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The growth of self-employment in British construction

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This paper explores the issues around the remarkable growth in labour-only subcontracting on a self-employment basis in the British construction industry over the last 30 years. Following a presentation of the available data from the Department of Employment, the paper explores the reasons behind this remarkable development, and concludes that the main reason for the growth of self-employment since 1977 is the strategic choice of construction companies to emphasize flexibility over productivity as sources of competitive advantage. The paper also explores the implications of this strategic choice, and concludes that, as a result, the ability of the industry to increase productivity and quality is compromised due to the ways in which labour-only subcontracting and self-employment hinder training and innovation.

Keywords: Labour-only subcontracting, self-employment, productivity, safety, training, UK

Introduction

The rise in labour-only subcontracting (LOSC) on a self-employed basis in the UK construction industry since the mid-1960s has attracted considerable comment and research activity. This rise represented a resurgence of a form of work organization which had dominated the industry between the 1880s and WWI, and had been widespread in many other traditional manufacturing industries such as coal and slate extraction. Internal subcontracting – known colloquially as the bargain system, the lump, butty system, or tasking – had largely died out in the UK by WWI, replaced by new technologies, premium bonus schemes, and scientific management. In the newer industries of the late nineteenth century such as chemicals and electrical engineering it was never established. Construction seemed to follow this trend, but during the long boom after WWII, LOSC re-emerged. The objectives of this paper are to explore the reasons why construction employers have sought to retain and develop a form of work organization which would be considered antediluvian in most other industries, and also to examine the implications for the effective organization of work of that strategy.

The investigation of these questions will proceed as follows. The discussion will commence by clarifying the terminology before moving on to present the data on the trends in employment and self-employment in the UK construction industry. The conventional explanations of this rise will be assessed before an alternative is proposed. Some of the implications of this rise of the effective organization of work in the industry follow before some more general policy implications are deduced concerning the ability of the industry to meet the ever more exacting demands of the client for performance on the crucial parameters of programme, budget and conformance to specification. LOSC and self-employment have important implications for the implementation of strategies aimed at re-engineering the construction process, and thereby meeting the demanding objectives set by clients and policy makers. This paper is intended to improve understanding of the forces behind their development, and thereby inform policies aimed at their change.

Labour-only subcontracting and self-employment

The literature on work organization in the construction industry has been dogged by conceptual confusion, with the terms 'subcontracting', 'labour-only subcontracting' and 'self-employment' being used

interchangeably. First, not all subcontracting by construction firms is on a labour-only basis. A considerable proportion of building works are re-let by the main contractor on a competitive tender basis to specialist subcontractors who supply both the labour and the materials required to complete their part of the works. The dynamics of this process are explored by Eccles (1981a). Thus the contractual relationship is one between capital and capital, and the issues involved are more the preserve of the study of industrial economics than work organization.

This is completely different from subcontracting for labour-only services, where a main contractor supplies the materials, and there is a contract between capital and labour. Thus 'labour-only subcontracting' is seen most usefully as a form of work organization, alongside, for instance, flow production on an assembly line. Littler (1982, p. 65) has defined internal contracting thus: "The employer provided the fixed capital, supplied the raw material and much of the working capital and controlled the sale of the finished product. The contractor hired and fired, supervised the work process and received a lump sum from the employer for completed work."

As Phelps Brown (1968, p. 316) pointed out, in practice such an arrangement can take forms in the construction industry ranging from a fully fledged employer of contract labour, to a ganger who takes on the main responsibilities of the employer, to the agent for a gang of men, to an individual operative. Clearly, labour-only subcontracting is a form of internal subcontracting.

The development of the formal relationship between capital and labour can be analysed in terms of the employment contract (Napier, 1986). By the twentieth century, a 'standard' model of full-time direct employment of indeterminate duration had emerged. The debate over the status of workers on 'non-standard' forms of contract has grown over recent years (Deakin, 1986; Leighton, 1986; Hakim, 1987). Hakim (1987) has distinguished between non-standard contracts in terms of part-time work, temporary work (i.e. work of determinate duration); and self-employment. Within this grouping self-employment can be seen as a legal status conferring fiscal and other benefits and disadvantages. In English law, the dividing line between employment and self-employment, or a contract *of* service and a contract *for* service is very hazy (see Phelps Brown, 1968, Appendix 3; Hepple and O'Higgins, 1976, Chap. 3), but the test involves an assessment of the continuity and intensity of the relationship with the alleged employer, and the extent to which capital is risked by the alleged employee (Napier, 1986).

The issue of capital risk further complicates the picture. The self-employed, as conventionally defined, include two groups: those who contract for labour services only, while possibly supplying hand tools; and those who contract for the supply of materials and plant as well. The latter group risk capital, and may be defined as small businesses. While the *form* of the contract is the same, the *substance* of the relationship is crucially different. Small businesses trade both with larger businesses and direct with the public; to the extent that they form stable relationships with larger firms, such as in franchise arrangements, they may be said to form part of a 'quasi-firm' (Lawrence, 1981; Winch, 1995). It is vital for analysis that the two groups of self-employed are kept separate, even if most sources of data fail to make the distinction empirically.

In the UK construction industry, by no means all the self-employed are labour-only subcontractors; many act as ordinary specialist contractors, particularly in the domestic sector, and trade as small businesses. Scase and Coffee (1982) provide an analysis of the class and status of this group of small construction businesses. There is, however, a considerable overlap between the two categories. Labour-only subcontracting opens up the way to the mutual benefits of self-employment for worker and employer. Phelps Brown (1968) found that the majority of labour-only subcontractors were self-employed. The congruence is probably even greater now, as self-employment has been legitimized through the construction industry tax deduction scheme.

Trends in the construction workforce

Figures 1, 2, and 3 present the trends in the construction workforce over the period 1961–1997. Briscoe and Wilson (1993, Chap. 4) provide a discussion of construction labour market statistics.) As Figure 1 shows, direct employment peaked in 1966 at 1 600 000 and fell to 967 000 in 1986, before it turned up slowly, peaking again at 1 060 000 in 1990. Figure 1 presents estimates of 'employees in employment' for Standard Industrial Classifications (SIC) 68 and 80 derived from surveys of employers. For SIC 92, the data for the employed are taken from the *Labour Force Survey* (LFS) *Historical Supplement 1997* due to its better coverage of small firms (Pease, 1997) and compatibility with the series for the self-employed. Overlaps are plotted to indicate the effects of changes in the SIC. Due to its clearer status in law, data are available only for measuring the total level of self-employment in the construction industry; we have no time series data on how many of those self-employed are working as labour-only subcontractors and how many as independent traders. However, few of the self-employed employ others: only 18% did so in 1989, a

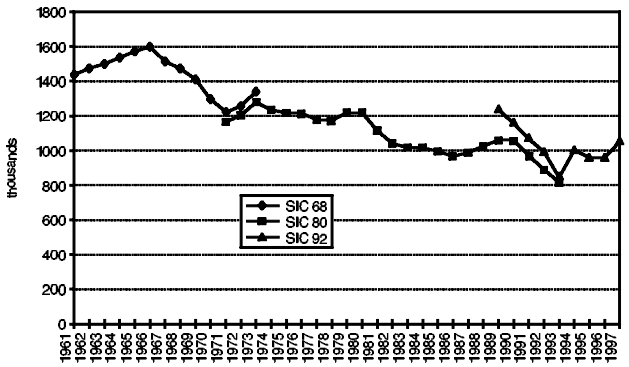

Figure 1 Employment in UK construction 1961–1997

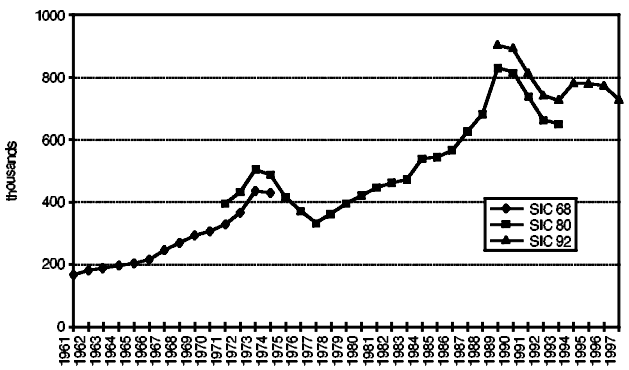

Figure 2 Self-employed in UK construction 1961–1997

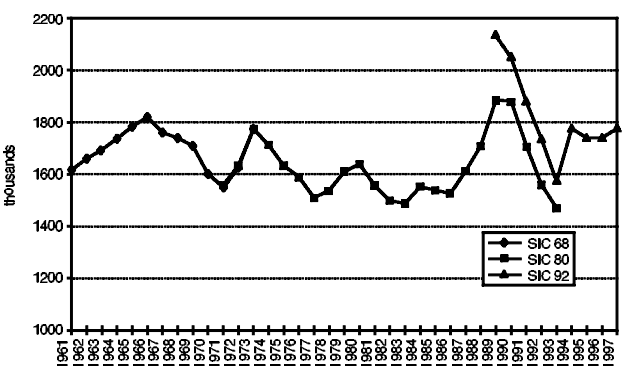

Figure 3 UK construction workforce 1961–1997

fall from 24% in 1981 (Daly, 1991, Table 17), a proportion lower than in any other industry. Marsh and Heady (1981) report that 42% of the self-employed in their sample worked only as specialist subcontractors, while another 18% sometimes did so. This means that around half of their sample of self-employed construction workers acted as labour-only subcontractors, but we can have no assurance that this ratio has remained constant over time; indeed the circumstantial evidence is that the proportion of labour-only subcontractors among the self-employed increased significantly during the eighties. The trend in self-employment in the industry, which can be taken as a *rough* proxy for the trend in labour only subcontracting, is therefore presented in Figure 2, and shows a consistently rising trend after 1977 after an earlier peak in 1973.[1] Summing the series for the direct and self-employed produces the series for the construction workforce presented in Figure 3, which shows clearly the unprecedented flows in and out of the construction labour force during the last boom, before the total fell to its lowest level for over 30 years. In three years from 1986, the workforce expanded by one quarter, only to fall by the same amount in the three years from 1990.

As a result, of these two trends, the self-employed formed an increasing proportion of the total workforce, as is shown by Figure 4, reaching 45% by 1993 before stabilizing at this level until 1996. Within this generally rising trend in self-employment, the use of labour only tends to be more common in large firms rather than small firms, in the main trades rather than specialist trades, and in building rather than civil engineering. Also it is largely confined to skilled workers. Labourers in the casual sector of the labour market

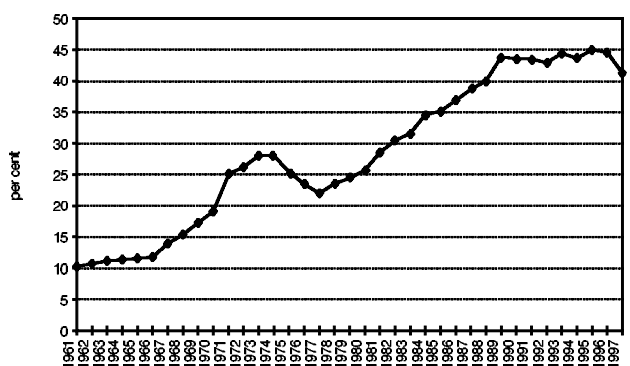

Figure 4 Self-employed as a proportion of the UK construction workforce 1961–1997

[1]Figure 2 presents estimates of the numbers of self-employed in the industry. The series from 1961 to 1970 is based on the decennial census, and the 1966 10% sample census. After 1966, intermediate points are interpolated using Department of Health and Social Security statistics on class 2 National Insurance cards. It covers MLH 500 under SIC 1968 (Department of Employment, 1976). The series for 1971 to 1993 is again based on the decennial census, but interpolated by the more satisfactory (because it samples households) annual LFS sample data. It covers Division 5 of SIC 1980 (DOE, 1984). LFSs were not conducted in 1976, 1978, 1980 and 1982. The SIC 1980 series was revised (Curtis and Spence, 1994) to take into account changes in the LFS, principally a switch to quarterly surveys, and that presented here is from the *Historical Supplement 4* of October 1994. The series for SIC 92 Sector F is taken from the LFS *Historical Supplement 1997*.

tend to be directly employed. Labour-only subcontracting is less common, although growing in the specialist trades (Winch, 1986). A similar pattern is reported by Eccles (1981b, Table 3) for the eastern Massachusetts housebuilding industry, the main difference being that masonry is not a main trade in American housebuilding due to the use of structural carpentry and siding, and it tends, therefore, to go to specialist subcontractors.There are also regional variations in its use, with London and the South East favouring it more than the rest of the country.

These changes in employment levels have occurred as flows through a distinctive labour market. Its main features have been analysed in Winch (1986). They are that the market is segmented into a stable sector and two casual sectors, a casually employed sector and a self-employed sector. The segmenter of the market into casual and stable sectors is 'firm type' in terms of size, and within the casual sector it is 'skill'. More recent survey evidence (Bresnen *et al.*, 1986) provides some evidence for this model. From a sample of 43 large construction sites, this study found that small firms (turnover < £20m p.a.) were more likely than large firms to employ workers directly rather than use subcontract labour, *and* to transfer them between sites. They show also that workers were more likely to be directly employed on civil engineering projects than on building projects; jobs tend to be less skilled in civil engineering, and firms tend to be larger. They also found a low level of transfer between sites in civil engineering.

Explaining the trend in self-employment

A considerable number of differing explanations have been advanced for the rise in labour-only subcontracting on a self-employed basis. These will be examined in turn, and assessed in the light of the available evidence.

Labour shortage

Analysts of the rapid increase in labour-only contracting during the mid-1960s were unanimous in attributing the major cause to an overheated labour market. As Phelps Brown (1968, p. 345) put it: "The factor outstanding as permitting the extension of labour-only subcontracting in all its forms is the maintenance of full employment in the economy as a whole with a demand for labour in construction that has seldom fallen short of supply and in some periods and regions has exceeded it". Hilton (1968), Shenfield (1968), Austrin (1978) and Druker (1980) all support this conclusion.

Essentially, the mechanism posited was that the unions, having lost control of the bonus scheme (Austrin 1978; Moore 1981; Ball 1983) were unable to take advantage of the 1960s boom to bid up wages through workplace bargaining. Employers tried to attract labour by manipulating bonus schemes, but in essence these were too inflexible, particularly the collective schemes operating at site level (Phelps Brown, 1968, p. 346). Employers were able to use labour-only contracting to adjust wages at the margin rather than on average. While higher wage rates tended to spread throughout the site, higher contract prices were restricted to that gang. Moreover, wages are much more rigid downwards than contract prices (Phelps Brown, 1968, p. 346; Ball, 1983, p. 172).

However, this argument cannot apply to the period after 1977 when the numbers of self-employed took off again. While there were still some problems with skill shortages (Wood *et al.*, 1979; Bresnen *et al.*, 1985, p. 115) and it seems as if there was no 'pool' of skilled labour upon which contractors could draw, there was no sign of the labour market over heating in 1983 (Building EDC, 1984, p. 81). By inference, it can be taken that this finding applies to the years between the mid-1970s and the mid-1980s. Indeed, the Building EDC (1984, p. 97) point out that even perceived labour shortages could well be due to the 'pay and poach' strategy of labour recruitment by building employers generating an intensively competitive atmosphere rather than any actual shortage. Unemployment in the industry started to rise rapidly after 1974, and stood at over 200 000 by 1980. Looking at an earlier period, Postgate (1923, p. 371) notes the spread of labour only amongst plasterers in the 'bad trade' after 1901 (see also Price, 1980, p. 188). Labour only contracting is by no means merely a response to a tight labour market, and has also grown under conditions of recession in the industry.

Rising wage costs

Price has argued that the spread of labour-only contracting in the 1880s and 1890s was a response to rising wages: they rose between 20% and 30% as a proportion of total costs during the period. On top of this, building shared in the general drop in productivity of the period, as the men began systematically to restrict output, and efficiency per worker fell by 14% over the 20 years from 1890. While other industries implemented new technologies and payments systems, the nature of the construction process largely precluded these options, and the employers reverted to labour-only subcontracting (Price, 1980, Chap. 5, see also Hobsbawm, 1964). Again, these factors do not apply to the period under discussion here. Average earnings

rose more slowly than materials prices over the 10 years to 1983, and at roughly the same rate as output prices (source: Housing and Construction Statistics, Table 2). Moreover, building workers' wages fell from parity with average manual wages in manufacturing to 95% thereof in 1983 (source: New Earnings Survey). Between 1974 and 1979, wages and salaries remained roughly constant as a percentage of output, fluctuating between 24.8% in 1976 and 22.9% in 1979 (source: Housing and Construction Statistics: Table 49). There was, therefore no pressure from wage costs during the period when self-employment took off again. The productivity issue will be discussed later.

More general attempts to control wage inflation through incomes policies may have stimulated the growth of self-employment. A government report complained of the considerable difficulties in making a prices and incomes policy stick to labour-only subcontractors, and the consequent undermining of the policy for directly employed workers (Price Commission and Pay Board 1974). The evidence does suggest that the implementation of 'hard' incomes policies (Lindley, 1983) coincided with upward turns in the rate of growth of self-employment in the period prior to 1979. Restrictions on wages encourage workers and employers to remove themselves from the ambit of incomes policy through self-employment.

Rising state imposts

The period since the war has seen increasing taxes upon income, mainly paid by the individual, but some, such as National Insurance, paid by employers also. A particularly notorious impost was Selective Employment Tax (SET), introduced in 1966 as a tax per head on non-manufacturing employment. Wood (1979, p. 71) among others believed that it gave a considerable impetus to the growth of self-employment, as this was exempt from the tax. The tax, at its peak, represented over 8% of labour costs (Reddaway, 1973, p. 79). Some of this cost was passed on in prices (Reddaway, 1973, p. 81), but many managers also put considerable ingenuity into trying to have part of their operations classified as manufacturing (Reddaway, 1973, p. 138). SET was abolished in 1973.

Phelps Brown (1968, p. 394) calculated that these imposts amounted to an overhead of 16% on average wages, the largest single item being SET. However, the rise in National Insurance contributions since 1968, and the development of the Holidays with Pay scheme, meant that the employers' direct overhead on a weekly wage of £250 stood at approximately 15% in 1987 as reported by the accountant of a specialist roofing contractor. To these costs must be added the costs of administration, especially of PAYE. Thus, despite the abolition of SET, the overhead costs of employing an operative in the construction industry seem to have remained fairly constant over the last twenty years.

However, it is not at all clear that these extra costs are not balanced by the higher cost of subcontract labour time. While the consensus seems to be that subcontractors are paid more in terms of total income (Phelps Brown, 1968, Supplement Chap. 6; Ball, 1983, p. 172), the size of the differential is elusive. Gagg states that 'lump' rates were twice those for the directly employed (Gagg, 1969, see also Arnison, 1974, p. 24), but his figure is based upon personal experience. More recently, calculations reported in the *Contract Journal* suggest a differential of 50–100% between a self-employed operative on £60 per day and an employed operative on National Working Rule Agreement (NWRA) rates (6/8/87).

Although rising state imposts may not, of themselves, encourage employers to switch to self-employment, they may have encouraged workers to accept self-employment. Leaving aside the opportunities for tax evasion offered, the advantages of being assessed as self-employed under Schedule D are significant (Kay and King, 1983, p. 29). However, during the 1980s personal income tax rates had been falling, so this is an unlikely explanation for the surge in self-employment.

The culture of the industry

Moore (1981) has argued that the individualism of building workers makes the autonomy of the labour-only contract attractive. In a similar vein, Scase and Goffee (1982, Chapter 3) have suggested that the individualistic ethos which pervades the industry encourages entrepreneurship. Blackburn and Mann (1979, p. 136) found in their survey of the Peterborough labour market a definite minority of workers, who included non-time-served building workers, of around 10% of the sample who preferred 'outdoor work' because of the autonomy on the job which it offered. This suggests that building workers may, to a certain extent, be a self-selected group who value autonomy. A plausible extension of this desire for autonomy would lead to a preference for self-employment. Lamb (1974) has gone so far as to suggest that 'the lump' offers the potential for workers' control in the industry. Marsh and Heady (1981, Table 7.8) found some evidence for this individualistic ethos, but it is not predominant: 28% of self-employed labour-only subcontractors chose it because of the autonomy, while 19% held that it was the only way they could find work, and 30% wanted the better money on offer. None of this, though, explains why employers offer the option of autonomy, only why workers accept it.

Labour migration

In Sweden and Italy, the development of labour-only subcontracting was associated with the organization of migrant workers from rural areas. Gangers would recruit workers from districts where they had personal contact and take contracts from building employers who had little personal knowledge of the labour market (Villa, 1981; Kronlund, 1982). It provided a way of forming an unknown mass of workers into groups whose labour power could be sold to employers. In Germany, the system has been used to supply British and Irish building workers, often through Dutch gangers. Before unification, East German building workers also supplied labour-only services in West Berlin. Since *die Wende*, gangs of east and south European workers attracted by the rebuilding programme in *die neue Länder* have formed a ready pool of workers (cf. Syben, 1996). The *kepala* system in Singapore works similarly (Wilkinson *et al.*, 1986), drawing in Indonesian workers. In France, Algerian building workers tend not to be organized in this way: the *tacheronnage* system is more an individual piecework system. Even where labour only is used to organize migrant labour, it retains its base in skill. Villa (1981) argues that its development in Italy was a way of mobilizing the mass of unskilled migrant labour under the control of scarce skilled labour. In the UK, this phenomenon has been associated mainly with Irish building workers. However, by no means all Irish building workers in the UK are labour-only subcontractors, and the use of such contracts is much more widespread than the sectors relying on Irish labour.

Unemployment

Linder (1983) has argued on the basis of a time series analysis of the trends in self-employment and unemployment in the US construction industry that rising unemployment in construction encourages the redundant workers to become self-employed, thereby achieving incomes above those they would receive if claiming unemployment benefit. A moving correlation analysis (Isaac and Griffen, 1989) of the UK construction unemployment rate with the self-employment rate shows a declining correlation during the boom period from 1965 to 1973 as self-employment expanded, before it strongly re-asserts itself from 1974 to 1980 (Bögenhold *et al.*, 1993). The low correlation for the boom period is what would be expected if the labour market were overheating, and thereby encouraging self-employment as discussed above under the labour shortage explanation, but it does not support Linder's argument.

Unfortunately, it is not possible to test the unemployment explanation for the period after 1977, due to lack of UK data on unemployment rates by industry after 1982. However, the movement of self-employment against output after 1981 shows strong procyclical tendencies. Indeed in the late 1980s, both self-employment and direct employment were rising together for a short period.

Productivity and flexibility

It seems to be generally accepted that subcontract labour is more productive labour in terms of output per worker (Phelps Brown, 1968, p. 352; Ball, 1983, p. 172). In part, this is due to the fact that direct employees have to be paid for non-productive time such as wet time and waiting, but the main effect comes from the fact that subcontractors are usually paid by 'the lump' for a specified piece of work – it is pure piecework without any time element in pay. This incentive attracts faster workers and encourages gangs to organize their work effectively (Phelps Brown, 1968, p. 360 ff). Evans and Lewis (1989, p. 71) report that self-employed workers provide overall savings of 20–30% on directly employed labour.

Part of the problem here may be due to the ineffective administration of bonus schemes for directly employed workers. Although such schemes were introduced ion 1947, and over half building operatives receive incentive pay, (source: New Earnings Survey, Table 79), building employers do not seem to have been very sophisticated in their administration, and they have not always provided an attractive incentive (NBPI, 1968, Chapter 4; Phelps Brown, 1968, p. 346; see also Gallagher, 1984, Chapter 7). In practice incentive schemes in the industry have often amounted to little more than rate fixing (NBPI, 1968, p. 144). The results are clear: the NBPI found that the biggest single cause of low productivity was unofficial relaxation (NBPI, 1968, Table 4). Gagg, a 'subby bricklayer', put the point succinctly: "I do as little as possible for a firm, but as much as I can when working for myself" (Gagg, 1969, p. 138).

Contracting for labour only shares the same advantages as subcontracting within the industry in general: working capital is minimized, costs are certain once the contract is let, and flexibility is maximized (Ball, 1988). The uncertainties generated by the contracting system encourage the casualization of the labour market; where skilled workers are concerned, such casualization is achieved most effectively through labour-only subcontracting. Direct employees, even if only temporary, are subject to the notice terms of the NWRA, and as the contract goes on, come within

the remit of employment protection legislation, qualify for redundancy payments, and so on. These reduce the ability of employers to maximize flexibility through hiring and firing. Greater cost certainty is attained and some of the uncertainties associated with the production process, particularly the weather, are transferred to the worker (*cf.* Druker, p. 352; Scase and Goffee, 1982, p. 150ff).

Understanding the growth of self-employment

The discussion presented above suggests that as construction firms faced the falling demand and increasingly fragmented product mix of the 1970s, which were intensified in their effects at the level of the individual firm through the contracting system, flexibility became the dominant element in operating strategy. So far as human resource management is concerned, this has meant an increasing use of labour-only subcontracting rather than direct employment, because of the combination of productivity and numerical flexibility that it offers. Higher labour costs are offset by higher output and full variability as market conditions change. An added bonus is that such contracts open up the possibility of self-employment and consequent savings in employment overheads. Workers have acquiesced in, and at times encouraged this strategy because of the fiscal advantages of self-employment and the culture of the industry.

Once labour-only subcontracting is established on a self-employed basis, it becomes the norm, and any shift back to direct employment becomes difficult. A ratchet effect builds up under the competitive pressures within the industry. When labour is scarce, workers can bid up wages more easily under labour-only subcontracting; when work is scarce, employers can shed labour more easily: as one employer put it "when markets are overheated, contractors can't get direct labour, when they're slack, they don't want it" (cited in Building EDC, 1984, p. 74).

It is in this context that Druker's comment that labour-only subcontracting is an alternative to technological change (Druker, 1980, p. 541) should be understood. The increase of productivity through technological change requires increased investment in fixed capital, which tends to be relatively inflexible. Where firms' operating strategies put flexibility first, productivity increases through the traditional means of capital investment are seen as unviable, and attention turns to maximizing output with the existing level of technology, and the restriction of technological change to either multi-purpose plant which can be hired, or the prefabrication of material inputs.

Some implications of self-employment

These developments have a number of implications for the UK construction industry. A number of commentators have suggested that the choice of labour-only subcontracting on a self-employment basis has a number of serious drawbacks. This section will explore these in turn.

Quality

Phelps Brown (1968, pp. 366–9) considered that 'scamping' or poor quality work, was a major problem. However, his own survey showed that such dissatisfaction was limited to around one quarter of employers (Phelps Brown, 1968, Supplement Table 5.8). He summarized the situation thus: "the labour is more variable, even if average standards are good" (Phelps Brown, 1968, p. 5.23). Quality control is a problem for management not confined to labour-only subcontracting, and part of the problem may be the reduced supervision levels for subcontract workers (Phelps Brown, 1968, Supplement Table 5.6). Moreover, there are strong counteracting forces. First, a subcontractor must retain good relations with local firms to keep in work. Second, the sanctions for poor work are much greater than those against a directly employed worker. The employer is legally obliged to pay a direct worker's full wage, whatever the quality of the work, and to go through a dismissals procedure should the problem become serious. With a subcontract worker, a portion of the contract sum can be retained to cover the cost of correcting the work, and dismissal can be immediate. This is one of the main ways in which control of the labour process is retained through the labour market in what I have termed elsewhere 'market control' (see Winch, 1986). However, to the extent that poor quality is the result of the lack of managerial control over the labour process or lack of training, then LOSC hampers attempts to improve quality from existing practice levels: in particular, it prevents the implementation of total quality management on site.

Safety

The UK construction industry is without peer in the rate at which it kills and maims its workforce in comparison with other British industries. It is often argued that LOSC worsens the already appalling record of site safety (Wood, 1979, p. 76, GLC, n.d., p. 35). However, there is no evidence for this assertion. Self-employed workers were not covered by the Factory Acts, and so it proved very difficult to enforce safety regulations against them, but even then, the Phelps Brown survey found no evidence that labour-only subcontractors

were any more prone to accidents than the directly employed (Phelps Brown, 1968, Supplement S 5.26). The Health and Safety at Work Act of 1974 brought the self-employed within the general provisions, but they remained outside the scope of many of the (pre-1974) detailed regulations.

Analysis of the statistics on construction safety is hampered by the lack of compatible time series. Accidents to the self-employed became reportable only with the advent of the RIDDOR regulations in 1986, but there remain significant problems of under-reporting of accidents to both groups of workers. It is generally accepted that the series for fatalities provides the most reliable guide (Codrington and Henley, 1981, p. 98). The number of fatalities of employees on a restricted definition of the industry more than halved between the peak year of 1973 and the bottom of the slump in 1981 (HSE, 1983, Fig. 1), while the number of employees feel by only 13%. Figure 5 shows the trend in the rate of deaths amongst employed and self-employed workers since 1981, when consistent data became available under the NADO regulations.[2] It shows a slowly falling trend over time among the employed, while the self-employed appear to be relatively free of fatalities, but display a more variable trend. A comparison with the construction industries of France, Germany, Italy and Spain (HSE, 1991), shows that the UK industry is roughly on a par with that of Germany, and much safer than those of the other three countries.

On this evidence, the self-employed are at less risk of death than employees – a comparison on the basis of accidents is not possible due to the greater incidence of under-reporting amongst the self-employed (Stevens, 1992). One explanation for the less poor record of the self-employed may be the greater use of labour-only contracting in the less dangerous trades such as carpentry and bricklaying, but it provides no evidence for a causal linkage from labour-only subcontracting to the poor safety record. The international comparisons indicate also that the relatively high incidence of self-employment in the British construction industry has not compromised safety in the industry in comparison with the main European economies. The problems of health and safety in construction are deeply rooted in the organization of the industry (Codrington and Henley 1981; Dawson *et al.*, 1988), and labour-only subcontracting is more a symptom than a cause of that structure. In particular, it is the casual nature of much employment, rather than LOSC, which is the biggest barrier to effective self-regulation. To the extent that LOSC reinforces this casualization, it helps to prevent the operation of the 1974 framework.

[2]The data on fatalities are taken from Health and Safety Commission *Annual Reports*. These are divided by the numbers of employees and self-employed from the data sets used to prepare Figures 1 and 2 to provide a rate per 100 000 workers. The switch to SIC 92 in this series occurs in 1994, and my calculations differ from those offered in Table 2 of the *1995/96 Annual Report*, probably due to my use of the LFS rather than employees in employment series as denominator.

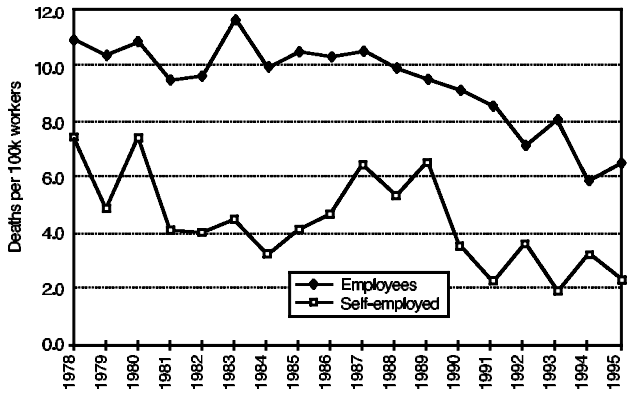

Figure 5 Fatality rates, employed and self-employed, in UK construction 1978–1995

Training

The amount and quality of training in the industry has long been a source of concern, and work by the National Institute has suggested that the poor productivity and high costs of the British construction industry compared with West Germany and France are due partly to low levels of training (Prais and Steedman, 1986). The institutional arrangements revolve around the sole survivor of the original 1964 levy/grant framework, the Construction Industry Training Board (CITB), and extensive use of Youth Training to support traditional apprenticeship schemes. They are discussed in more detail in Rainbird (1990). Figure 6 shows the trend in the number of operative trainees on courses lasting more than one year from 1975 – a precipitous fall of nearly 38% which did not stabilize until 1986. However, if the 'training rate' is examined, a remarkable stability at just over 10% is demonstrated. (The 'training rate' is defined as operative trainees as a percentage of the total number of operative employees. Data are not available after 1989, and the data are taken from CITB *Annual Reports*.) Although the CITB enthusiastically embraced the original Youth Training Scheme, this appears to have had no significant effect upon increasing numbers in training, and the recent boom again revealed severe skill shortages, especially in the South East.

Clearly, the problem is that the proportion of employed operatives within the total workforce has been dropping as self-employment has grown, and the

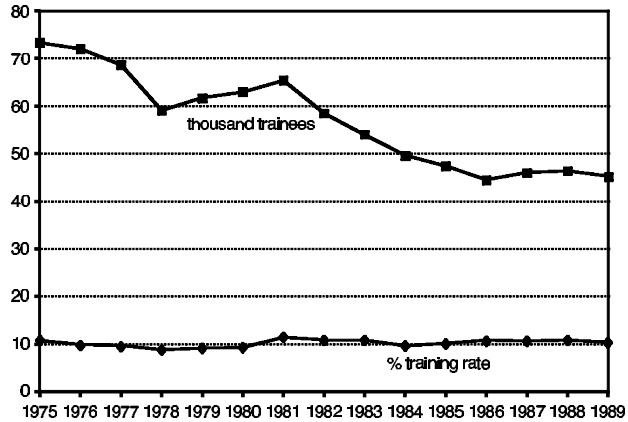

Figure 6 Number of trainees and training rate in UK construction 1975–1989

training effort is stable only within a shrinking part of the total workforce. The result of this situation is that the industry relies heavily on informal skill acquisition on site by 'improvers'. While 62% of the workforce is an OPCS survey described themselves as 'skilled', only 43% of the workforce had ever started an apprenticeship, and a mere 36% had completed one. A further 11% had completed other formal training such as Government Training Schemes (Marsh and Heady, 1981, p. 6).

LOSC has been held to undermine training in two ways. First, its piecework basis means that it is impossible to compensate workers for the time taken to train a young worker (Austrin, 1978, p. 183; Ball, 1983, p. 177). Second, it was held to undermine the CITB through the avoidance of the levy on employees by firms using self-employed workers (Phelps Brown, 1968, p. 329: Hilton, 1968, p. 187; Austrin, 1978). The latter problem has now been removed. Since 1975 there has been a levy on payments for labour-only services. Since 1981, this has stood at 2%, a rate significantly higher than the average on direct employment. The main problems remain, however. LOSC is a pure piecework method of payment. Under time-based incentive schemes, an allowance can be included in the bonus target for training, but such adjustments are impossible with payments by the piece. Formal training on site is, therefore, virtually impossible where operatives are organized on an LOSC basis. While sub-contract gangs do carry out a certain level of training themselves, this is necessarily informal and aimed solely at increasing the gang's output in the short term. This system works, within its inherent limits, most effectively where the gang is made up from fathers and sons.

Despite these problems, Phelps Brown concluded that LOSC had not contributed to the decline in apprenticeships in the industry during the 1960s (Phelps Brown, 1968, p. 376), and there are more profound changes in the nature of the labour process at work (Clarke, 1992). However, as can be seen from the figures, the problem over the last 20 years appears to be very much one of a shrinking direct employment base; although the funds have been available through the levy scheme and government initiatives, it has been difficult to find destinations for grants. The decisions of increasing numbers of main contractors to subcontract work to specialist contractors and self-employed workers, and the very small average size of specialist contractors, who themselves often use LOSC, has meant a failure to provide the skill needs of the industry. The role of the CITB is not unlike that of King Canute in the face of the tides of the self-employed.

The control of the labour process

Lamb (1974, p. 4) insisted that "the lump poses the problem of control: lump workers at present cannot be controlled". Ball (1983, p. 171) argued that LOSC represents a means of regaining control over the construction labour process, but the evidence suggests that the reverse is true. A NEDO report argued that "reluctance to employ operatives directly ... sometimes caused contractors to lose adequate control over their own capacity" (Building EDC, 1983, S2.13). Phelps Brown (1968, pp. 371–5) found that LOSC made some aspects of site management more difficult – flexibility in the allocation of labour is reduced, subcontractors work at times to suit their own convenience, they default in the middle of the job, they are difficult to co-ordinate, and finally management lack authority and more easily loses control over the construction programme. He also found that the supervision levels of labour-only gangs tended to be lower than for employed workers (Phelps Brown, 1968 Supplement Table 5.6).

The point was made dramatically by a trade unionist giving evidence to the Phelps Brown committee (cited by Lamb, 1974, p. 3): "Fundamentally, our objection to labour-only subcontracting and self-employment is that by its very nature it corrupts, leads to indiscipline, destroys morale, and fragments the construction process to the point where management techniques become impossible to implement. This leads to inefficiency and high costs which in the long run are an unnecessary strain on the economy of the country as a whole."

It is the contention here that LOSC is a form of abdication of control over the actual labour process by construction employers, and a retreat to a reliance on control through the labour market, in what can be called 'market control' of the labour process (Winch, 1986).

Productivity

The low rate of innovation in the industry means that it continues to rely mainly on intensifying work within a relatively stable technology to increase productivity per head, and the costs of attempting to use this route to increase productivity have been significant. The reliance on the 'market control' of the labour process (Winch, 1986) inherent in labour-only subcontracting on a self-employed basis means that it is extremely difficult to implement either technological change (Druker, 1980) or industrial engineering programmes. This implies that employers have chosen a very limited way of increasing productivity – work intensification – over more thorough-going investments in improving work organization through capital investment and rationalization of the production process. The paradox of flexibility and productivity (Winch, 1994) has been resolved in favour of flexibility.

Summary and conclusions

This paper has presented the data on the rise of self-employment in the UK construction industry, and suggested that this trend can also be treated as a proxy for the rise of labour-only subcontracting as the preferred form of work organization by many employers in the industry. It then reviewed the various explanations that have been offered over the last 30 years for this rise, and concluded that construction employers' choice to maximize their flexibility in the context of declining and fragmented demand was the main cause. Recent policy changes by the Inland Revenue and Contributions Agency, and court cases (e.g. *Lane* versus *Shire Roofing Company Ltd.*) which have moved towards a broader interpretation of contracts 'of' service, have produced claims of a shift back towards direct employment in the industry, although little hard evidence (Druker, forthcoming). It remains to be seen whether the drop in the proportion of self-employed in the workforce in 1997 shown in Figure 4 is the start of a secular trend. The second part of the paper addressed the various results of this strategic choice and concluded that the main implications were for training, productivity, and quality. Lack of attention to these issues means that the ability of the industry to meet the client's increasingly demanding requirements for performance on the parameters of budget, programme and quality is compromised. It is to these points that the more general discussion will turn.

The strategic decision to leave control over the detailed execution of work largely in the hands of self-employed labour only gangs, rather than in the hands of management, has a number of implications for the effectiveness of the industry. First, costs are higher than they would otherwise be – productivity growth in the construction industry has been relatively slow compared with other industrial sectors, and the productivity of the UK industry is relatively low in comparison to other EC countries (Margirier, 1988; CEC, 1994). One result of this is that government policy objectives such as new housing, schools and infrastructure are more costly, and hence difficult, to achieve. Another is that UK businesses face higher costs in providing the enclosures required for their activities. The essence of the problem is that productivity on-site can only be increased through the intensification of work, which has inherent limits, rather than the reorganization of work, which has much greater potential.

Perhaps the main reason that productivity growth has been poor is the low level of technological change in the industry. This has long been an endemic problem (Bowley, 1966), and is related to the overall structure of the industry, and contractors' reluctance to invest in the fixed and human assets that would generate such increases; however, self-employment makes life more difficult. As Druker (1980, p. 541) argues, labour only subcontracting is in many ways an alternative to technological change. While management can rely upon workers, existing skills if the production process is stable, technological innovation requires management to take responsibility for the process as the new technology is implemented. Materials flows need to be re-thought, the technology needs to be commissioned, and operative training schemes need to be mounted. The technology also needs to be closely monitored to ensure that technical success also means business success (Winch, 1994).

A second area of concern is that of the quality of work done.The definition of quality is open to a number of interpretations, but in this context it is usually defined as conformance to specification. The control of quality on site is through inspection of the work completed by the gang, but it is becoming increasingly clear that such an approach is inadequate. This reliance on inspection means that little can be done to improve quality levels, which are generally accepted to be inadequate. The techniques of '*total quality management*', particularly those associated with quality circles, are impossible to implement in the context of work organization around labour-only gangs. The essence of labour-only subcontracting is the handing over of responsibility for the execution of the work to the gang, which is why Lamb considered it to be the basis of workers' control. The essence of total quality management, on the other hand, is first the training of members of quality circles in the techniques

of statistical process control and second the transmission of ideas for the improvement of the work process thereby generated to management for approval and implementation. Such trust and communication clearly are fantasy under the naked cash nexus of LOSC.

The reliance by the UK construction industry on a casualized workforce in general, and on labour-only subcontracting in particular, contrasts strongly with major competitors within the European Community, particularly Germany and France, where self-employment other than on a small business basis is unlawful, and productivity levels are significantly higher. UK construction firms have abandoned the ability to influence the detailed process of construction, while French and German firms make strong operational capabilities their source of competitive advantage. The opening up of the EU market for construction services will demonstrate the more effective route, but presently the signs do not augur well for UK firms' abilities to compete internationally.

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