essentially unchanged. Knight himself makes this point in a preface to the 1957 reprint of his classic. He writes:

'One analytical defect in the treatment has been mentioned — the 'production period' fallacy. When the book was written I did not see that every productive act must yield its value — result instantly, either as product ready for consumption (in the case of a service, instantly consumed) or an accretion to capital (otherwise no production has occurred.) This is the principal change that would be made if the book were being written now. With the exception that the theory of enterprise and profit would not be essentially changed'.

Profits would still be shown as arising due to errors in forecasting (what the asset values would be at the end of the accounting period) which are caused by uncertainty. Instead of comparing the contractual commitments now, at the beginning of the process of production, with the expected total returns at the end of the period of production when the produce is marketed, the entrepreneur would be seen comparing the asset values at the beginning with the asset values at the end of the accounting period, however brief it may be. The

essential circumstances characterising business enterprise which make the thing forecasted uncertain will not change because of a change in what that 'thing' is — asset values or future market values of the produce. Profit would still be the difference between the ante value which formed the basis of the contractual commitments and the post value which is actually realised (or could be realised if the entrepreneur so desired).

Howsoever significant the removal of this 'analytical defect' in treatment might have appeared to Knight, exponents of the uncertainty theory who have later restated it or incorporated it into a broader framework, like J.F. Weston and B.S. Keirstead, have not thought it important enough to take up the reworking themselves. Fifteen years after the need for reworking was emphasised by Knight we find Weston ignoring the issue in his generalised version of the uncertainty theory, and, called upon to take a stand, contenting himself with a mere advice by remarking that 'the role of asset value changes in profit theory (the line of modification adverted to by Knight) may deserve greater emphasis than it has hitherto received'.

1. and 2. These contributions are discussed at some length in chapters Four and Five.
Further development of the uncertainty theory has, instead, taken entirely new routes as shall be examined in the following chapter. Meanwhile let us note some points in criticism of the theory summarised above.

**SOME POINTS IN CRITICISM**

The view that profits are unimputed value residues arising due to uncertainty of future values and accruing to the entrepreneur because of his assuming the ultimate responsibility of errors in forecasting has, in essence, found favour with the majority of later economists. Even till date the essence of the theory has not been successfully challenged. Nevertheless the theory has been subjected to criticism in some of its details, and some economists have even challenged its claim of being a 'theory' of profit.

Knight's application of the supply and demand apparatus to the determination of profits has been severely criticised. Nothing is wrong with the broad statement that the gross returns to enterprise depend on the prices of productive services which are determined by supply and demand. But to speak of supply and demand of entrepreneurs determining the rate of profit is stretching the point too far. It is not valid because, in the first instance, entrepreneurs are
not a homogeneous lot. The units in which entrepreneurial ability is supplied are indivisible and heterogeneous. Those who, taking their cue from Knight, have constructed a continuous supply curve for entrepreneurship are ignoring not only the indivisibility and lack of homogeneity but also the fact that the thing so determined cannot, by nature, be a uniform price for entrepreneurship. The very concept of profit as an uncertain residue abhors uniformity. Schumpeter has rightly warned against such constructions stressing that even to speak of 'supply of business ability' is fraught with danger.\(^1\) Gordon decries such attempts on the familiar ground that the entrepreneurs, to a great extent, create their own demand.\(^2\) They increase the supply of productive services — land, capital and skill. Thus what Knight characterises as the demand for entrepreneurs no longer remains independent of its supply, and the supply-demand apparatus becomes inapplicable.

Though J.F. Weston, restating the uncertainty theory thirty years after its classic formulation by Knight, still finds it possible to state 'as a first approximation' that 'the return to unhired factors depends upon the relative demand for and supply of unhired factors',\(^3\) Knight himself

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seems to have recognised the weight of this objection as he feels it necessary to stress in his latest pronouncement on the subject the fact that entrepreneurship is not measurable in the sense the other factors of production are, nor is it subject to varying proportions and marginal imputation.¹

Profits being uncertain residues, and their magnitude in each case depending on the success of the individual entrepreneur in meeting uncertainty the question 'how profits in the economy as a whole are determined can be answered only at the macroeconomic level. Knight approaches this level when he seeks 'to examine the entrepreneur's income indirectly, by inquiring into forces which determine the fixed incomes, in relation to the whole product of an enterprise or a society'.² But he fails to pursue the point in the right direction applying the supply-demand analysis to the determination of the rate of profit instead. The result is that what could open entirely new vistas in profit theory only served to force it into the strait-jacket of the supply-demand apparatus which it could never fit in.

The view has been expressed that while the entrepreneur creates profits, the appropriation of profit by its recipient:

¹ F.H. Knight, Preface to the reprint of 1957, Risk Uncertainty and Profit (8th impression, 1957), p.LXX.
² Ibid., p. 280.
is institutionally determined; that separate theories must be evolved to explain the origin of profits and their sharing out.¹ This view is based on the finding that part of the profits actually arising pass on to the capitalists and to the owners of other productive services. Thus the very definition of profit with which the uncertainty theory starts — a residue remaining over after all contractual claims are met — is desired to be changed. For it is only profit defined in some other manner that can be said to be shared by entrepreneurs with others, while the uncertainty theory explains only 'pure' profits accruing to the entrepreneurs. There is truth, however, in Triffin's observation that Knight's theory envisages a specific institutional situation: there is separation of ownership from day to day control but the owner retains a large element of control by always keeping the right of dismissing the salaried manager at will.² In Triffin's terminology it is a mixed case distinguished from the extreme cases of the property-less entrepreneur and the entrepreneur-owner. In other institutional situations either the sharing of profit or its very notion will be different.


As a clarification, rather than criticism of the theory it has been stressed that though profits arise due to uncertainty they cannot be regarded as a reward, compensation or payment for uncertainty bearing.\textsuperscript{1} The obvious reason is that uncertainty is borne also by those entrepreneur who actually suffer losses. This clarification is necessitated by the persistence of the wrong notion in the literature.\textsuperscript{2} Recently Knight himself has unequivocally rejected this view for which the readers of Risk Uncertainty and Profit might have found some room for equivocation.

'Uncertainty explains profit and loss, but profit, when it occurs, is not properly speaking a 'reward for risk taking', though the expectation of gain is the incentive for assuming the entrepreneurial role'.

\begin{enumerate}
\item Among those who hold the view criticised above may be listed:
\begin{itemize}
\item A.C. P. you also regards uncertainty bearing to be a disutility to be compensated by profits. Vide \textit{Economics of Welfare}, pp.771-72. Macmillan and Co., London, 1941. As regards the textbook expositions of the uncertainty theory they generally expound the wrong idea.
\item F.H. Knight: Preface to the reprint of 1957, \textit{op.cit.}, p.LIX.
\end{itemize}
\end{enumerate}
Knight's sharp distinction between risk and uncertainty, ascribing the emergence of profits exclusively to the latter, has also left some economists unconvinced. Thus J.R. Hicks¹ is not satisfied with his uncompromising treatment of 'measurable risks', presumably because the border line between the measurable and unmeasurable ones is dim and shifting. Weston² on the other hand, seeks to replace Knight's classification by an entirely different one which would make risk a subset of uncertainty and emphasise the transformability or otherwise of risks and uncertainties as the feature crucial for profit theory. Perhaps Weston's reformulation to which we shall return later,³ will satisfy Hicks without earning disapproval from Knight.

Are the entrepreneurial estimates regarding future prices or the values of other variables single valued and unique or in the nature of a range of values? Knight admitted the other possibility but regarded the first as the better assumption, stressing at the same time that to assume the second would not affect his conclusion. Some economists, however, insist on the second assumption and

3. Chapter Four.
claim that it would modify some of the conclusions. Among recent expositors of the theory Shackle still regards entrepreneurial expectations to be single valued projections and B.S. Keirstead proceeds with the same assumption.

These, however, are points related to the details of the theory. A serious attack on the very basis of the theory comes from Anatol Kurad who contends that: 'An uncertainty theory of profit is no theory of profit at all. It merely elevates to the position of explanation or rather definition a mere attribute of profit — uncertainty.' Kurad thinks that the theory starts with a definition of profit which itself implies the whole of the theory, hence it is a mere tautology. Furthermore uncertainty is important only at the microeconomic level, from the viewpoint of the individual firm. A genuine theory of profit must explain the sources of aggregate profit in the economy specifying the conditions under which they arise. The list of questions set by him for a theory of profit to answer makes it quite clear that to get his approval the theory of profit must be macroeconomic in nature.

5. Ibid.
J. Fred Weston, whose restatement of uncertainty theory was the immediate target of Murad's attack, correctly points out that Murad seems to hold the accounting view of profit.\(^1\) The uncertainty theory explains the emergence of pure profits, any other income not deserving the name as Knight has so convincingly argued. It is not a tautology as profits are first defined as unimputed residues and later shown to be arising due to uncertainty. As regards the need for a macroeconomic theory of profit, everybody is agreed on it; but this does not necessitate throwing the microeconomic theory of profit into the dustbin, what is needed is to integrate the micro and macrotheories so as to make the principle formulated in one consistent with that underlying the other.\(^2\)

Among the few writers who deny uncertainty being the cause of profits is James P. Beddy whose book on Profits appeared in 1940. He writes:

"Our conclusion has been that uncertainty bearing is not the cause of profits, nor does any portion of profits reward uncertainty-bearing, which itself is simply one of a number of resistances upon which costs of production rest, and is, therefore, rewarded in the same way as other costs of production.\(^3\)"


\(^2\) Ibid.

\(^3\) J. P. Beddy, \textit{Profits}, p. 130.
This reward comes as an increase in the rate of interest on risky investments.¹

Beddy further contends that the concept of uncertainty is so vague, so wide, and so difficult to judge that it cannot be made the key concept in a scientific theory of profit.

It is surely a misunderstanding of Knight's position regarding profits being a reward of uncertainty bearing which makes Beddy remark that 'If the theory was correct we should expect to find big profits where there was a wide range of uncertainty and vice-versa.'² Beddy's own theory, which regards profits a return to acquired advantages hardly impressed anybody.

Gordon, reviewing the state of profit theory in 1936³ noted the failure of the uncertainty theory to explain profits in functional terms. It also suffered from the defect of tacitly identifying the owner with the entrepreneur thus 'leaving out of the picture the active and dynamic entrepreneurial function involved in business leadership.'⁴ He therefore stresses the need of formulating

¹. Ibid., p. 126.
². Ibid., p.140.
⁴. Ibid., p. 313.
separate theories to explain the income and function of enterprise and the income and function of ownership. This need has arisen mainly due to the rise of corporate enterprise as the main form of business in modern times.

Gordon finds little difficulty in accepting the explanation of pure profit in terms of change, uncertainty and friction, but then he gives a definition of pure profit which is not the same as that given by Knight or more recently by Weston. Gordon's essay, therefore, is hardly an endorsement of the uncertainty theory; it is explicit in its call for the formulation of a new theory whose essentials it seeks to outline.

The continued emphasis on pure profits by the uncertainty theorists, the emphasis on purity increasing with the passage of time, produced in many minds serious doubts about the realism and usefulness of the theory itself. That such a realisation is not foreign to the champions of the theory is manifest in Weston's declaration that 'what is loosely called profit theory is a concept or definition'.

1. Ibid., p. 316.
2. Ibid., p. 315.
3. Ibid., p. 315.
Others could be hardly expected to remain contented with a mere definition in a field of enquiry which had long engaged the attention of the best minds. Furthermore they pointed out that profits so defined no longer conformed to what business-men actually recognised as their profits. Pure profits are un-identifiable in reality.

This view is strongly held by Paul Streeten who declares that 'The isolation of pure profit is a will o' the wisp'.¹ He rejects the claim of the uncertainty theory to be a theory of profit as it amounted merely to the self-evident proposition that 'where there is uncertainty there is the opportunity for profit and the danger of loss'.² Over the last one century or so, the once meaningful and potent concept of profit has suffered a process of 'purification'. From J.S. Mill's concept of profit as comprising interest, wages of management and reward for risk bearing, the elements of interest and wages were first separated, only to be followed by the purge of the reward for risk bearing, thus leaving a mere residue which was not associated with any productive function at all. The present purified concept was that of accidental gains arising from successful market operations which defy all analysis. This

2. Ibid., p. 282.
is agnosticism in the realm of scientific analysis and 'Agnosticism is not a theory of profit'. Streeten, therefore, registers a strong plea for a return to the study of gross profits — an aggregate of various types of incomes clearly related to well known productive functions.¹

Despite these criticisms the theory continued to attract attention and quite a few minds devoted themselves to its further refinement. The next chapter studies the main contributions in this respect.

¹. Ibid., p. 187.