

**AN INTRODUCTION TO THEORIES OF THE FIRM**

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## I. FOUNDATIONS

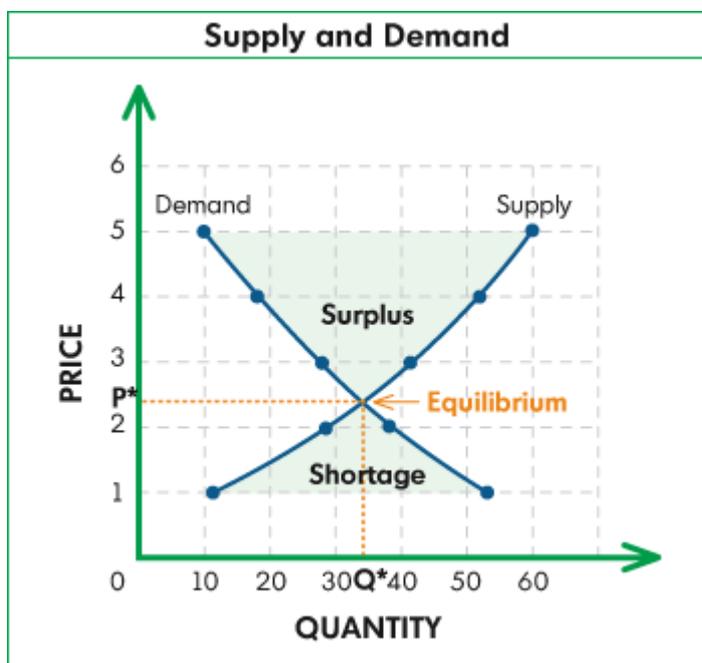
### Neo-classical economics and its assumptions

Micro-economics or the theory of prices, as taught in introductory courses, seems deceptively simple.

Given that consumers have limited resources, which they will spend so as to get maximum utility, if the price of a good goes up, relative to other goods, the demand will tend to go down. If the price of apples were to move from £2 per kilo to £4 per kilo, for example, then everything else being equal consumers will get greater total utility by switching some of their purchasing from apples to alternative foods such as pears or plums.

Similarly, given that producers also have limited resources, which they will use so as to maximise profit, if the price of a good goes up the supply will also tend to go up. If apples become more expensive, relative to pears, it will pay producers to plant more apple trees and less pear trees on their land.

Draw these as graphs, and we get two lines sloping in opposite directions. Where they cross, the equilibrium point, will according to theory determine the actual equilibrium price: the price at which the amount people will supply and the amount they will demand are equal.

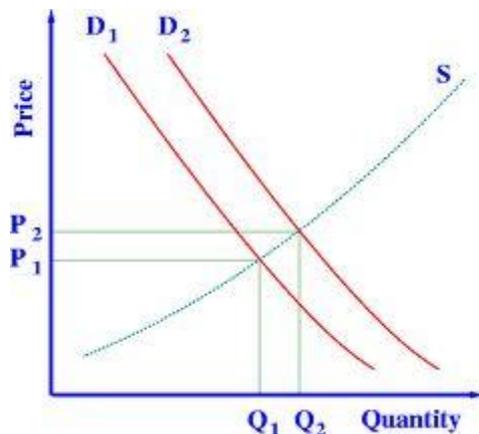


As this theory is developed it quickly gets more complicated, with a lot more lines on the graph. We might suppose, for example, that fruit becomes more fashionable. At any given price people will

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now buy more apples than they would have before, the demand curve shifts to the right, and we get a new equilibrium point at which both the price and the total quantity of apples are higher.



Similarly, if supply conditions change, the supply curve will shift and again the equilibrium point will change. Since in the real world both supply and demand conditions are both very complex and changing all the time, and since products are not nearly as simple as the example supplies (even apples come in a range of different varieties, sizes and quality grades), the application of price theory can get very complicated indeed. The core theory, however is extremely simple, and of course we use it very day in explaining, for example, changes in energy or commodity prices.

Beneath this simple theory, are, however, a large number of assumptions, which are often taken for granted by economists. Some of these are relatively straightforward, but others are by no means self-evident. For example, neoclassical micro-economics (which is how this theory is generally described) assumes that:

1. Consumers are fully rational and fully competent utility-maximisers with stable preference sets. Consumers know what they want (given an infinite range of possible combinations of purchases they can rank them in order), they are consistent in what they want and act fully rationally in accord with it (so their behaviour is predictable). Or at least, to the extent that some of them may make irrational choices, or keep changing their minds, or make mistakes, this doesn't affect the overall demand pattern.
2. Producers (whether individuals or 'firms') are fully rational and fully competent profit-maximisers. Producing firms base all their decisions solely on maximising profit, and they get every decision exactly right.
3. Both consumers and producers have perfect information – about every possible product, about each others' (and in producers' case their competitors') behaviours and preferences, about everything in the world, including everything in the future, that might affect their decisions.
4. Transactions (purchases and sales) have zero cost. In particular, since information is perfect, there are no search costs prior to purchase (you automatically know every conceivable property of every available product) and no monitoring or enforcement costs afterwards.

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(when you buy the services of a gardener, for example, you already know exactly how much he's going to rip you off, the extent of his shirking, etc., and take this into account in the price; if you buy a car you know when and how it's going to break down, at what cost, etc.).

5. The situation to be analysed can be modelled as an equilibrium situation. In this economic world, for example, since everybody is fully competent and fully knowledgeable a situation of surplus or shortage will never arise.
6. Both producers and consumers have enforceable and straightforward property rights. The price mechanism essentially assumes a free market system in which property rights are well defined and enforceable without cost.<sup>1</sup>

This list of assumptions is not complete, and as is already obvious, the different assumptions are not separable – they all interact with each other. It will, however, do for our purposes.

The first things that strikes us about these assumptions is surely how unrealistic they are, and this prompts an obvious question: why on earth do economists assume things they know are not true? There are two main answers to this.

First, the assumptions themselves are not at all obvious. When Euclid wrote his geometry he didn't think 'I'm going to assume a Euclidean space, rather than a more general Riemannian space' – and nor did anyone else for nearly two thousand years. Neither he nor his readers realised that he was assuming anything. Similarly, the full extent of the assumptions underling neoclassical economics came to light only slowly.

Second, the assumptions are necessary if we are to make a simple enough model of the world to generate predictions, which is what economists are about. All science relies on simplifying assumptions (Newton's laws of physics, for example, treat bodies, even big ones like planets, as point-masses). Since human behaviour, which is the subject of economics, is incredibly complicated, it has to be incredibly simplified if we are to make scientific sense of it, and from a scientific point of view the benefits of price theory – the practical predictions we can derive from it – are seen to outweigh the costs of its inaccuracies. And as we noted in (1) above, in some cases the assumptions do not need to apply through and through: it is enough if they apply on average.

In fact, the assumptions listed above largely reflect one major constraint of the formal economic theory, namely that it is a static theory: it has no time dimension. Although we talk loosely of prices changing in response to changing demand or supply conditions, and may indeed draw arrows between the two demand curves in the figure above to suggest a temporal shift from one to the other, the theory does not address how they change, or indeed take any account of time. Different

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<sup>1</sup> Property rights in economics are broadly defined and can get quite complicated. Even if I sell you an apple I transfer to you a bundle of rights: to possess the apple, to eat it or otherwise dispose of it, or not, to sell it on (or sell part of it on) to someone else, etc. If I buy a share in a racehorse, I buy rights to a share in its winnings, but these also entail obligations, to a share in its maintenance and training, for example, to not doing anything that would damage my co-owners' rights, and so on. If I enter employment, I sell to the employer certain property rights in respect of my labour and its products, but these are not complete and can be very difficult to define – and they assume, of course that I have the rights to my own labour in the first place (as a slave would not). An illustration of how difficult the question of property rights can become is the situation that arises when a factory pollutes the environment. Here the property rights of the factory (to pursue its production unhindered) and of the community (to pursue their lives unhindered) come into conflict and the economic analysis depends on the legislation and legal remedies in force.

conditions imply different prices, but the formal comparison is between different worlds, not different states of the same world, and each world is assumed, strictly speaking, to be static. Of course, real worlds aren't like that. We live in the time dimension and all our decisions are made in that dimension. Even in the very simplest case, we buy apples today to eat them tomorrow. The assumptions are consequently necessary for the theory to be of use, and in many simple applications they are arguably quite innocuous.

Having said this, however, the assumptions do have some uncomfortable consequences. For example, although the whole theory is a theory of *price*, there is actually no need, under these assumptions, for money! Since even the most complicated arrangement for bartering would be cost-free and instantaneous, and since in a world of complete knowledge all future transactions could be anticipated and settled here and now, there is no need for any intermediary. Money becomes useful only when we need to bridge between transactions at different times or in different places, or when it acquires a utility value as a symbolic good in its own right (which, by the way, economics denies: money in economics is treated as pure exchange value).

There is also no role, under these assumptions, for the firm. As Adam Smith famously noted, good might be produced more efficiently through a division of labour, in which specialists combined within a complex production process, but with no transaction or information costs there is no reason why this should not be achieved by a complex of one-to-one trades.

In summary then, neoclassical micro-economics, which remains the dominant school of economic research, and on which most economics teaching is based, assumes that everyone knows absolutely everything, including everything about the future, and that everyone is completely rational and completely competent; and it has no place for either firms or money. But it does give predictions, and if we try to relax some of the assumptions so as to make it more realistic, it turns out to be extraordinarily difficult to derive models that still 'work' as science. Over the last 40 years, however, economists have been able to make progress in some areas, and in particular to build up theories of the firm and its governance, and they have done so by building on insights developed by a handful of the more critical of the economists of previous generations. In the next section we shall review some of these critical early contributions.

### **Neoclassical economics and the theory of the firm: some critical contributions**

*The classical tradition: Adam Smith and Karl Marx*

Adam Smith's *The Wealth of Nations* (1776) is widely regarded as one of the founding texts of economics and is probably best known for two observations. The first is on economic self-interest.

It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves not to their humanity but to their self-love, and never talk to them of our own necessities, but of their advantages.

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Two things need to be noted here. First, Smith's concept of self-interest was almost certainly different from ours. As his other writings make clear, he took for granted a general moral sympathy between people in a community, and while he assumed that the butcher would advance his own interests he did not assume he would be opportunistically self-serving: self-interest is conceived here as lying within moral bounds, not as being amoral. Second, within the framework of neoclassical economics as it developed in the two hundred years after Smith's work, self-interest is not an issue. What is assumed is that everybody has full knowledge of everybody else's motivations and behaviour, and can make decisions accordingly, not that that behaviour is of any particular kind. Once this assumption of perfect information was relaxed by modern theorists of the firm, however, it had to be replaced by something else that could be used to make predictions, and that something else was the assumption of opportunistic self-interest.

Smith's second observation, and the subject of an important section of his book, concerned the division of labour. Using the example of the manufacture of pins, he noted that this seemingly simple task was actually divided up into a whole series of specialised operations:

One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper.

All together, the making of pins was divided into about 18 distinct operations, carried out by between 10 and 18 people. Even in small factory, Smith estimated, this resulted in the production of about 4,800 pins per person per day, whereas without any division of labour he reckoned 20 pins per person per day would be good going. The gains came, he suggested, from the development of specialist skills, the time savings when people didn't have to keep changing tasks, and the use of specialised machinery that the division of labour made possible.

The pin factory observed by Smith was evidently a firm: the workers were employed, not autonomous producers. But in the perfect markets of neoclassical economics there is no apparent reason why. Since the benefits of the division of labour are known, there are no information or transaction costs, and future transactions can be settled for in the present, there is no reason why skilled labourers should not simply contract with each other, and with suppliers of machinery, to deliver pins at the optimal price. Of course the real world is not like that, as Smith well knew, but given the primitive stage of the development of economics at the time, the fact that that might be problematic was not yet apparent. It is only with Karl Marx, writing nearly a century later, that we get the beginnings of a theory of the firm.

Writing in *Capital*, Volume 1 (1867), Marx identified productivity gains not only from the division of labour but also from the combination of workers with the same skills, as was by then commonplace in the large textile factories of Britain, for example. Man, he observed, was a social animal, who could gain from cooperation, and the economies of scale associated with the factory system (in which many identical machines might be housed in one building and driven from one power source) favoured ever growing firms. He recognised, however, that these could not be achieved by market exchange alone. The system depended critically on the accumulation of surplus value as capital, and on the use of that capital to employ labour and machinery so as to generate further surpluses. This

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in turn requires the employment of managers and controllers to coordinate the work of the labourers, and so the 'firm' in its modern sense is born.

Building on the work of Ricardo as well as Smith, Marx developed a distinctive labour theory of value and associated theory of capitalist production. In simple terms, he argued, capitalist firm owners paid workers what was necessary to keep them working, and appropriated the surpluses derived from the productivity gains of the firm to themselves. This was a real world view of the firm that provides a useful counter-balance to the more abstract and mathematical neoclassical economics of the twentieth century, but with very different starting assumptions it could not easily be combined with that economics. With the rise of communism, moreover, the neoclassical economics of free market capitalism and the Marxist critique of capitalism came to occupy quite separate worlds. To be productive, insights for an economic theory of the firm would have to come from closer to the mainstream.

### *Frank Knight on uncertainty, risk and the role of the entrepreneur*

By the time Frank Knight wrote *Risk, Uncertainty and Profit* (1921), neoclassical economics, based on the analysis of marginal changes from equilibria positions and incorporating the price model with which we started, had taken over from the classical economics of Smith and Marx, and the problems associated with the assumption of complete information were beginning to become apparent. In the consideration of investment decisions, for example, it was evident that people did not have complete knowledge of the future, and that any investment was consequently associated with an element of risk. The value of a production decision was not known in advance, as the theory assumed, but had to be estimated. To an extent this can be incorporate within neoclassical theory. If I know, for example, that there is a 2/3 probability that planting a new orchard will yield me a profit of £30,000 and a 1/3 probability that it will yield only £10,000, I can still work out an expected return and use that in my calculations. There is a risk, but it is a known risk, and since it is known I could, for example, insure against it. What Knight controversially asserted, however, is that in the real world we are often faced not only with the risks associated with probabilistic information, but with radical uncertainty. The future is so uncertain that we can't even put probabilities on outcomes: we know there are risks but we don't know what they are. (Writing 15 years later in *The General Theory*, a work of macro- rather than micro-economics, the most famous economist of the century, John Maynard Keynes agreed: investment decisions, he suggested, are based not on estimates of future value, which are impossible to make, but on estimates of what other people will estimate what other people will estimate.)

For Knight, the uninsurable risks associated with uncertainty centred upon the individual businessman or entrepreneur and the decisions he took. On the one hand the entrepreneur had to take decisions in the face of environmental uncertainty. On the other hand investors or banks had to take investment or lending decisions in the face of the uncertainty associated with the decisions – the "guesses" made by the entrepreneur. Two results followed. The first was a division of labour within firms according to people's psychological attitudes to the risks of uncertainty, with the risk averse preferring salaried employment while the entrepreneurs committed to pay those salaries and to take responsibility for the risks upon themselves. The second was a growth in both the scope of the firm and the widening of ownership. Entrepreneurs sought self-insure by spreading their risk

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across a range of decisions or guesses, hoping that the good guesses would outnumber the bad ones. Investors and lenders sought to spread their risk across numerous firms, and to share the risk in each firm.

### *Empirical observation on the complexity of firms: Adolf Berle and Gardiner Means*

Knight's theoretical observations on the risks of entrepreneurship and the implications for ownership and control were complemented by the empirical observations of Adolf Berle and Gardiner Means's 1932 classic, *The Modern Corporation and Private Property*. Through the 19<sup>th</sup> century, the typical firm had been owner-managed, but around the turn of the twentieth century several things happened, the changes occurring first in the United States. First, new technologies of communication (the telegraph and the railways) and mass production machinery made possible new economies of scale. This gave rise to a wave of mergers between firms in different parts of the country as industries consolidated to exploit the scale economies. Ownership of the new large firms was dispersed across the many owners of their constituent companies, while management control was centralised, sometimes in one or two families, who began in the twentieth century to employ specialist professionals. Then, as these large firms sought to grow further and were unable to raise capital either from the existing owners or from a highly regulated and constrained banking sector, shares were increasingly sold to the general public. By the time Berle and Means wrote, the typical large American corporation combined extremely diverse ownership with completely separate management control, an arrangement that with some modifications continues in both America and Britain to this day.

This 'separation of ownership and control' raised two sets of problems. One was social. The family firms of the nineteenth century had invested heavily in their local town communities, to which they were closely bound. The profits went to the family, who lived in the community and relied on it for their workers: it was natural to invest in schools, charities, etc. In the twentieth century corporations, however, a local factory would be managed by an employee. The firm's profits were not his to spend and the link with the community was broken. The other problem was, in a sense, the other side of the same coin. Since the managers of a corporation were no longer its owners, there was a conflict of interest between their brief to maximise profits for the owners and the temptation to serve their own interests, for example by expanding the firm so as to create more or better management jobs, or by taking steps to prevent takeovers.

The first of these problems was hotly debated at the time, but very quickly forgotten, or rather subsumed under the second. Within the economic and political orthodoxy of the twentieth century the sole aim of the firm was, as we have noted, to maximise profits. Spending money on communities did not fit with that, but nor did a separation of ownership and control. While neoclassical economics assumed profit-maximisation, the message from Berle and Means was that delivering it was not straightforward.

### *Herbert Simon on bounded rationality*

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Another insight that can be related to Knight's ideas came from the economist Herbert Simon, who made a special study of business administration and the implications for that of radical uncertainty. Simon repeated Knight's observation about the impossibility of complete information but added to it the observation that we cannot practically process even the information that we do have.

Neoclassical economics assumes that decisions are based on a complete rational analysis of complete information about anything that may conceivably be relevant to the decision. In the case of administrative decision making, Simon argued that this was impossible, and indeed self-contradictory: to attempt such a rational analysis would itself be irrational. Instead he proposed a concept of 'satisficing' or 'bounded rationality'. A rational administrator, according to Simon, would take into account his cognitive limitations. He would start by analysing what seemed to be the most relevant information and would continue to bring in new information until the cost of the analysis became greater than the cost of the likely benefit from that analysis. Instead of seeking an optimal solution, he would be content with a good-enough or satisfactory one.

Simon's work has been highly influential, not least on the theory of the firm, but its interpretation remains contentious. Simon certainly hoped to 'save' the rationality assumption in economics, arguing that his concept of bounded rationality was sufficiently powerful to reproduce the established results of neoclassical theory while being true to administrative reality. (Unlike most of the critiques discussed here, his seminal paper, published in 1955, is highly mathematical.) Those who have drawn on his work within economics have tended to go along with that, interpreting the satisficing process as a simple trade-off between the costs of analysis and the benefits from the results of that analysis. The decision maker, it seems, remains fully competent, even in accommodating his own incompetence. This is hard position to defend, however. Given Simon's assumption of radical uncertainty, the 'unknown', the bit that is left out of the calculation, can never be measured (or even estimated), so the judgement of how far to take the analysis must always be subjective and, just like that of Knight's entrepreneur, a judgement – an educated guess.

### *Joseph Schumpeter on equilibrium and entrepreneurship*

Going back to the 1920s, a rather different critique of neoclassical theory came from the Austrian economist Joseph Schumpeter. For Schumpeter, a critical limitation of the neoclassical theory was its focus on equilibrium states, which almost by definition – being in equilibrium – could not produce economic growth. This led him, like Knight, to focus on the entrepreneur. For Schumpeter the innovating entrepreneur, whether an individual or, more commonly in modern society, the decision maker in a large firm, is the central character in any economic system, introducing new products, taking the risks associated with that, and earning rewards from the monopoly profits achieved before competitors react and equilibrium is restored.

### *Friedrich Hayek on entrepreneurship and the uses of knowledge*

Several of the insights we have mentioned were brought together by another Austrian economist, Friedrich von Hayek (he dropped the 'von'). In a classical article of 1945 on "The use of knowledge in society" (some of the ideas in which had already been put forward in the early 1930s), Hayek

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addressed what he saw as the fundamental problem of economics in society, namely how best to employ available resources so as to maximise the resulting utility. In conventional economic theory, assuming complete knowledge and an equilibrium state, this was straightforward: you have all the available facts and just have to do the calculation. Like Schumpeter, however, Hayek noted that the equilibrium assumption was completely unrealistic. In real life things were always changing and business people were constantly having to make new decisions: even the maintenance of stable profits required a constant struggle to keep costs from rising. Like Knight and, later, Simon, he also recognised that complete information was impossible. He had a distinctive take on this latter problem, however, suggesting that the key thing about economic knowledge was that it was widely dispersed amongst economic actors.

This dispersion of knowledge has two consequences, according to Hayek. The first, and the one that dominated his thinking, was that centrally planned economies were inevitably suboptimal. The planners simply could not have the information they would need to plan effectively. In free market economies, however, the price mechanism could act as a means of communicating information on the basis of which efficient resource allocation decisions could be made. The global calculation of equilibrium prices based on total information of both present and future was not possible, but since equilibrium was itself an illusion that didn't matter. In a changing world actors could react rapidly to new information by responding to price signals. The businessman, he suggested did not need to know why some resources had become more difficult to acquire, or some products more in demand; he just needed to know how their prices were changing.

The second consequence of dispersed information was that since each entrepreneur or investor started out with a different knowledge base, each would make different investment decisions. One of the problems with a world of complete information is that every rational producer will come to the same conclusion, so while there may be a perfect market there is no place, for example, for an active stock market: every investor will always put the same value on a particular stock. This clearly did not describe the real world – though it continues to be the basis of most finance theory! This perspective complements Knight's, for where Knight saw the entrepreneur as having a specific approach to risk, Hayek saw him as having specific knowledge.

Hayek's popular fame is based largely on his advocacy of a free market system with minimalist state intervention, a position that was seized on by neoliberal conservative politicians in the 1980s. It was his emphasis on the potential of price theory rather than on its limitations that was most influential. But with his work, and with that of Simon which followed and built on it, we have the beginnings of an informational theory of the firm. We shall turn next to the contributions that form the basis of modern theories of the firm, the first of which, due to Ronald Coase, was published as early as the 1930s, but only taken up many years later.

### **Seminal works for the modern theory of the firm**

#### *Ronald Coase on transaction costs*

In 1937 Ronald Coase, then a junior academic at the LSE, published a paper on "The nature of the firm" that was to result, over 50 years later (1991) in the award of the Nobel Prize. The paper began

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by declaring, quite simply, that “economic theory has suffered in the past from a failure to state clearly its assumptions” and went on to look at what economists meant by a ‘firm’ and at how this related to firms in real life. Like Hayek, on whose early work he drew, Coase started by focusing on the price mechanism as means by which, according to economic theory, resources were optimally allocated. But whereas Hayek, focusing on the level of the nation state, argued that the price mechanism was a more efficient means of resource allocation than central planning, Coase pointed out that at the firm level entrepreneurs clearly found it more profitable to rely on planning (the coordination of activities within a firm) than on the price mechanism. Indeed, he suggested, what was above all characteristic of the firm was the suppression of the price mechanism.

Given the claims of economic theory, and in particular the supposed advantages of the price mechanism, this prompted the question: why do firms exist? And having considered a range of possibilities Coase’s answer was that the use of the price mechanism must carry a cost. Pursuing this insight, he suggested that there was a cost associated with discovering what the relevant prices were. There were costs associated with negotiating and concluding a contract for each market transaction. And if one tried to save on these costs by making one long-term contract instead of several short-term ones, then given the real-world lack of certainty as to future events one would have to introduce some flexibility into the specification of what was being supplied. One might be better with an incomplete contract (such as that of employment) than with one that tried to specify and price specific future actions. In short, since the operation of the market costs something it may be beneficial to form an organisation in which resource allocation is directed by a manager rather than left to market forces.

Coase himself both likened his approach to that of Knight and distinguished it from that. For whereas the key element to Knight was the psychology of risk and the mode of payment (fixed and risk-free or fluctuating and risky) that resulted, the key element to Coase was the distinction between the allocation of resources by price and by managerial direction. And while Knight’s analysis suggested a certain division of labour it provided no reason, according to Coase, why the price mechanism should be suspended: Knightian entrepreneurs could, in his view, sell their services and secure returns without having to exert direct control over others. Moreover, unlike Knight’s distinction, Coase’s was in principle amenable to economic analysis. For just as it was apparent that some resource allocations could be conducted more efficiently by a firm than in the market, so it was also apparent that there would, after a point, be diminishing returns from organisation. Coase also suggested that larger and more geographically diverse organisations would carry greater risks of managerial error (a relaxation of the competence assumption that did not survive in successor theories) and that the relative costs of market and organisational coordination would vary significantly across activities and, as technologies changed (he mentioned the growing use of the telephone) over time. At any point in time and in any localised area of the economy, circumstances would dictate particular trade-offs between transaction costs and organisational coordinating costs leading to firms of particular size and scope.

*Armen Alchian and Harold Demsetz on information costs and team production*

An analysis of the economics of the firm put forward by Armen Alchian and Harold Demsetz in their 1972 paper, “Production, information costs, and economic organization” was broadly consistent

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with Coase's treatment, but put the emphasis on a different kind of information cost, that associated with measuring and monitoring outputs. Just as Coase had argued that Knight's analysis didn't actually explain why firms exist, so Alchian and Demsetz suggested that Coase's distinction between managerial direction and the price mechanism was misleading. It was not as though firm owners managed by coercion, they pointed out: the mechanism used was still contracts with prices attached. What in their view was characteristic of the firm was rather the existence (due to their superior efficiency) of team production processes in which the individual outputs of team members (as opposed to the total output of the team) could not be individually measured. A simple case might be where two or more people were needed to lift something. A more characteristic case would involve the combination of a variety of skills and activities, none of which added measurable value in itself, but which together resulted in a valuable product. Real world agents did not have complete and free information, and where measuring the output of individual workers was difficult and hence expensive, they argued that it would be more economic to use employment contracts which measured inputs. Under such contracts, however, utility-maximising workers would have an incentive to shirk (gaining greater leisure at no cost). This could be compensated for on the average by lower pay, and the workers, each of whom had an interest in the others not shirking, could themselves engage a monitor to limit the shirking. But even then the question would remain of who would monitor the monitor. The arrangement could only work, it was argued, if there was some specialist – in reality the owner of the firm – to pay the salaries, absorb the risks of shirking, and receive the *residual* income as opposed to the specified incomes of the workers.

Alchian and Demsetz's teamwork theory of the firm has not itself flourished, but the paper has nevertheless been extremely influential, especially through its emphasis on the information costs of monitoring and its characterisation of the firm as a nexus of contracts, with the owner as residual risk-taker.

### *Ross, Spence and Zeckhauser: first thoughts on agency costs*

Around the same time, in the early 1970s, information costs such as the cost of monitoring were also being considered in another context, where they became known as agency costs. The starting point here was the problem of insurance, explored in a 1971 paper by Spence and Zeckhauser, "Insurance, information and individual action". The problem is simple. In a world of perfect information there would be no need of insurance. In the real world, insurance helps people to cope with the lack of information, but as in Alchian and Demsetz's analysis, imperfect information also opens the way for utility-maximising agents to shirk. For example, if I take out insurance on my property, I will (as a rational economic actor) be less likely to look after it. In a concise 1973 paper on "The economic theory of agency: the principal's problem", Stephen Ross generalised this observation to any contract between a principal and an agent to whom the principal delegates some task. Where the agent's output can be accurately and easily measured there is no problem: the principal pays by results. But in many cases, and in most employment contracts in particular, this is not the case. Indeed, as Alchian and Demsetz noted, it is precisely because of the measurement problems that people are employed on wages or salaries rather than paid for their outputs.

Suppose, for example, that I wish to engage a gardener. I cannot easily measure (or indeed specify) his output, because this will depend on all sorts of things such as the weather, the condition of the

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soil, the activities of pests and so on. So I pay by the hour. But I then incur two types of costs. First there are the costs of finding and choosing the gardener and of the risks associated with *adverse selection* – of employing someone, for example, who does not have quite the skill set I was seeking. Then there are the costs of monitoring his work, and of the risks of *moral hazard* – of his skiving off or shirking, when I'm not around, or digging the vegetable beds less deeply than he should, or stealing some of my fruit or petrol. Agency relationship and their associated costs are endemic in society, and not just associated with employment. As well as the insurance case, for example, we have already noted the costs of shirking by team members, and in the business context the relationship between a firm and its bank would be another example. Wherever the property rights to the use of some resource (whether labour, goods or finance) are transferred without specifying completely the use to be made of the resource, we have a potential agency problem. The case that is of particular interest for the theory of the firm, however, is that arising from the separation of ownership and control identified by Berle and Means, the relationship between the owners of a firm and its managers.

### *Edith Penrose on the firm as resources*

Finally in this section, a completely different approach to the theory of the firm, but one that was to be extremely influential in the field of business strategy, was set out by Edith Penrose in her *Theory of the Growth of the Firm* (1959).

In neoclassical theory, producers are characterised solely by profit-maximisation. If there is more profit to be made from oranges than from aeroplanes, a rational producer will switch from aeroplanes to oranges. Even in the theories of the firm we have discussed so far, moreover, the firm is just a mechanism by which a given product is most cheaply produced. Penrose's core observation was that real firms are both constrained and enabled by the specific resources at their disposal, where resources include skills and knowledge as well as plant and machinery. Of course these resources can be bought and sold, but because of the way they evolve they tend to be sticky with respect to firms. A manager's understanding of how to create value may, for example, be specific to a firm culture so not easily tradeable. And like Alchian and Demsetz's teams, the value of the whole is typically greater than the value of the parts, giving the firm an organic quality.

These bundles of resources may originally have been put together to produce a given product, and cannot easily be reallocated to something completely different. But they are not restricted, either, just to that product. Typically they will be applicable to a range of possible products (new as well as existing), and so one of the key things about firms is that they have restricted but important choices to make about how best to apply their specific resources. Moreover, most firms, most of the time, will have spare resources, either because they come in indivisible units or because they are being continually augmented through learning effects. Processes become more efficient, and less demanding on management time, managers enhance their knowledge by learning from each other, and so on. So there are always decisions to be made about resource allocation.

The emphasis of Penrose's account was on how firms grow, but she also offered an early attempt at an economic account of what firms are, and how they gain and sustain competitive advantage.

## II. CONTRACTUAL THEORIES OF THE FIRM, THE PRINCIPAL-AGENT PROBLEM AND CORPORATE GOVERNANCE

### The firm as a nexus of contracts

Common to several of the insights we discussed in the last section is the idea of a firm as a nexus of contracts. The terminology was first used by Michael Jensen and William Meckling in 1976, but the idea was already central to Alchian and Demsetz's account, in which different kinds of firm (owner-managed, partnership, publicly quoted corporation etc.) were loosely explained as the consequences of the different webs of contractual relationships appropriate to different circumstances. This approach was made more explicit by Steven Cheung in a paper on "The contractual nature of the firm" (1983). The contractual model of the firm has particular implications for corporate law and corporate governance, because it treats the legal entity of the firm as largely accidental: what matters, it is argued, are the explicit and implicit contracts between different actors, whether they are seen as inside or outside the firm. From an economic perspective, however, it provides a way of describing and analysing the firm. Legal and social conceptions of the firm, which form the basis of our everyday perceptions (the firm as a legal entity or as an organisation) are then seen as the consequence of economic contracting considerations, and not vice-versa. Firms take the forms they do, it is suggested, not because of any social or political considerations, but for purely economic reasons. (Given the artificiality of economic theory this may seem an extraordinary claim, but that's economists for you!)

Cheung had been one of the early exponents of transaction costs and he suggested that particular firm structures could in effect be seen as the outcome of a competition between alternative contracting arrangements, each of which was associated with a range of transaction costs. Oliver Williamson's transaction cost theory of the firm, which will be the subject of the next session, builds on this approach.

Meanwhile, for Jensen and Meckling, the contractual nature of the firm provided the basis for a different kind of analysis, in terms of the agency costs associated with particular contractual arrangements, and in particular the costs facing a firm's owner or owners as principals in contractual agency relationships. Their 1976 paper, "Theory of the firm: managerial behaviour, agency costs and ownership structure", is probably the single most influential contribution to both agency theory in general and the economics of corporate governance.

As we shall see, agency theory and transaction cost theory start from very similar assumptions not only about the costliness of information and the contractual nature of firms but also about the behaviour and motivations of the actors involved in them. The key difference is in the perspectives they adopt. Transaction cost theory addresses the traditional economic question of the optimal allocation of resources in a society and seeks to explain why firms have the scale, scope and internal and external governance structures they do. Agency theory, in contrast, takes the position of one individual actor, the principal (in practice the firm owner), and seeks to determine the contractual

arrangements that will optimise his or her utility. In this section we focus upon agency theory, and its application to questions of corporate governance.

### **Agency theory and corporate governance**

Agency theory is concerned with the relationship that arises when one party (the principal) engages the services of another party (the agent) in order to achieve certain of the principal's goals, delegating to the agent some decision-making authority (or "residual control rights"). In particular, it is concerned with the form of contract that is appropriate if the costs to the principal of this arrangement are to be minimized. In its origins it is essentially a problem of property rights enforcement. Through the contract the principal acquires certain property rights to the labour of the agent, but enforcing these is costly so a rational agent will specify the contract so as to minimise these costs.

Agency relationships are ubiquitous, arising not only in cases of contractual engagement or direct employment (engaging a lawyer or employing a gardener) but also in all co-operative efforts, whether or not these incorporate formal contracts, and thus in all organizational activities. Agency theory has accordingly proved applicable to a wide range of issues, including insurance contracts, taxation, management accounting, procurement, transfer pricing, sales-force compensation and remuneration policies. Its best-known applications, however, have been to issues of corporate governance, including issues of capital and debt structure (which get very complicated and will not be covered here), the market for corporate control and, especially, issues of executive pay, within a contractual theory of the firm, and what Demsetz has called a *laissez-faire* economic system.

(Note that the agency theory literature can be divided into two groups of studies, one linked with game theory and concerned with formal (mathematical) principal-agent models, the other using agency arguments to make more general predictions that are then empirically tested. We shall be concerned just with the latter approach.)

The *laissez-faire* model of the economic system differs from the neoclassical or 'decentralised' model in admitting the existence of information costs, including transaction costs. It still assumes generally efficient competitive markets, but the existence of transaction costs leads to institutions of employment and to the separation of ownership and control, and because of information costs the property rights associated with these may be ill-defined and costly to enforce. Doing away with the perfect information assumption also has another, theoretical implication, for one thing that assumption did was allow things to be modelled, in a way that was completely general with regard to human behaviour and motivations. Without it economists need to make other assumptions about how people behave, on the basis of which we can predict outcomes.

### *Assumptions*

Accounts of agency theory rarely make these other assumptions explicit. Indeed, economists generally prefer to ignore assumptions altogether, arguing that a theory should be judged on predictions. But since in practice they always develop theory deductively from assumptions

(whether stated or unstated, conscious or unconscious) and not by induction from empirical observations, this seems little more than a rather artless way of protecting against criticism. So what are the assumptions entailed in agency theory? The box below suggests six assumptions that seem to be required in order to generate any predictions.

### Agency theory assumptions

- 1: *Individual humans are boundedly rational, fully competent, self-interested, self-serving and opportunistic economic utility maximizers.*
2. *The principal and agent have differing degrees of risk aversion with respect to any particular set of outcomes. In particular, in most applications, the agent is assumed to be more risk averse, since less wealthy and with a less diversified portfolio, than the principal.*
3. *Information is asymmetric between principal and agent. In particular, the principal has only limited information concerning the agent's abilities and behavior.*
4. *Information on the agent's behavior is a purchasable commodity.*
5. *The objectives of the principal can be fully specified, or at least the degree to which the objectives of the principal can be specified is independent of the form of contract adopted.*
6. *Apart from the qualification noted in assumption 3, there is an efficient market for principals and agents. In particular, the principal can exert no direct, monopolistic control over the agent.*

The *self-interest* assumption is generally traced back to Adam Smith (1776), but as we have already noted is actually much more restricted than Smith's use of the term. That human beings are self-interested in Smith's relatively broad sense is uncontentious: they generally act in, and not against, their own interests. Moreover, even when actions appear to be altruistic, they may well contribute to the individual's welfare by generating good feelings or avoiding feelings of guilt. The constraints imposed by what Smith termed moral sentiments can also be attributed, as by Hume, to a wider, socially-constructed self-interest. The self-interest required by agency theory, however, has little room for moral sentiments and even self-interested altruism, though it may be accepted in principle, is assumed not to be significant in practice: in all applications of the theory, utility is equated with economic utility. In pursuing their self-interest, moreover, agents are assumed to be in general intentionally deceitful and to shirk their responsibilities to principals to whatever extent their (boundedly) rational calculations lead them to believe they can get away with. Oliver Williamson, whose transaction cost theory adopted the same assumption described behaviour of this kind as 'opportunistic'.

Not all accounts of agency theory treat *risk aversion* explicitly. However, in the simplest case of purely financial principal-agent contracts, which take the form of insurance contracts, it is differing levels of aversion to the risks specified (arising from different levels of wealth and different risk portfolios) that provide the asymmetry between principal and agent without which the relationship would have no value to either party. In the traditional agency theory of corporate governance it is similarly assumed that the CEO-agent, who is very largely dependent upon her contract remuneration, is more risk averse than the principal, for whom the contract forms part of a

substantial and balanced portfolio of investments. More generally, risk aversion provides a variable in terms of which alternative contract arrangements can be defined and costed.

Treating *information* as not just costly but as a *purchasable commodity* allows the scope for an agent's deceit (and thus the cost of deceit) to be treated as a dependent variable under the indirect control of the principal. Note, however, agency theory retains the assumption of free markets for labour, whether workers or managers, and so assumes that the principal can exert no direct, monopolistic control over the agent. It thus has no room, for example, for the exploitation of workers.

The *specification* assumption is rarely stated explicitly and it can be argued that it follows, in principle at least, from the assumption of rational utility maximization. If the principal can maximize her utility she must be able to know and hence to specify what objectives this entails. Knowing ones objectives for the practical purposes of one's own decision making is not the same thing, however, as communicating them effectively in the form of a contract. Agency theory assumes that not only the principal but also the agent has full knowledge and understanding of the principal's objectives, at least so far as they relate to the activities for which the agent is engaged.

### *Applications*

These assumptions ensure that the agent is able, should she so desire, to act fully in the interests of the principal, but that in general she will not do so. Her own objectives will, in general, be different from those of the principal, and so long as the principal has only incomplete knowledge of her actions she will exploit this in her own self-interest.

As noted above, two specific problems are identified in the agency theory literature. One is *moral hazard* or *shirking*: in the absence of effective monitoring by the principal, the self-interested agent will pursue her own interests and devote less effort than had been agreed upon to the principal's objectives, with the consequence that those objectives will not be met as fully as would otherwise be the case. The other is *adverse selection*: in the absence of complete prior knowledge and subsequent effective monitoring the agent will further her own interests by mis-representing her skills and abilities.

For the principal, these adverse effects can be mitigated either by increased *monitoring* or by the use of *outcome-based* rather than behaviour-based contracts. The first limits the scope for deceit. The second ties in the agent's objectives to the principal's. Both, however, involve additional costs: the cost of acquiring information in the first case and the cost of transferring risk in the second. Since the agent is assumed to be risk-averse she will require additional incentives to take on the additional risk entailed in an outcome-based contract.

By working out all the costs involved, agency theory seeks to predict the optimal contractual arrangement in any given circumstances. We shall come back to how this works in respect of the governance of the firm, but first let us look in general at the kind of prediction it generates. The costs obviously differ from case to case, and they are also broken down differently by different authors, but one version would identify three costs:

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**S** Self-seeking cost. The cost to the principal of the deviation between the principal's objectives and the agent's actions arising from the agent's self-seeking behaviour.

**M** Monitoring cost. The cost to the principal of acquiring information on the agent's behaviour and abilities. This includes the costs of any information voluntarily supplied by the agent to raise goodwill but effectively costed into the contract - what Jensen & Meckling (1976) term "bonding costs".

**R** Risk-transfer cost. The cost to the principal of transferring risk to the agent through the inclusion of outcome-based remuneration in the contract.

A detailed treatment might also include various transaction costs, but these can either be included in one or other of the above costs or disregarded as insignificant for the main theory.

Following the assumptions made, the main costs of an agency relationship can be related to each other and to the choice of contract as follows:

*1. For a given form of contract there is an inverse relationship between **M** and **S**.*

Other things being equal, there is a trade-off between the costs of monitoring and the costs of self-seeking. The more (less) the principal spends on monitoring the agent's behaviour, the less (more) is the agent's scope for self-seeking

*2. There is a positive relationship between the use of outcome based contract terms and **R**.*

In a pure behaviour-based contract (as when the principal engages the agent on a salary or per diem rate) there is no transfer of risk so no cost arises. As risk is transferred to the agent through the introduction of outcome-based contract terms (as when the agent is remunerated in part or in full through a fixed proportion of the profit or loss incurred by a venture) the total expected return sought by the agent will increase.

*3. There is a negative relationship between the use of outcome-based contract terms and **(M + S)**.*

The greater the outcome-based element of a contract relative to the behavior-based element, the more the incentives of principal and agent are aligned and the less the principal has to gain by monitoring or to lose from self-seeking.

Combining these relationships we can see that there is a trade-off between the cost of risk transfer on one hand and the combined costs of monitoring and self-seeking behaviour on the other. Both are related to the use of outcome-based contract terms and the optimal contract will be that which minimizes the total agency cost,  $R + S + M$ . Depending on the mathematical form of Relationships 2 and 3, this may be either a pure behaviour-based or a pure outcome-based contract, or one including some combination of behaviour- and outcome-based elements.

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To put all this back into the context of the firm, let us go back to Berle and Means's (1932) observations in respect of the separation of ownership and control in the modern corporation. Their basic argument was that managers were out of control. In economic terms, the costs to dispersed shareholders of monitoring corporate managers were too high to allow for effective monitoring, leaving shareholders at the mercy of the self-interested actions of managers. This posed a corporate governance problem that would be summed up by Andrei Shleifer and Robert Vishny in a 1997 review article of the literature as: "We want to know how investors get the managers to give them back their money". Beginning with the classic paper by Michael Jensen and William Meckling in 1976, a large financial economics literature has sought to answer this question.

Within this literature, three constraints on management self-interest are identified. First, there is monitoring. Modern corporations are subject to rigorous reporting regimes, manager report to a board of directors, exercising oversight on behalf of the shareholders, and shareholders can themselves exercise some oversight, especially in the UK where the large institutional investors meet regularly with the senior managers of the firms in which they invest. Apart from the sheer costs involved, however (which are what tend to dominate the economic treatments: economists like costs), the potential of monitoring is restricted in various ways. First, where each shareholder owns only a small percentage of shares (the largest institutional investor in a UK or US company may own 3%), and where each investor owns shares in perhaps a hundred companies, each investor has a limited incentive to spend much on monitoring – for the benefit of everyone else – any particular company. In recent years 'passive' investors (who essentially buy an index-weighted basket of shares rather than picking stocks) have pooled resources to exercise some corporate governance oversight, but only on a very small scale. Second, the board of directors may be able to exert only limited oversight. In the US in particular, companies have traditionally had large boards, meeting infrequently, whose members have effectively been appointed by the CEO and have little inside information. Often the CEO has also chaired the board, and where not the chair has been a former CEO. The UK system, with smaller boards, spending more time on the job, and with independent chairmen working one or two days a week, has been more effective, and the US system has recently begun moving towards it. In both countries, moreover, the CEO's position has become markedly more vulnerable: in the UK over the last 15 years, perhaps a third of all large company CEOs have been fired, or have resigned in the face of strong criticism, rather than staying to retirement or moving on to another position. It is widely recognised, however, that when a CEO is fired it's probably too late, and for all the eyes upon them (press as well as shareholders) CEOs still exert enormous power, making them quite difficult to monitor.

The second constraint on management self-interest is the market for corporate control, more commonly known as the takeover market. In theory, if managers shirk their duties or pursue aims other than shareholder value, the share price of the company will fall and they will become subject to take-over from more successful management teams. Again American practice long frustrated this control, as CEOs introduced legal provisions that made take-overs extremely difficult. Most of those have now been outlawed, and we have an active take-over market, but it is still very slow to take effect.

The third constraint is not formally a constraint at all, but an incentive: as discussed above, shareholders can pay CEOs partly by outcomes, using share options that deliver only if the share price rises over a number of years, in addition to salaries and short-term bonuses. This is the remedy

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on which agency theory has focused, and it is also the remedy that has been most actively pursued in practice, especially in the wake of a Harvard Business Review article of 1990 in which Michael Jensen and Kevin Murphy asserted: “It’s not how much you pay but how”. Almost all large company CEOs now receive a substantial part of their pay package in the form of such long-term incentives, and increasingly contracts are designed in accord with theory. For example, it is commonplace now to require CEOs to hold a significant part of their wealth in shares in their companies, so the incentive pay is not just an add-on to an already enormous salary: there is a down-side risk too.

### *Limitations and critiques*

In some ways the agency theory of corporate governance has been immensely successful: it dominates academic writing on the subject, and its prescriptions in terms of incentive pay dominate practice as well: it is immensely influential. But it is also immensely problematic. Economists cannot agree among themselves whether it works, or whether the effects of incentive pay are fatally undermined as managers use their power to manipulate the terms of their own contracts. Certainly pay has gone up enormously, with no obvious impact on performance. There is also the problem that managers were initially paid through salaries rather than by results for very good reasons. The form of corporation that evolved did so because it was efficient, not because of some mysterious managerial power, and what agency theory leaves out, through its choice of assumptions, are the peculiarities of management – of working collaboratively and through other people, for example. The theory also assumes that all that matters to managers is the money: there is no place for the satisfaction of doing a good job, for example. And the risk profile of the manager in making business decisions is assumed to be the same as the risk profile of the manager in making decisions for herself, which may well not be the case, even on average. Finally there is the radical assumption of competence. Agency theory assumes not only that shareholders know exactly what they want (and that they all want exactly the same) but that managers can achieve exactly what they want. If they fail to maximise shareholder returns, for example, it is purely as a result of self-seeking and nothing to do with competence: if they really wanted to be perfect they could.

There are of course reasons for all these assumptions – without them there would be no predictions at all. The question is, is a badly flawed economic theory better than no theory at all?

### III. THE TRANSACTION COST THEORY OF THE FIRM: SCOPE, STRUCTURE AND GOVERNANCE

The modern transaction cost theory of the firm is due largely to Oliver Williamson, who picked up on Coase's ideas in the 1970s and went on to publish two influential books, *Markets and Hierarchies* (1975) and *The Economic Institutions of Capitalism* (1985) as well as a series of academic articles. Coase had suggested that firms will exist when transactions can be organised within the organisation at lower cost than they can in the market place; and that the size of firms will be limited because at some point a degree of organisational complexity will be reached that makes it cheaper to transact externally than to keep growing internally.

To turn this into a predictive economic theory Williamson saw that he needed behavioural assumptions to replace the assumption of perfect information and explicitly identified two such assumptions:

1. Because people are only bounded rational, as proposed by Herbert Simon, all real world contractual arrangements of any complexity are incomplete: something is always left unspecified or open to interpretation. Moreover systems and structures that are adapted to bounded rationality (e.g. those involving sequential adaptive decision making) will tend to be economically preferable to those that are adapted to complete rationality (e.g. those that require one-off 'perfect' decisions).
2. All human beings are opportunistically self-seeking: if they can get away with doing less than, or something other than but preferable to what they have agreed or committed, they will. Moreover, since most contractual situations are characterised by information asymmetries, giving scope to opportunism, such contractual arrangements will therefore tend to be accompanied by some kind of safeguards, to make commitments more credible.

Note that while Williamson made use of Simon's concept of bounded rationality, he used it very differently from Simon. Simon argued that rational managers would satisfice – limit their information search and processing and settle for 'good enough' decisions. Williamson argued that they would optimise – exploit the uncertainty for their own benefit. Whereas Simon focused on their necessary incompetence, Williamson, like the proponents of agency theory, implicitly assumed perfect competence in the execution of self-interest.

With these behavioural assumptions, transactions are described in terms of the frequency with which they recur (one-off transactions have different properties from regular repeat transactions); the nature and amount of the uncertainty to which they are subject; and the specificity of the asset transferred – the degree to which it can or can't be redeployed to different uses or by different users. Asset specificity is important, according to Williamson, because it can give rise to interdependence between contracting parties, which then affects future contract possibilities. Indeed a key feature of Williamson's approach is precisely that particular contracting arrangements, since they are incomplete and subject to the self-interested responses of parties to that incompleteness, give rise to often unintended consequences. And it is these consequences one is trying to cost.

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In Williamson's hands, Transaction Cost Economics looks at an organization or other institution as a set of contractual arrangement for administering a complex set of economic transactions in the presence of transaction costs. In the case of a simple organisation, there is a trade-off between the transaction costs associated with multiple open-market transactions on one hand, and those associated with organisational arrangements on the other. This trade-off will depend upon the specificity, frequency, complexity and connectedness of the transactions concerned, and determines the choice between markets and hierarchies. In general, market transactions will tend to be more efficient where transactions entail the trading of standard products, or one-off trades, and organisational arrangements will tend to be more efficient where the products have idiosyncratic elements, or the transactions are recurrent.

In more complex cases, we can look at the different transaction costs arising from different forms of organisational governance: owner-managed versus dispersed shareholder models for example, debt versus equity funding, or what Williamson termed U-form versus M-form, where the U-form is a traditional 'unitary' firm with either a simple or a functional structure, and the M-form is a diversified firm or conglomerate with separate product divisions. A prominent feature of twentieth century America (and with a time lag Britain) was a move from U-form to M-form firms, and Williamson interpreted this as a response to the growing demands on bounded rationality of ever more complex U-form structures, together with a reduction in the costs of opportunism in the more profit-focused divisions of the M-form. From a detailed analysis of the transaction costs arising, he argued that the conglomerate corporation, allocating resources internally to its different divisions, became gradually more efficient as compared with capital markets allocating resources to separate U-form firms.

The theory was also used to explain vertical integration decisions, the limits of firm growth, and differences between the corporate structures found in different cultural settings. While at one level organisations could be more efficient than markets, Williamson argued that bureaucracy also carries costs, mainly because it reduces individual incentives to perform. Whereas the market pays according to output, bureaucracies are under pressure to treat people equally regardless of output. So the firm also encountered limits. In terms of cultural comparisons, he argued, for example, that American and Japanese firms tended to employ different structures because Japanese culture put constraints on opportunism that weren't present in American culture.

Transaction Cost Economics is a dramatic improvement on the neoclassical assumptions, and its explanatory power is beguiling, but it is nevertheless open to criticism. Williamson's historical analysis has been strongly criticised by historians, and ignores important aspects of the governance contexts in which firms are operating, including for example financial systems and labour markets for senior managers. It can also be argued that the theory relies on all sorts of unrealistic (and often unstated) assumptions. We have noted the assumption of competence, for example, which is shared with agency theory and which is starkly at odds with the core assumption of bounded rationality. The theory also relies on unrealistic assumptions about perfect competition, e.g. in labour markets. It says that firms should act so as to minimise total transaction costs, including those born by employees, but in reality there is a big power differential. The time dimension is also a problem when we come to apply the theory, as the most efficient end state cannot always be reached through most efficient states and what you do now can foreclose options in the future – a problem that is explicitly recognised by Williamson but largely ignored in his applications. And since

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transaction costs are not easy to observe and measure, applications of the theory tend to take the form of a plausible story about how transaction cost considerations might have led to a certain result rather than a derivation of results from objectively collated data: in short, by focusing on particular transaction costs and interpreting the consequences of contractual arrangements in particular ways, it is possible to prove almost anything, and its opposite!

Finally, the theory also shares with agency theory the assumption that people are in general opportunistically self-seeking. In fact, transaction cost economics doesn't need such a strong assumption in this respect as agency theory. All that Williamson requires is that opportunism is sufficiently widespread that contractual arrangements need always to provide for it. On the other hand the assumption is particularly problematic in the case of organisations, because it could be argued that the whole point of an organisation is that people don't or needn't behave like that: if the assumptions were true, organizations as we know them would not exist. Several organisational scholars have challenged the theory on this basis, with a 1996 paper by Sumantra Ghoshal and Peter Moran offering a particularly compelling critique.

## IV. THE RESOURCE-BASED THEORY OF THE FIRM AND DYNAMIC CAPABILITIES

The economic approaches to the theory of the firm have all started from the basic problem: why do firms exist? In developing theories to explain the existence of firms, economists have also developed explanations for different governance and organisational structures. The field of business strategy is dominated by applied economists, but as far as these people are concerned the existence of the firm is taken for granted and the key question is: why are some firms (and some industries) more profitable than others? The problem the strategists address is very similar to those addressed in economics proper. In a perfect market, all firms in all industries would make 'normal' profits, as any excess profit would attract new firms into the industry and any shortfall would cause them to move to other, more profitable industries. But the analysis is carried out at a much less fundamental level.

One of the most influential economic approaches to strategy is based on what is known as the 'structure-conduct-performance' model of industrial organisation economics, made popular by strategy guru Michael Porter in his multi-million seller *Competitive Strategy* (1980). In simple terms, Porter argued that the profitability of an industry was determined by imperfections in the markets in which that industry was engaged: by entry barriers and exit barriers, for example, and by monopoly or oligopoly conditions in the industry itself or its supplier and buyer industries. The profitability of the firm was then determined by how well it matched its strategy (or 'conduct') to those market conditions.

Porter's analysis of industries is compelling. If we set aside the complex foundational considerations that troubled the economists we have discussed so far, the sources of market imperfection identified in his '5-Forces' model provide a convincing explanation of industry profitability. To take a very simple example, if the barriers to entry are very high – perhaps because of the advantages of economies of scale or accumulated learning enjoyed by incumbent firms, profitability is likely to be higher than if new firms can enter the market more easily. Porter's explanation of firm profitability was less convincing, however, and in 1985 he expanded on it by associating sustainable competitive advantage with a firm's extraction of value from its unique resource base. Meanwhile, two other strategy scholars, Birger Wernerfelt in a 1984 paper on "A resource-based view of the firm" and Jay Barney in two papers of 1986, independently developed theories of firm competitiveness deriving from a consideration of the firm's resources. In 1991 Barney summed up the arguments in a paper on "Firm resources and sustained competitive advantage".

The resulting resource based theory of the firm can be related to Edith Penrose's early work on the growth of the firm, to Porter's development of the structure-conduct-performance model, and to developments in evolutionary economics, in particular a 1982 book by Richard Nelson and Sidney Winter, *An Evolutionary Theory of Economic Change*. The common ideas underlying all these approaches were:

1. That it doesn't make sense to look at firms and industries just from a static point of view (as equilibrium theories do). Rather the nature of a firm is path-dependent.
2. That markets for key resources are often inelastic. Resources often take a long time to develop and are not easily tradable. They are sticky.

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In consequence, it was argued, different firms are often characterised by different resources and capabilities, and these differences can survive for long periods of time, giving firms with particularly strong resource bases (either in the resources themselves or the ways in which they are applied) a sustained competitive advantage. Converted into a strategy prescription, sustainable competitive advantage is based on resources and capabilities that are valuable, rare, hard to imitate or acquire and deeply embedded in the organisation.

A further development of the resource-based view was the knowledge-based view, according to which the critical resources for contemporary firms take the form of tacit and organisationally embedded knowledge, sometimes referred to as a source of 'dynamic capabilities'. This is hard to attribute to any single author, and has both economically-based and organisationally-based variants, but the economic version is often associated with a 1996 paper by Robert Grant, "Toward a knowledge based theory of the firm".

A very popular and accessible version of resource based strategy is found in a 1990 *Harvard Business Review* article by Gary Hamel and C.K.Prahalad, "The core competence of the corporation". Divorced from any underlying theory this paper urged managers to identify the core competence or unique value generating capabilities of their firms and build strategy on those.

### V. NON-ECONOMIC PERSPECTIVES ON THE FIRM

Economics is not the only academic tool we have for looking at business organisations. Of course, since the purpose of a business is generally to make money, economics is important; but businesses also have much in common with other kinds of organisation, not all of which have an economic focus. Indeed, most of the work in Organisation Theory is not economic at all, and just as economists tend to ignore the contributions of other social scientists, so organisation theorists tend to ignore the work of economists. Gareth Morgan, in his best-selling *Images of Organization* (1997) identifies in the literature eight different metaphors for the business organisation, a selection of which we review here:

#### The organisation as a machine or closed system

The first professional managers, in the early part of the twentieth century, were often engineers by training. Until relatively recently (up to the 1990s in Oxford and Cambridge, for example) the academic study of management was also often located in departments of engineering and technological institutions (MIT, Stanford, Imperial College). Also until recently, the standard organisation form for larger business organisations was the bureaucracy.

Associated with these origins, one tradition of thinking about firms sees them much as economists tend to, as rational efficiency-maximising systems, in which the effects of individual personalities or peculiarities are minimised. Frederick Taylor's influential scientific management approach, set out in his *Principles of Scientific Management* (1911), focuses on the machine aspects of human work, using time-and-motion studies to determine the most efficient working patterns, taking away all discretion from the workers, and monitoring them to ensure compliance. A hundred years later, we can still find elements of this machine organisation not only in most manufacturing companies, but also in large service delivery firms such as McDonalds.

Although most large corporations are now more loosely organised than they used to be, with elements of network and team structure, most still retain distinct elements of bureaucracy. The bureaucratic organisation takes its name from the way in which it is organised in bureaux, or offices. The work of each office is not necessarily machine-like: it may, for example, require professional judgement. But the professional is fully substitutable. The bureaucracy has a comprehensible rule book covering all conceivable eventualities, ensuring that the work of each office will be carried out in a reliable and predictable way regardless of the person occupying that office.

Bureaucracies are wonderful organisations for stability, but they struggle with change, whether that be a changing environment, changing technologies, changing competition or simply sudden changes in customer demands. As a consequence business bureaucracies have always had to make compromises, and in recent years bureaucracy has gone out of

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fashion even in the public sector, where economic ideas on the productivity effects of incentives have pushed out the traditional public sector ideals of duty and public service. But it remains impossible to manage large organisations without some kind of bureaucratic hierarchy, and as Paul du Gay has emphasised (*The Values of Bureaucracy*, 2005), bureaucracy still has great merits.

### The organisation as an organism or open system

While the machine metaphor can be useful, one obvious feature of organisations is that, being made up of real human beings, they are open to their environments and respond organically to environmental changes. This insight has led to two main strands of organisation theory: contingency theories and population ecology theories.

Contingency theories of organisation link the structures and processes of business organisations to the environments (and especially the competitive environments) in which they operate. They attempt both to predict what form organisations will take and to prescribe what form they should take if they are to achieve a good fit with the environment and so operate successfully.

Two works have been particularly influential. In *The Management of Innovation* (1961), Tom Burns and G.M Stalker, working from the Tavistock Institute in London, distinguished between mechanistic and organic approaches to organisation. Using a series of case studies they identified the environmental conditions to which each was best suited (primarily in terms of speed of change and predictability) and the corresponding organisational characteristics: the ways in which jobs were defined, the ways in which authority was exercised, the communication systems used and the kinds of employee commitments required.

In *Organization and Environment* (1967), Paul Lawrence and Jay Lorsch from Harvard systematised the contingency approach by focusing on two organisational variables: integration, or the degree to which the work of different parts of the organisation was coordinated; and differentiation, or the degree to which different parts of the organisation differed in their characteristics from each other. Again using a set of case studies, and comparing more and less successful firms in the same industries, they argued that environmental complexity and turbulence led to a greater degree of differentiation, which in turn called for greater integration.

In *The Structuring of Organizations* (1979), Henry Mintzberg took the contingency approach still further, identifying 5 forms of organisational structure, each of which he associated with a particular coordination mechanism, a dominant part of the organisation and a distinctive set of environmental characteristics: the simple structure, the machine bureaucracy, the professional bureaucracy, the divisionalised form (Williamson's M-form) and the flexibly structured adhocracy.

A counterpoint to contingency theorists is provided by population ecology theorists (Howard Aldrich, John Freeman and Michael Hannan) who argue that in practice the ability of firms to adapt to changing circumstances is limited, and that the evolution of organisational

forms can be seen as a Darwinian process of natural selection. Competition for survival leads to the success and growth of businesses whose organizations are well suited to the developing environment, at the expense of businesses whose organisations are not.

### The organisation as an information processing or learning system

If, as economists suggest, the existence and structure of firms are a consequence of information costs, then one way of looking at a business organisation must be as an information processing system. Indeed it could be argued that contemporary business organisations are defined much more by their information processes than by their operating processes. We can see firms as systems that scan their environments for information, relate this to the information already held in the firm, and develop new information that can either be sold directly or used to produce goods and services that can be sold.

Drawing on the science of cybernetics, a key feature of any stable information processing system is its ability to self-regulate by detecting environmental changes, identifying emerging discrepancies between system and environment and making the appropriate corrections. This can be seen as a learning process, but it is one with limits since it can only incrementally change the system: it changes the settings, so to speak, but not the underlying system design. Characterising this process as single-loop learning, Chris Argyris and Donald Schön have focused attention on how organisations might also engage in more radical double-loop learning, questioning their own operating norms and assumptions. Given the defensive routines by which both people and systems avoid such radical reflection, however, the conclusion seems to be that double-loop learning is extremely difficult, if not impossible. Firms can certainly be seen as information processing systems: they are limited in the way cybernetic systems typically are limited.

One further line of development within this school of thought focuses on the properties of so-called holographic organisations. The starting point here is that like many living organisms, a tightly bound and effective organisation contains information about the whole in its parts. So just as a stem cell can be used to generate a variety of body parts, and a fragment of a holographic contains a replica of the whole holograph, so the information that makes up an organisation is multiply present in its parts. From a mechanistic point of view there is information redundancy and the system is inefficient, but it is this redundancy that gives the organisation the ability to regenerate when damaged (for example when key staff leave) and the freedom and scope to innovate and learn.

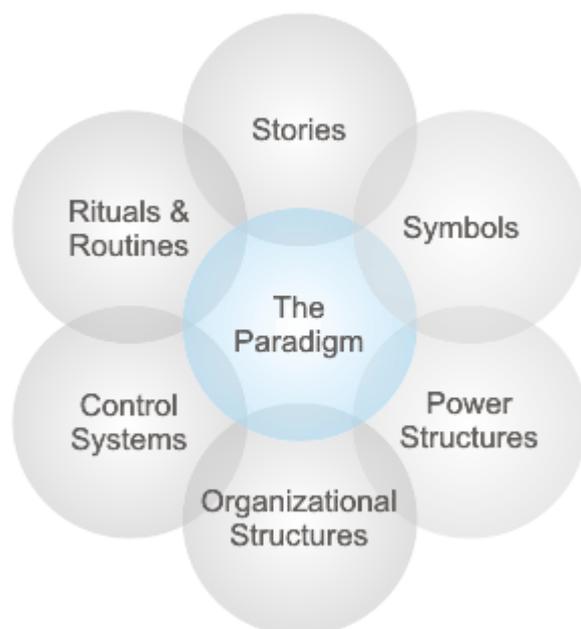
### The organisation as a culture or social system

Organisations are most obviously *social* systems, and one theoretical approach treats them analogously to societies. An organisation, on this view, is network of social relationships (rather than, as in the economists' view, of contractual relationships), characterised by a particular social structure and a particular culture. From this perspective the large bureaucratic corporate structures of the twentieth century can be seen as modelled on the societies in which they evolved, with similar, hierarchical structures, and similar ethics of duty and obligation binding the individual to the whole. Similarly small owner-managed firms, cooperative ventures and other forms of firm can be related to a limited number of

different social and cultural structures that can be found everywhere from primitive societies onwards.

The culture of a firm is most simply seen as a set of taken-for-granted assumptions and behaviours that have emerged historically (often linked with the ideas of a founder or prominent leader) and that determine how members of the firm act, both strategically and in everyday matters. Back in the 1980s and 1990s, many prominent management writers argued for programmes of cultural change. However, culture is deeply embedded organisationally, and is generally rooted in successful behaviour. Changing it is a slow and enormously difficult process. To get an idea of what is involved, Gerry Johnson's "cultural web" portrays some of the 'carriers' of culture in an organisation:

Figure 1: The Cultural Web



The central component here, the paradigm, can be summed up as "how we do things round here" – which may involve the application of economic rationality, but equally well may not: it is the firm's recipe for success and, when things change, for failure too.

### The organisation as a political system

While economists tend to assume efficient labour markets and purely economic transactions, the reality of the firm, as of the society, is that there are generally enormous power differences, both between individuals and between groups. Firms are places within which people compete for control of knowledge and resources and for political dominance, both openly and surreptitiously, through argument, through coercion and resistance, through disciplinary regimes and through language and the attribution of meaning; in which they exercise authority, both formally and informally; in which they make political alliances, compromise and refuse to compromise, and so on.

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The political theory of the firm is rarely used on its own, but it provides an invaluable counterpart to the other theories. Firms don't owe their existence to politics, and are rarely defined by it, but every firm or other organisation has a political dimension, and our understanding what firms do and how they do it is greatly enriched by taking this into account.

### ANNEX A. EXERCISE: AGENCY THEORY AND EXECUTIVE PAY

Both the theory and the practice of executive pay are dominated by agency theory considerations, but agency theorists themselves disagree as to how effective incentive pay is, with some arguing that the contracts used are themselves distorted by managerial self-seeking. Critics, meanwhile, argue that the assumption of self-seeking is not helpful in this context and, indeed, that the economists' focus on money may itself be misleading. Some of the arguments are given in the following papers:

Bebchuk, L.A. and Fried, J.M. 2003. Executive compensation as an agency problem. *Journal of Economic Perspectives* 17(3): 71-92.

Hendry, J. 2002. The principal's other problems: honest incompetence and the specification of objectives. *Academy of Management Review* 27: 98-113.

Core, J.E., Guay, W.R., and Thomas, R.S. 2005. Is US CEO compensation inefficient pay without performance? *University of Michigan Law Review* 103: 1142-1185.

Hendry, J. 2010. CEO pay and the meaning of money. Working paper.

Discussion questions:

Ignoring the fact that the most critical papers are written by your tutor (who is NOT always right!), what do you make of these arguments? Try summarising (a) the main arguments and (b) the main assumptions of each paper in a few bullet points. How dependent are theories in this area on their assumptions? What kind of assumptions do you think are reasonable in this context? How do you think chief executives of large firms should be remunerated?

### ANNEX B. EXERCISE: THE CURIOUS CASE OF CONGLOMERATES

Conglomerates (Oliver Williamson's M-Form firms) are firms that are composed of multiple divisions operating in a range of unconnected industries. They grew to prominence in post-war American and Britain and were explained by Williamson in terms of transaction costs. In some circumstances, he argued, a firm could allocate resources among these different business units more efficiently than markets could. The firm's head office, for example, had much greater information on the business units (internal performance and management accounting data, for example) than potential investors could easily acquire. It could make better decisions, and it could monitor management more effectively. The financial and management skills needed to oversee business units were very similar, despite industry differences, giving rise to both firm-based capabilities and economies of scope. Even across different industries there could be cost savings from the sharing of plant, brands, know-how, sales forces, back-office functions such as HR and information systems, and management resources.

In the wake of Williamson's analysis, historians questioned whether the rise of conglomerates could really be tied in to the development of the technologies and institutions supposed to give them transaction cost advantages, but Williamson's idea remained influential. Researchers and consultants looking at the value added by corporate HQs identified a particular form of value adding in conglomerates, associated with highly developed skills of financial interrogation. Well-known conglomerates such as Hanson Industries were treated as case studies in the building of competitive advantage through financial control.

Then conglomerates seemed to go out of fashion. Financial economists and strategists alike argued that firms should 'stick to their knitting' and that the capital markets were the most efficient way of allocating resources: diversification was against shareholder interests. There had been a lot of criticism, associated with the agency theory view and a revival of interest in Berle and Means's ideas on the separation of ownership and control, of corporate managers as self-interested agents, running firms in their own interests rather than in the interests of their shareholders – and a lot of evidence that this was indeed happening, especially in the USA. Setting this view of management against their very high view of the near-perfect efficiency of financial markets, and knowing nothing about the insides of firms, finance academics drew the obvious conclusion. Strategists, meanwhile, influenced increasingly by the resource-based view of the firm and by Hamel and Prahalad's influential notion of core competence, increasingly associated competitive advantage with deep knowledge of products and services.

Over the last ten years, US and UK conglomerates have almost disappeared. But recent research in finance has suggested that conglomerates do seem to allocate resources efficiently after all, and some of today's most successful global companies, that are increasingly taking over UK firms, are ... conglomerates! These include Singapore and Hong-Kong based family firms with broad interests in hotels, fashion retail, investment, etc, and also Indian family firms such as Tata, which owns Jaguar and Land Rover, and what used to be British Steel, alongside business units in chemicals, insurance and a host of other areas. The big firms of Japan and South Korea have long been conglomerates,

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and while they have had to make some divestments in recent years to satisfy corporate governance demands they have retained the conglomerate form.

Discussion questions:

See what you can find out about the arguments for and against conglomerates and try and summarise the arguments for and against. (Wikipedia gives you a starting point, but find out why they have the advantages and disadvantages claimed there.) How are these arguments influenced by particular theories or views of the firm? Is there a logic underlying the observation that conglomerates tend to be family-owned?

## READING LIST

### Required readings for tutorial

Bebchuk, L.A. and Fried, J.M. 2003. Executive compensation as an agency problem. *Journal of Economic Perspectives* 17(3): 71-92.

Hendry, J. 2002. The principal's other problems: honest incompetence and the specification of objectives. *Academy of Management Review* 27: 98-113.

Core, J.E., Guay, W.R., and Thomas, R.S. 2005. Is US CEO compensation inefficient pay without performance? *University of Michigan Law Review* 103: 1142-1185.

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### General works

For sections I-III the clearest account is provided by Eggertsson, especially in chapters 1, 2 and 6:

Eggertson, T. 1990. *Economic Behaviour and Institutions*. Cambridge University Press.

Be warned though: this is not a student textbook!

Many of the key academic papers referred to in sections I-III have also been reprinted in 'readers', that by Kroszner and Putterman being the most comprehensive:

Kroszner, R.S. and Putterman, L. 2009. *The Economic Nature of the Firm: A Reader*. 3<sup>rd</sup> edition. Cambridge University Press.

Williamson, O.E. and Winter, S.G., eds. 1993. *The Nature of the Firm; Origins, Evolution and Development*. Oxford University Press.

Williamson, O.E. and Masten, S.E., eds. 1999. *The Economics of Transaction Costs*. Edward Elgar.

Again, these are not really student works, but they do give a very good feel for how the theory has developed.

The key works in section III have not been conveniently connected, but a comprehensive treatment is given in:

Barney, J.B. and Clark, D.N. 2007. *Resource Based Theory: Creating and Sustaining Competitive Advantage*. Oxford University Press.

The resource-based theory of the firm is also well covered in many strategic management textbooks, a particularly good treatment being that of Grant, whose 1991 paper is also a readable introduction:

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Grant, R.M. 2009. *Contemporary Strategy Analysis*. Wiley.

Grant, R.M. 1991. The resource-based theory of competitive advantage: implications for strategy formulation. *California Management Review*, 33 (Spring): 114-135.

For some reason the economic theory of the firm and non-economic 'organisation theory' are never covered in the same books. By far the best and most accessible treatment of non-economic theories, even though it's a little old now, is that by Morgan:

Morgan, G. 1997. *Images of Organization*. Sage.

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