II

The Firm in Theory

Different ways of looking at firms—The firm in the theory of price and production. *Limits to size. The 'firm' is not a firm*—The firm as an administrative organization. *The function and nature of an industrial firm. Size and administrative co-ordination. Industrial firms and investment trusts. Continuity in the 'history' of a firm*—The firm as a collection of physical and human resources—The motivation of the firm. *The profit motive. Long-run profits and growth.*

IN a private enterprise industrial economy the business firm is the basic unit for the organization of production. The greater part of economic activity is channelled through firms. The patterns of economic life, including the patterns of consumption as well as of production, are largely shaped by the multitude of individual decisions made by the businessmen who guide the actions of the business units we call firms. The very nature of the economy is to some extent defined in terms of the kind of firms that compose it, their size, the way in which they are established and grow, their methods of doing business, and the relationships between them. In consequence, the firm has always occupied a prominent place in economic analysis. It is a complex institution, impinging on economic and social life in many directions, comprising numerous and diverse activities, making a large variety of significant decisions, influenced by miscellaneous and unpredictable human whims, yet generally directed in the light of human reason.[7]

In the literature of economics, the firm of the 'real world' has long lived in that uncomfortable no-man's-land between the high and dry plateaus of 'pure theory' and the tangled forests of 'empiric-realistic' research. Border skirmishes between the natives of the two areas have been common, supplemented by formal jousts in the medieval manner between noble knights of the opposing allegiances, each warmly defending his faith. These encounters have

[7] I hope I shall be forgiven if, on occasion, I endow the firm itself with human attributes, considering it, not as a 'legal person', but, by analogy, as an 'economic person' (although not necessarily as the 'economic man'). This fiction permits me to speak of the 'firm', rather than its managers or executives, acting in this way or that, and facilitates exposition in those cases where no distinction is required between the firm and the men who run it.

one remarkable characteristic—it seems strangely difficult for any participant ever to discover precisely where his antagonist stands, with the result that an uncommon number of thrusts seem to be made in one direction but countered from an entirely different direction, broad swords and rapiers forcefully cutting the air, without really clashing. When such difficulties occur in the world of thought one is likely to find the source of them in the meaning of words, and indeed so it is with the present problem of the 'firm'. A 'firm' is by no means an unambiguous clear-cut entity; it is not an observable object physically separable from other objects, and it is difficult to define except with reference to what it does or what is done within it. Hence each analyst is free to choose any characteristics of firms that he is interested in, to define firms in terms of those characteristics, and to proceed thereafter to call the construction so defined a 'firm'. Herein lies a potential source of confusion that it is essential to deal with at the very outset of this study.

Because of its complexity and diversity, a firm can be approached with many different types of analysis—sociological, organizational, engineering, or economic—and from whatever point of view within each type of analysis seems appropriate to the problem in hand. Within economics itself there are several different approaches to the study of the firm, and one type—the so-called 'theory of the firm'—continues to hold the field in spite of vigorous attacks; of all the approaches it is probably the most often misunderstood and misapplied by both its defenders and its attackers.

Educated laymen as well as economists studying the vagaries of actual business behaviour often show an understandable impatience with the 'theory of the firm', for they see in it little that reflects the facts of life as they understand them. It is therefore worth a little trouble, perhaps, to discuss at the very beginning the nature of the 'firm' in the 'theory of the firm', to indicate why it provides an unsuitable framework for a theory of the growth of firms, but at the same time to make clear that we shall not be involved in any quarrel with the theory of the 'firm' as part of the theory of price and production, so long as it cultivates its own garden and we cultivate ours. Much confusion can arise from the careless assumption that when the term 'firm' is used in different contexts it always means the same thing.

The 'Firm' in the Theory of Price and Production

The 'theory of the firm'—as it is called in the literature—was constructed for the purpose of assisting in the theoretical investigation of one of the central problems of economic analysis—the way in which prices and the allocation of resources among different uses are determined. It is but part of the wider theory of value, indeed one of its supporting pillars, and its vitality is derived almost exclusively from its connection with this highly developed, and still basically unchallenged general system for the economic analysis of the problem of price determination and resource allocation.[8] In this context only those aspects of the behaviour of firms are considered that are relevant to the problems that the wider theory is designed to solve.

Since the theory of value is concerned with the factors determining the prices of particular products or productive services, the appropriate model of the 'firm' is a model representing the forces determining the prices and quantities produced of particular products in the individual firm; the 'equilibrium' of the 'firm' is, in essence, the 'equilibrium output' for a given product (or given group of products) from the viewpoint of the firm. It does not pretend to be an 'equilibrium' of the firm if the firm is represented in any other way, or if any other considerations affect it than those permitted in the theory of price and output.[9] Hence if we become interested in other aspects of the firm we ask questions that the 'theory of the firm' is not designed to answer. In that theory the 'growth' of a firm is nothing more than an increase in the output of given products, and the 'optimum size' of the firm is the lowest point on the average cost curve for its given product; the question what limits the size of a firm is the question what limits the amount it will produce of the given product or products with respect to which the cost and revenue schedules apply that are used to represent the 'firm'. The model is not designed for the analysis of a 'firm' free to vary the kind of products it produces as it grows.

The Limits to 'Size'

The conditions of equilibrium analysis require that there be something to prevent the indefinite expansion of output of the individual 'firm' defined in the above manner. In the model of the firm in 'pure' competition, the limit to output is found only in the assumption that the cost of producing the individual product must rise after a point as additional quantities of it are produced; in the model of the firm in 'monopolistic' competition, the limit is partly found in falling revenue as additional quantities of the product are sold. Without some such limit to the output of a given product—which, in this context, means to

[8] Consequently the various attacks on the theory of the firm, whether they come from theorists emphasizing the effect of uncertainty or from investigators of the actual behaviour of firms, have failed to dislodge it from its key position in economic theory. To do so, even for the competitive case, would, as Hicks has pointed out, involve the 'wreckage' of 'the greater part of general equilibrium theory', which can hardly be accepted until something better has been evolved to take its place. J. R. Hicks, *Value and Capital* (Oxford: Clarendon Press, 2nd edn., 1946), p. 84.

[9] It is not surprising, therefore, that this firm is '. . . a strange bloodless creature without a balance sheet, without any visible capital structure, without debts, and engaged apparently in the simultaneous purchase of inputs and sale of outputs at constant rates'. Kenneth Boulding, *Reconstruction in Economics* (New York: Wiley, 1950), p. 34.

the size of the firm—no determinate 'equilibrium position' can be posited in static theory.

Thus, regardless of the specific framework of their particular theories, economists have looked to the limitations of management (causing increasing long-run costs of production) or of the market (causing decreasing revenue from sales), or to uncertainty about future prospects (causing both increasing cost of larger outputs and decreasing revenue from larger sales because of the necessity of making allowance for risk) to provide a limit to the size of firm.[10]

The whole problem has been the source of much controversy, especially the question whether managerial diseconomies will cause long-run increasing costs; to establish such a result management must be treated as a 'fixed factor' and the nature of the 'fixity' must be identified with respect to the nature of the managerial task of 'co-ordination'. This identification has never been satisfactorily accomplished and many theorists have given up the task, preferring to rely on other limits to size.[11]

The notion that the market limits the size of firms follows from the assumption that a firm is tied to given products, that a specific group of markets governs its possibilities of expansion. If this assumption is dropped, however, one is dealing with a different concept of the 'firm' and a different type of analysis becomes more appropriate. With a different concept of the firm one can recognize that a 'firm', when appropriate resources are available, can produce anything for which a demand can be found or created, and it becomes a matter of taste or convenience whether one speaks of the 'market' or of the resources of the firm itself as the consideration limiting its expansion. The fact that demand curves for given *products* can be assumed to be tilted downward does not mean that the expected net revenue from additional units of *investment* need ever become negative. Net revenue may well be rising as investment—and therefore total production—increases. To say that the expansion of a firm which can produce unspecified new products is limited by 'demand', is to say that there are no products that the firm could produce profitably. This, of course, is not what is meant in the theory of the firm, simply because its 'firm' is not a firm.

The introduction of 'uncertainty' or 'risk' as a limit to size merely underlines the fact that the expected cost and revenue calculations of firms reflect their

[10] The effect of uncertainty is not always put in these terms—see, for example, M. Kalecki, 'The Principle of Increasing Risk,' *Economica*, Vol. IV (New Series) Nov. 1937, pp. 440–7—but most formulations can usually be expressed in terms of 'corrected' cost and revenue estimates. See Chapter IV for further discussion of this point.

[11] Chamberlin attempted to meet the problem by abandoning entirely the principle of a fixed factor and argued that mere increased complexity of organization would lead to the requisite rise in costs as the firm expanded. E. H. Chamberlin, 'Proportionality, Divisibility and Economies of Scale', *Quarterly Journal of Economics*, Vol. LXII, No. 2 (Feb. 1948), pp. 229–62. This does not get to the root of the matter, however, since complexity is a problem only if the capacity of men to deal with complexity is limited. Hence we are again back to the same point.

expectations about the future course of events; these expectations are held with varying degrees of uncertainty which increase as output increases (thus increasing the risk of loss) and allowances must be made in a firm's calculations for the possibilities of disappointment. It in no way alters the nature of the analysis.

The 'Firm' is not a Firm

When the 'theory of the firm' is kept in its proper habitat there is not much difficulty with any of the explanations of the 'size' of firms. Difficulties arise when an attempt is made to acclimatize the theory to an alien environment and, in particular, to adapt it to the analysis of the expansion of the innovating, multiproduct, 'flesh-and-blood' organizations that businessmen call firms. It makes little difference in the theory of the firm whether changes in the characteristics of the individual firm, for example its managerial ability, or changes in the expectations of the entrepreneur about the future course of events, are treated as causing changes in the size of a single firm or as causing the creation of a series of 'new firms'.[12] The theorist is free to adopt the technique most suited to his problem. But how such changes are treated makes a great deal of difference to the theorist concerned with the growth of the firm defined, say, as an administrative organization in the real world. For the latter purpose it becomes necessary to use a very different concept of the firm and little is gained by tortuously trying to force an adaptation of the theory of the firm merely because it has proved to be a valuable concept for a different purpose. To some extent the adaptation can be forced, as we shall see, but we shall be dealing with the firm as a growing organization, not as a 'price-and-output decision maker' for given products; for this purpose the 'firm' must be endowed with many more attributes than are possessed by the 'firm' in the theory of the firm, and the significance of these attributes is not conveniently represented by cost and revenue curves. Furthermore, not only is it inconvenient so to represent them, but it is also misleading, for it only compounds the confusion involved in a failure clearly to distinguish the 'firm' in price theory from the 'firm' as it is looked on by businessmen as well as by many economists dealing with the

[12] Kaldor, for example, has defined the firm as a 'productive combination possessing a given unit of co-ordinating ability', and holds that 'all the theoretically relevant characteristics of a firm change with changes in coordinating ability. It might as well be treated, therefore, as a different firm'. N. Kaldor, 'The Equilibrium of the Firm', *Economic Journal*, Vol. XLIV, No. 173 (March 1934), pp. 69–70. And Triffin explicitly states that for (his) theoretical purposes it is 'better to say that a new firm has been created' when the producer's appraisal of cost and revenue conditions changes. Furthermore 'each innovation modifies the level of profit opportunities attached to a firm or rather creates a new firm, provided with profit opportunities of its own . . . '. Robert Triffin, *Monopolistic Competition and General Equilibrium Theory* (Cambridge: Harvard University Press, 1940), pp. 169–71.

behaviour of firms—a confusion which has unnecessarily marred the reputation of the 'theory of the firm' and done its credit in this world much wrong.[13]

The Firm as an Administrative Organization

It is not the *degree* of abstraction involved in the 'theory of the firm' that makes it inappropriate as a starting point for an analysis of the growth of the firm, but rather the *kind* of abstraction. That is to say, the purpose of any study, 'theoretical' or 'empirical', must be defined, and only those aspects of 'reality' selected which are relevant. Irrelevant matters are rightly ignored, or 'abstracted' from. The object of the present study is to investigate the growth of the industrial (non-financial) firm as an economic entity in the broadest sense. But an economic analysis of the growth of firms has meaning only if there is some economic function or economic effect with respect to which the size and growth of firms is relevant. Consequently the definition of what constitutes a 'whole firm' for our purposes depends upon its essential function as an economic entity in the economy.

The Function and Nature of the Industrial Firm

Probably it would be generally agreed that the primary economic function of an industrial firm is to make use of productive resources for the purpose of supplying goods and services to the economy in accordance with plans developed and put into effect within the firm. The essential difference between economic activity inside the firm and economic activity in the 'market' is that the former is carried on within an administrative organization, while the latter is not. The

[13] It is for this reason that I would reject the attempt of Andreas G. Papandreou to construct a concept of the firm which takes into account the firm as an organization without 'doing violence to [the economist's] main conceptual schema'. He holds that 'organization theory and the economist's theory of the firm are seen to converge, in fact, as soon as we introduce organizational techniques as data into the latter, side by side with the technological data'. Andreas G. Papandreou, 'Some Basic Problems in the Theory of the Firm', in *Survey of Contemporary Economics*, Vol. II, B. F. Haley, Editor (Homewood: Irwin, 1952), pp. 187–8.

The economist's 'main conceptual schema' is designed for the theory of price determination and resource allocation, and it is unnecessary and inappropriate to try to reconcile this theory with 'organization theory'. E. S. Mason in his *Comment* (Ibid., pp. 221–2) is justified in confessing a 'lack of confidence in the marked superiority, *for purposes of economic analysis*, of this newer concept of the firm, over the older conception of the entrepreneur'. If the study of the process of growth of firms is a legitimate purpose of economic analysis, however, then I think it can be shown that the 'newer concept of the firm' is of importance, but it should be clearly defined as a concept to be used for a different purpose from that of the traditional one.

growth in the 'size', however defined, of the industrial administrative unit is of importance because the larger this unit is, the smaller is the extent to which the allocation of productive resources to different uses and overtime is directly governed by market forces and the greater is the scope for conscious planning of economic activity. The chief controversies over the social desirability of large firms come either from disagreement over the question whether the increase in the scope for conscious planning in the organization of production and distribution has 'good' or 'bad' results, or from disagreement over the question whether extensive administrative organization of productive resources, if 'good', should be in private hands and conducted in response to opportunities for private profit.

One important aspect of the definition of the firm for our purposes, then, involves its role as an autonomous administrative planning unit, the activities of which are interrelated and are co-ordinated by policies which are framed in the light of their effect on the enterprise as a whole.[14]

All such units have some form of central managerial direction responsible for the general policies under which the firm's administrative hierarchy operates. Let us call this 'court of last resort' in the firm 'central management'. In practice it is made up of some combination of the board of directors or committees thereof, the president, and general managers of the firm. Just who is included in central management varies from firm to firm. Whatever the effective group, it must be accepted in practice as the highest authority within the administrative framework of the firm, and must be small enough to make more or less agreed decisions. In general, central management is responsible for establishing or altering the administrative structure of the firm, laying down general policies, and making decisions on those matters where no subordinate executive has been authorized to act or where no clear-cut principles have been set out in advance. In the last category are usually included at least the major financial and investment decisions of the firm, and the filling of the top managerial posts.

In the ideal case, once an administrative framework has been created within which the 'bureaucracy' of the firm functions smoothly, and once policies are laid down which are accepted as guides for decisions by the administrative personnel of the firm, no further intervention by the central management is required so long as each decision that has to be made is of a type and scope envisaged in established policies. This does not mean that all decisions must be rigidly circumscribed in advance and no exercise of judgment allowed, but merely that there must be no confusion as to who makes any given decision,

[14] The concept of autonomy must not be taken too rigidly. It certainly can never mean complete independence of any external forces nor that there are not areas in which a firm is forced to adopt certain policies against its will. Furthermore, a firm can voluntarily give up its autonomy in certain respects, for example when it joins a price cartel, without becoming any the less a firm thereby.

the principles that shall be considered in making it, and the scope of its effects.[15]

It is evident that there will be great variations in the number, range, and nature of the tasks of the central management of different firms, depending on the structure of the firm, the preferences and ambitions of the top management group, and the extent to which the firm is faced with external changes which require action not provided for under existing arrangements. In an unchanging environment, for example, an established firm that had succeeded in creating optimum administrative procedures and framing an optimum set of policies could operate successfully without any overt acts of 'central management' at all; even new appointments could conceivably be made according to established regulations. Managerial and supervisory functions could be carried on by appropriate officials on different levels in the firm within the framework provided by the administrative organization and existing policy 'directives'.[16] In such circumstances, the administrative problem is 'solved' once an appropriate administrative structure has been established.

Adaptation to change poses somewhat different problems. One type of problem is the adjustment to 'short-run' conditions—the day-to-day, month-to-month decisions required in operations—and another is the adjustment to 'long-run' changes and the making of 'long-range' policies. While undoubtedly no clear dividing line can be drawn between the two types of problem, the former certainly requires many decisions that cannot be individually 'cleared' with central management in the large firm; in consequence, organizational

[15] The brief discussion here of the nature of the firm's administrative organization is not intended to contribute anything to the extensive literature on business organization nor to discuss the important issues in organizational theory or the significant problems connected with determining the functions of different groups within the firm. I am concerned only with those aspects of these large and complex subjects which will be of use in the theory of the growth of the firm to be developed later. However, the general view of the administrative functioning of a firm set forth here does not differ fundamentally from the concepts underlying the analyses of Simon, Barnard, Papandreou, and similar 'organization theorists', nor is it at variance with the findings of Gordon. Cf. H. A. Simon, *Administrative Behavior* (New York: Macmillan, 1945), Chester Barnard, *The Functions of the Executive* (Cambridge: Harvard University Press, 1938), Andreas G. Papandreou, 'Some Basic Problems in the Theory of the Firm', op. cit., and R. A. Gordon, *Business Leadership in the Large Corporation* (Washington D.C.: Brookings Institution, 1945).

[16] Compare the views, for example, of analysts as different as Nicholas Kaldor and Chester Barnard. Although Kaldor's frame of reference is that of the 'theory of the firm' and thus fundamentally different from ours, nevertheless his conclusion, that 'the technically optimum size of the individual firm becomes infinite or indeterminate' in equilibrium, rests on essentially the same conception of the administrative task as that set forth here. Op. cit., p. 71. Barnard on the other hand, points out that 'Systems of cooperation are never stable, *because of changes in the environment and the evolution of new purposes . . . adjustment of cooperative systems to changing conditions or new purposes* implies special management processes and, in complex cooperation, special organs known as executives or executive organizations'. Chester Barnard, op. cit., p. 37 (Italics added).

structures and procedures have been evolved which not only permit the making of such decisions on almost all administrative 'levels' in the firm but also ensure at the same time a high degree of consistency among decisions. Similarly, techniques and procedures have been created to enable central management to deal with the longer-run problems without excessive congestion at the top.

Size and Administrative Co-Ordination

The question has often been raised and is still debated, whether a firm can get 'too big' to enable both kinds of problem to be efficiently handled. At one time it was almost universally agreed that such a point would be reached as a firm grew in size, that management or 'co-ordination' was a 'fixed factor' which would necessarily give rise to diminishing returns and increasing costs of operation at some point. Behind this notion lay the common-sense deduction that consistency of behaviour requires 'single-minded' direction which is clearly limited in its possible scope simply because the capacity of any human being is finite. The conclusion that the limited capacity of the individual will limit the size of firms has not, however, been supported by events—at least not in any clearly discernible way. Now it seems likely that this 'single-mindedness' can be achieved through an appropriate form of organization inherited from the past and operated by people, also inherited from the past, who share a common tradition, who are accustomed to the organization and to each other, and who thus form an entity which works with sufficient consistency and efficiency in broad areas to make unnecessary any one individual having to comprehend and direct its detailed working. It is this capacity of the firm to alter its administrative structure in such a way that non-routine managerial decisions requiring real judgment can be made by large numbers of different people within the firm without destroying the firm's essential unity, that makes it so difficult to say with confidence that there is a point where a firm is too big or too complex to be efficiently managed.

At the present time at least it cannot be said that the large firms in the economy are unable effectively to compete with smaller firms nor that they tend to break up because of bureaucratic inefficiency and sheer inability of management to handle unwiedly size. On the contrary, the big firms appear extremely successful and there is no evidence at all that they are managed inefficiently when enough time has been given them to make the adjustments and adaptations of their administrative framework appropriate to increasing size. The techniques for decentralizing administrative organization have been developed to a fine point, and the task of central management is apparently not one of attempting to comprehend and run the entire organization, but rather to intervene in a few crucial areas and to set the 'tone' of the organization. Operating control is effected largely through accounting devices which, to be sure, are highly centralized, but which place the task of 'co-ordination' in an entirely different framework, and incidentally permit the use of extensively mechanized techniques in carrying it out.

Apparently what has happened as firms have grown larger is not that they have become inefficient, but that with increasing size both the managerial function and the basic administrative structure have undergone fundamental changes which profoundly affect the nature of the 'organism' itself. The differences in the administrative structure of the very small and the very large firms are so great that in many ways it is hard to see that the two species are of the same genus. We say they are because they both fulfil the same function, yet they certainly fulfil it differently, and it may be that in time the differences will become so great that we should consider in what sense they can both be called industrial 'firms'. In other words, I think the question whether firms can get 'too big' for efficiency is the wrong question, for there is no reason to assume that as the large firms grow larger and larger they will become inefficient; it is much more likely that their organization will become so different that we must look on them differently; we cannot define a caterpillar and then use the same definition for a butterfly.

Industrial Firms and Investment Trusts

To be more specific, consider the difference commonly held to exist between an industrial operating firm and a financial investment trust. The one organizes production, the other holds financial instruments. But as an industrial firm becomes larger and larger, and its operations become progressively more decentralized with the lines of authority becoming more tenuous, permitting greater autonomy in the constituent parts, is it not possible that the firm will increasingly acquire the characteristics of a financial holding company, lose those of an industrial firm, and finally become virtually indistinguishable from an investment trust? And if this does happen, can we safely assume that the principles that govern the growth of an industrial firm are equally applicable when the organization is metamorphosed into an essentially financial firm?

I do not think we can assume this; on the contrary, the techniques suitable for analysing the growth of firms engaged in the actual organization of production and distribution are probably very different from those required for the analysis of the growth of a purely financial organization. It follows, therefore, that if we *define* the industrial firm with reference to its administrative framework within which industrial activities are co-ordinated, we can be concerned with its growth only as such an organization. It is the 'area of co-ordination'—the area of 'authoritative communication'[17]—which must define the boundaries of the

[17] The term is that of Chester Barnard, and is peculiarly appropriate because it leaves room for informal as well as formal 'communications' which are accepted as 'authoritative'.

firm for our purposes, and, consequently, it is a firm's ability to maintain sufficient administrative co-ordination to satisfy the definition of an industrial firm which sets the limit to its size as an industrial firm. Nevertheless, it cannot be presumed that if this limit is exceeded the organization has become 'inefficient'; it may merely have become a different type of organization to which a different type of analysis must apply.

'Authoritative communication' can consist on the one extreme of the actual transmission of detailed instructions through a hierarchy of officials and, on the other, of the mere existence among a group of people of observed and accepted policies, goals, and administrative procedures established at some time in the past. Difficulties arise when we consider whether various kinds of 'cross currents' of 'authoritative communication', particularly those arising from outside the firm, weaken the applicability of this criterion of the limits of the firm.[18] This is basically the problem of how the 'area of administrative co-ordination' can be discovered in practice, in other words, how we shall determine the size of any given firm at any given time.

In earlier times, perhaps, before the predominance of the corporate form of enterprise, a firm was reasonably identifiable. The extensive and elusive lines of control in the modern business world, however, make it more difficult to decide what should be included within a given firm. The unincorporated individual proprietorship, the partnership, and the small corporation without subsidiaries create in general no trouble, but the large corporation with many subsidiaries over which it exercises some degree of control does.

The concept of the firm developed above does not depend on the ramifications of stock ownership or the mere existence of the power to control, although extensive stock ownership may, and probably should, be one important consideration in any attempt to apply it. On the other hand, long-term contracts, leases, and patent license agreements may give an equally effective control, and yet cannot easily be treated in the same way. If a corporation is controlled by, or because of stock ownership is classed as a subsidiary of, a larger corporation, it is part of the larger firm only if there is evidence of an administrative co-ordination of the activities of the two corporations—for example, if its production programme or its expansion plans are co-ordinated with those of the larger firm or if its financial decisions are made by or jointly with those of the larger firm. It should not be classed as part of the larger firm if it appears to operate independently of the *managerial* plans and *administrative* arrangements of the larger firm, for in this case any influence the larger firm exerts should be viewed as an extension of economic power and not as an extension of the co-ordinated planning of productive activity. Thus, although many industrial firms are more or less loosely bound together by a common source of

[18] See, for example, Papandreou's discussion, op. cit., pp. 194–5.

finance or a strong element of common ownership, the mere existence of such connections is not of itself sufficient evidence that administrative co-ordination is effective and adequate enough to justify calling such a grouping a firm.[19]

Suppose, for example, one giant firm buys a strong minority interest in another giant sufficient to give it partial financial control, but makes no attempt to co-ordinate the productive activity of the other firm with its own. It may interfere at strategic points, but its power to do so may be no greater than that attaching to other relationships, for example, to the position of a powerful customer. Is the former firm bigger than it was before? The purchase may have been, from the point of view of the buyer, primarily a transformation of assets, say from cash to securities, and it is not even clear that the buyer has extended its area of control, for financial 'size' in terms of financial power over productive resources is not necessarily affected by such a transformation of assets.

It is essential to distinguish between the extent of economic power and the size of the industrial firm proper. For an analysis of economic power there is no doubt that the industrial firm is *not* the most relevant unit; indeed, individual men as well as corporations may extend their economic power by extending their ownership interests, and an attempt to define the firm according to power groupings would produce too amorphous a concept to handle; the analysis of 'growth', of expansion and size would be of a very different kind. It is not clear in what economic sense a 'financial group' can be called a 'firm', or what reinvestment in such a 'firm' would mean. The extension of power of this sort is largely a matter of legal opportunities, legal institutions and legal limitations; yet in some sense a firm, in extending its financial power, is continuing to 'grow', but in another sense than ours; its growth still has economic significance, not so much for the organization of production as for the concentration of financial control and for the possibilities of using such control to manipulate the use of resources in the interest of the financial power of the controlling group. Public policy, or the hazards of financial speculation, and not conditions relating to the organization and administration of production, set the limits to this kind of growth.

[19] The National Resources Committee distinguished eight more or less clearly defined interest groups on the basis of interrelations between the corporations included in the group through interlocking directorates, minority stockholding, financial connections, etc. The largest, for example, it called the 'Morgan-First National group', 'not because the separate companies are controlled by either J. P. Morgan and Co., or by the First National Bank of New York or by these two institutions in combination but rather because much of the interrelation between the separate corporations allocated to this group is brought about through these two institutions'. The eight interest groups included 106 of the 250 largest corporations and nearly two-thirds of their combined assets. See National Resources Committee, *The Structure of the American Economy*, Part I (Washington, D.C., 1939), pp. 160 ff.

Continuity in the 'History' of a Firm

Not only is it sometimes difficult to determine the boundaries of a particular firm at any given time; it is also sometimes difficult, in tracing the growth of a firm, to determine when a succession of legally different firms should be treated as events in the history of a single firm.

In practice the name of a firm may change, its managing personnel and its owners may change, the products it produces may change, its geographical location may change, its legal form may change, and still in the ordinary course of events we would consider it to be the same firm and could write the story of its 'life'. Whether the continuity was maintained by bankers in times of crisis or by the ingenuity of a clever promoter is irrelevant, provided that the firm neither suffered such complete disruption that it lost the 'hard core' of its operating personnel, nor lost its identity in that of another firm. There may have been reorganizations, but a reorganization in itself generally requires a continuing group of at least the subordinate administrators to effect it. Just as in political life the state 'survives' many changes of government and many reorganizations of its administrative organs, but not partition nor complete annexation by other states, so the identity of the firm can be maintained through many kinds of changes, but it cannot survive the dispersal of its assets and personnel nor complete absorption in an entirely different administrative framework.

A firm may fail to survive in any identifiable form without failing in a financial sense at all. A very successful firm may find it more profitable to merge with another firm, and thus lose its identity, than to continue independently. This may be classed as an expansion of the acquiring firm if the latter merely absorbs the former in its own administrative framework and maintains its own identity. Or the merger may be classed as a new firm if the change in the administrative structure of both firms is so extensive that it seems more appropriate to do so. In both cases firms have disappeared without failing. In one case a new firm is created, in the other not.

Survival in this sense is sometimes as much determined by the legal framework within which a firm operates as by the economic 'viability' of the firm. The laws regulating bankruptcy and corporate reorganization as well as the attitude of the courts may be decisive in many cases. If the firm is a large one with extensive financial connections, the courts are prone to do everything possible to avert its failure as a going concern, and it may operate for years in an insolvent ('failed') condition. Since any particular firm is a legal as well as an economic institution, these considerations should not be ignored; they are of great practical importance for the growth and size of many firms in the economy, but at the same time they make it extremely difficult to use survival as a test of 'comparative private costs' or of adaptability to the environment, as some economists have attempted to do.[20]

Clearly all of these problems must be taken into consideration in any empirical study of the growth of firms. For our present purposes it is not necessary to be more precise; it is enough merely to indicate the nature of the unit with which we are concerned and some of the criteria which should in practice be applied to define its boundaries. I doubt whether any 'rules' could be laid down for the application of the criteria which would obviate the necessity of judgment in individual cases, with the consequent differences of opinion. In any event, in most empirical economic investigations the ability of the analyst to adopt a satisfactory definition is severely restricted by the form in which the data appear, and he usually has to make do with a rough approximation of the thing he really wants to measure. Consequently further abstract definition of the firm as an administrative unit would serve no useful purpose here.

The Firm as a Collection of Productive Resources

The cohesive character that an administrative organization imparts to the activities of the people operating within it provides the justification for separating for analytical purposes such a group from all other groups. The activities of the group which we call an industrial firm are further distinguished by their relation to the use of productive resources for the purpose of producing and selling goods and services. Thus, a firm is more than an administrative unit; it is also a collection of productive resources the disposal of which between different uses and over time is determined by administrative decision. When we regard the function of the private business firm from this point of view, the size of the firm is best gauged by some measure of the productive resources it employs.

The physical resources of a firm consist of tangible things—plant, equipment, land and natural resources, raw materials, semi-finished goods, waste products and by-products, and even unsold stocks of finished goods. Some of these are quickly and completely used up in the process of production, some are durable in use and continue to yield substantially the same services for a considerable period of time, some are transformed in production into one or more intermediate products which themselves can be considered as resources of the firm once they are produced, some are acquired directly in the market, and some that are produced within the firm can neither be purchased nor sold outside the firm. All of them are things that the firm buys, leases, or produces, part and

[20] See, for example, George Stigler, 'The comparative private costs of firms of various sizes can be measured in only one way; by ascertaining whether firms of the various sizes are able to survive in the industry.' George J. Stigler, 'Monopoly and Oligopoly by Merger', *American Economic Review*, Vol. XL, No. 2 (May 1950), p. 26.

parcel of a firm's operations and with the uses and properties of which the firm is more or less familiar.

There are also human resources available in a firm—unskilled and skilled labour, clerical, administrative, financial, legal, technical, and managerial staff. Some employees are hired on long-term contracts and may represent a substantial investment on the part of the firm. For some purposes these can be treated as more or less fixed or durable resources, like plant or equipment; even though they are not 'owned' by the firm, the firm suffers a loss akin to a capital loss when such employees leave the firm at the height of their abilities. Such human resources may well be on the payroll for considerable periods of time even though their services cannot be adequately used at the time. This may sometimes be true also of daily or weekly workers. They, too, may often be considered as a permanent 'part' of the firm, as resources the loss of whose services would involve a cost—or lost opportunity—to the firm.

Strictly speaking, it is never *resources* themselves that are the 'inputs' in the production process, but only the *services* that the resources can render.[21] The services yielded by resources are a function of the way in which they are used—exactly the same resource when used for different purposes or in different ways and in combination with different types or amounts of other resources provides a different service or set of services. The important distinction between resources and services is not their relative durability; rather it lies in the fact that resources consist of a bundle of potential services and can, for the most part, be defined independently of their use, while services cannot be so defined, the very word 'service' implying a function, an activity. As we shall see, it is largely in this distinction that we find the source of the uniqueness of each individual firm.

Ideally, the size of a firm for our purposes should be measured with respect to the present value of the total of its resources (including its personnel) used for its own productive purposes. This is almost impossible to discover in practice, and in the absence of any really satisfactory measure of size we have a wide choice depending on our purpose. For the most part, though not always, the analysis of the growth of firms that is developed in the following chapters is most directly applicable to their growth measured in terms of fixed assets. This measure has its own disadvantages and there is no overwhelming reason for choosing it rather than another; adaptations of the analysis can be made to meet the requirements of nearly any measure, and at appropriate points in the following pages various problems of measurement will be discussed. As I have indicated, however, the use of total assets may distort the size of the firm as a productive unit because it includes the 'placements'[22] of a firm which may be

[21] I am avoiding the use of the term 'factor of production' precisely because it makes no distinction between resources and services, sometimes meaning the one and sometimes the other in economic literature.

[22] This ingenious term was proposed by Joan Robinson to denote 'the purchase of titles to debts or shares', and is used here to mean investments outside the firm which, though perhaps conferring some power to influence the behaviour of other firms, do not bring

large simply because the firm is unable to expand its productive operations fast enough to make full use of its cash resources. This point will become clearer as we analyze the process of growth.

The Motivation of the Firm

We cannot leave this discussion of the functions and nature of the firm without making a few remarks about the 'motivation' of the firm—why it acts as it does. It is reasonable to assume that the people making decisions on behalf of a firm are acting in the light of some purpose, yet it is notoriously difficult to discover the true purposes of anyone. On the other hand, purposive behaviour cannot be understood if one does not know what the purpose is. Therefore if the economist is to understand the behaviour of firms he must make some assumption about why they do what they do. The more he believes that his assumption corresponds to the true motives, the greater will be his confidence in a theory designed to explain the behaviour of firms. It is possible that his theory may be very useful for analysis and for prediction, even if he is not very happy about the 'realism' of his assumption, but the theory will not satisfy his desire to 'understand', and his confidence in it will be correspondingly reduced.

Accordingly, a theory purporting to explain the process of growth of firms can be useful on two levels. It can be useful even if it only presents a logical model yielding conclusions which seem to correspond to actual events that can be 'observed' in the growth of actual firms. But it will be even better if it helps us to understand the actions behind these events. For this, if we assume that firms act for a purpose, we must find an acceptable assumption as to *why* they act. In either case, the usefulness of the theory can only be tested against facts relating to particular firms.[23]

The Profit Motive

The assumption on which this study is based is simply that the growth of firms can best be explained if we can assume that investment decisions are guided by

the other firms into the administrative orbit of the investing firm. See Joan Robinson, *The Accumulation of Capital* (London: Macmillan, 1956), p. 8.

[23] In this it differs fundamentally from the 'theory of the firm', the primary usefulness of which lies in the extent to which it explains the response in the economy as a whole to those types of change which the theory leads us to believe will affect the price and output decisions of firms. The usefulness of this type of theory is not dependent upon whether or not it helps to explain the behaviour of any particular firm (although it may do so); consequently the appropriate test of its usefulness does not lie in its applicability to particular firms.

opportunities to make money; in other words that firms are in search of profits. But then the further question arises, why should a *firm*, or more accurately the managers of a firm, always want to make more profits? The 'profit motive' when applied to individuals is usually based on the psychological assumption that increases in income and wealth have personal advantages for the individual which will spur him to obtain what he reasonably can.[24] The profits of a firm do not confer such advantages on individuals unless they are paid out as income to individuals. From this it is often concluded that a firm is interested in making profits in order to pay out dividends to owners. To be sure, some dividends must be paid to maintain the reputation of the firm and, in particular, its attractiveness to investors as the source of future funds, but why should a firm ever want to pay out more than this if owners are not in a position to force it to do so?[25]

Almost every large firm today is appropriately classed as 'management controlled', that is to say, most firms that have grown large (according to any of the commonly accepted criteria of what is large) have reached a size where either the ownership equity is widely shared, or the owners' control of operations is in practice effectively limited by the managerial bureaucracy.[26] Salaried managers have little or nothing to gain by paying out more than is necessary to keep existing shareholders from complaining in force, to attract any additional capital that may be needed, and in general to build up or to maintain the reputation of the firm as a good investment. On the contrary, the managers of a firm have much more to gain if funds can be retained and reinvested in the firm.[27] Individuals thereby gain prestige, personal satisfaction in the successful

[24] For this reason, it has sometimes been held that the 'profit motive' is weaker in the large corporations than in the small firm because the various managers of the former have less personal 'stake' in the firm's profits. There may be some truth in this, but the extensive use of impersonal accounting records with which to judge the performance of the individual business executives in charge of the various operations of the large firms may have exactly the opposite effect; the 'profit motive' may be sharpened simply because the personal preferences of the businessmen are more rigidly controlled in the interests of the firm.

[25] '. . . the distribution of dividends . . . is a problem in the theory of the firm analogous to the problem of the distribution of a consumer's income between consumption and saving, and it presents similar analytical difficulties. From the point of view of the balance sheet a cash dividend represents a simple destruction of liquid assets. It is not an exchange, for no asset is created to correspond to the assets destroyed; it is, from the firm's point of view, an act of more or less voluntary consumption. It may be asked, therefore, why should the firm ever perform such an act?' Kenneth E. Boulding, *A Reconstruction of Economics* (New York: Wiley, 1950), p. 113.

[26] This is not only true in a country like the United States where firms have reached a very large absolute size, but also in some smaller countries as well. In the sample of large industrial firms that I studied in Australia, for example, not one was effectively owner-controlled in spite of the fact that no firm in Australia would be considered large in comparison with United States firms. The only exceptions were some of the wholly-owned subsidiaries of foreign corporations, and even here the influence of management was often very strong in all policy decisions.

[27] This does not mean that executives will keep their own salaries small in order to leave more for profits. On the contrary, the salaries of top executives will tend to get as high as the community will condone or as the conscience of the executives themselves will

growth of the firm with which they are connected, more responsible and better paid positions, and wider scope for their ambitions and abilities. On this view, dividends would be looked on as a cost to be kept to a level no higher than necessary to keep investors happy; providers of capital, like providers of labour services, must be remunerated, sometimes handsomely, but a desire to remunerate them as handsomely as possible is not a plausible explanation of the behaviour of modern corporations.[28] Even owner-managers often seem to be more interested in the growth of their firm than they do in the income they withdraw from it. Small businessmen frequently tend to identify themselves with their firm and to view it as their life's work, as a constructive creation to which they can point with pride and which they can pass on in full strength to their children. To this end they often prefer to reinvest their profits in the firm rather than outside and to draw only moderately on profits for their personal consumption.

It seems reasonable, therefore, to assume that in general the financial and investment decisions of firms are controlled by a desire to increase total long-run profits.[29] Total profits will increase with every increment of investment that yields a positive return, regardless of what happens to the marginal *rate* of return on investment, and firms will want to expand as fast as they can take

permit (and sometimes higher if the size of the remuneration can be concealed or 'justified' by devices such as stock purchase options or other bonuses). The total remuneration of 'top' executives in a large corporation will be such a small proportion of total profits that its effect on net profits has little practical significance, and the executives know this.

[28] It has been argued, for example, that an enterprise attempts to maximize net income to its owners, but that this is equivalent to maximizing the present worth of its assets, 'for the significance of the assets to the firm is their ability to contribute to the realization of the desired stream of dividends', that is, 'the stream of cash payments (dividends) to owners (shareholders) having the greatest present worth'. N. S. Buchanan, *The Economics of Corporate Enterprise* (New York: Holt, 1940), p. 209.

I am saying, on the other hand, that the enterprise must be considered separately from its owners from this point of view. In the calculation of the present value to owners of a dividend stream, dividend payments in the near future should be given more weight than dividend payments in the distant future. For the firm, however, dividend payments in the present may reduce funds available for investment and therefore reduce net earnings in the future, and there is no evidence at all that firms consider that the greater value of present cash payments to owners offsets in any degree the value to be attached to the prospect of higher earnings for the enterprise in the future. Furthermore, the 'significance of assets to the firm' may just as well be considered to lie in their 'ability to contribute' to meeting a 'desired' payroll, a 'desired' managerial bonus payment, or any other 'desired' cost. Only if higher dividends in the present are expected to maintain or increase the availability of capital funds in the future will the firm have an incentive to make them.

[29] Of course, no assumption about motivation will fit all firms. Indeed, there are many examples of firms that have been 'milked' by those in a position to do so, and the firm destroyed because individuals in control were more interested in protecting their own interests than those of the firm or even of its owners. See, for example, the story of the destruction of the Amoskeag Manufacturing Company by a group of somewhat unscrupulous trustees. Alan Sweezy, 'The Amoskeag Manufacturing Company', *Quarterly Journal of Economics*, Vol. LII (May 1938), pp. 473–512.

advantage of opportunities for expansion that they consider profitable.[30] On this assumption, we would expect a marked tendency for firms indefinitely to retain as much profit as possible for reinvestment in the firm; we would also expect that funds that could not be profitably used would be invested instead of being used substantially to raise dividends, unless higher dividends were required to attract further equity capital. In other words, profits would be desired for the sake of the firm itself and in order to make more profit through expansion. The proposition, thus baldly stated, may to some seem to imply extreme and almost irrational behaviour. Yet it is, to my mind, the most plausible of the various possible assumptions.[31]

Long-Run Profits and Growth

The assumption that the managers of firms wish to maximize long-run profits derived from investment in the enterprise itself has an interesting implication for the relation between the desire to grow and the desire to make profits. If profits are a condition of successful growth, but profits are sought primarily for the sake of the firm, that is, to reinvest in the firm rather than to reimburse owners for the use of their capital or their 'risk bearing',[32] then, from the point of view of investment policy, *growth and profits become equivalent as the criteria for the selection of investment programmes*. Firms will never invest in expansion for the sake of growth if the return on the investment is negative, for that would be self-defeating. Firms will never invest outside the firm except eventually to increase the funds available for investment in the firm. To increase total long-run profits of the enterprise in the sense discussed here is therefore equivalent to increasing the long-run rate of growth. Hence, it does not matter whether we speak of 'growth' or 'profits' as the goal of a firm's investment activities.

[30] It should be noted that this in no way gets around the ambiguities inherent in the notion of a 'most profitable' course of action in an uncertain world where businessmen possess different degrees of optimism and different attitudes toward risk and uncertainty. These questions are discussed in the next chapter.

[31] Compare, for example, the views of one of the more 'popular' writers on business matters. Speaking of large corporations Herrymon Maurer remarks, 'Such an enterprise is too big for any one owner or group of owners to control. It is run, therefore, not primarily for the stockholders, who have generally become used to a socially approved return on their investment, but for the enterprise itself. The aim of the enterprise is not immediate or even future maximum profits, once thought to be the goal of all enterprise, but healthy future existence, to which the size of profits is an important but secondary consideration'. Herrymon Maurer, *Great Enterprise: Growth and Behavior of the Big Corporation* (New York: Macmillan, 1955), p. 186.

[32] 'Payout, under an ideal dividend policy in a growth situation, should not exceed the minimum amount necessary to maintain the market position and integrity of existing debt and equity issues and of issues contemplated in the near future'. Harold Quinton, 'Financing Growth Industries in an Inflated Economy: Standards, Theory and, Practice', in *Long-Range Planning in an Expanding Economy* (American Management Association, General Management Series, No. 179), p. 29.

There is no need to deny that other ‘objectives’ are often important—power, prestige, public approval, or the mere love of the game—it need only be recognized that the attainment of these ends more often than not is associated directly with the ability to make profits. There surely can be little doubt that the rate and direction of the growth of a firm depend on the extent to which it is alert to act upon opportunities for profitable investment. It follows that lack of enterprise in a firm will preclude or substantially retard its growth, although ‘enterprise’ is by no means a homogeneous quality, a problem to which we return in the next chapter.