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and the 'British Disease'

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Abstract: The strikes' literature is dominated by the causes and effects of strike action as they relate directly to strikers themselves. This paper considers another important group of affected workers – those individuals incidentally made idle as a result of the strike action of others. Using a unique data set of the British Engineering Employers' Federation (EEF), it examines the years 1960 to 1970, a critical period in Britain's post-war strikes' history. The mid-point of this decade marked the start of the era of the 'British Disease', a universally adopted title given to Britain's perceived international leadership in strikes incidence and industrial unrest. Workers made idle were an important symptom of the disease. In the study here, they accounted for 72% of days lost in disputes in which they were involved and 44% of total days lost in all disputes. Consideration is given to the likely causes of these incidental layoffs within 7130 strikes of EEF federated firms covering engineering, automotive and metal industries. Particular attention is given to the British car industry, accounting for 22% of total EEF strikes during the period of study. The regression analysis examines the causes of workers being made idle with explanatory variables covering labour market conditions, strikes durations, pay issues, non-pay issues. The regressions also control for company, union, geographical districts, annual and seasonal fixed effects.

Key Words: Strikes, workers made idle, pay disputes, non-pay disputes

JEL Classification: J52, L61, L62

1. Introduction

The nadir of post-war British industrial relations was reached in the 1970s/early 1980s. The related events were popularly referred to throughout the industrial world as the 'British Disease'. While this term referred to strikes and industrial unrest[1], it was more generally associated with a decline of British manufacturing industry. This ranged from falling international competitiveness through to the weakness and eventual collapse of some large-scale companies. Prominent among the latter was the effective elimination of the British motor car industry. In fact, the year 1964 marked the start of the era of extreme industrial relations turbulence in Britain. Over the period of Harold Wilson's labour government of 1964 to 1970, there was exceptional growth in strike incidence. The associated working days lost were, apart from the short event of the General Strike in 1926, unmatched over the previous 50 years.

Using a unique data set that was originally compiled by the Engineering Employers' Federation (EEF)[2], this paper concentrates on a highly significant group of

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[1] **British Disease:** *the pattern of strikes and industrial unrest in the 1970s and early 1980s supposed by many during this time to be endemic in Britain and to weaken the British economy*. (English Collins Dictionary)

[2] The EEF is the largest employers' organisation in the United Kingdom with a current membership of nearly 6000 companies throughout the country. It was established in 1896 and by 1899 had become known as the Engineering Employers' Federation. It later merged in 1918 with the National Employers' Federation and become known as the Engineering and Allied Employers' National Federation. In 1961 it changed its name back to the Engineering Employers' Federation. It covers mainly engineering, metal working, and automotive companies. The company membership averaged about 4500 over the period studied here (see Wigham, 1973, Appendix J). It accounted for between 30% and 35% of total engineering industry employment. One of the remarkable features of this organisation is that it compiled, on a thoroughly systematic basis, a complete strikes record for its member companies from 1920 to 1970 (Devereux and Hart, 2008). The data have recently been transcribed on to spreadsheets in a systematic fashion. They are available at the UK Data Archive: "An Evaluation of UK Engineering Strikes between 1920 and 1970", SN 5841.

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workers who symbolise one of the most damaging aspects of the British Disease. These are non-striking workers who were incidentally laid off as the result of the strike action of others. They are referred to in what follows as workers made idle. Days lost due to workers made idle account for 44% of total days lost in the 7130 EEF member strikes between 1960 and 1970. If we confine attention only to company disputes in which workers were made idle, then this group account for 72% of total days lost.

The total number of days lost due to strike action within a given company derives from three categories of workers. First, days lost by strikers themselves. Second, days lost by workers in the company who are not directly involved in strike action but who are consequentially made idle. Third, days lost due to stoppages and disruptions in other branches of the affected company as well as other outside companies due to business and trading connectedness.[3] The existing strikes literature has been overwhelmingly concerned with the first category of affected worker. Unsurprisingly, there is little micro evidence on the third loss of working time because of the associated complexity of data requirements. But even information on those within-company workers who are made idle by the strike action of others is difficult to obtain. The EEF strikes data offer insights into this aspect of the consequences of strike activity.

Attention is concentrated on the 11 year period from 1960 to 1970 for three main reasons (see also Devereux and Hart, 2008). First, as underlined in Figure 1, the second

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[3] Turner, Clack and Roberts (1967, p54/55) give an example involving days lost through a combination of all three influences. It involved a 1960s British Motor Corporation (BMC) dispute in which a strike by less than 200 hoist operators led to a work stoppage of 6,000 other workers in the same plant and then to 8,000 operatives in other BMC plants being laid off. Such a dispute may well have caused days lost in outside supply firms, information on which would have been very difficult to obtain.

half of this decade covers a period of historically high strikes incidence in engineering, car manufacture and other manufacturing industries.[4] They mark the beginning of an era of strong union militancy within important sectors of British manufacturing. Second, statistics for this period can be broken down into 54 engineering districts – mostly defining EEF travel-to-work areas – for which matching monthly unemployment rates are available. Thirdly and partly related to the foregoing, the data allow us to control comprehensively for company, union, geographical district and time fixed effects all of which have a strong bearing on the incidence of workers made idle.

The paper is structured as follows. The discussion in Section 2 suggests likely factors that result in workers being made idle due to the strike actions by others. Section 3 describes the EEF data. The incidence of workers made idle within total strikes activity is featured in Section 4. Associated estimation and results are contained in Section 5. Section 6 concludes.

2 Workers made idle due to the strike action of others.

In this section, I outline a number of likely explanations of why company strike activity may force non-participants to cease working. I also indicate how the EEF strikes data help us to account or control for each of the eventualities.

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[4] Figure 1 shows the incidence of strikes within EEF member companies over the period 1920 to 1970. The late 1950s/early 1960s mark the start of an upturn in incidence which accelerated in 1965 and which by the late-1960s far exceed the incidence in the previous 40 years. The shape of the plot in Figure 1 is strongly indicative of British strikes' activity over this period. It holds for numbers of strikes in EEF companies and numbers of strikes in all industries (see Hart and Devereux, 2008, Figures 2a and 2b). See also the evidence presented in Silver (1977).

(a) _Production constraints and job task interdependence_

Table 1 lists the categories of pay and non-pay disputes recorded in the EEF data and categorised in the UK Date Archive. The non-pay item, _Production Constraints_, concerns disputes involving interrupted work flow. Examples include 'under-manning', 'absenteeism causing extra work', 'alteration in the work sequence', 'problems with the work schedule', 'disruption due to line breakdowns' and 'poor work flow from other work groups'. In work environments with highly interrelated production and job task sequences, where individual value added is highly dependent on outputs of others, disruptions may spread to work groups who are not directly involved in an initial localised dispute. Line production is obviously vulnerable to such knock-on effects. The most prominent example of line production is car assembly.[5] Work disputes in a given segment of the line may well entail both downstream and upstream repercussions. Downstream sections will suffer from a disrupted production flow. Upstream activity will be slowed down as bottlenecks accumulate. Clearly, in these situations, the work patterns of individuals not immediately involved in strike action can be adversely affected. In fact, the leverage effects of relatively small groups of strikers impacting on non-striking work colleagues can be quite substantial.

The EEF data allow for a stringent test of the effects of production constraints on workers made idle relative to other non-pay disputes. Thus, as well as incorporating a

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[5] Of the 189 disputes in the EEF data under the heading _Production Constraints_, 48% occurred within the British car industry.The British car companies in the EEF data are Austin Motor Co Ltd, BMC Ltd, British Leyland, Morris Motors Ltd., and Rolls Royce Ltd. In all details referring to the car industry in what follows, I refer to these EEF member companies. Also, I ignore issues concerning mergers, takeovers and rationalisations within the British car industry during this period. I simply use the company names recorded by the EEF in its strikes' records.

binary variable denoting this type of dispute, I can simultaneously account for individual

company fixed effects which capture a broad set of production and organisational

configurations.

(b) Demarcation disputes

The previous example involves disputes in which a given section of striking

workers can make non-strikers idle because of production and organisational inter-

dependence across company workers. However, the possibility of a dispute arising in one

section of a company having wider impacts on workers elsewhere is not restricted only to

the issues raised above. The non-pay category *Job Demarcation* in Table 1 provides an

additional possibility. Demarcation disputes refer to disagreements between different

unions representing workers in the company, or between workers in the same union, over

the allocation of work across different categories of workers. So, for example, a

demarcation dispute may involve objections – often via a representative union - by one

category of worker to the employment of other categories of workers on given job tasks

because they are alleged to lack the appropriate skills.[6] A strike by workers who feel that

they alone should undertake the work in question may lead to the disputed parties being

made idle.[7] Alternatively, and with the same possibility of outcome, an aggrieved

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[6] Specific examples of such disputes in the EEF data include objections to (i) labourers
being employed on plate moulding, (ii) the class of worker being employed on
coreblowing machines, (iii) the employment of youths in certain job tasks, (iv) the
employment of semiskilled labour on sandslinging machines, (v) the class of labour
employed on metal pattern machining.

[7] In fact, such objections may arise while a group of workers are actually on strike. In the
EEF data, for example, there is a case of a dispute involving the claim that non-testers
handled work while testers were on strike.

category of workers may take strike action because they consider that they are being required to perform job tasks that should be undertaken by work colleagues working under different job descriptions.

What was the potential for inter-union demarcation disputes within EEF companies? Table 2 shows the frequency distributions of numbers of unions operating in EEF member companies in which strikes occurred over the period. Within all companies, about 33% of striking companies experienced 2 or more unions representing their workforces. In car companies, this latter figure was almost double at 63%. There were 385 incidents involving demarcation issues of which 17% involved car companies.

(c) *Strikes' durations.*

We might expect that the incidence of workers made idle will correlate with strike durations. It is not clear, *a priori*, whether correlation will be negative or positive. Why might we find a *negative* association? First, strikers may attempt to spread the scope of the dispute, including deliberately making non-strikers idle, in order to increase the strike's economic impact on the company. This may have the result of weakening management's resolve to resist strike demands. Second, those workers who are made idle, for whatever reason, may exert pressure on strikers to reach a settlement of the dispute because of loss of income. Why might we find a *positive* association? Where strikes become protracted, workers may eventually be made idle as the lack of work flow from strikers increasingly limits the ability of non-strikers to execute job tasks. If maintenance workers go on strike, prolonged failure to deal with machine breakdowns will eventually seriously disrupt the work activity of machinists. If workers responsible for intermediate production and/or partly finished goods and/or replacement parts go on

strike then this will eventually freeze the work activities of those whose jobs depend on the related supplies.

While the EEF data record the timing of the start of each strike as well as strike duration in days, there is clearly an endogeneity issue with this variable. Some of the foregoing arguments can be cast in terms of duration causing workers to be made idle or in terms of workers made idle affecting duration outcomes. The duration variable needs to be instrumented. The method of instrumentation is discussed in Section 5.

(d) *The timing of strikes*

In general terms, it is important to check whether trend and seasonal factors relate to strike activity, including workers made idle. Annual and monthly dummy variables are included to 'control' for these influences. But are there potential cyclical influences? Based on the EEF strikes data, Hart and Devereux (2008) find that successful strike outcomes, from the viewpoint of engineering unions and workers, are pro-cyclical. It might be expected that favourable outcomes are more likely to be achieved near to the peak of a cycle when company order books are full. The risks attached to taking strike action may increase towards cyclical troughs as outside labour market options for potential strikers become relatively scarce. Also, companies may be less likely to respond if, in any event, order books are thin and spare production capacity is high. If some unions attempt to press home advantages by strategically widening disputes to non-striking company workers in order to increase related costs to the employer then cyclical impacts may also positively relate to the incidences of workers made idle.

The EEF data allow us to measure relative demand pressures – both across engineering geographical districts and through time – through the availability of detailed

district-level unemployment rates. At the same time, union fixed effects allow us to control for relative union militancy.

(e) *Militancy*

Some unions, industries and geographical districts are linked with strike militancy. This may relate variously to such factors as political affiliation, social infrastructure, workplace conditions, management attitudes, and local workforce tradition. Militancy is likely to relate to the incidence of workers made idle. For example, militant union leadership in a given company dispute may seek to achieve widespread worker solidarity.

Militancy may manifest itself through the frequency of strike action in particular geographical areas. Here the British car industry has a particularly notable record during our study period (see Table 4). Where high and persistent strike frequencies occur, radical strike behaviour may be common among local working communities and may include pressurizing non-striking workers into joining on-going disputes or perhaps initiating direct action to halt continued work activity by non-strikers. Such possibilities underline the need to incorporate company, union and district fixed effects in work of this type.

3. Data

As shown in Figure 2, EEF strikes are dominated by disputes involving blue-collar workers.[8] The EEF coverage of each individual strike is comprehensive. Thus, we obtain the name of the company involved, the union(s) involved, the geographical

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[8] These are referred to as 'manual' workers in the EEF data, with white-collar workers classified as 'staff'.

engineering district (e.g. Coventry) [9], the cause of the strike, the outcome or resolution,

the strike duration in days [10] (with precise start and end dates), the numbers involved (by

men, women and boys), the classes of workers involved (e.g. toolroom fitters,

machinemen), whether or not the strike is in breach of procedures for avoiding disputes,

and numbers of workers made idle as a result of the strike [11]. The causes of strikes are

divided into pay and non-pay issues. There are no censored durations in the EEF strikes

records because all reported strikes had ended at the end of the data.

From 1960 to 1970, the EEF averaged 4567 member companies. Of these, 863

were involved in at least one pay dispute and 762 were involved in at least one non-pay

dispute. In total, there were 3671 pay disputes and 3459 non-pay disputes. Table 3

summarises per-company frequency distributions of pay and non-pay disputes. Clearly,

the great majority of companies affected by strikes experienced less than 11 disputes over

the period whereas on the right-tail of the distribution 16 companies were involved in

more than 50 disputes over pay or non-pay issues. The latter are listed in Table 4.

Assembly and supply companies in the British car industry account for 100% of these

high-frequency non-pay disputes and 70% of the high frequency pay-related disputes.

This domination is even more remarkable given that the vast majority of car strikes

occurred in the second half of the period. This is shown in Figure 3 which graphs strike

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[9] Matching district-level unemployment rates are available in the electronic data base.

[10] For strikes lasting less than a day, durations are reported in hours.

[11] If a strike lasts for x days, the EEF records the number of strikers and the number of
workers made idle as experiencing the same x-day durations. This is unlikely to be true
in all cases. Some strikes are likely to involve workers being made idle at later stages;
for example, the supply of intermediate goods and services may take time to dry up. It
may well be the case, therefore, that the numbers of reported working days lost due to
non-direct layoffs may exceed actual layoffs.

incidence. There is a clear 'take-off' in strike activity from 1964 throughout EEF

member companies. Among car companies, the incidence rose from under 5% of total

strikes in the early 1960s to 30% by the end of the period.

Summaries of the main issues involved in pay and non-pay strikes are shown in

Table 1 together with their relative frequency over the 1960 to 1970 period.[12] The

percentage share of non-pay to total disputes year by year, as shown in Figure 4, is

relatively stable over the period, at roughly 50% of all disputes. In the car industry by

contrast non-pay disputes account for about 70% of all disputes during the key 1965 –

1970 period.

In the following, I differentiate between the 7130 total recorded strikes and the

1641 recorded car strikes.

4 The relative importance of workers made idle within total days lost due to strikes

For the years 1960 to 1970, let TDL_t be the total days lost in all EEF strikes in

year t. The total can be decomposed into number of strikes, average number of workers

laid off by strikes, and the average strike duration (Forchheimer, 1948 and Knowles

1952). Thus, we have

$$(1) \quad \ln(TDL_t) = \ln(S_{Tt}) + \ln(\overline{N}_{Tt}) + \ln(\overline{D}_{Tt})$$

where S_{Tt} = total number of strikes in year t, $\overline{N}_{Tt}$ = average number of workers laid off per

strike (i.e. strikers and workers made idle), $\overline{D}_{Tt}$ = average duration of strikes.

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[12] Brief specific details of pay or non-pay issues for each individual strike are available in
the strikes' database.

Similarly, let MDL_t be the total days lost in year t due to workers made idle. Then we have

(2) $\quad \ln(MDL_t) = \ln(S_{Mt}) + \ln(\overline{M}_{Mt}) + \ln(\overline{D}_{Mt})$

where S_{Mt} = total number of strikes in year t that include workers made idle, $\overline{M}_{Mt}$ = average number of workers made idle in S_{Mt}, $\overline{D}_{Mt}$ = average duration of strikes involving workers made idle.

Figure 5 graphs the contributory shares in expression (1) while Figure 6 shows the equivalent outcomes in respect of expression (2). Comparing these Figures, the major differences are (a) the number of strikes is the major contributory factor to total days lost in Figure 5 and (b) the average numbers of workers made idle contribute most to total days lost in Figure 6. This underlines the fact that workers made idle comprise significant proportions of total days lost within strikes in which they occur. The average duration of strikes are roughly comparable in both figures, as can be checked by consulting Table 5 which breaks strikes durations into all disputes as well as pay and non-pay disputes. Note, however, that the size of strikes – measured in terms of total workers laid-off – are considerably larger if workers made idle are involved.

The percentage of total working days lost due to workers made idle is given by $100.\exp[\ln(MDL_t) - \ln(TDL_t)]$ and presented in Figure 7 for all companies and for car companies separately.[13] Days lost due to workers made idle accounted for an average of

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[13] Car companies are omitted before 1965 because they accounted for relatively very few strikes (see Figure 3).

44% of total days lost in all companies between 1960 and 1970.[14] In car companies

between 1965 and 1970 workers made idle accounted for 68% of total days lost. The

peak occurred in 1967 when 83% of total working days lost in British car manufacture

were accounted for by workers made idle. In fact, 57% of total disputes in car plants

between these dates involved workers made idle. But these percentages under represent

the true impacts of workers made idle. Figure 8 confines attention to strikes that include

workers made idle. Workers made idle average 72% of total days lost in such companies

from 1960 to 1970. In every year from 1962 to 1967, workers made idle accounted for

over 80% of total days lost in these companies.[15] In the late 1960s there was a decline

from these extraordinarily high percentages culminating in 1970 when 57% of days lost

in company strikes involving workers made idle were accounted for by such workers. In

general, the overall leverage effects on total time lost due to workers made idle were

clearly substantial.

5. Regression specifications and findings

I now make use of the complete data to test for the main factors that affect the

probability of strikes including workers made idle. In particular, I test directly for the

influences that are suggested in Section 2, while controlling for company, union, district

and time (annual and monthly) fixed effects. These are clearly a highly detailed and

wide-ranging set of controls and so tests of the significance of individual issues are

especially stringent.

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[14] The annual average of total days lost is 1.1 million days, with a trough of 0.6 million
days in 1961 and a peak of 2.2 million days in 1970.

[15] Given the extremely high incidence of workers made idle in car company disputes
between 1965 and 1970, the car graph in Figure 8 differs little from that in Figure 7.

First, consider pay-related strikes, with the pay issues listed in Table 3. Let $MP = 1$ if a given pay-related strike involves workers made idle and $MP = 0$ if only direct strikers are involved. Then, using a simple linear probability specification[16], and in terms of strike i in engineering district d at time t, the regression equation takes the form

$$(3) \ MP_{idt} = \alpha_0 + \alpha_1 \hat{D}_{idt} + \alpha_2 U_{dt} + \alpha_3 (Pay \ Issues_{idt}) + \alpha_4 (Company \ Dummies)$$
$$+ \alpha_5 (Union \ Dummies) + \alpha_6 (District \ Dummies) + \alpha_7 (Year \ Dummies)$$
$$+ \alpha_8 (Month \ Dummies) + \varepsilon_{idt}$$

where $\hat{D}$ is instrumented strike duration, U is a district level unemployment rate[17] and ε is an error term.

Second, consider non-pay-related strikes, again itemised in Table 3. Let $MN = 1$ if a given non-pay-related strike involves workers made idle and $MN = 0$ if only direct strikers are involved. Then the equivalent to (3) for this class of strikes is given by

$$(4) \ MN_{idt} = \beta_0 + \beta_1 \hat{D}_{idt} + \beta_2 U_{dt} + \beta_3 (Non - Pay \ Issues_{idt}) + \beta_4 (Company \ Dummies)$$
$$+ \beta_5 (Union \ Dummies) + \beta_6 (District \ Dummies) + \beta_7 (Year \ Dummies)$$
$$+ \beta_8 (Month \ Dummies) + \varepsilon_{idt}$$

How is the durations' variable instrumented? It turns out that the EEF data contain two strong instrumental variables. The EEF had a laid down procedure for dealing with disputes arising in the workplace. There was a somewhat convoluted

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[16] The choice is conditioned by the fact that the regressions control for company, union, district and time fixed effects and so fixed effects probits may be biased due to the incidental parameters problem (Greene, 2003).

[17] Given that more than one strike may occur in district r at time t, I cluster the standard errors in equations (3) and (4) at the year/month/district level in these regressions. I have verified that the analogous 2-step approach (e.g. Devereux, 2001) gives very similar estimates of coefficients and standard errors.

grievance formula under the so-called 'provisions for avoiding disputes'.[18] Turner, Clack

and Roberts (1967), work out that in 1964/5 the average time between submitting a

dispute to formal procedure and its final outcome – which may have ended-up with a

failure by the parties to agree – averaged over 7 weeks in engineering cases and over 13

weeks in car manufacturing cases. Exceptionally difficult cases could take over 6 months.

Unsurprisingly, unions often favoured direct 'unofficial' negotiation with plant managers

rather than risk a lengthy process that may eventually involve outside adjudicators.

The EEF systematically recorded whether a given strike followed or was in

breach of the laid-down provisions for avoiding disputes and reported outcomes

separately for blue collar and white collar workers. The contention here is that these

variables are strong instruments for strikes durations. It is likely that unions and workers

were most likely to incur the time costs associated with following procedure if and only if

they felt that a given dispute involved complex issues that were unlikely easily to be

resolved at plant level. By contrast if the details surrounding a dispute appeared *a priori*

to be relatively simple and straightforward then it was probably deemed to be worthwhile

to breach procedure and attempt to sort matters with local management. Figure 9 reveals

that this latter course of action was the one pursued by the large majorities of both blue-

and white-collar workers. Of course, the strategies of following or ignoring laid-down

procedure could and did break down, resulting in strike activity. If 'going through

procedure' signaled less tractable disputes then subsequent strikes would be expected to

be longer than those in which procedure had been ignored because they were deemed

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[18] Depending on its degree of tractability, a given dispute could initially involve work
floor foremen and then higher-level managers within the company and then proceed
outside the company to relevant local unions and local employers associations and then,
if necessary, to national union and representative employer levels.

simple enough to be solved at workshop level. In fact, this outcome is confirmed in

Table 6 which shows clearly that strikes occurring after laid-down procedure had taken

place lasted considerably longer than strikes that breached procedure.

In summary, whether or not procedure was followed among blue- and white-

collar workers in the period preceding a given strike offers a strong instrument for the

strike duration variable. In the first place, it is positively associated with the duration of

the subsequent strikes. Secondly, given that it involves procedural issues of negotiations

that may or may not subsequently lead to strike actions, it seems highly reasonable to

assume that it is will be independent of the error term in equation (3) or (4).

Results to equation (3), covering pay disputes, are presented in Table 7. Workers

made idle are significantly positively related to strikes' durations. However, the

magnitude is small: a one day increase in duration is associated with an increased

probability of workers made idle by just 0.007. District unemployment rates have no

statistical effect. This would seem to rule out opportunistic behaviour on the part of

strikers that is linked to the tightness of the labour market and that seeks to widen strike

action to add pressure on employers. In contrast, Devereux and Hart (2008) find, over

the same time period, that strike resolutions are more favourable to unions when the

unemployment rate is low. Disputes over *Piece Rates*, affecting almost 13% of all pay

disputes, is the excluded dummy in respect of pay issues. Only disputes over *Bonuses* and

over *Miscellaneous* pay issues (see Table 1) display significant impacts on the probability

of being made idle. Both have positive influences.

So, Table 7 provides limited evidence that pay-related issues impacted on the

probability of strikes including workers made idle. One problem is that wage disputes

account for, unsurprisingly, over half of all pay-related disputes and so it is difficult to discern – in the absence of much greater detail of the specifics of remuneration grievances – which aspects of pay are most likely to result in workers being made idle. By contrast, we see from Table 1 that there is no such predominant issue in respect of non-pay disputes. Also, there is a somewhat wider breakdown of total issues. This might serve to give more 'bite' to the non-pay effects on workers made idle. Moreover, as shown in Figure 10, while pay-related disputes within strikes in which workers were made idle predominated in the early years of our data, post-1963 there was a growth in the incidence of non-pay disputes culminating in a reversal of the relative importance of pay/non-pay disputes by 1965. This trend was especially apparent in the British car industry. In fact, since the incidence of car strikes was low in the first-half of the period, it is clear that non-pay issues constituted easily the more important reason for strike action in this industry (see also Figure 4).

Results in respect of non-pay issues are shown in Table 8. As with pay disputes, the durations variable is significantly positive in the non-pay equation (4) but with almost twice the coefficient size. Unemployment continues to display no impact, however. The excluded non-pay issue is *Treatment of Workers*, accounting for 10% of non-pay disputes. After the comprehensive control of fixed effects, disputes covering three non-pay issues - *Production Constraints*, *Job Demarcation* and *Redundancy* - add significantly to the probability of workers being made idle. As discussed in Sections 2 (a) and 2(b) the first two types of strike issue involve the propensities of disputes to spread from an initial localised epicentre out to other work-sections of a company. The

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third, involving worker redundancies, is not so straightforwardly explained.[19] Finally,

and again relative to the *Treatment of Workers*, disputes concerning *Working Time* are

significantly associated with workers made idle. There are 300 such disputes in the data

and, once again, the car industry predominates, accounting for 45% of the total. This

issue, however, is associated with a *lower* probability of the strike involving workers

made idle.

6 Conclusions

Using a unique data set on strike activity within the EEF, this paper offers one of

the first insights into the phenomenon of workers made idle by the strike actions of

others. Member EEF companies represent core elements of British engineering, metal

manufacturing and automotive industries and accounted for about one-third of total

employment in these sectors. The analysis covers the period 1960 to 1970, a decade that

marked an escalation of British industrial relations problems that were to last into the

early 1980s. Disruptions to production and associated production costs were greatly

magnified in disputes that involved workers made idle. In fact, they accounted for

between three and four times the working days lost of those directly involved in strike

actions. Added to this, strikes involving workers made idle were relatively large scale

(see Table 5).

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[19] There are 571 demarcation-related strike incidents in the EEF data involving
disputes over redundancy. Many of these involve workers protesting against the
redundancy of others. Of course, such workers constitute *bone fide* strikers. However,
unless there is absolute solidarity within the company's workforce, some workers will not
want to join such a strike because they themselves are not directly affected by the issues
at hand. However, to the extent that the strike action is undertaken widely in the
company then those who do not wish to take part may be unavoidably made-idle due to
severe input and output disruptions.

The relative sizes of strikes involving workers made idle combined with the special 'grievance issues' among those affected served to make such strikes highly visible to the outside world and contributed to the popular notion of the British Disease. No industry typified the Disease more than British car manufacture, an industry that suffered a prolonged terminal illness. Car firms exhibited easily the highest frequencies of both pay and non-pay disputes (see Table 4) and were especially prone to disputes that embraced non-striking workers (see Figure 7). Literature on the plight of the British car industry in the 1960s and beyond is dominated by descriptions of industrial relations problems that embraced union militancy, the power of shop stewards, and poor management practices. Industrial relations issues almost certainly played a central role in the industry's eventual demise. But outcomes were exacerbated by an acute vulnerablity to widespread and costly disputes. The dominance of interrelated job tasks and systematised production sequences served to increase the risk that non-striking workers would be made idle. Further, 63% of striking car companies had 2 or more representative unions, twice the norm among all EEF member companies. The presence of several unions within the workplace was a catalyst for disputes involving demarcation issues. In fact 17% of demarcation strike incidents in our data involved car companies. Such disputes are found here to be significantly related to the probability of workers made idle.

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Figure 1 Strike incidence by companies in the EEF, 1920 - 1970
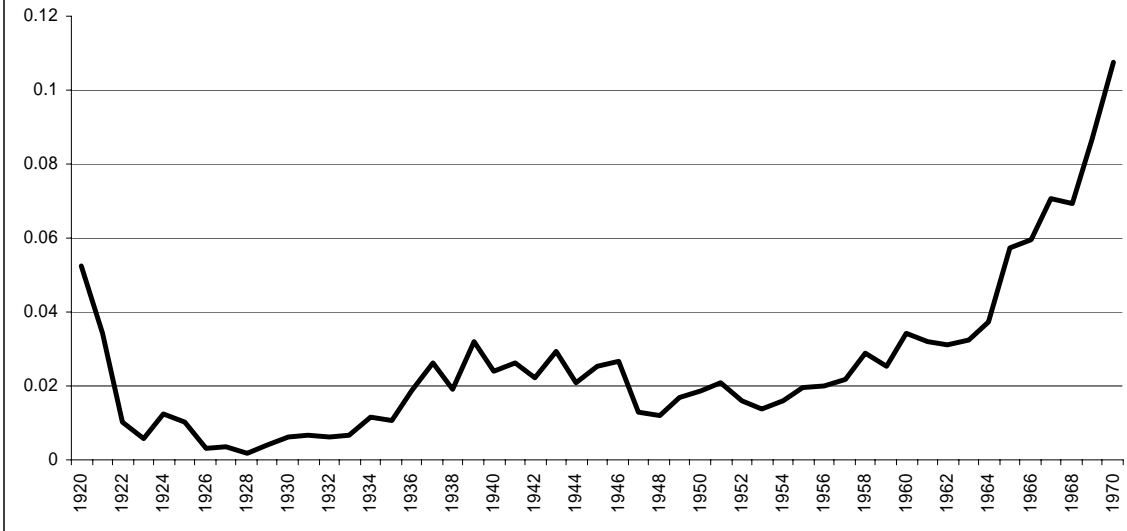
Figure 2 Percentage of blue-collar strikes to all strikes
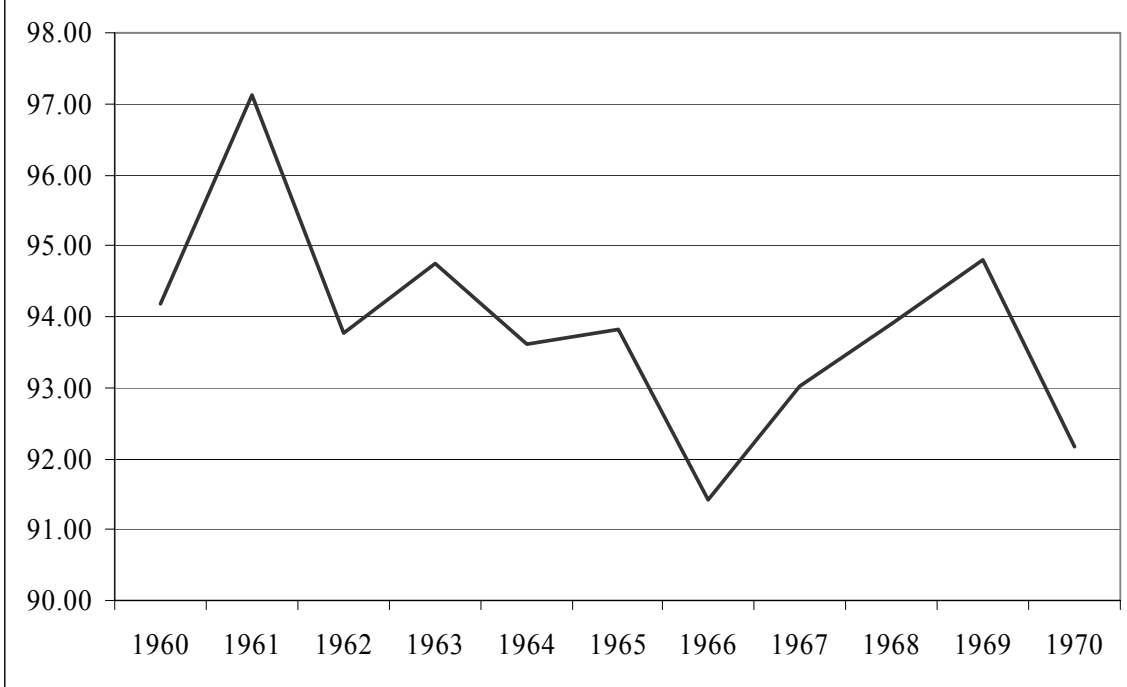
Figure 3 Car strikes and total strikes in the EEF, 1960-1970
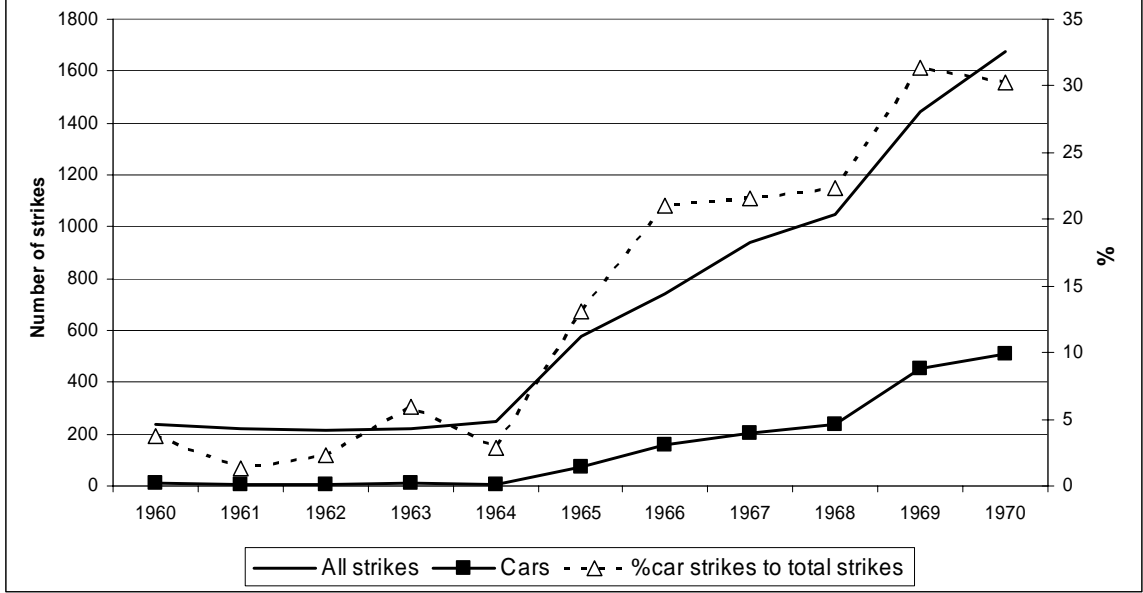
Figure 4 Percentage of non-pay strikes to total strikes
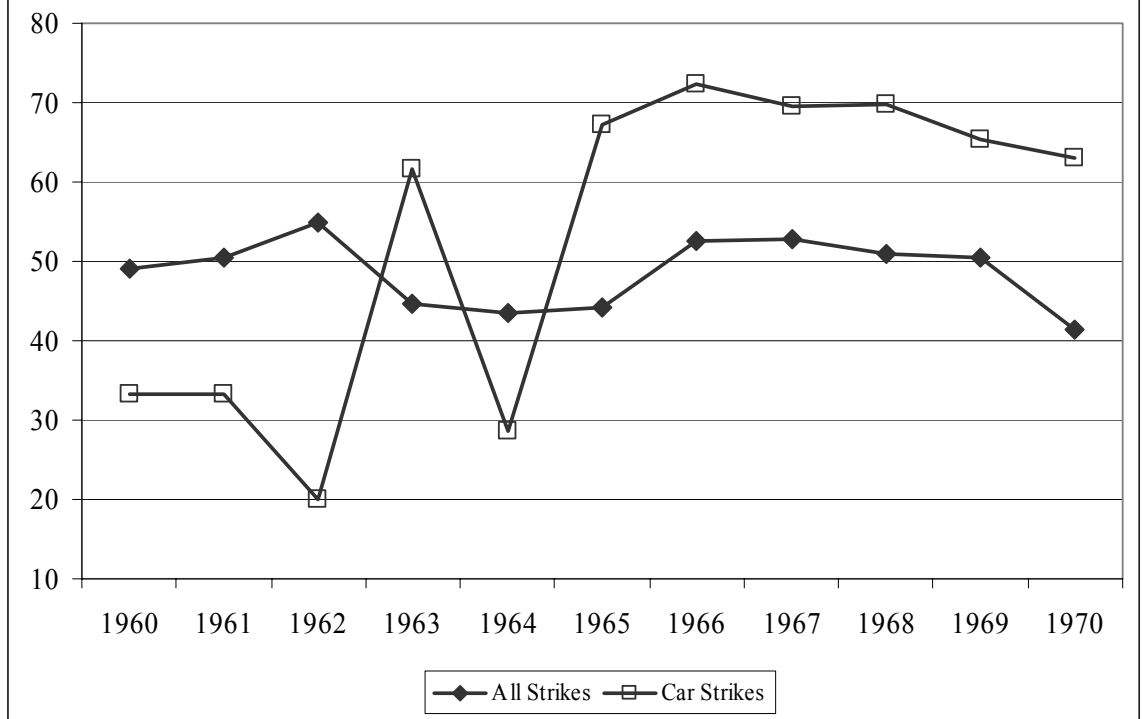
Figure 5 Total days lost in all EEF strikes

ln(strikes) □ ln(average number laid off) ■ ln(average strike duration)
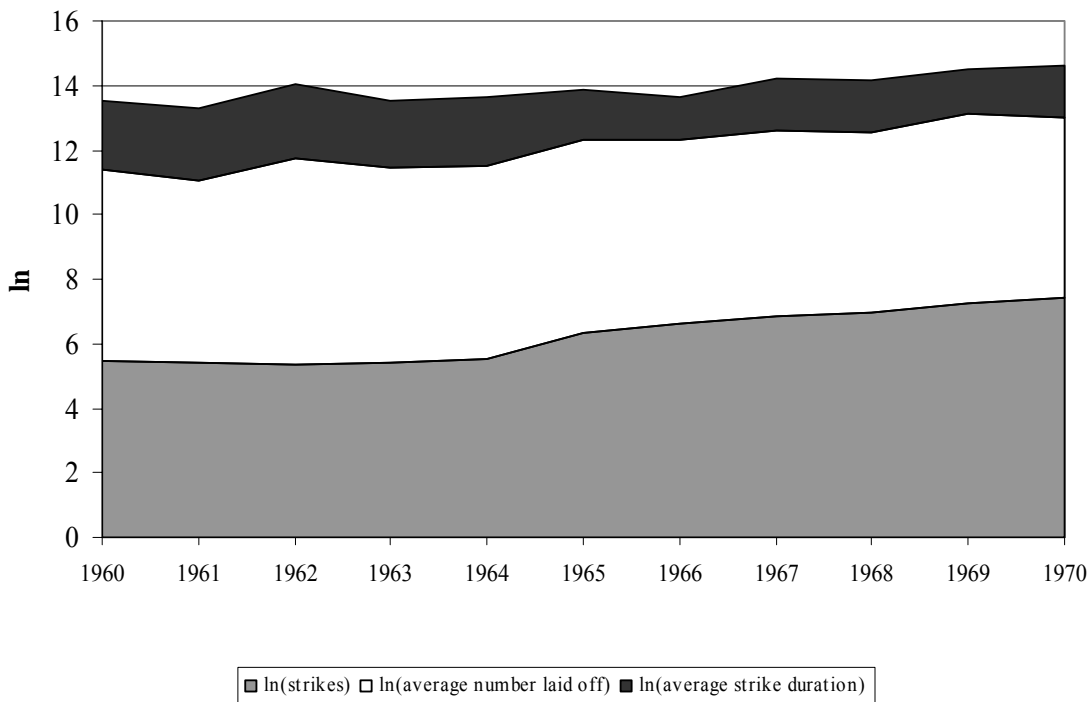
Figure 6 Total days lost due to workers made idle

ln(strikes with workers made idle) □ ln(average number of workers made idle)
ln(average duration of strikes with workers made idle)
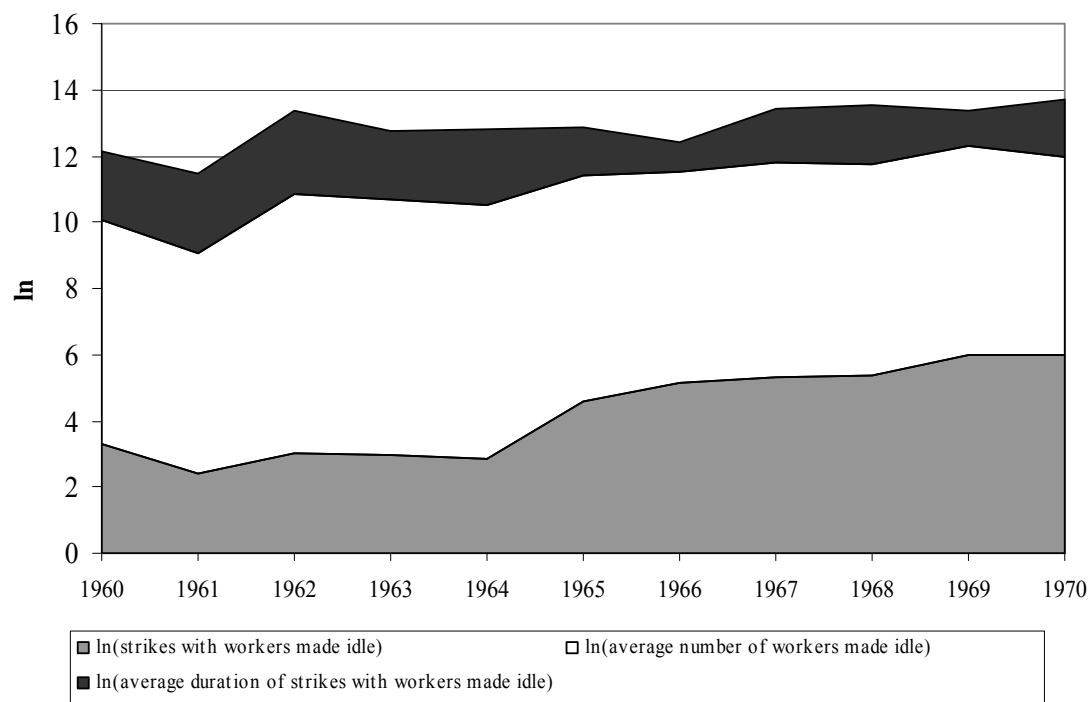
Figure 7 Percentage of total working days lost due to workers made idle
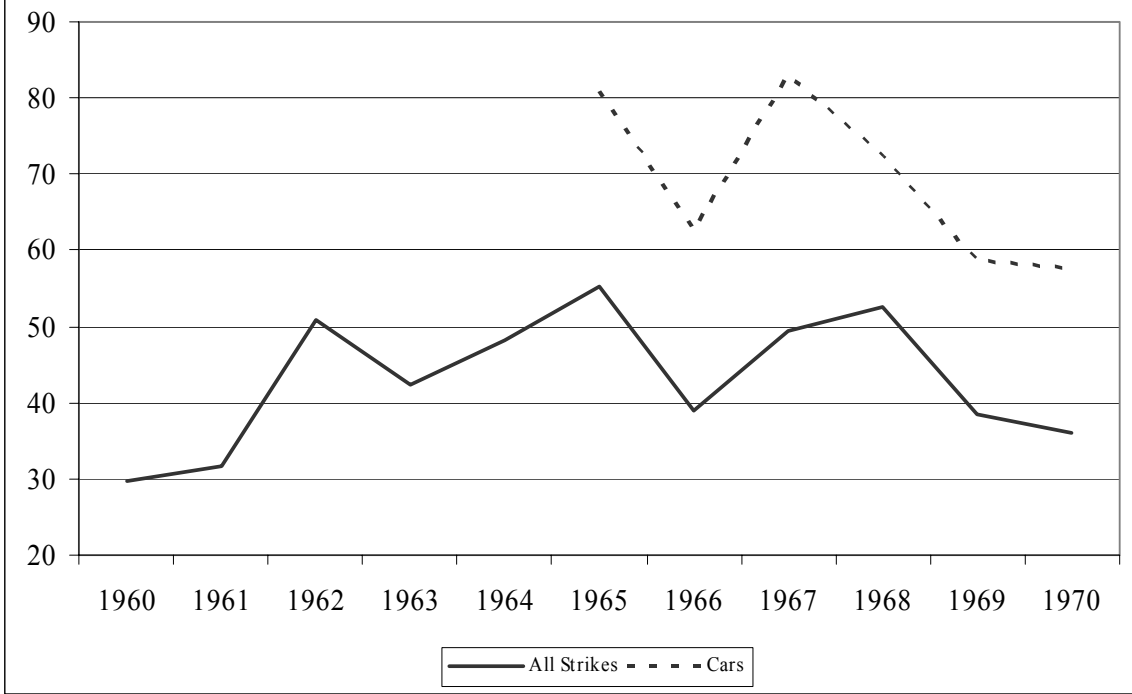
Figire 8 Percentage of total working days lost due to workers made idle in strikes with made idle

23
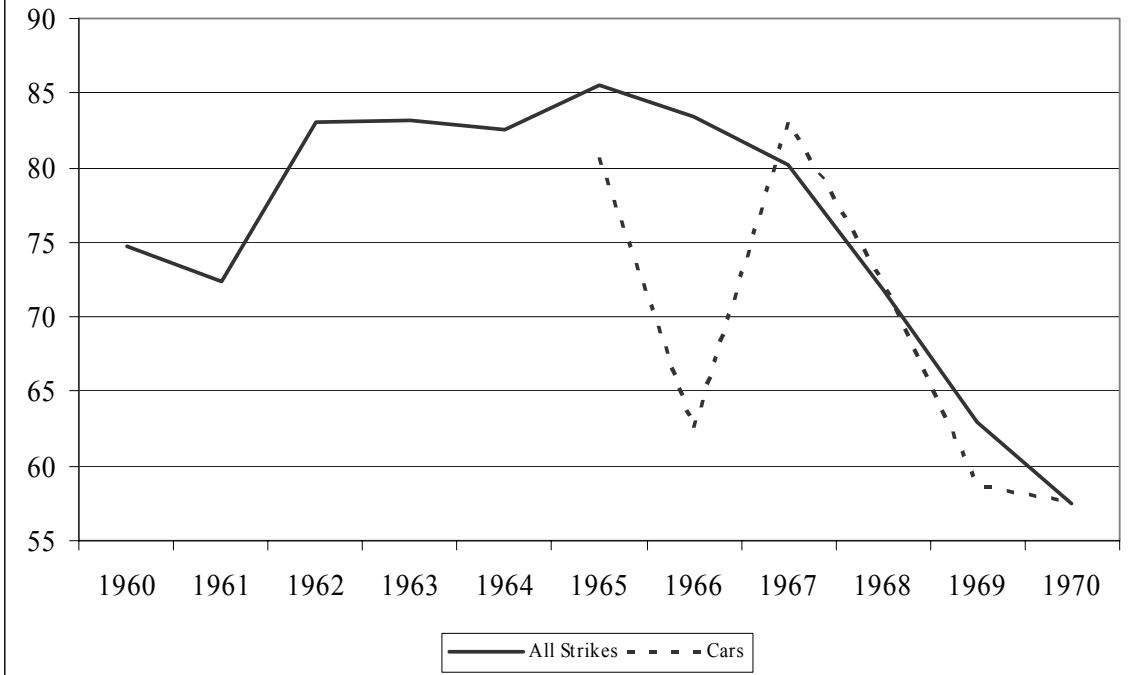
Figure 9 Percentages of blue-collar strikes and white-collar strikes in breach of procedure

% of blue-collar strikes in breach ▬◆▬ % of white-collar strikes in breach ▬□▬
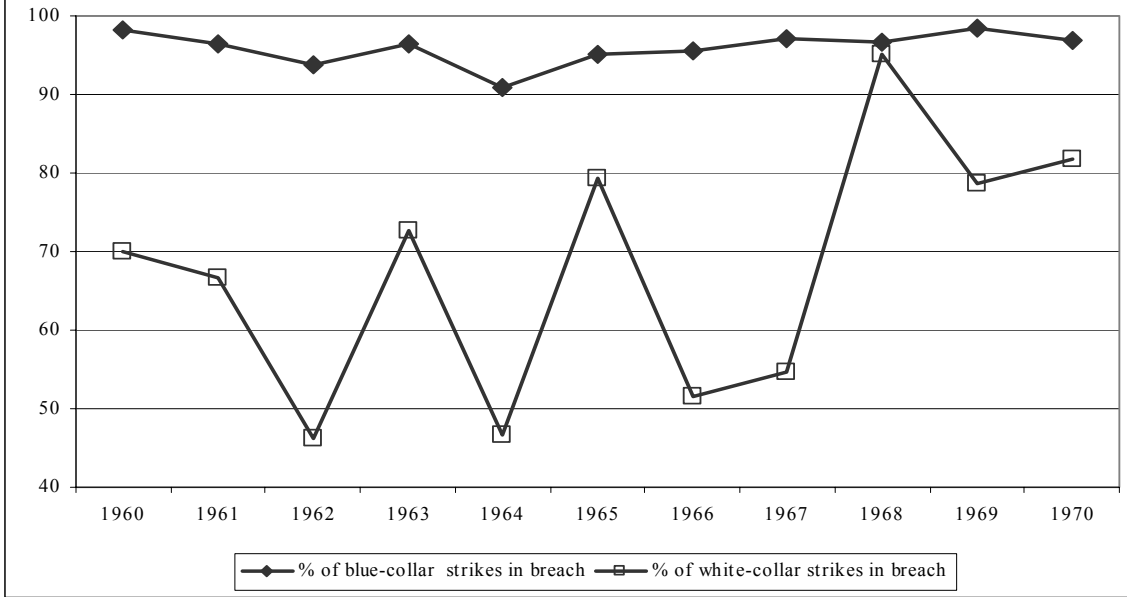
Figure 10 Percentage of non-pay strikes to total strikes involving workers made idle

All Strikes ▬◆▬ Car Strikes ▬□▬
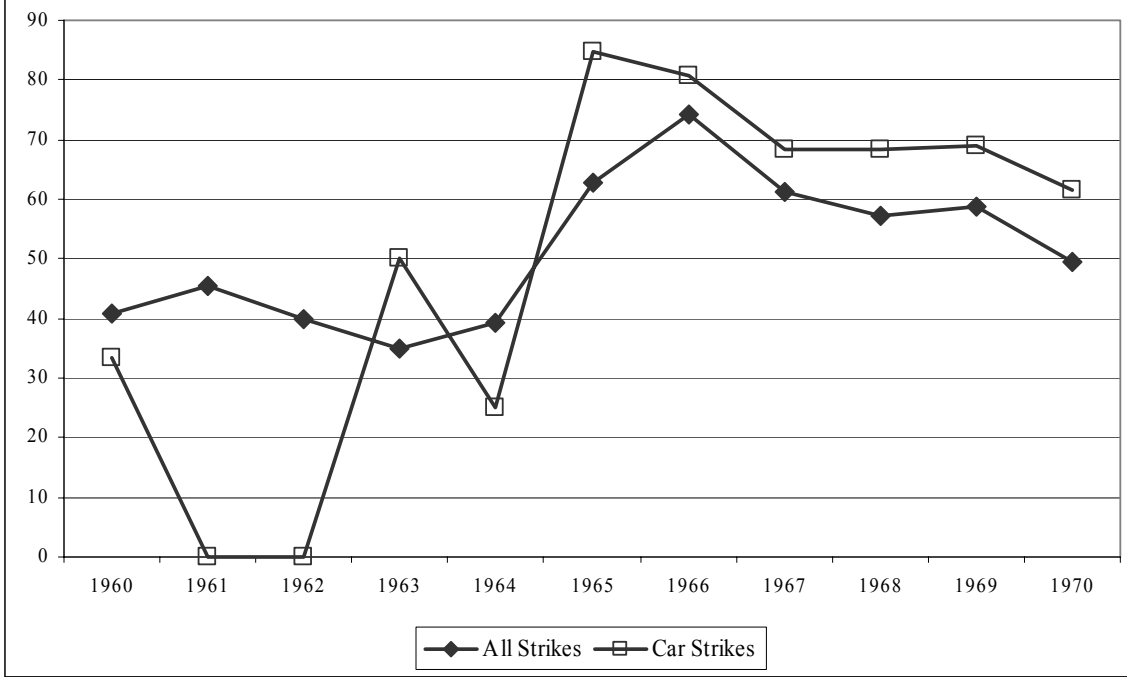
Table 1 Causes of Pay and Non-Pay in EEF Strikes, 1960 - 1970

Pay Disputes	Relative frequency	Non-Pay Disputes	Relative Frequency
Wages	52.4	*Wrongful Dismissal*	12.3
Bonuses	16.9	*Treatment of Workers*	10.2
Piece Rates	12.9	*Union-Related*	7.5
Overtime	0.1	*Redundancy*	4.0
Shift/Night Rates	0.1	*Use of Outside Labour*	0.9
Relative Pay	3.1	*Supervision/Management*	4.4
Systems of Pay	5.0	*Systems of Working Time*	6.2
Holiday Pay	2.1	*Apprentices*	0.1
Payment for Time Lost	6.3	*Job Demarcation*	5.5
Holiday Time	0.3	*Production Constraints*	4.6
Miscellaneous	0.9	*Sympathy with Others*	3.3
		Work Environment	10.2
		Working Hours	7.6
		Work Flexibility	10.4
		Delay in/Refusal to Open Negotiation	4.4
		Attendance at Union Meetings	3.0
		Miscellaneous	5.8

Table 2 Number of Unions Representing Workers in EEF Striking Companies, 1960-1970

Number of Unions	All Companies % Frequency	Car Companies % Frequency
1	67.4	36.6
2	16.9	29.3
3	10.9	32.4
4	2.7	1.0
5-10	2.1	0.7
Total	100.0	100.0

Table 3 Frequency distributions of company pay and non-pay disputes, 1960 – 1970

Disputes per Company	Pay Disputes	Non-Pay Disputes
1	417	415
2 – 5	314	261
6 – 10	71	45
11 – 20	34	24
21 – 50	17	11
51 – 100	7	1
> 100	3	5
Number of Companies	863	762
Total Frequency	3671	3459
Mean Frequency	4.25	4.5

Table 4 Companies with over 50 pay and/or non-pay disputes, 1960-1970

Companies with a frequency greater than 50	Pay Disputes (Frequency)	Companies with a frequency greater than 50	Non-Pay Disputes (Frequency)
British Motor Corporation Ltd.	189	British Motor Corporation Ltd.	400
British Leyland	158	British Leyland	320
Pressed Steel Fisher Ltd.	107	Pressed Steel Fisher Ltd.	256
Joseph Lucas Ltd.	82	Morris Motors Ltd.	157
Hawker Siddeley Ltd.	58	Austin Motor Co. Ltd.	115
Austin Motor Co. Ltd.	56	Rolls Royce Ltd.	51
Rolls Royce Ltd.	55		
Rover Co. Ltd.	53		
Plessey Co. Ltd.	51		
Smiths Industries	51		

Table 5 Means and Medians of Strike Durations

	All Strikes				Pay-related strikes				Non-pay strikes			
	All Strikes		Strikes with Made Idle		All Strikes		Strikes with Made Idle		All Strikes		Strikes with Made Idle	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
ALL COMPANIES Duration	7	2	7.25	1.5	9.2	2.25	11	3	4.8	1.5	4.4	1
Size	352	89	820	330	325	70	942	325	379	106	726	332
CAR COMPANIES Duration	2	0.75	1.5	0.5	3.1	1	2	0.8	1.4	0.5	1.2	0.5
Size	614	204	846	343	791	194	1226	432	521	213	660	322

Table 6 Average strike durations and strikes in breach/not-in-breach of procedure

	Blue-collar in breach of procedure	Blue-collar not in breach of procedure	White-collar in breach of procedure	White-collar not in breach of procedure
	Average Strike durations (days)			
1960	8.0	15.0	14.6	58.7
1961	7.8	25.4	27.5	95.0
1962	8.3	19.1	16.7	41.0
1963	7.6	17.4	6.8	36.7
1964	6.1	19.1	8.3	37.9
1965	3.7	18.2	4.5	18.3
1966	2.7	6.4	5.9	23.9
1967	4.1	14.6	4.8	15.5
1968	4.4	14.8	7.0	97.3
1969	3.0	22.3	5.8	37.8
1970	4.4	16.3	9.6	24.4

Table 7   Results to Regression Equation (3)

EXPLANATORY VARIABLES	ESTIMATED EFFECTS
$\hat{D}$	**0.007* (0.003)**
U	-0.007 (0.016)
Constant	-0.148 (0.175)
PAY ISSUES §	
Wages	0.021 (0.032)
Bonuses	**0.085* (0.036)**
Overtime	-0.115 (0.152)
Shift/Night rates	0.071 (0.085)
Relative Pay	-0.008 (0.050)
Systems of Pay	0.032 (0.048)
Holiday Pay	-0.005 (0.049)
Payment for Time Lost	0.038 (0.047)
Holiday Time	0.111 (0.125)
Miscellaneous	**0.186* (0.095)**

Notes: There are 3669 observations. Regression includes dummies to control for union, district, company, year, and month fixed effects. Standard errors in brackets. ***** Denotes 5% significance. § Excluded pay issue is *Piece Rates.*

Table 8   Results to Regression Equation (4)

EXPLANATORY VARIABLES	ESTIMATED EFFECTS
$\hat{D}$	**0.013* (0.005)**
U	-0.004 (0.012)
Constant	-0.089 (0.284)
NON-PAY ISSUES §	
Wrongful dismissal	0.049 (0.037)
Union-related	0.039 (0.044)
Redundancy	**0.090* (0.046)**
Outside labour	-0.003 (0.082)
Supervision/management	0.012 (0.052)
Systems of supervision	0.048 (0.047)
Apprentices	0.127 (0.077)
Demarcation	**0.094* (0.049)**
Production constraints	**0.109* (0.047)**
Sympathy with others	-0.039 (0.059)
Work environment	0.086 (0.046)
Working hours	**-0.142* (0.055)**
Work flexibility	0.042 ((0.041)
Problem with negotiation	0.056 (0.050)
Attendance at union meetings	-0.050 (0.059)
Miscellaneous	0.078 (0.051)

Notes: There are 3347 observations. Regression includes dummies to control for union, district, company, year, and month fixed effects. Standard errors in brackets. * Denotes 5% significance. § Excluded pay issue is *Treatment of Workers*.