CO-OPERATION, THE ORGANISATION OF WORK AND COMPETITIVENESS

ESRC Centre for Business Research, University of Cambridge
Working Paper No. 85

Frank Wilkinson
ESRC Centre for Business Research
Department of Applied Economics
University of Cambridge
Sidgwick Avenue
Cambridge CB3 9DE

Phone 01223 335262
Fax: 01223 335768
Email: sfw11@econ.cam.ac.uk

March 1998

This Working Paper relates to the CBR Research Programme on Corporate Governance, Contracts and Incentives.

Abstract

Operational and dynamic efficiency depend on co-operative production relationships. The incentives structure required to overcome rivalry in distribution and encourage co-operation is illustrated by a simple model. Traditional pre-occupations with markets or hierarchy for economic co-ordination generated low trust which reduced co-operation in Anglo-American economies. The competitive weakness of this was revealed by the successful challenge mounted by high-trust, co-operative productive systems. These demonstrated the importance of representative micro- and macro- level institutions for generating trust, countering uncertainty and encouraged co-operation. The undermining of these institutions by neo-liberal policies threatens co-operation and long term operational and dynamic efficiency.

Further information about the ESRC Centre for Business Research can be found on the World Wide Web at the following address: http://www.cbr.cam.ac.uk

CO-OPERATION, THE ORGANISATION OF WORK AND COMPETITIVENESS

1. Introduction

Economists have found the notion of co-operation difficult. Hodgkin recognised the importance of co-operation and joint labour in production but found that 'there is no principle or rule, as far as I know, for dividing the produce of joint labour among the different individuals who concur in production'.[1] Hayek (1988, Chapter 1) dismissed co-operation within groups as a primitive trait superseded by differentiation, individualisation and the *ordering principle* of the market. But he did not address the question of joint labour or the problems for distribution it raised. The way around this for mainstream economics is to argue that factors of production are substitutes for each other. Thus it is supposed that the organiser of production is faced with the choice of production techniques composed of different amounts of labour and capital and the choice of which to use is determined by the relative prices of labour and capital. The problem of distribution is solved assuming diminishing marginal rates of substitution between factors. However, nothing is said about the nature of the relationship between the factors of production once the technique has been chosen and production is underway: what, for example, does the notion of substitutability between factors of production mean when a operator is using a lathe to shape metal.

Economists are generally highly suspicious of individuals who co-operate, suspecting that they are colluding against the public interest. They are even more doubting of institutional means of co-operation, joint action and collective security which they suspect of restricting free competition and reducing economic welfare. All this is in sharp contrast to the evidence from economies which have emerged in the post war period to successfully challenge the Anglo-American economies for competitive prominence. These economies, which include Germany, Japan and Northern Italy, have evolved systems of co-operation within

and between firms, supported by a dense network of institutions and operating in markets regulated by agreed rules, norms and standards. They have been acclaimed for developing competitive strategies based on high rates of product and process innovation, high product quality, good design and improved flexibility designed to meet the changing requirement of consumers.

The evidence of the success of overtly co-operative productive systems appears to cast doubt on the generally negative attitude of economists towards this form of organisation and invites a reconsideration of the role of co-operation in production. This is particularly important at the present time because the growing pressure of globalisation is leading to a questioning in the countries who lead in the *new competition* of the institutional frameworks which appeared to play a central role in their success. This purpose of this paper is to re-examine the question of co-operation in production starting from the usual assumption made by economists that individuals pursue their own interests. The first section briefly considers co-operation in production and differentiates between the role of the technical and social relations in securing co-operation; the second section develops a simple model of co-operation in production which identifies co-operation as determining the effectiveness of production and incentives as inducing co-operation between self-interested individuals; the third argues that economics have identified markets and hierarchy as alternative mechanisms for securing co-operation; the fourth shows how these views when translated into managerial practice created *low trust* conditions by which co-operative production relations are impeded; the fifth section argues that the success of *new competition* rests on an ability to generate effective co-operation by creating *high-trust* productive systems; the sixth section argues that deregulation risks destroying the trust necessary for co-operation; the seventh section discusses the role of the institutional framework in securing co-operation; and the eighth section briefly sums up the argument.

2. Co-operation and economics

Economist have traditionally put strong emphasis on specialisation and individualism. Individuals are seen as motivated entirely by their own self interest whilst increasing specialisation by the way of the division of labour is seen as a central driving force of economic progress. However, the more specialised individuals become the more dependent they are on others (Marshall, 1947). The important question then becomes: how can this interdependence be made compatible with individualism. In addressing this question, Adam Smith (1974) identified exchange as both driving the division of labour and co-ordinating the increasing specialised parts of the system. The propensities in human nature to 'truck, barter and exchange one thing for another'(p117) led to the division of labour so that 'In civilised societies' individuals stand 'at all times in need of the co-operation and assistance of the great multitudes'(p118); needs that are met 'not by the benevolence of the butcher, the brewer or the baker... but in exchange where they have 'regard for their own interest' (p119). Self interest thus provides the incentive for specialisation, exchange provides the opportunity and the system of exchange - the market - co-ordinates the individual production and consumption decision securing societal co-operation.

Edward Gibbon Wakefield, an early critic of Adam Smith's treatment of the division of labour, emphasised the co-operative nature of production. Wakefield (1835) in his editorial notes to the *Wealth of Nations* argued that Adam Smith, in his formulation of the division of labour, confused the categories of labour and employment, the latter meaning the work performed by labour. Wakefield pointed out that labour is naturally divided into pairs of hands so that the division of employment between many pairs of hands requires workers to work collectively: 'the greatest division of *labour* takes place amongst those exceedingly barbarous savages who never help each other, who work separately from each other; and the division of employment with all its great results, depends on co-operation' (Wakefield, 1935). Wakefield went on: 'Co-operation appears to be of two distinct kinds, such co-

operation as takes place when several people help each other in the same employment; secondly, such co-operation as takes place when several persons help each other with different employments. These may be termed simple co-operation and complex co-operation'. Co-operation is to be found in the workshop: 'the division of employment which takes place in a pin factory results from and is wholly dependent on the union, generally under one roof, of all the labour by which pins are made' and more generally is 'dependent also upon the agreements, concert, or combinations of a general kind, in which the whole of society takes part' (ibid.: p29).

What Wakefield was drawing attention to was, firstly, that each stage of production, labour, equipment and material work in combination. None can operate without the others so that the failure of any to adequately perform its productive functions lowers the joint product of the whole.[2] This technical interdependence extends to relations between the different stages of the production. *The operational efficiency* (i.e., the effectiveness of the utilisation of productive resources, and the meeting of product specifications) of productive systems requires co-operation. How effective this is depends on how well machines are designed and maintained, the suitability of the design of the product both to meet the requirement of the customer and for the ease of production and how well workers performed their technically determined tasks. The latter will depend on how well workers are trained, the degree of care and attention with which equipment is operated and materials and products are handled, the timing of the flows of materials to, semi-finished products through and finished products from the production process. At each stage the availability and communication of information is essential. The sharing of information is also important to ensure, for example, that all agents of production are equally well informed about production techniques and how to operate them, and that components are designed and produced in such a way as to best fulfil their productive purpose. The making availability of information about variations to the flow of materials, their specifications and quality and the prompt reporting of

and response to equipment malfunctioning and other problems impeding output and reducing product quality is also essential.

The sharing of market information is of central importance in matching production to demand. The need to continuously adjust production to changing consumer demand necessitates co-operation in the supply chain, particularly in the rapid transmission of accurate information The avoidance of producing unsaleable stock or allowing demand to go unsatisfied requires responsive linkages in supply chains; the more uncertain is final demand, the more important become such close relationships. Success in production and marketing also depends on access to information on the latest products, processes and forms of organisation. Here co-operation is important because of both the problem-solving benefits of working together, and because the sharing of information increases the pace of diffusion of new processes and products, and hence the pace of technical progress of the productive system. The *operational efficiency* of a productive system therefore depends on the generation and transmission of technical and market information; and its *dynamic efficiency,* the ability to introduce new and improved products, processes and forms of organisation, requires the generation and diffusion of new ideas and innovations.

Secondly, Wakefield drew attention to the importance of the organisational and institutional framework for securing co-operation. In this respect it is useful to distinguish between the *technical and social relations of production. Technical relations* are the functional inter-linkages between labour, equipment and materials in the production processes, the exchange of technical and other information pertaining to production and the development of products and processes. Technical relations are therefore objective and impersonal associations which are determined by the technicalities of products and of the methods by which they are produced. By contrast, the *social relations* of production are the subjective and personal associations between the agents of production. These linkages form the social structure within which the technical relations of production are formed and the

production tasks of labour and the means of production are jointly undertaken. Social relations of production therefore play a central role in determining the effectiveness of technical co-operation and hence operational and dynamic efficiencies. Consequently, an understanding of the operations of the social relations of production are central to an understanding of the determination of the competitive performance of productive systems.

The social relations have two functions in production: co-ordination and control. *Production co-ordination* can be expected to require formal direction as well as less formal interpersonal relationships among participants in the productive process. Together, these constitute the social framework within which the agents of production are brought together into co-operative activity. The *control function* of the social relations of production involves the exercise of authority and the imposition of sanctions necessary to secure effective technical co-operation. These, too, can be expected to operate at both the formal and informal, inter-group, and intra-groups levels of organisation.

The social relations of production also serve a third purpose in the determination of the distribution of the value added in production between the parties involved. But, whereas production is necessarily co-operative, distribution is essentially competitive; what one of the partners to production get the other(s) cannot have. And, as Adam Smith recognised, for self seeking individuals it is material gain which encourages them into co-operation in production rather than any sense of the common good. In these circumstance the social relations have the dual and potentially conflicting functions of securing co-operation in production and agreement over distribution. The next section develops a simple framework for analysing the relationships between individualism in distribution and co-operation in production.

3. Co-operation and incentives

i. An analytical framework

For the purposes of developing an analytical framework for exploring individual incentives within co-operative production we will assume a production process consisting of a single stage requiring a single worker (labour) and the owner manager of the firm (capital)[3]. Techniques are fixed and production capacity of the process is limited to a given maximum. The owner manager provides the equipment, raw materials, knowledge and co-ordinating organisation necessary for the production of the particular product. Similarly labour has skills and knowledge necessary for the operation of the particular technology. Both capital and labour have elements which have general application but others which are specific to the particular product and process so that although they can operate independently they can be more productive by co-operating. Moreover, as they are technically complementary and mutually dependent their joint productive activity yields what Marshall described as a composite quasi-rent, the distribution of which is settled by an agreement between them.[4] It is further assumed that there is no problem of measuring the partners' co-operation, therefore no moral hazard and that the firm's non-labour and non-capital costs and its revenue and hence value added are known with certainty by both parties. Finally, it is assumed that both parties are self-interested and motivated to co-operate by the expectations they have about their share of the value of their joint endeavour, expectations they know will be realised because of the previous assumption.

The monetary value of production is realised value added. This will be determined by the price of the firm's product, the costs of production other than wages and profits, and the quality, reliability and other non-price attributes of the product which determine its marketability. The realisable value added of the firm measures its operational efficiency and in the short term will be subject to some maximum determined by the productive capability of the firm. However, in the longer period, this

maximum constraint may be lifted by improvements to products and processes. The increase in the maximum realisable value added of the firm measures its dynamic efficiency. Following the argument in the previous section both operational and dynamic efficiencies are importantly determined by how co-operative labour and capital are; if either withdraws co-operation the efficiency of the firm will decline and with it realisable value added available for distribution.

Figure 1 illustrates the relationship between co-operation and realised value added in the short-period. This has been called the operational efficiency curve the slope of which measures the importance of co-operation in production, i.e. the elasticity of value added with respect to co-operation. The flatter is the operational efficiency curve the less value added depends on co-operation. For Figure 1 it is assumed that elasticity of value added with respect to co-operation is unity so that a 20 percentage point increase in co-operation from point A will increase realisable added from 80% to 100% of what is technically feasible.

It is assumed that for both capital and labour the securing of co-operation will require the appropriate incentives. The relationship between incentives and co-operation is illustrated in Figure 2 by what is described as the incentive curve. This shows the level of co-operation to be a function of incentives so that, for example, if the incentive increases from B to A co-operation will increase from 80% to 100%. The slope of the curve is determined by the responsiveness of co-operation to incentives, i.e. the elasticity of co-operation with respect to incentives, and the flatter is the co-operation curve the more co-operative labour and capital can be said to be.

Figure 3 shows the co-operation curves, a combination of the incentive curve and the operational efficiency curve to illustrate the issues involved in determining the performance level of the firm as measured by realisable value added. The co-operation curve will be the steeper the more production depends on co-operation and the more dependent co-operation is on incentives. The elasticity of the co-operation curve is the

product of the elasticity of value added with respect to co-operation (Figure 1) and the elasticity of co-operation with respect to incentive (Figure 2) and in Figure 3 it is therefore unitary.

In Figure 3 the incentives required to induce co-operation are expressed as percentages of realisable value added of the firm. The horizontal lines, MinK and MinL, are the opportunity costs of capital and labour the sum of which is the level of realised value added the firm will need to retain its labour and capital. KC gives the co-operation curve for capital showing the proportions of the value added required by capital to deliver the levels of co-operation necessary to achieve all levels of operational efficiency between 0 and 100%. The area below the KC curve gives the proportion of value added going to capital and the area above the curve gives the share going to labour. The LC curve repeats the exercise for labour

Up to point A in Figure 3 the incentive required to raise value added to that point poses no problem because up to that point the sum of capital's and labour's share is less than the value added produced. However, at point A the two shares absorb the whole of the value added produced at that point. Beyond A what one of the partners wants leaves an insufficient large share to solicit the necessary level of co-operation from the other and production in the firm stalls at 80% of its potential realisable value added.

The question is how can the parties respond. Figure 3 suggests 3 ways: either labour, capital or both can become more co-operative. Point B is reached by labour becoming more co-operative (a pivoting of the LC curve the right). Point C is reached by both labour and capital becoming more co-operative (accepting a smaller share for each level of co-operation). The move to point C is easy to understand in our example in which both sides are assumed to have the same bargaining power and full information about outcomes. They would soon realise that whereas at point B they only have 40% of feasible realisable value each (i.e. 50% each of 80%) at point A they could each have 50% percent each of

feasible realisable value added. It can be shown that a mutually beneficial outcome could also be achieved by adjustments in the co-operation curves to take the parties to any point between D and E in Table 3, although the increase in value added would be differentially distributed. Outside DE, one production partner can only get more if the other gets less.

ii. More general applications

If the assumptions of a single stage of production and two productive agents are relaxed, and the analysis is broadened to include the complex of relations within and between productive systems[5], it can be seen that the more co-operative are the relationships within each stage of a productive system the greater will be the potential for co-operation between the stages. The degree of co-operation at each stage will importantly influence the quality of the product and service, and reliability of the timing of its delivery, and determines the level of value added needed to achieve full co-operation and hence the price. This in turn will be an important determinant of the costs to the next production stage and therefore the possibility of achieving full co-operation there. Similarly, if there are more than two parties to the productive relations at any stage in the production process the possibility of securing co-operation between any pair is importantly influenced by how co-operative are the other pairs. For example, a joint stock company consists of workers, managers and shareholders. The smaller the share of realisable value added demanded by shareholders the easier it will be to secure full co-operation between managers and workers and the more realisable value added there will be available for distribution. Generally, the more co-operation there is at any part of the productive system the greater the scope there is for co-operation at others.

Moreover, in principle, there is no reason why the shares demanded by individuals within a productive system should exhaust the whole of its realisable value added. In this case, the system can be seen as generating a surplus over that needed to secure full operational efficiency. This

surplus can be regarded as a bonus which might be used as a reward to the production partners to ensure future co-operation, for investment in improved products and processes, to lower prices to increase demand or any combination of these. The deployment of a surplus in these ways would improve the performance of the system. In turn, innovation and expanding markets would give widened opportunities for co-operation in the diffusion of knowledge, the developments of new methods and learning by doing and by so doing could trigger a cumulative improvement in dynamic efficiency and hence in competitiveness.

iii. Long and short term self interest

The important point is that in production each party needs to take into account two different types of incentives: 1) their own wants and 2) that needed to get their partner(s) into full co-operation with them. But the sequence of events is that the decision to co-operate is taken prior to the realisation of the benefits from co-operation, in effect in deciding the extent of their co-operation individuals give a hostage to fortune the outcome of which depends on how their partners respond. This problem was trivialised in the exercise above by the assumptions which gave K and L perfect foresight. Thus their enlightenment was easy to explain without departing from the assumption that K and L were self-interested individuals. With their ability to see into the future K and L soon realised that their material well-being depended *both* on the size of their slice *and* the size of the pie. What happened in the move from A to C is that by sacrificing some of the share they needed for co-operation each solicited from the other such co-operation that the subsequent increase in the pie more than compensated them for the reduced share they demanded. The choice being made is between short and long term interest and that choice is necessarily based on predictions about the responses of others.

4. Co-operation and economists

In mainstream economics production is a black box and the assumption of either perfect foresight or computable risks trivialises the distinction between short and long term interest. Providing the rights of property are recognised, the freedom of disposal of property is guaranteed and promises are honoured production and distribution are regulated by exchange. Freely operating markets provide information, price incentives and the opportunities to select amenable partners from amongst a large number of equally well qualified alternatives, so that co-operation is spontaneously generated.

The general equilibrium mainstream position was succinctly summarised by Coase in his seminal 1937 paper: 'an economist thinks of an economic system as co-ordinated by the price mechanism' and posed the question: 'having regard to the fact that if production is regulated by price movements production would be carried out without any organisation at all, well might we ask why is there any organisation?' The answer Coase gave to this conundrum was that industrial organisation serves as an efficient way of overcoming costly impediments to the effective co-ordinating activities of markets. These arise from asymmetric bargaining power between trading partners created by such market imperfections as monopoly in supply and demand, concentrated control of specific assets, privileged access to information and difficulties in monitoring and securing performance. The consequence of such *market failure* leading to high *transaction costs* in decentralised markets leads, it is argued, to the development of institutions invested with the authority to replicate the role of the market by neutralising the opportunistic exploitation of bargaining advantage.

From this *new institutionalist* perspective the development of managerial organisation is a defensive *reaction* to transactions costs resulting from the opportunistic exploitation of bargaining advantage by trading partners. In other traditions in economics, of which those of Marx and Marshall are notable examples, organisational innovation play

a leading and *pro-active* role in dictating the pace and direction of economic development. Marx followed Wakefield in explicitly recognising the importance of co-operation in his theories of the labour process and of surplus value (Marx, 1967, Chapters XIII to XV). He argued that co-operation in production originated when capitalist employers brought workers together in workshops under their command. Even with existing technology, workers increased their collective productivity by working in concert and this additional value was expropriated by capital. Assembling workers together also provided opportunities for the division of labour, the mechanisation of production and eventually the development of modern industry. In this process, co-operation changed from its simple form, to a 'more specialised form based on the division of labour' to 'a technical necessity dictated by the very nature of the instruments of labour' (Marx, 1974, p. 364). During this transformation capital played a central innovating role in developing the social organisation within which co-operation evolved:

A single violin player is his own conductor; an orchestra requires a separate one. The work of directing, superintending and adjusting becomes one of the functions of capital, from the moment that the labour comes under the control of capital [and] becomes co-operative. (Marx, 1974: 313)

In Marx's analysis the managerial *plan* co-ordinates production within the factory prior to the often chaotic and wasteful co-ordination of supply and demand by the market (Pagano, 1985). Distribution also involves a two stage process in which the market and managerial control played a part but this time the market comes first. The money wage was seen by Marx as being determined by free market exchange after which, within the factory and under the control of the capitalist managers, additional value is extracted from labour: *surplus* value which constitutes profits.

Marshall similarly acknowledged the importance of co-operation in production in the sense Marx used it[6] but did not stay 'to consider all the

implications of this argument' (1920, p. 72). He placed strong emphasis on the need for more sophisticated forms of co-ordination as the division of labour led to increasingly differentiated labour and machines (Marshall, 1947, Book IV, Ch.VIII), and paid close attention to the role of organisation in the co-ordination of the increasingly specialised and mutually dependent productive activities of labour and machines. Thus whilst Marshall saw freedom of industry and enterprise[7] as a central motivating and integrating force, market success depended on increased specialisation and the development of more effective industrial organisation, a process driven by the entrepreneurial and innovating owner manager who:

..is the organiser in command of capital, who bears the uninsurable risk. He takes complex decisions with limited information. Superintendence is only a small part of this: co-ordination, imagination and risk bearing are fundamental (O'Brien, 1990)

In economics then the central question of securing co-operation in production is subsumed in theories of market exchange and/or managerial authority. Both the invisible hand of the market and visible hand of management serve to co-ordinate and control although the relative importance and function of these mechanisms vary between the different schools. In orthodox neo-classical economics the market co-ordinates and managerial organisation is a reaction to the failure of markets to co-ordinate costlessly. By contrast, for the Marshallian and Marxist schools markets and hierarchy are complementary forms of regulation and capitalist management takes the lead in developing directing and co-ordination organisation. There is greater unanimity, however, amongst non-Marxist economists about the central importance of the market in determining income distribution. Marshall, for example, dismissed Marx' argument about the exploitative nature of capital by reference to the preventative effect of competition between employers for labour.[8]

In the terminology developed in Section 3, in neo-classical and transactions cost economics the operational efficiency curve is given whilst in Marxist and Marshallian economics, the curve is the result of an historical process in which managerial authority plays a central role. In neo-classical and Marshallian economics the incentive curve is a regulated by the market whereas in transaction costs and Marxian economics it is regulated by managerial command. In each of them direct association between productive agents plays little or no part and employment relationships are strictly hierarchical.[9]

5. Managerial control, work organisation and trust

The theories of the co-ordination and control functions of management enshrined in economic theory have their practical counterparts in the organisation of firms and the supporting contractual relations. Within the firm, bureaucratic rules determine the position of employees within the internal employment structure, identify those who hold managerial and supervisory power, and regulate the exercise of that power. This hierarchical structuring is reinforced by the contract of employment which underpins the employer's power of direction, the 'managerial prerogative', while at the same time giving the employee certain employment and income expectations. The distinguishing feature of the contract of employment is that employees cede to the employer a degree of authority over the pace and organisation of the work which they undertake to do so that the contract is asymmetrical and engenders economic power. The employer therefore does not need to gain the consent of the employee to any and every change in the way the job is carried out. And, while the employer's inherent powers are subject to limits, employment law recognises that the employer has certain residual rights to the 'co-operation' of the employee in areas not covered by explicit or implicit agreement. This residual power which the employment contract vests in the employer can be seen as a layer of regulation 'beyond contract' (Fox, 1974) which attaches to the relationship both as a matter of law and of social convention. The same idea, in a different form, is found in the Marxian distinction between

labour and labour power, which has quite different implications: it is because the worker contracts to submit herself to the employer's orders for the duration of the contract term that the resulting performance of the contract gives rise to the possibility of expropriation of the surplus from production.

The principal of managerial power in direction and control is also deeply entrenched by the historical development of work organisation. This has its ideological roots in the dominant role given by Adam Smith to the division of labour in technical change. Fundamental to this is the progressive simplification of the tasks undertaken by individual workers and the reduction of their discretion over the execution and pace of work by mechanisation (which embedded the co-ordinating and control functions in the machine) and the development of *scientific* management (to perfect the co-ordinating and command function of management). Adam Smith had argued that a finer division of labour had the efficiency advantage of saving the time lost as operators pass from task to task, the increased dexterity resulting from task specialisation and the greater possibility of mechanisation. Babbage suggested additional gains by observing that as the training and pay for particular jobs was determined by its most skilled elements savings could be made by separating out the skilled tasks from the mass of jobs and concentrating them in specialised occupations. By these means both training and pay could be reduced and the firm would be able to adjust the attributes of its labour force more precisely to the task requirements of its system of production. Taylor built on the Babbage principle by advocating a three stage process by which the task composition of work could be simplified : the disassociation of the organisation of work from the skills of the workers by the acquisition by management of the knowledge traditionally possessed by skilled workers; the removal of all possible brainwork from the shop floor to the planning departments to separate the conception of work from its execution; and the use by management of the monopoly of knowledge to finely divide labour and to carefully plan and control every step in the labour process.

The purpose of scientific management was to make production less dependent on overt worker co-operation in production (flattening the operational efficiency curve in Figure 1) whilst monetary incentive (the steepening of the incentive curve) served to induce the residual co-operation required. Task simplification and the narrowing of skill requirements to that needed for the immediate task, serves also to reduce the potential for co-operation between management and workers in the improvement in processes and products and hence any contribution workers might make to dynamic efficiency. It also firmly planted in the minds of managers and many commentators the idea that much of work is unskilled and consequently workers have little contribution to make beyond the conceptual and discretion impoverished content of their jobs.[10]

A further consequence of scientific management was that the mass of jobs became characterised by what (Fox, 1974) described as *low trust* relationships which 'imposes limitation on human collaboration' p362. Fox identified six main features of the *low trust syndrome*: the worker perceive themselves as not being trusted and are closely supervised; workers obey formal rules in carrying out their tasks; the co-ordination of worker's tasks is a managerial function; technological and managerial constraints and monetary rewards are seen as more important than self imposed standards for determining the pace of work; failure to meet standards result in punishment, more rules, tighter supervision or some combination of these measures; and, conflicts between management and workers are handled on a group basis through bargaining processes. Within this fundamentally alienating and antagonistic environment industrial relations became premised on a 'behavioural acceptance of divergence purpose' (Fox, 1974, p.29) with workers and management having different ends or values; requiring a precisely balanced exchange in the short term; carefully estimating the costs and benefits of concession; restricting information in their own interests; limiting mutual dependence and readily imposing sanctions against ill-will or default on obligations (ibid, p 362).

No doubt the norms of employment and income protection deriving from labour legislation and collective bargaining between trade unions and employers (Muckenberger and Deakin, 1989) helped make the employment relationship more tolerable to the employees and might help to explain its continued existence despite its fundamental inequality. These external regulatory institutions, in turn, support the firm's hierarchy and system of rules because they provide (up to a point) enforcement of employees' expectations regarding job and income security, and underpin their right to collective representation in the workplace. Collective bargaining thus came to provide the basis for compromise usually by the acceptance by the unions of managerial prerogative and the recognition by management of the right of unions to represent their members and negotiate on their behalf. However, in such alienating circumstances the primary function of collective bargaining became the regulation of conflict rather than the encouragement of co-operation. Collective agreements embody the peace terms and dispute procedures the means by which the terms of the truce are policed and the industrial peace preserved (or not as the case may be). Substantive agreements and procedural rules reflect a compromise based on the recognition by both managers and workers that while each side has an interest in sustaining co-operation, each side also has an interest in shifting the terms of contract to their own advantage. And, in the absence of trust, rules may become rigid simply because no one wants to risk the consequence of breaking the compromise (Lorenz, 1996, p7).

This situation is reminiscent of that addressed by the theory of repeated games under which some degree of co-operation may be enforced by the threat of retaliatory defection by one side against the other. However, whereas the theory of repeated games is generally cast within a choice theoretic framework in which the relentless pursuit of immediate self interest generates mutual suspicion between partners, the distrust and conflict typifying the employment relationship is the consequence of two centuries of development of the theory and practice of managerial organisation and the resistance to it by workers. In this evolutionary process, collective bargaining emerged to develop rules which regulated

the threat and counter threat typifying labour/management allowing for the exchange of some minimally acceptable level of co-operation for the fewest possible concessions on distributional shares. In this process, at best, low trust came to be replaced by relationships characterised by what has been described as *calculative trust*[11] which arises from the strategic interaction of parties who only remain in the relationship as long as they regard it to be in their immediate interest to do so (Deakin and Wilkinson, 1996).

6. Co-operation and the New Competition

The low-trust managerial and work organisation systems analysed by Fox evolved in Britain and especially in America where its competitive downside was off-set by technological leadership. The history of the post-war period also demonstrates the extent to which the ability to pursue low-trust managerial strategies depended on product market conditions. Until the early 1960s the US market was to an important degree closed to foreign competition and more generally in the early post war period the high demand for products created a sellers' market. In these benign conditions producers found it easy to impose upon their customers their production requirements and the costs of their antagonistic work organisation strategies in form of the high prices, limited variety and the low quality of goods they supplied. From the early 1960s, however, as its competitors caught up technically the US markets were progressively opened up to foreign competition. This *new competition* (Best, 1990), and increasing market dominance by buyers as the 1970s recession deepened, required producers to pay closer attention to customer demands for improved design, greater variety, high quality and more reliability in delivery as well as keener price.

The new competition originated with Japanese, German and Italian producers who had evolved more co-operative relationships both with their work forces and their suppliers than was usual in the Anglo-American productive systems. Greater motivation to co-operate on the part of managers, workers and suppliers resulted in high levels of

operational and dynamic efficiency based on improved labour productivity, the more effective utilisation of equipment and materials, better quality control and the mobilisation of the skills and knowledge of workers and suppliers in the improvement, design and innovation of products, processes and the organisation of production (Howes, 1991). The basis for this success was the ability to build relationships closer to what Fox described as *high-trust*. The requirements of these include: a commitment to, and moral involvement in, the goals and values of a calling or organisation; the recognition of the inappropriateness of close supervision; a problem solving relationship between related work areas rather than standardised externally imposed co-ordination; the recognition that punishment is inappropriate for the failure to effectively exercise high discretion because loyalty, support and goodwill are taken for granted and because, in the absence of clear cut rights and wrongs, performance is a matter of fine judgement; the resolution of disputes is a question of problem solving rather than bargaining. Traditionally, high trust employment relations were confined to a narrow range of high level managerial and professional jobs although those of certain craft workers, technicians, clerical workers, lower professionals and supervisory and administrative staff include high trust elements. The success of the emerging competitively successful productive systems was to extend high trust relations to include the whole work force. But, in this context, what does trust mean and how is such trust generated?

Trust, in the sense that it is used here, simply means the reliance on and confidence in the truth, worth, reliability, etc. of a person or thing.[12] A recent survey of trading relationships undertaken by the Centre for Business Research in Cambridge revealed that the most important element in trust in economic relationships is simply that trading partners do what they say they will do, promise-keeping which goes beyond contractual arrangements to include more informal commitments. Trust is also related to flexibility in a social sense - being willing to give and take, to help in an emergency and to forgive occasional faults - and in a sense more directly related to economic relationships, including sharing

information, honouring informal understandings and being ready to renegotiate a contract. It would seem then that in an imperfect, uncertain world the role of honouring formal and informal promises in generating, fostering and maintaining trust is tempered and supported by a degree of flexibility in the social environment in which economic relations are embedded and flexibility within economic relations but going beyond formal commitments (Burchell and Wilkinson, 1997). These findings echo Sako's (1992) three-fold categorisation of trust. *Contractual* and *competence* trust provides assurance that the supplier can be entrusted to carry out a task to the required specifications and quality requirements without expensive vetting. *Goodwill trust* provides a third category which Sako argues occurs when "someone.... is dependable and can be endowed with high discretion, as he can be entrusted to take initiatives while refraining from unfair advantage taking" (Sako, 1992, p.39). The important point is that whilst the roles of contractual and competence trust are specified within existing technical and contractual relationships the role of goodwill trust, fostered by flexibility within and beyond contract, extends beyond existing relations and includes the transfer of new ideas and new technology. Thus, whilst contractual and competence trust mainly benefit operational efficiency, goodwill trust also contributes to the dynamic efficiency of productive systems.

Whilst Sako's research and that of the Centre for Business Research concentrated on supplier/buyer relationships there is no reason for believing the findings do not apply with even greater force to the employer/employee relationship. These are typically closer and more permanent than customer/supplier relationship and it is now widely recognised that the quality of the employment relationship is a crucial factor in determining a firm's competitive success. This reality was recognised by the respondents to the CBR survey when they were asked to rate the importance of trust in different types of relationships on a scale of from 1 (no importance) to 10 (most importance). The average scores were: 9.1 for employees, 8.8 for customers and 6.6 for banks.

7. Responses to new competition and co-operation

The response to the growing competitive pressure in Anglo-American productive systems has been in one of two diametrically opposed directions. The first, what might be called *trust-busting*, was given its direction by neo-liberal theorising. This is firmly rooted in the orthodox market/managerial co-ordination school and so identified *market imperfections* as the source of the problem. The neo-liberal argument is that over generous welfare state provision, statutory and union imposed labour standards, and trade union wage bargaining, when combined with over-full employment, had so shifted the balance of power in favour of labour that they could resist managerial authority in production by restrictive practices and increase the wage share by excessive wage demands.[13] It followed from this that higher levels of unemployment, labour market deregulation and a reduction in social welfare would allow managers to re-assert their authority to secure a higher level of co-operation for a smaller distributional share. The success of this strategy, however, rests on the assumption that labour market deregulation and unemployment *will not* have a demoralising and alienating effect on employees further undermining trust and *will* strip workers of their ability to retaliate.[14] These are heroic assumptions given the scope workers have to withdraw co-operation by such tactics as the *work to rule,* by refusing to take the initiative in maintaining the smooth flow of production and ensuring quality and by refusing to divulge information and what they may have learned by doing. Moreover, the ability to enforce worker compliance by unemployment, restrictive employment law, and *macho* management depends on specific social, political and economic climates and is unlikely to survive the change in such climates. History shows the extent to which the arbitrary exercise of managerial power and organised responses produces wide swings in climate of industrial relations with workers retaliating in the booms for reversals suffered in the recessions (Mankelow and Wilkinson, 1997).

Whatever the short-term benefits there might be from increasing managerial authority within low trust systems it is unlikely that it will create the high trust environment necessary to effectively respond to *new competition*.[15] The growing realisation of this, and the recognition of the extent to which *new competition* has rendered obsolete managerial strategies based on low trust, means that the new conventional wisdom is that top priority should be given to the design of technical and social relations to fully exploit the co-operative nature of production. The emerging consensus is that work relations within firms are unitary systems the operation of which require the involvement of workers through participatory devices such as team work, quality circles and total quality management and their embracing of the *corporate culture*. These objectives are seen as incompatible with traditional 'pluralistic' industrial relations systems although the incorporation of workers' representative into managerial processes at the level of the firm through works councils or other *integrating institutions* is seen as an important part of the new approach to work organisation. Thus, if collective bargaining is to have any role, it is argued, it is required to be 'integrative' rather than 'distributive'.[16] Trade unions, if they are to play any part, 'rather than competing with management can assume the role of co-ordinators of the strategic process and facilitate the achievement of managerial objectives, which are seen to forward the mutual interest of all the firm's stake holders' (Konzelmann Smith, 1996). What is not usually discussed, however, is the extent to which such innovations are compatible with organisational forms and contractual relations which embody the power asymmetries of traditional employment relationships and whether the individual firm is a sufficiently broad basis for delivering the long term conditions necessary for fostering high trust.

8. Fostering high trust

The hallmark of high trust systems is that the parties provide open ended commitments to co-operate, the returns from which are realised over an uncertain, long time period. Important factors for creating such conditions in the face of uncertainty include: fairness of

treatment, job satisfaction, high quality of work environment, income and job security. The scope for trust depends upon conditions both within the particular work place *and* within the system of which the workplace is a part.[17] This environment includes other parts of the firm, supply chains, markets in which the firm operates, and the wider economy in which it is embedded. The quality of the productive system's relationship network, the prosperity and dynamism of the economy within which it trades, and how supportive is the social and political environment within which it operates are instrumental in creating the necessary conditions for co-operative long term employment relationships. Whether these external conditions are fully exploited, or compensated for, depends upon the quality of workplace relationships. The establishment of a base secure enough to create and maintain the requisite long term commitments for establishing and sustaining trust and co-operation requires overcoming the effects of both social and economic uncertainty. *Social uncertainty* arises from the social relations which pervade production and exchange, and the social and political environment within which these relations are formed and reformed. *Economic uncertainty* results from economic forces, such as changes in technology, resource availability, and consumer tastes.

One way of alleviating social uncertainty is to include all parties directly and indirectly involved in particular relationships within a single contractual (or less formal) arrangement. This is the logic behind proposals for *stakeholder* agreements (involving employees, managers and shareholders; and, possibly, suppliers and customers). The importance of such a community of interests was demonstrated by Konzelmann Smith (1995). She showed that single plant firms whose interests are confined to a single industry and whose shares are not quoted on the stock market were able to create more harmonious industrial relations based on favourable long term expectations than were plants which were part of large, public, multi-plant conglomerates. The industrial relations difficulties experienced in these latter types of productive system were explained by the

divergence of interests among plant level managers (whose interests were tied to the plant), top-level managers (for whom the wider interests of the corporation might require sacrificing those of particular plants), and shareholders (who might sell out to a corporate raider intent on cutting wages, downsizing the work force and stripping the corporation of its assets).

The effectiveness and independence of stakeholder group representation has also been shown to be an important determinant of the success of co-determination schemes. This was highlighted in a study of a Canadian steel plant (Frost, 1998). In this case, the union and management agreed upon the need for mutual consent over workplace reorganisation, training, contracting out, technological change and work force scheduling. De facto co-determination did not, however, prevent local union officials from rigorously defending their members' interests in opposition to management's initiatives. But success in this drew union leaders into developing together with their members alternative ways to solve problems, solutions which the membership found acceptable. Local union leaders' militant opposition to unacceptable terms and their support for securing acceptable dispute settlements was also fully supported by a responsive national union. As a result, strong and decisive multi-level action served both to strengthen the local union as an effective representative of members' interests and to legitimate their involvement in the joint control of work reorganisation, technical change and related issues.

The ability of bargaining units to conclude effective internal agreements both influences and depends at least partly on relationships within supply chains. Costs, prices, credit terms, and speed of payment determine the financial capabilities of firms to meet the competing incomes claims of managers, workers and shareholders. Moreover the quality and surety of delivery impinges on the firm's ability to meet customer requirements. Certainty that buyers will take delivery at agreed-upon terms is a major determinant

of the supplier's ability to plan production and provide employment guarantees. Long term trading relationships and the knowledge that customers will not switch suppliers (and visa versa) also make it easier to offer employment guarantees. The nature of market competition is similarly an important determinant of the quality of relationships within supply chains and in final markets. The use of market power to secure favourable price, credit and delivery terms is not conducive to the establishment of high quality trading relationships, nor is the disruption of supply and demand by unlimited price competition. In both cases, resultant low trust relationships can be expected to have a cumulative effect as poor standards in employment and business relationships are extended throughout the productive system by protective and retaliatory responses.

A counter to this degenerative process and the social uncertainty it engenders is the creation of generally applicable behaviour and performance standards to which individuals and groups are expected to subscribe. This solution is illustrated by the effect of the interaction between the legal code and private ordering of business relations through trade associations on the social environment in Germany (Lane and Bachmann, 1995). German trade associations regulate against such practices as late payment and unfair pricing; they arbitrate disputes and organise countervailing measures against excessive market power to which members may be collectively subjected. They also establish quality and product standards, and collect and disseminate technical and cost information. Generally, 'by providing a common stock of knowledge and a shared set of norms for production and exchange they co-ordinate expectations and remove ambiguity from inter-firm relationships' (ibid, p18). The workings of the trade associations are supplemented and strengthened by the German legal code which requires firms to trade in good faith, establish just prices, and engage in fair competition. This is further reinforced by the Standard Contract Terms Act, enacted to protect the weaker party to contracts. On the employment front, institutional and

legal arrangements establish the rights to representation and collective bargaining, minimum terms and conditions of employment, effective health and safety protection and to training; citizen rights which are furthered and protected by the works council system and sector level collective bargaining.

As a consequence, the industrial environment in Germany is characterised by norms, rules and standards which are either legally binding or made *de facto* obligatory by the wide and systematic involvement of the industrial community. These, and the code of business ethics they foster, constitute expected behaviour to which business people conform more as a matter of course than as a matter of business strategy. In turn, this helps create an environment in which conflict is contained, performance assured and information provided; where markets are stabilised by trading standards; and where the ability of smaller and weaker companies to survive and prosper is not unduly threatened by unfair terms and conditions imposed upon them.

An important question, however, relates to the appropriate form of requisite investments for building and maintaining trust. Lorenz (1997) whilst recognising the importance of *systems trust* (Lane and Bachman, 1995) established by laws, rules, norms and standards, points out that in France, distrust by managers and local unions undermined the effectiveness of *direct expression groups,* which were established by law to allow workers to express production and work related suggestions directly to management. Each side feared 'that the expression groups would be used as a strategic resource by the other side to increase their power and command over resources within the firm' (p17). In contrast, Lorenz showed that German works councils succeeded in accomplishing this objective because early employer and union distrust was overcome by local union participation in the works councils and a learning process by which trust in the works council system was established. Thus, the *hardware* for trust is established by investment in supportive laws,

rules, norms and standards, whilst the *software* for trust is developed by a learning process establishing the reliability of laws, rules, norms and standards for serving the parties' mutual and separate interests. This learning process is facilitated by long term business and personal relations, the establishment of reputations, regional culture and collaborations in productive activities (Burchell and Wilkinson, 1997).

The central role played by the social relations environment, the quality of direct relationships *and* the interaction between them for establishing and sustaining trust is strongly supported by Dei Ottati's (1994) research on Italian industrial districts. In this, Dei Otatti draws a distinction between *collective* and *personal* trust, treating collective trust as capital in which productive systems invest and which creates an environment in which high standards are expected. The value of collective trust enhances and is enhanced by personal investments of individuals in building and sustaining trusting relationships with each other. The importance of collective representation is the social certainty it generates. The more effective it is in this respect, the more successful it will be in improving the availability of information; reducing conflict and the need for monitoring; and increasing the scope for trust building and for co-operative productive relations. The important point is that effective representation in which organisations can be held accountable by their members creates an environment in which there are mutual obligations to find solutions which take into account the interests of all the parties involved and for each party to co-operate fully in these objectives.

In periods of fundamental change, however, *collective voice* at the level of firm or the sector may not be enough, especially if the change requires radical restructuring with a reduction in the number of firms and/or the level of employment (Dei Ottati, 1997). There can be little doubt that economic uncertainty is exacerbated by mass lay-offs and bankruptcies, the fears of which can trigger and sustain destructive competition. Breaking such a cycle to secure an orderly recovery,

replace obsolete technology or restructure industry requires competition-limiting co-operation such as price-fixing, order-sharing and equipment scrapping. In Japan, the consolidation of ownership or creation of "crisis cartels" have been effective means to these objectives (Best, 1990). Protection of labour standards by industry wide wage agreements also provides an important way of preventing erosion of the skilled labour force and stabilising markets by taking wages and other employment conditions out of competition.

Conversely, it is often argued that *outdated* social relations at both the macro- and micro- levels pose fundamental obstacles to change. This is a major reason offered by mainstream economic theorists for giving priority to the rights of the individual and, by extension, to the management of individual corporations. In America, managerial prerogative restricts joint participation in such decisions as production organisation, technical and other forms of change. Any involvement, other than that of managers and those they represent, is generally confined to the outcomes of managerial decisions. The freedom of managerial action is tempered when markets make *exit* an option or when regulations set standards that cannot be lowered. However, if these restraints are weak or are lifted, managers can and do act opportunistically, by restructuring the technical and social relations of production in an effort to distribute the gains towards themselves and those they represent and to displace the costs to others. Any influence employees and others might have on this process depends upon how effectively they are organised, yet even so this is limited to the distributional and other effects of managerial decisions (Birecree, Konzelmann and Wilkinson, 1998).

In the US and Britain, new technology and market deregulation provided the opportunity for restructuring telecommunications and for largely unconstrained corporate managers to cut costs, eliminate labour and segment product and labour markets. The primary benefits of new technology accrued to management and shareholders of the telecommunication companies and their large business customers,

whilst the residential and small business customers received minimum benefits through automated systems by operators who are closely and electronically monitored. As a result, for non-managerial staff, high trust relations within well organised collective bargaining systems were replaced by low trust relations. The union's role was reduced to attempting to maintain the terms and conditions for a rapidly shrinking work force and negotiating severance and early retirement packages in exchange for the jobs of the rest. By contrast, in Germany, where consumer and worker interests were well represented in the regulatory framework and collective bargaining, widespread displacement of workers, downsizing and cost minimisation were ruled out as approaches to the restructuring of industry, technology and work organisation. However, by eliminating these options and the possibility of segmenting the domestic product market, the new regulatory framework obliges German firms to offer a universally high level of service and to adopt a revenue enhancing, up-market strategy to which the unions lend their full support (Batt and Darbishire, 1998).

In the Anglo-American case, economic uncertainty triggered by regulatory changes and new technology was exacerbated by the social uncertainty associated with the process of dismantling the traditional social relations of production. In this process, the short-term benefits to management from their largely unrestricted exercise of prerogative were achieved at considerable expense to the work force and a restriction of the benefits of new technology for the customers with least countervailing power. Longer term costs include the detrimental effects on productivity and employee commitment that accompanies increased insecurity, low morale and the creation of antagonistic, non-co-operative and low trust employment systems. In Germany, greater certainty generated by well established collective social relations of production served to ameliorate the economic uncertainty of the information technology revolution and allowed its benefits to be more widely shared.

It must however be acknowledged that the need to negotiate change slows down the process; yet the question of whether this constitutes an obstruction of technical change, as it is frequently accused of doing, requires consideration of the questions: 'from whose perspective?' and 'over what time period?'. From the perspective of the distributive interests of the large corporations the answer may be "yes" but only at great cost to a large proportion of the work force and many customers. What the overall costs and benefits are judged to be depends upon the relative weights attached to the different interests and whether the assessor subscribes to the view that what is good for the corporation is necessarily good for the system. In any case, in evaluating the longer period effects, the risk of destroying co-operative and trusting inter- and intra-firm relations and those in the wider society would need to be added to the cost side of the balance sheet.

The Swedish experience underlines the importance of building and rebuilding social relations at each level capable of creating co-operative and trusting relations over a period of continuous change. Early settlement between capital and labour at the national level established the rights of managers to manage, the rights of unions to organise and represent their members, and the rights of employees to share in the benefits of technical change. Trade unions combine strong representation, a commitment to technical progress and *wage solidarity* (by which wages are fixed by national bargaining) in such a way that poor firm performance cannot be compensated for by low pay. During the late 1920s, the political wing of the Swedish labour movement responded to high levels of unemployment by accepting the state's responsibility for joblessness and from this commitment developed the welfare state. The Swedish government also accepted responsibility for the high rate of job displacement resulting from rapid technical change and developed active labour market policies combining high quality training, job creation and measures to encourage labour mobility. During the 1960s the disruptive effects of rapid economic progress and growing shop floor opposition to

Taylorist work organisation led to the enactment of a series of measures designed to limit managerial prerogative. These included the outlawing of unfair dismissal, protection of the physical and psychological health of employees, and the establishment of rights to paid leave for education. New legislation also introduced co-determination which gave unions the right to negotiate local agreements for the joint control of hiring and firing, work assignment and disciplinary matters. Involvement by unions and their members in the introduction of technological innovations and work organisation and environmental improvements contributed significantly to the development of socio-technical systems in which job satisfaction, responsibility and learning constitute an integral part of the social relations of production. The beneficial effect of these developments is reflected in growing employer support for them and recognition of their beneficial effect on competitiveness (Persson, 1998).

What the Swedish example demonstrates is that there are points beyond which firm and industry level measures cannot go and, moreover, the institutions and organisations themselves may be victims of technical and other forms of economic change. In such cases what is required are procedural, behavioural and performance standards designed to encourage the development of new industries, new forms of work organisation, training and retraining, and industrial and occupational flexibility. But these broader objectives must be cast within the context of policies designed to secure full employment and environmental protection, and trade and capital movement regulation aimed at preventing unfair competition, disruptive price fluctuations and global uncertainty. Increasingly, these questions need to be addressed at the international level where as yet the democratic interests of the vast majority of populations are not sufficiently well represented.

9. Conclusions

This paper begins with the notion that production relations are at the same time co-operative and conflictual because parties to such relationships are necessarily co-operative in production *and* competitive in the distribution of what is produced. Without necessarily departing from the basic economic assumption that individuals act in a self interested manner, in circumstances where parties recognise that their long term interest is in the size of the pie (rather than relative share), it is reasonable to assume that they will form co-operative arrangements with trading partners designed to secure operational and dynamic efficiency. In this way, it is possible to obtain as large a pie as possible and to satisfy the demands of each party for the rewards of co-operation. The question then becomes one of securing the appropriate long term agreement.

The paper then considered how this question is answered in economics. An examination of approaches to this question by the various schools of economic thought, from Adam Smith on, reveals that economists have traditionally assumed that co-operation in production is secured by the market and/or managerial hierarchy. However, the operationalisation of these notions in managerial, contractual and work organisation systems created low trust relationships which hinder productive co-operation. The shortcomings of this historical heritage are evident in the consequences experienced by the Anglo-American system when faced with competition from productive systems that had generated high trust and co-operative relationships.

Consideration of the conditions necessary for creating high trust relationships suggests that the problem extends beyond the workplace to include both the network of linkages which constitute the productive system and the economic environment in which the productive system is embedded. In this context, the creation of high trust relationships is inhibited by two types of uncertainty: social and

economic, which can be countered in a variety of different ways. Social uncertainty can be moderated by expanding contractual and less formal arrangements to include a wider range of relationships; or by establishing rules, standards and norms that rule out practices which create social uncertainty; such arrangements can also serve to counter economic uncertainty. However, the effects of economic change may be so extensive that wider national and inter-national policies, rules, norms, standards and institutions are necessary to constrain its potentially disruptive effects and to guide it into creative channels.

There can be little doubt that the adversarial relations generated by deregulation and the resulting growth in inequality, income and employment insecurity are inimical to the long run conditions necessary for fostering trust and co-operation. Further, there is no convincing evidence that the Anglo-American economies improved their competitiveness by deregulation and greater reliance on the market, particularly when compared with the economies which generated the new competition. During the period from the beginning of 1991 to the middle of 1997 America and Britain had negative trade balances (exports of goods and services minus imports of goods and services) in excess of one percent of GDP. For America, the trade deficit grew from -0.3 to -1.7% of GDP; in Britain it fell from -1.4 to -0.7% of GDP. Over the same period the economies of Sweden, Italy and Japan generated positive trade balances of 5%, 0.3% and 1.1 percentage respectively. Each of these economies improved their relative trade performance with increases, as percentages of GDP, from 1.5% to 8.2% for Sweden, -2.9% to 2.3% for Italy and from 0.2 to 1.1% for Japan. The Italian comparative performance is especially impressive. When Britain left the EMU in 1992 the British and Italian currencies were devalued by comparable amounts. From then to mid 1997 the Italian trade balance improved by 5.2% of GDP whilst that of Britain improved by only 0.7%. Of the *new competition* economies Germany's trade performance was the least impressive with an average trade deficit of -0.2% of GDP. But this was the

period of unification of East and West Germany and despite the resulting economic, political and social traumas the unified Germany managed to improve its trade performance by converting a trade deficit of 0.1% of GPD to a trade surplus of 0.7% between 1991 and 1997[18].

Despite the superior competitive performance of the countries which took the lead in demonstrating the competitive advantages of co-operative forms of production they are currently being pressed to deregulate their labour and product markets and scale down welfare provision. Whether or not the countries which showed the benefits resulting from decency and trust in productive relations heed this advice and follow the US and UK's neo-liberal route will determine whether or not the world progresses further into a new dark age -- of extending and deepening inequality, poverty, exploitation and production inefficiency.

Notes

1. Quoted in Pagano, 1985, p29

2. For a more detailed discussion of this see Wilkinson, 1983 and Tarling and Wilkinson, 1987.

3. So that the necessary cooperation is between just two individuals. This assumption is made to simplify the analysis and will be relaxed later.

4. For discussion of this see Marshall, 1947: Book V, Chapter XI, Section 7 and Book, VI, ChapterVII, Section 9 & 10.

5. For descriptions of these see Deakin and Wilkinson, 1996.

6. See Marshall (1920) pp. 71 and 72 and especially footnote 2.

7. A term Marshall preferred to 'competition' because of the need for a term 'that does not imply any moral quality, whether good or evil, but which indicates the undisputed fact that modern business and industry are characterised by more self-reliant habits, more forethought, more deliberate and free choice' (1947, p. 9-10).

8. In answering Marx's claim that capitalist employers reap the benefits of cooperation between workers as surplus value Marshall argued that "so long as there is active competition between employers, each will be forced to pay as wages the equivalent of the net value that the 100 men, working cooperatively, add to the product" (1920, pas.71-72).

9. I have taken Marx and Marshall as illustrative of non-neoclassical reprentations of the firms. There is an expanding literature in which the essential nature of the firm is portrayed in

many different ways. However, generally the relationship between management and workers is taken to be hierarchical.

10. For analysis of differences in the perceptions of managers and workers to job content see Burchel et. al. 1994.

11. Sabel (1992) reasonably sees "calculative" and "trust" to be contradictory and prefers the term *modus vivendi* (a working arrangement between conflicting interests) to describe such outcomes.

12. Collins Concise Dictionary, 1995.

13. Such ideas form the basis for Nairu, theories of inflations, efficiency wage theory and insider-outsider theories of labour markets and marxist and other analysis of the the productivity slowdown. See, for example, Meade (1981), Layard and Nickell (1992) and Weisskopf et al (1983).

14. From the game theory perspective, the expectations would be that the greater threat posed by managerial retaliation would secure compliance from workers and this would compensate for the elimination of the rules established and maintained by collective bargaining.

15. In this respect, it is worth noting that in Britain deregulation and the imposition of new hierarchical managerial systems has gone furthest in the National Health Service and other parts of the public sector which are largely closed to foreign competition. And, as Fox would have predicted, high trust employment systems have been replaced by low trust employment. Ironically as this is happening in the public sector, in manufacturing, where low-trust employment systems had been pioneered, they were being jettisoned as out-moded in product markets where high trust productive systems were triumphant.

16. A distinction made by Walton and McKersie (1965).

17. For discussion of this see Konzelmann Smith, 1996.

18. The trade performanc figures in this paragraph were derived from OECD Main Economic Indicators.

FIGURES

Figure 1: The Operational Efficiency Curve

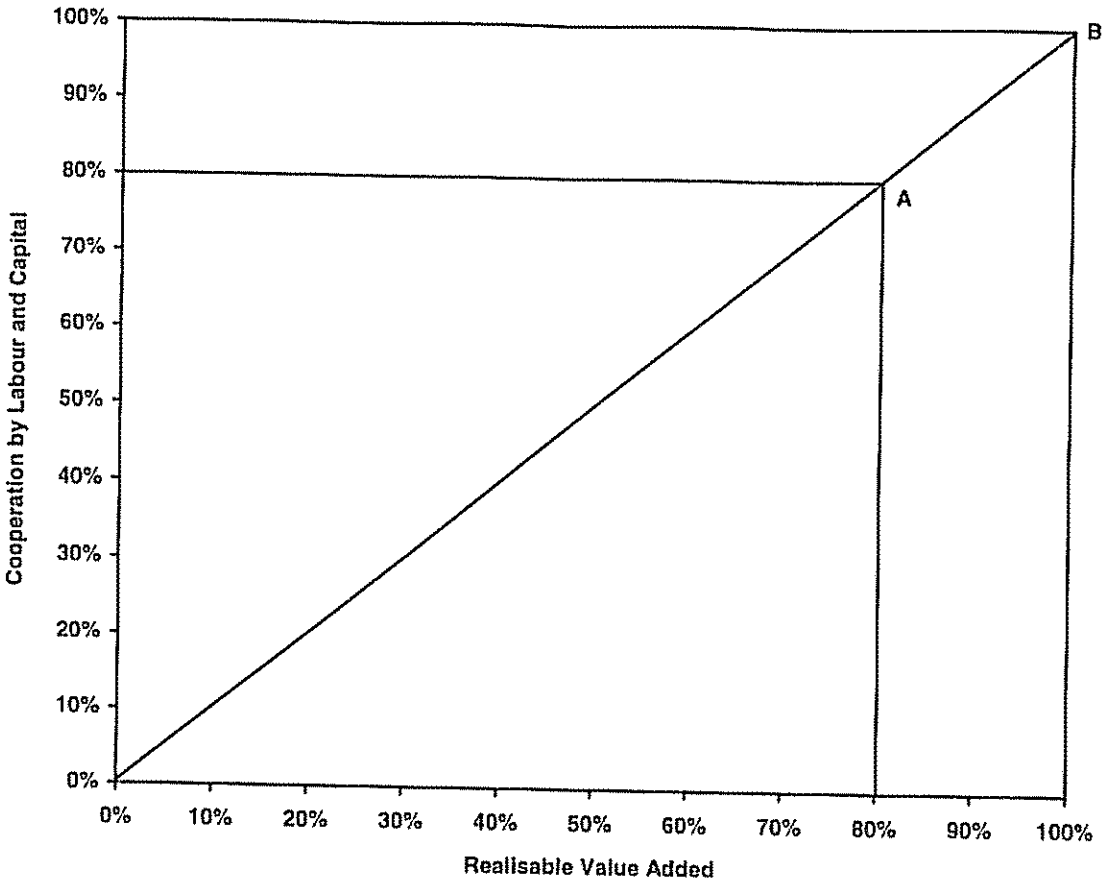


Figure 2: The Incentive Curve

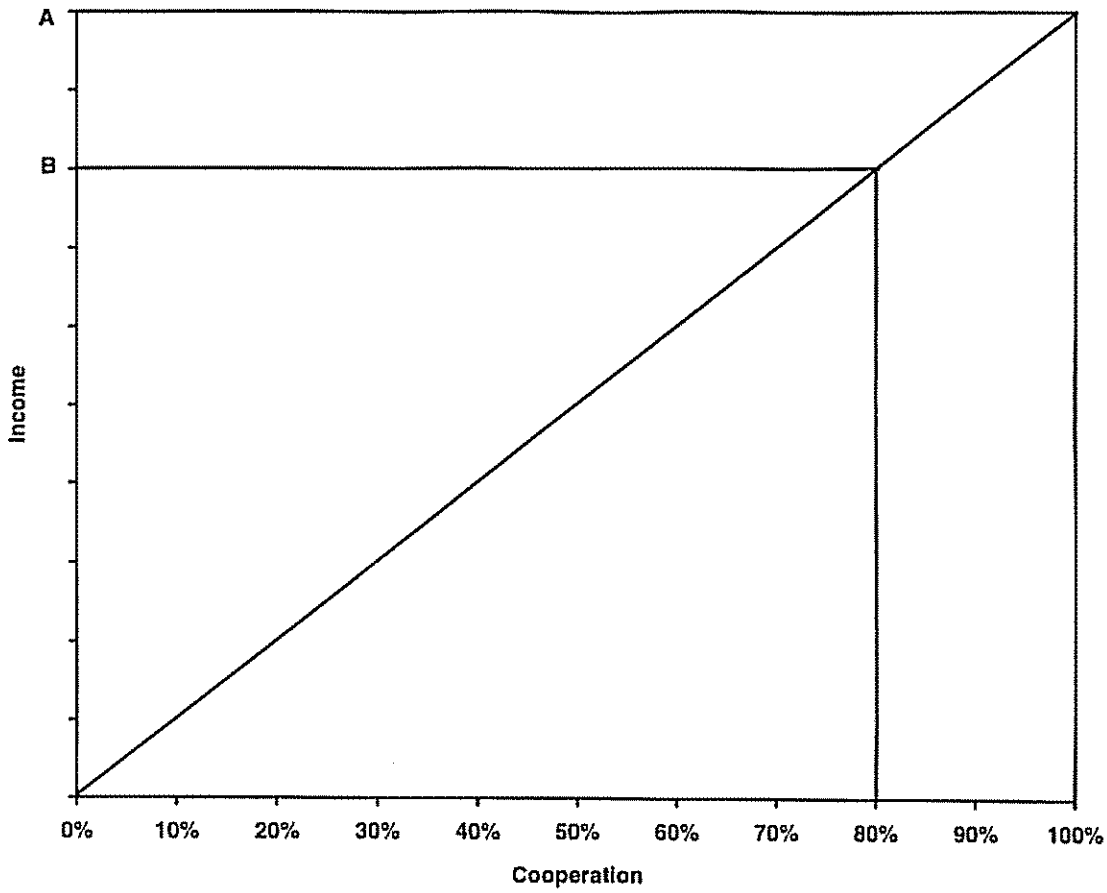
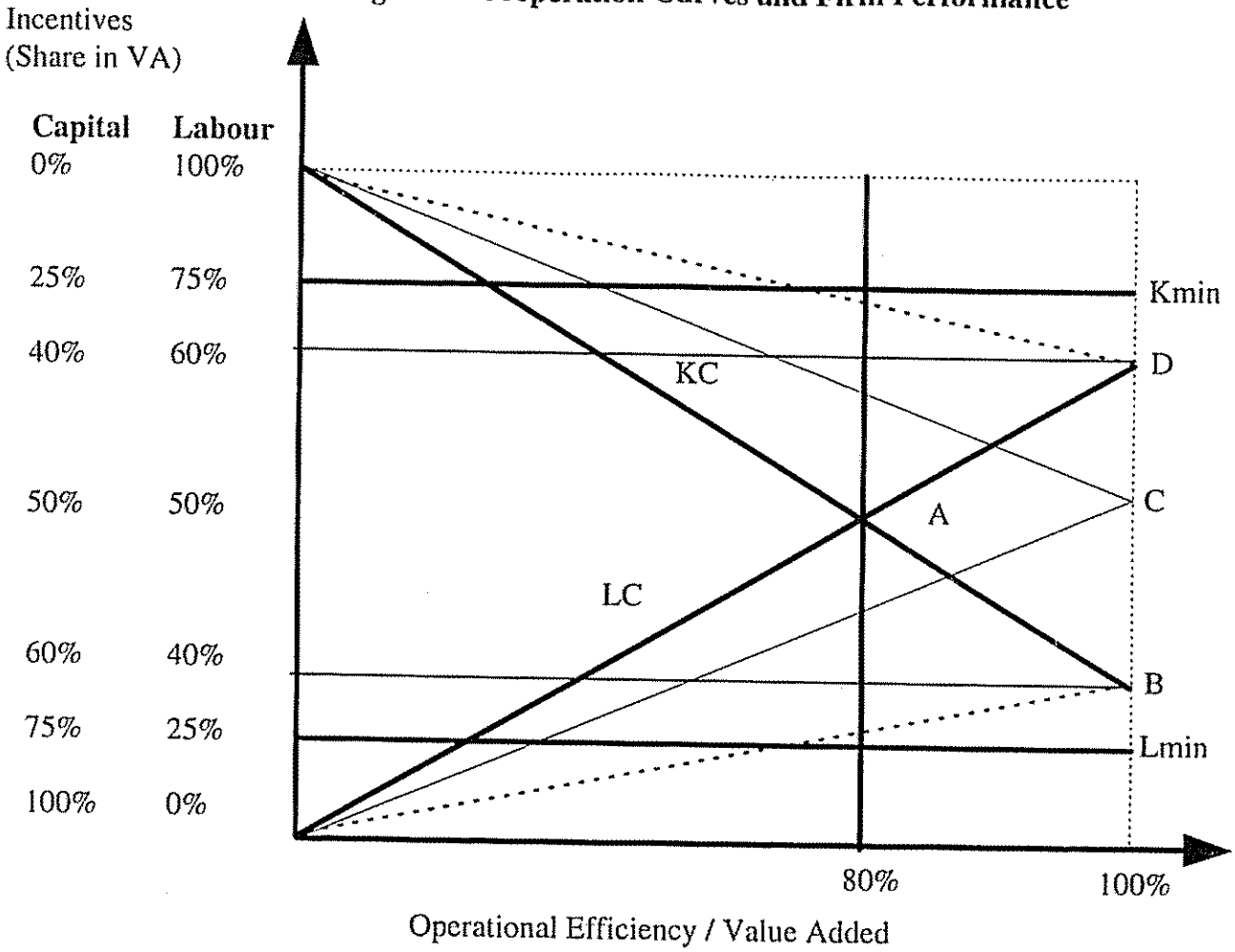


Figure 3: Cooperation Curves and Firm Performance



Erratum: The following paragraph replaces that printed in error earlier in section 3.i

The question is how can the parties respond. Figure 3 suggests 3 ways: either labour, capital or both can become more co-operative. Point B (D) is reached by labour (capital) becoming more co-operative (a pivoting of the LC (KC) curve to the right (left)). Point C is reached by both labour and capital becoming more co-operative (accepting a smaller share for each level of co-operation). The move to point C is easy to understand in our example in which both sides are assumed to have the same bargaining power and full information about outcomes. They would soon realise that whereas at point B they only have 40% of feasible realisable value each (i.e. 50% each of 80%) at point A they could each have 50% percent each of feasible realisable value added. It can be shown that a mutually beneficial outcome could also be achieved by adjustments in the co-operation curves to take the parties to any point between B and D. At B labour's share is 40% and at D capital's share is 40% so neither would be any worse off than they had been at A. Between B and D both would be better off although the gains would be differentially distributed. Outside BD, one production partner can only get more if the other gets less.

Bibliography

Batt, R and Darbishire, O. (1998) Institutional determinants of deregulation and restructuring in the telecommunications industry, *International Contributions to Labour Studies*, Vol, 7. Special Issue on Co-operative and Antagonistic Work Organisation.

Best, M. (1990) *The New Competition: Institutions of Industrial Restructuring,* Harvard University Press.

Birecree, A., Konzelmann, S. and Wilkinson, F. (1998) Productive systems, competitive pressures, strategic choices and work organisation: an introduction, *International Contributions to Labour Studies*, Vol, 7. Special Issue on Co-operative and Antagonistic Work Organisation

Burchell, B., Elliot, J., Rubery, J. and Wilkinson, F. (1994) 'Job content from managers' and employees' perspective', in Penn, R., Rose, M. and Rubery, J. (eds.) *Patterns of Skill Change*, Oxford University Press.

Burchell, B and Wilkinson, F. (1997) 'Trust, Business Relationships and the Contractual Environment', *Cambridge Journal of Economics*, Vol. 20, No. 2

Coase, R.H. (1937) 'The nature of the firm', *Economica*, Vol. 4, 386-405.

Collins Concise Dictionary (1995) London, Harper Collins.

Deakin, S. and Wilkinson, F. (1996) 'Contracts, Competition and Trust: The Role of the Institutional Framework', in Campbell D. and Vincent Jones P. (eds) *Socio-Legal Analysis of Contract,* Dartmouth Press.

Dei Ottati, G. (1994) 'Co-operation and Competition in the Industrial Districts as an Organisational Model', *European Planning Studies,* Vol 2, No. 4, pp.463-483.

Dei Ottati, G. (1994) 'Trust, Interlinking Transactions and Credit in Industrial Districts', *Cambridge Journal of Economics*, Vol. 18, No. 6.

Dei Ottati, G, (1997), 'The Changing Forms of Supplier Relations in an Italian Industrial District: An Exit-Voice Approach' *Dept. of Economics, University of Florence, mimeo.*

Fox, A. (1974) *Beyond Contract*, London: Routledge

Frost, A. (1998) The strategic use of cooperation and conflict: the cornerstone of labour's success in workplace restructuring, *International Contributions to Labour Studies*, Vol, 7. Special Issue on Co-operative and Antagonistic Work Organisation.

Hayek, F. (1988) *The Fatal Conceit,* London: Routledge.

Howes, (1991) 'The Benefits of Youth: The Role of Japanese Fringe Benefits Policies in the Restructuring of the US Motor Vehicle Industry', *International Contributions to Labour Studies,* Vol. 1.

Konzelmann Smith, S. (1996) 'Co-operative Corporate Level Strategies', *Journal of Economic Issues,* Vol. XXX, No.3.

Konzelmann Smith, S. (1995) 'Internal Co-operation and Competitive Success: The Case of the US Steel Mini-Mills', *Cambridge Journal of Economics*, Vol. 19, No. 2.

Lane, C. and Bachmann, R. (1996) 'The Social Construction of Trust: Supplier Relations in Britain and Germany', *Organisation Studies,* Vol. 17, No. 3

Layard, R., Nickell, S, and Jackman, R. (1991), *Unemployment, Macroeconomic Performance and the Labour Market*, Oxford, Oxford University Press.

Meade, J. (1982) *Wage Fixing*, London, Allen and Unwin.

Lorenz, E. (1997), 'Trust, Contract and Economic Co-operation', *Sociologie du Travail*, Vol. 38, No. 3.

Mankelow, R and Wilkinson, F. (1998) 'Industrial Relations in Iron and Steel, Shipbuilding and the Docks 1930-1960', In Whiteside, N. and Salais, R. *Governance, Industry and Labour Markets in Britain and France: The Modernising State in the MId-Twentieth Century* (London, Routledge).

Marshall, A (1947), *Principles of Economics* (8th ed.). London, Macmillan.

Marx, K. ([1887] 1974), *Capital*, London, Lawrence and Wishart.

Mückenberger, U. and Deakin, S. (1989), 'From deregulation to a European floor of rights'. *Zeitschrift für internationales und ausländisches Arbeits- und Sozialrecht*, Vol. 3.

O'Brien D. P. (1990), 'Marshall's Industrial Analysis', *Scottish Journal of Economics*, Vol. 61.

Pagano, U. (1985), *Work and Welfare in Economic Theory,* Oxford, Blackwells.

Perssen, B. (1998) Unions, management and the government: the Swedish model, *International Contributions to Labour Studies*, Vol, 7. Special Issue on Co-operative and Antagonistic Work Organisation.

Sabel, Studied Trust, 'Building New Forms of Co-operation in a Volatile Economy', in: Swedberg R., *Explorations in Economic Sociology*, New York, Russell Sage Foundation.

Sako, M. (1992), *Prices, Quality and Trust: Inter-Firm Relations in Britain and Japan.* Cambridge University Press

Smith, A. ([1776] 1974) *The Wealth of Nations*, Harmondsworth: Penguin.

Wakefield, E. (1835), Notes to A. Smith *An Inquiry into the Nature and Causes of the Wealth of Nations*. Knight.

Walton R. E. and McKersie R. B. *A Behavioural Theory of Labour Negotiations*, New York, McGraw Hill.

Weisskopf, T.E, Bowles, S. and Gordon D.M. (1983), 'Hearts and Minds: A Social Model of U.S. Productivity Growth', *Brooking Papers*, 2.

Tarling, R. and Wilkinson, F., (1987), 'The Level, Structure and Flexibility of Costs', in Tarling, R. (ed.), *Flexibility in Labour Markets*. Academic Press.

Wilkinson, F. (1983), 'Productive systems'. *Cambridge Journal of Economics* Vol 7, pp.413-429.

ESRC CENTRE FOR BUSINESS RESEARCH
WORKING PAPERS

CBR Working Papers are widely circulated to libraries and research institutes. Single copies are available to individuals on request to the Publications Secretary, ESRC Centre for Business Research, Department of Applied Economics, Sidgwick Avenue, Cambridge CB3 9DE, UK, at a cost of £5 or $10. Cheques/money orders should be made payable to University of Cambridge.

WP1 **Management Consultancy in Europe**
David Keeble and Joachim Schwalbach, February 1995

WP2 **Seedcorn or Chaff? Unemployment and Small Firm Performance**
Michael Kitson, February 1995

WP3 **Employment in the United Kingdom: Trends and Prospects**
Ken Coutts and Robert Rowthorn, February 1995

WP4 **Enterprising Behaviour and the Urban-Rural Shift**
David Keeble and Peter Tyler, February 1995

WP5 **Risk, Trust and Power: The Social Constitution of Supplier Relations in Britain and Germany**
Christel Lane and Reinhard Bachmann, February 1995

WP6 **Growth-oriented SMEs in Unfavourable Regional Environments**
Peter Vaessen and David Keeble, February 1995

WP7 **Capital Formation and Unemployment**
Robert Rowthorn, May 1995

WP8 **On the Size Distribution of Establishments of Large Enterprises: An Analysis for UK Manufacturing**
Paul Kattuman, May 1995

WP9 **A Simulation Model of North-South Trade**
Robert Rowthorn, May 1995

WP10 **Contracts, Cooperation and Trust: The Role of the Institutional Framework**
Simon Deakin and Frank Wilkinson, September 1995

WP11 **Korea at the Cross-Roads**
Robert Rowthorn, September 1995

WP12 **Manufacturing, the Balance of Payments and Capacity**
Andy Cosh, Ken Coutts and Alan Hughes, September 1995

WP13 **The Role of Manufacturing in the National Economy**
Robert Rowthorn, September 1995

WP14 **Britain's Industrial Performance Since 1960: Underinvestment and Relative Decline**
Michael Kitson and Jonathan Michie, September 1995

WP15 **The Competitive Selection of Democratic Firms in a World of Self-Sustaining Institutions**
Ugo Pagano and Robert Rowthorn, September 1995

WP16 **Tacit Knowledge and Technology Transfer**
Jeremy Howells, September 1995

WP17 **Economic Growth as an Evolutionary Process**
Matthias Kelm, September 1995

WP18 **Failures, Acquisitions and Post Merger Success: The Comparative Financial Characteristics of Large and Small Companies**
Andy Cosh and Alan Hughes, September 1995

WP19 **Executive Remuneration, Executive Dismissal and Institutional Shareholdings**
Andy Cosh and Alan Hughes, September 1995

WP20 **Communities of Competitors: Open Price Associations and the American State, 1911-1929**
Gerald Berk, November 1995

WP21 **Cooperation in Vertical Inter-Firm Relations in Britain and Germany: The Role of Social Institutions**
Christel Lane and Reinhard Bachmann, December 1995

WP22 **Economics, Ethics and Unfair Competition**
Ian Jones and Michael Pollitt, December 1995

WP23 **Business Services, the Management of Change and Regional Development in the UK: A Corporate Client Perspective**
Peter Wood, December 1995

WP24 **Joint Ventures and Economic Reform in China : A Case Study of the Coca-Cola Business System, with Particular Reference to the Tianjin Coca-Cola Plant**
Peter Nolan, December 1995

WP25 **Financing the Industrial Cooperatives of the Mondragon Group**
Melissa Moye, March 1996

WP26 **Why do Firms Grow?**
Fabrizio Traù, March 1996

WP27 **The European Dynamics of Computer Services**
Jeremy Howells, March 1996

WP28 **The Remarkable Resilience of the Industrial Districts of Tuscany**
Gabbi Dei Ottati, March 1996

WP29 **Insurance Markets and Long-Run Equilibrium with Systematic Risks**
John Duncan, March 1996

WP30 **Takeovers, Institutional Investment and the Persistence of Profits**
Andy Cosh, Alan Hughes, Kevin Lee and Ajit Singh, March 1996

WP31 **Common Supply, Collusion and Entry Deterrence**
Robert Evans, March 1996

WP32 **Semi-Parametric Estimation of the Company Growth-Size Relation**
Andy Cosh, Alan Hughes, Hyehoon Lee and Stephen Pudney, March 1996

WP33 **An Economic System of Technology-Related Acquisitions and Spin-Offs**
Åsa Lindholm, August 1996

WP34 **Schumpeter's Theory of Economic Evolution: A Darwinian Interpretation**
Matthias Kelm, August 1996

WP35 **Trust, Business Relationships and The Contractual Environment**
Frank Wilkinson and Brendan Burchell, August 1996

WP36 **Contract Law, Social Norms and Inter-Firm Cooperation**
Alessandro Arrighetti, Reinhard Bachmann and Simon Deakin, August 1996

WP37 **The Fiscal and Distributional Implications of Job Generation**
Jonathan Michie, Michael Kitson and Holly Sutherland, September 1996

WP38 **Unemployment, Wage Bargaining and Capital-Labour Substitution**
Robert Rowthorn, September 1996

WP39 **The Role of Technical Standards in the Social Regulation of Supplier Relations in Britain and Germany**
Christel Lane, September 1996

WP40 **The Economic Consequences of Innovations in Italian Manufacturing Firms: Theory and Results from the Community Innovation Survey**
Sergio Cesaratto and Antonella Stirati, September 1996

WP41 **Competition and Competitive Advantage**
Jonathan Michie and Renee Prendergast, September 1996

WP42 **Small Firms, Innovation and Regional Development in Britain in the 1990s**
David Keeble, September 1996

WP43 **Economic Functioning, Self Sufficiency and Full Employment**
Roger Tarling and Frank Wilkinson, September 1996

WP44 **Slow Convergence? Post-Neoclassical Endogenous Growth Theory and Regional Development**
Ron Martin and Peter Sunley, December 1996

WP45 **Inflation, Economic Performance and Employment Rights**
Simon Deakin and Keith Ewing, December 1996

WP46 **Evolutionary and 'New' Institutional Economics: Some Implications for Industrial Policy**
Matthias Kelm, December 1996

WP47 **Acquisition and Growth of Technology-Based Firms**
Åsa Lindholm, December 1996

WP48 **Innovation in UK SMEs: Causes and the Consequences for Firm Failure and Acquisition**
Andy Cosh, Alan Hughes and Eric Wood, December 1996

WP49 **The Changing Anatomy of Corporate Control and the Market for Executives in the UK**
Andy Cosh and Alan Hughes, December 1996

WP50 **Downsizing Company Strategies and Executive Pay in Germany**
Joachim Schwalbach and Ulrike Grasshoff, March 1997

WP51 **Industrial Structure and Training Needs in the Knitwear and Clothing Sectors in Italy**
Sebastiano Brusco and Daniela Bigarelli, March 1997

WP52 **Technological Competitiveness in an International Arena**
Jeremy Howells and Jonathan Michie, March 1997

WP53 **Internationalisation Processes, Networking and Local Embeddedness in Technology-Intensive Small Firms**
David Keeble, Clive Lawson, Helen Lawton Smith, Barry Moore and Frank Wilkinson, March 1997

WP54 **Territorial Clustering and High Technology Innovation: From Industrial Districts to Innovative Milieux**
Clive Lawson, March 1997

WP55 **Retail Distribution Channel Barriers to International Trade**
F.M. Scherer, June 1997

WP56 **Hostile Takeovers, Corporate Law and the Theory of the Firm**
Simon Deakin and Giles Slinger, June 1997

WP57 **Replicating the Experience of the New Industrialising Economies on a Large Scale**
Robert Rowthorn, June 1997

WP58 **Divisions of Labour, Power Asymmetries and Place Dependence: The Restructuring of Industrial Mittelstand Firms in the Ruhr Area**
Christian Berndt, June 1997

WP59 **Entrepreneurship, Geographic Spillovers and University Research: A Spatial Econometric Approach**
Zoltan Acs, Luc Anselin and Attila Varga, June 1997

WP60 **Innovation and Performance of SMEs in Italy: The Relevance of Spatial Aspects**
Roberto Camagni and Roberta Cappello, June 1997

WP61 **The Impact of European Economic Integration on Business Associations: The UK Case**
Robert Bennett, June 1997

WP62 **Business Service Firms, Service Space and the Management of Change**
John Bryson, June 1997

WP63 **The Wage Costs of a National Statutory Minimum Wage in Britain**
Paul Robson, Shirley Dex and Frank Wilkinson, August 1997

WP64 **Needs and Wants: The Case of Broadcasting Policy**
Stephen Pratten, September 1997

WP65 **Inter-Firm Links Between Regionally Clustered High-Technology SMEs: A Comparison of Cambridge and Oxford Innovation Networks**
Clive Lawson, Barry Moore, David Keeble, Helen Lawton Smith and Frank Wilkinson, September 1997

WP66 **Expenditure, Outcome and Nature of Innovation in Italy**
D. Archibugi, R. Evangelista, G. Perani and F. Rapiti, September 1997

WP67 **Technological Convergence, Globalisation and Ownership in the UK Computer Industry**
Suma Athreye and David Keeble, September 1997

WP68 **Unemployment Flow Regimes and Regional Unemployment Disparities**
Ron Martin and Peter Sunley, September 1997

WP69 **'Barriers' to Technology Transfer: Local Impediments in Oxfordshire**
Helen Lawton Smith, September 1997

WP70 **Leveraging Resources Under Threat of Opportunism: Predicting Networking in International Growth**
Erkko Autio, Helena Yli-Renko and Harry Sapienza, September 1997

WP71 **Small Firms and Employment**
Alan Hughes, September 1997

WP72 **SME Innovator Types and their Determinants**
Eric Wood, September 1997

WP73 **Innovation in the Service Sector: Results from the Italian Statistical Survey**
Rinaldo Evangelista and Giorgio Sirilli, December 1997

WP74 **Parenting and Labour Force Participation: The Case for a Ministry of the Family**
Shirley Dex and Robert Rowthorn, December 1997

WP75 **The Policy Implications of the Globalisation of Innovation**
Daniele Archibugi and Simona Iammarino, December 1997

WP76 **Industrial Concentration Under Shock Therapy: Poland in Early Transition Years**
Paul Kattuman and Ryszard Domański, December 1997

WP77 **Foreign Direct Investment in the UK 1985-1994: The Impact on Domestic Management Practice**
John Child, David Faulkner and Robert Pitkethly, December 1997

WP78 **The Theory and Practice of Contracting**
Simon Deakin and Jonathan Michie, December 1997

WP79 **Cooperation and Trust in Inter-Firm Relations: Beyond Competition Policy?**
Simon Deakin, Tom Goodwin and Alan Hughes, December 1997

WP80 **Inter-Firm Cooperation, Competition Law and Patent Licensing: A US-EC Comparison**
Alan Gutterman, December 1997

WP81 **Towards a Competence Theory of the Region**
Clive Lawson, December 1997

WP82 **Opportunism and the Advantage of Organisations**
Matthias Kelm, March 1998

WP83 **On Markets in Knowledge**
Suma Athreye, March 1998

WP84 **Markets, Competition and Innovation**
Michael Kitson and Jonathan Michie, March 1998

WP85 **Co-operation, the Organisation of Work and Competitiveness**
Frank Wilkinson, March 1998

WP86 **Collective Learning Processes and Inter-Firm Networking in Innovative High-Technology Regions**
David Keeble, Clive Lawson, Helen Lawton Smith, Barry Moore and Frank Wilkinson, March 1998