SWP 23/92 **NATIONALISATION, PRIVATISATION, AND AGENCY STATUS WITHIN GOVERNMENT: TESTING FOR THE IMPORTANCE OF OWNERSHIP**

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INTRODUCTION

The word "privatisation" was not commonly used until the early 1980s. Within a decade, however, not only was it an accepted part of the language in most Western countries, more surprisingly it featured in the headlines of newspapers in Warsaw, Prague, Budapest and even Moscow. The policy of privatisation is now a worldwide phenomenon affecting both the traditional capitalist countries and the former communist bloc alike. The programmes introduced by governments differ in detail and intensity; nevertheless they are all driven by a belief that by transferring assets from public ownership to private ownership efficiency will improve. The policy of privatisation is the product of a growing disillusionment with state production during the post-war period.

In Britain, where a large privatisation programme was pursued in the 1980s, disillusionment took the shape of growing criticism of the nationalised industries. These giant industrial organisations had been created mainly by the 1945-51 Attlee Governments but had proved difficult to manage effectively during the 1960s and 1970s. However, once selling state enterprises appeared to win wide public support, attention also turned to the civil service and difficult to privatise welfare services, notably education and health. In April 1988 the Conservative Government introduced its "Next Steps" initiative intended eventually to reduce the size of the central bureaucracy from 550,000 to less than 100,000 (HMSO, 1988). This is to be achieved by transferring personnel to quasi-governmental "agencies" which will run former activities on more commercial lines and perhaps with new senior management brought-in from the private sector. The same Government also tackled what it considered to be the disincentive effect of "red tape" in education and health by providing independent budgets for schools and contracting for health care between fund-holding GPs and self-governing hospitals. Just as head teachers could now be "budget holders" freed from total dependence on local authority education departments, so GPs could operate their own finances buying "best care" for their patients. The "Next Steps" initiative, along with the sale of state industries and reforms in education and health, were intended to result in a more efficient use of scarce resources.

Unfortunately, however, assessing the value of privatisation and "agency" initiatives is hampered by a lack of empirical study of public versus private efficiency. Where studies have been undertaken their usefulness is often restricted by the problem of making like-with-like comparisons. State activities are often monopolies or much larger in scale than their private counterparts. Hence there are very few industries where direct comparison can be made. Moreover, surveys of the studies which have been undertaken have reported mixed results (eg. De Alessi, 1980; Borcherding, Pommerehne and Schneider, 1982; Millward and Parker, 1983). In particular, in addition to ownership, product market competition and the degree of continued state regulation of enterprises are identified as significant factors determining managerial behaviour.

Turning specifically to the UK, there have been very few comparative studies, largely because nationalisation created monopolies. Pryke (1971, 1981) argues, in one such comparison of the private and nationalised sectors, that state industry outperformed private industry in the 1950s and 1960s in terms of the growth in labour and total factor productivity but performed much less well in the 1970s, when performance was "third rate, though with some evidence here and there of first class standards" (Pryke, 1981, p.257). However, recent data from the Treasury (Table 1) suggests that the nationalised industries improved their performance dramatically in the mid-1980s and may have again performed better than the economy in general in terms of labour productivity growth. It is difficult to see what general conclusion can be drawn from this record. A more recent study of the early effects of the 1980s privatisations, by Bishop and Kay (1988), is equally enigmatic. While government ministers, the popular press and many economists have praised the success of the privatisation programme in raising efficiency, Bishop and Kay conclude:

> "The overall picture to emerge..... is one of substantial change. Output and profits have grown, margins have increased, employment has declined. But the relationship of these changes to the fact of privatization is not immediately apparent from the data. The privatized industries have tended to be faster growing and more profitable, but it seems that the causation runs from growth and profitability to privatization, rather than the other way round." (pp.40-41)

(Table 1 around here.)

There is, therefore, a clear need for more empirical study of the effects of privatisation and, equally, the results of related reforms which have created quasi-independent agencies to take over traditional state activities.

The remainder of this chapter is concerned, firstly, with assessing the *a priori* arguments for privatisation and then, secondly, with reporting the main results of a recent research programme into ownership and performance. This research measured the extent to which performance changed in a number of organisations in the UK which crossed between the public and private sectors or underwent a status change within government.[1] In the main only organisations which experienced relevant ownership changes before 1982 were included so that the "longer-term" effects of the change could be assessed (the exception is British Airways which was included for reasons explained later). This meant that while most of the privatisations of the 1980s could not be included, the research avoided the criticism that it is still too soon to assess the full effects of recent privatisations. Also, although these ownership changes are not included, the results are still relevant to an assessment of the likely effects of the privatisation, "Next Steps" and other related government programmes both in the UK and elsewhere.

THE CASE FOR PRIVATISATION

The case for privatisation cannot be safely made simply on the basis of the existing knowledge of public versus private efficiency provided by empirical studies. Instead, the main intellectual force has come from *a priori* or deductive reasoning centred on "public choice" and property rights theories. These theories have been popularised through the publications of free market pressure groups such as the Institute of Economic Affairs and the Adam Smith Institute in the UK and the Pacific Research Institute and the Cato Institute in the USA. Hence they are now well known and the briefest of summaries will suffice here.

Public choice theory is concerned with the nature of decision taking within government. Rejecting the Weberian notion of disinterested officials actioning democratic decisions, public choice theorists (eg. Niskanen, 1971; Buchanan, 1978; Mitchell, 1988) argue that government officials are just as inclined to pursue their own ends as other individuals. Drawing from the neoclassical model of the utility maximising economic man, they conclude that government policy is likely to be shaped to maximise the utility of public sector employees rather than the public at large. Moreover, they further argue that politicians, whose role is to lay down policy and monitor the performance of state officials, are also likely to pursue their own utility in terms of maximising the chances of re-election. In this environment the power of pressure groups, such as public sector trade unions, is increased to the point where public services are run in the interests of the employees and other special interests rather than the public. The result is an over-bloated or inefficient public sector.

Property rights theory complements public choice economics. In this theory the source of inefficiency in state organisations lies in the attenuation of property rights. In the archetypal capitalist firm the entrepreneur has a direct interest in the most efficient use of the firm's resources because his or her income is the residual after revenues are deducted from production costs. In joint stock companies, which now dominate in capitalist economies, property rights are less obvious and ownership and control of the business are divorced. The business is ultimately owned by the shareholders but the use of resources is controlled by the directors. The shareholders' wealth, both in terms of dividends and capital growth, depends on profits, while managers may earn all or the bulk of their income in the form of fixed salaries. Nevertheless, property rights theorists (eg Alchian, 1965; Furubotn and Pejovich, 1974) argue that the ability of shareholders to trade their shares means that managers cannot afford to lose sight of the need to manage efficiently and pursue high profits. Where shareholders are disappointed by the performance of their management, shares will be sold leading to a fall in the share price. This in turn will make the company more vulnerable to a takeover bid by alternative management.

This view of the operation of the private capital market is simplistic, perhaps naive, but it does contain a germ of truth even if the takeover threat is not reliable (Grossman and Hart, 1980; Lawriwsky, 1984). Certainly in the public sector there are no shares to trade and there is no threat of a hostile takeover bid. In addition, financing does not require an approach to the banks or the equity market through a rights issue. The Exchequer, and hence the taxpayer, underwrite all debts of state enterprises.

Although the public choice and property rights theories have different nuances, they obviously complement each other. Together they suggest that economic activity undertaken in the public sector will be performed with less *productive (cost) efficiency* than the same activity in the private sector. Also, as public sector activities may not charge market prices (eg. education and health), or where market prices are set they are set by large monopolies, the public sector is associated with less *allocative efficiency*.

State enterprises tend to be protected from competition. For example, under the Coal Industry Nationalisation Act British Coal has rights to mine coal in Great Britain "to the exclusion (save as in this Act provided) of any other person" and imports of coal were restricted. Similarly, before deregulation of local bus services by the 1985 Transport Act, public sector bus services in Britain faced only limited competition from private bus operations. It has been a leading tenet of economic theory since Adam Smith that competition is generally superior to monopoly. Under competition prices are related more closely to marginal supply costs leading to allocative efficiency and survival in the competitive market requires production costs to be minimised.

From this brief discussion it should be clear that there are *two* broad forces identified in economic theory which lead to high allocative and productive efficiency - the capital market and the product market. In the remainder of this chapter we are primarily concerned with productive efficiency. In Figure 1 these two forces are represented by the capital market on the horizontal axis and the product market on the vertical axis. Point A represents the position of a firm which is directly controlled by a government department. It is politically controlled and there are no tradeable shares, hence we would expect from the public choice and property rights theories that efficiency will be low. Point B represents an activity undertaken by a government agency which has some, if limited, autonomy from the political process. Examples include the trading funds set up with their own finances under the 1973 Trading Fund Act and the more recent agencies established under the "Next Steps" initiative. Public corporations (nationalised industries) can be placed at point C. They have more autonomy than quasi-governmental agencies and were designed in the immediate post-war period to act at "arm's length" from government. Their chairman may be drawn from the private sector, commercial style accounts are published and employees are not civil servants. At the same time, however, government ministers intervene in long-term strategy and sometimes in day-to-day management decisions. Also, government acts as ultimate guarantor of the industry's finances.

(Figure 1 around here)

Points D, E and F correspond to forms of ownership in the private sector. Point D includes those private sector firms which are close to the public sector because of state funding or a reliance on state contracts. This might diminish incentives to be efficient. Point E is the joint stock company; while point F represents private ownership where property rights are least attenuated - notably the owner-managed firm.

Turning to the vertical axis, movements upwards correspond to a shift away from monopoly towards competition and hence greater product market pressure to be efficient. In summary, therefore, Figure 1 provides a mapping of the expected relationship between ownership and performance, drawn from the theories outlined earlier, and competition and performance. Although for convenience discrete points on the horizontal axis have been identified A to F, both ownership and the product market are best viewed as continuous dimensions. The schema implies the following:

- changes in ownership involving movements away from political control towards private ownership, but with no change in competition, will be associated with improved efficiency due to a change in the capital market;

- increased competition in the absence of a change in ownership will be associated with improved efficiency due to a change in the product market;

- changes in ownership involving a movement away from private ownership towards public ownership will be associated with reduced efficiency due to a change in the capital market;

- less competition, even where there is no change in ownership, will lead to a reduction in efficiency[2].

In Figure 1 these movements are illustrated as X to Y, X to Z, Y to X and Z to X respectively. The largest efficiency gains are likely to be associated with movements from X to W, that is towards private ownership and more competition; while a movement from W to X, involving political control and less competition, is likely to lead to a significant deterioration in efficiency. Movements either way between positions Z and Y imply an ambiguous result because the changes in the product and capital market constraints on managerial behaviour conflict.

From this discussion the following central hypothesis can be derived: *changes in ownership away from political control and towards private ownership, especially when also associated with increased competition, will lead to appreciable improvements in efficiency*[3]. It is, of course, precisely this view which underpinned the policy of privatisation in the UK in the 1980s and which currently drives the policy in eastern Europe. The emphasis given to promoting competition also has implications for current discussion of the role of regulation of privatised public utilities (Parker, 1989). The property rights and public choice theories suggest that privatisation of monopolies will lead to some efficiency gains (though these gains may mean higher profits rather than lower prices), but the largest efficiency gains will occur where privatisation is associated with more competition. Where "natural monopoly" prevents efficient competition, the regulatory structure should create managerial incentives similar to those which exist under competition.

THE ORGANISATIONS STUDIED AND THE PERFORMANCE MEASURES USED

To test the central hypothesis that ownership affects economic performance, ten organisations were selected covering a number of possible moves between the public and private sector (nationalisation and privatisation) and within the public sector (from government department to trading fund or public corporation status). Two of the organisations underwent two ownership changes in the period studied, hence twelve relevant status changes were studied. The ten organisations, their status changes with the relevant dates, and the predicted effect on performance are summarised in Table 2.

(Table 2 around here)

Four nationalisation/privatisation cases were included - British Aerospace, Rolls Royce, British Airways and the National Freight Corporation (NFC). British Aerospace was created on the nationalisation of the UK's two largest aerospace companies - the British Aircraft Corporation, Hawker Siddeley (Aviation and Dynamics) - and the smaller Scottish Aviation in 1977. Four years later the corporation was privatised.[4] Rolls Royce was bought by the state in February 1971 following a financial crash associated with major cost over-runs in the development of the RB211 engine. The company was privatised in 1987, though this event came too late to be included in the study. The decision to privatise British Airways was made in 1980 but had to be postoned until 1987, mainly because of legal disputes in the USA relating to the collapse of Lake Airways (British Airways along with Pan Am and TWA was accused of anti-competitive practices), and later because of the need to renegotiate the Bermuda II agreement which regulates traffic on the vital Atlantic routes. However, because the management were aware that privatisation was imminent, we might expect to find a large growth in efficiency between 1980 and 1987. Lastly, the National Freight Corporation was established as a state holding company for the nationalised freight and related undertakings in 1969. It was privatised in February 1982 in a celebrated worker and management buy-out.

The movements within the public sector which were studied included the Royal Mint, the HMSO (the government's stationery office), the Royal Ordnance Factories, London Transport and the Post Office. The Royal Ordnance factories, the Royal Mint and the HMSO had for a long-time been run within government departments, but with a view to making them operate more commercially were given trading fund status in 1974, 1975 and 1980 respectively. Under trading fund status, management are still accountable to the Minister and the employees remain civil servants. The organisation, however, has its own accounts and is financed by trading receipts instead of parliamentary votes. This provides for a greater degree of financial autonomy and managerial independence than exists when activities are directly run by government departments.

London Transport, which manages the capital's bus and underground services, was one of Britain's first public corporations when established in 1933. In the post-war years it had a chequered history of ownership though it always remained a public corporation. From 1963 it was responsible to central government but in 1970 it became accountable to the Greater London Council which had been established five years earlier. This change resulted in fourteen years of periodic and extensive political intervention in the management of London Transport, notably in relation to pricing policy. Following the decision to abolish the GLC, the corporation once again became accountable to central government in 1984 and its management were expected to operate more commercially. Given the extent of political intervention in London Transport during the GLC years, we would expect performance to have deteriorated after

1970 and improved again after 1984. Lastly, the Post Office postal and telecommunications businesses were separately studied. The Post Office moved from being a government department to public corporation status in 1969, again with a view to raising efficiency.

Performance changes were measured using three sets of measures. The reason for using different measures was to check for "measurement bias", ie the possibility that performance might have improved using one measure but not using another (something found to be true for many of the organisations studied).

The three sets of performance measures were:

- **Labour and total factor productivity.** Four year averages were used for before and after the dates of the status change to capture "lead and lag" effects. There is always the possibility that performance might have improved ahead of the date of the status change or that there might have been a delay caused by reorganisation costs before performance responded. Longer periods were not used because these might have reflected performance changes unrelated to the ownership change. To control for the effects on performance caused by general changes in the macro-economy, notably the business cycle, changes in the organisation's productivity were compared with changes in productivity in the same periods for the whole of the UK economy, public corporations and, in the case of manufacturing organisations, UK manufacturing industry.

  Labour productivity was measured by the relationship between a weighted index of physical quantities of output and the volume of labour input. In the absence of reliable information on average hours worked, the average number of employees was used as the labour input. Where no adequate physical output measure was available, this was approximated by deflating the value of output by price deflators, including an own industry deflator. Using more than one price deflator provided a test of the sensitivity of the results to the precise deflator used.

Total factor productivity was defined as:

$$\text{TFP} = \frac{\text{Weighted index of physical quantities of output}}{\text{Total expenditure on inputs/Weighted index of input prices}}$$

Again, where there was an absence of quantity data physical output was approximated by applying relevant price deflators to value of output figures.

- **Employment functions.** Various employment functions were tried though the Ball and St Cyr (1966) function usually gave the best fit and had the added advantage of simplicity. Employment functions relate the amount of employment to a series of independent variables and in the Ball and St Cyr function the relationship is expressed in general form as:

  $$N = f(q, t, N_{t-1})$$

  where N is employment, q is output, *t* is a time trend and N_{t-1} is a lagged dependent variable from which the speed of adjustment of employment to its optimal level can be calculated. The equation is expressed in natural logarithms.

By introducing a binary (dummy) variable for the ownership change, it was possible to test whether ownership had a statistically significant effect on the employment relationship. The binary variable was applied in both shift and slope forms so that the relationship tested was:

$$Ni = a + b_i V_i + cXV_i + D + m_i$$

where V_i is a vector of variables, notably output, the time trend and the lagged dependent variable, X is a slope shift dummy variable for status change applied to V, D is an intercept shift dummy, and m_i is the usual stochastic error term.

Where employment efficiency rose following the status change the sign on the dummy variable will be negative suggesting less employment to output; the sign will be positive if employment efficiency fell. The use of an employment function permitted an assessment of the longer-term effects of organisational status changes on the relationship between employment and output than provided by the labour productivity calculations. It also permitted the introduction of other factors which might have impacted on the relationship.

- **Financial Ratios.** A series of standard financial ratios were calculated for each organisation. Appropriate adjustments were made to the reported accounting figures to create a consistent series over time where there had been changes in accounting practice. The following ratios were calculated:

- rate of return before interest and tax on net assets (profitability)[5]

- debts to turnover and stock to turnover (use of working capital);

- sales to net fixed assets (use of capital stock);

- labour's share in expenditure and value added per employee (use of labour).

Profitability is usually taken to be the key financial ratio to which the others contribute. However, using profitability alone is unsatisfactory when considering organisations which spent some or all of their time in the public sector. In the public sector goals other than profitability are often considered as, or more, important. Performance measured simply in terms of the rate of return on net assets could, therefore, simply reflect changes in objectives.

The ratios were calculated using four year averages for before and after the status change and were tested using a simple covariance model which took the form:

$$V_{it} = a + bt_i + bXt_i + D + m_i$$

where V_{it} is a vector of financial ratios and once again t is a time trend, X is a binary variable in slope form and D in shift form to capture the effect of the ownership change. Other factors affecting financial performance are reflected in the time trend, t.[1]

Returning to the organisations studied, only three - the HMSO, British Aerospace (nationalisation) and London Transport (post-1984) had appreciable changes in their competitive environment at around the time of the status change which might have impacted on performance. In 1982 the HMSO lost its monopoly of stationery and other supplies to government departments. The nationalisation of three airframe manufacturers to create British Aerospace reduced competition; while in the case of London Transport, from 1984 an increasing number of London bus routes were subjected to competitive tender.

RESULTS

Space precludes the inclusion of all of the statistical results, but the main ones are reported in Tables 3, 4 and 5 (for fuller details see Parker and Hartley 1991a and 1991b and Hartley, Parker and Martin, 1991). Table 3 provides a selection of results from the employment function tests; Table 4 includes the figures on labour and total factor productivity adjusted for changes in productivity in the whole economy, public corporations and the manufacturing sector; while Table 5 is a summary of the results of the significance tests on the financial ratios. In all cases dates refer to accounting year ends. For example, for the HMSO 1977-80 refers to the accounting years year ending 31 March 1977 to 31 March 1980.

(Tables 3, 4 and 5 around here.)

Inevitably, using a number of financial ratios meant that not all of them pointed in the same direction. To provide a guide, albeit crude, to the overall impact, each of the financial ratios was weighted equally to derive the "net total" column. An improvement in any ratio was given a value of one; where it deteriorated a value of -1. A net total greater than zero means that more financial ratios improved rather than deteriorated; and vice versa for a negative total. Changes in the stocks and debtors ratios need to be treated with special care as the direction of change associated with an improvement in performance is not certain. Lower stocks and debtors ratios may not always be desirable. Too few stocks might mean an inability to meet new orders. Fewer debtors could result from pestering customers to pay to the point where future sales are lost. An alternative view is to interprete any change in these ratios, in whatever direction, as evidence of improved performance. The final column in Table 4 adopts this approach. It is important to stress that either "net total" is merely a crude illustrative guide implying an equal weighting of the ratios and, therefore, the figures must be interpreted with care. It can be argued that profitability is the key ratio, though as already explained there is a problem in using profitability alone when measuring changes in performance for organisations which spent at least some of their time in the public sector. Nevertheless, it is interesting to note that in five of the cases profitability rose following the status change (though for Rolls Royce contrary to expectation) and for none of the organisations did it decline.

In the cases of British Airways and the National Freight Corporation the performance measures showed evidence of improvement. The anticipation of privatisation and actual privatisation respectively seem to have had the desired effect. The British Airways results are unambiguous. In terms of the employment equation for the NFC, the inclusion of a slope dummy on output indicates that before privatisation the output coefficient was insignificant but became significant following privatisation. Along with the expected negative and significant shift dummy, this implies that privatisation was associated with a large increase in employment efficiency. In Table 4, three time periods are reported for the NFC with the period 1980 to 1983 reflecting the "anticipation effect" of impending privatisation in 1980/81 and the company's first nineteen months in the private sector. The financial ratio results for the NFC are also supportive of the view that privatisation improved efficiency if it is accepted that any changes in the stocks and debtors ratios suggest a performance change.

Turning to British Aerospace, the Ball and St Cyr employment function provided a poor fit and instead a function based on the Treasury employment function is reported (for more on this see Parker and Hartley, 1991a, p.413). The shift dummies proved to be positive as expected for nationalisation but contrary to expectation for privatisation. However, the interaction terms on output suggest an improvement in employment efficiency, especially after privatisation in 1981.

In other words, the coefficient on output was somewhat higher during the period of nationalisation implying a greater increase in employment was needed to produce any given increase in output. This result is also born out by the figures for labour and to a lesser extent total factor productivity in Table 4. Labour productivity growth was worse during the four years of nationalisation than in the earlier or following periods of private ownership. The total factor productivity results are more mixed, but the slight improvement in relation to the performance of public corporations and UK manufacturing during the period of nationalisation is a feature of the very poor productivity record of public corporations and manufacturing in these years. Similarly, the sharp recovery in UK manufacturing productivity in the early 1980s accounts for the deterioration in relative total factor productivity performance after 1981. The financial ratio results, however, do not confirm that nationalisation lowered performance and an assessment of the effects of privatisation depends upon the interpretation placed on the deterioration in the stocks ratio.

Owing to lack of reliable data, for the Royal Mint financial ratios could not be calculated. But in terms of labour and total factor productivity growth the Mint's transfer from government department control to trading fund status seems to have produced the anticipated efficiency gains. A Peel and Walker (1978) formulation of the employment function, which includes real wages as an independent variable, proved more satisfactory than the Ball and St Cyr equation, though there was evidence of multicollinearity between output and the lagged dependent variable so the latter was omitted. The results suggest that the movement to trading fund status led to an improvement in efficiency as reflected in the negative sign on the shift dummy, though this was partially offset by an increase in the coefficient on output, implying a one-off efficiency gain at the time of the status change.

In the case of the Royal Ordnance Factories, contrary to expectation labour productivity growth seems to have declined following the granting of trading fund status and, with the exception of the comparison with trends in UK manufacturing, total productivity growth also appears to have deteriorated. Again because the mid-to late 1970s was a period of very poor growth in manufacturing total factor productivity in the UK, this may explain why the performance of the Royal Ordnance Factories looks more respectable when contrasted with this indice. There was also no sign of the expected improvement in efficiency as measured by the employment function results, where the coefficient of the shift dummy is positive rather than negative. Only using the financial ratios could a performance improvement be identified (Table 5).

Turning to the HMSO, immediately after becoming a trading fund the performance in terms of comparative labour and total factor productivity seems to have worsened. Taking the period after 1982, however, when the HMSO faced competition for government contracts, labour productivity seems to have recovered though the performance in terms of total factor productivity remained disappointing. With regard to the financial ratios, there was either no evident change in performance or a slightly improved performance depending on the interpretation placed on the deterioration in the debtors ratio. The employment function result reported takes 1982 as the date of the status change and the result suggests improved performance.

The results relating to the public corporations were also mixed. The nationalisation of British Aerospace has already been discussed. The transfer of the postal and telecommunications businesses from government department control to a public corporation in 1969 led to improvements in labour productivity and perhaps also to some improvement in terms of the financial ratios (though once again, for telecommunications this depends on the interpretation placed on the higher debtors ratio), but the results using the other measures were more confused. For telecommunications, the Ball and St Cyr employment function provided a poor fit, therefore the lagged dependent variable was omitted, in which case longer-term employment efficiency did seem to improve after the introduction of public corporation status (but see Parker and Hartley, 1991a, p.413 for reservations). For the postal service, the status change dummy variable in the employment function was statistically insignificant at the 10% level or better.

At first blush perhaps the most surprising results were those for Rolls Royce. Instead of performance deteriorating as expected following the state takeover, it actually improved irrespective of which measure is used. It is interesting to note, however, that labour productivity, in particular, actually fell in the mid-1970s. Between 1975 and 1978, for instance, the decline was between 1.4% and 3.7% per annum depending on the precise measure used (Parker and Hartley, 1991a, p.410). This may mean that the 1971 financial crash acted as a short-term stimulus to reorganise and cut waste, but that within a few years state ownership was having the expected deleterious effect on performance.

Lastly, London Transport remained a public corporation throughout the period studied but was subjected to more political intervention during its years under GLC control between 1970 and 1984. The expectation was that performance would have deteriorated after 1970 and improved from 1984. Our study suggests that the establishment of GLC control did not lead to an immediate performance deterioration except in terms of total factor productivity. However, the transfer from GLC control in 1984 *did* lead to the expected efficiency improvements. This result may be explained by the fact that political intervention in London Transport by the GLC intensified in the late 1970s and early 1980s.

CONCLUSIONS

The research reported in this chapter was concerned with testing a central hypothesis derived from the public choice and property rights literatures that changes in ownership status away from political control towards private ownership, especially when also associated with increased product market competition, lead to improved performance. This was tested by studying ten organisations which underwent twelve relevant status changes either within the public sector or involving movements between the public and private sectors.

The results were mixed and often varied depending on the precise performance measure used. Table 6 provides an overall summary of the results with the organisations listed according to the extent to which the results supported the central hypothesis. The following are the main conclusions:[6]

- Three cases of privatisation were studied involving British Airways, the NFC and British Aerospace. The results for British Airways and the NFC were strongly supportive of the central hypothesis, while those for British Aerospace were only slightly less supportive. In other words, privatisation seems to have led to the expected performance improvement.

- The results for those organisations which changed status within government were more confused. In the case of the trading funds, the performance of the Royal Mint and, on the whole, the HMSO improved, but the results for the Royal Ordnance Factories were disappointing. The granting of public corporation status to the Post Office in 1969 may have led to some improvement in labour productivity in both the postal and telecommunication businesses, and perhaps a marginal improvement in terms of the financial ratios, but in terms of total factor productivity the result was unclear.

- The results for the nationalisation cases were perhaps the most surprising. There was some evidence of a worsening in the performance of British Aerospace after 1977 in terms of the use of labour but not necessarily in terms of the other performance measures. In the case of Rolls Royce, initially state ownership led to an improvement in performance, though performance deteriorated later. The experience of London Transport following the abolition of the GLC and the the imposition of a clearer commercial objective, supports the view that political control reduces efficiency.

- In three cases, the HMSO, London Transport after 1984 and the nationalisation of British Aerospace there was a change in ownership status and an apparent change in product market competition. The HMSO and London Transport faced more competition, while the merger of three aerospace companies within the UK to form British Aerospace reduced domestic competition. According to the schema in Figure 1, the coupling of a change in ownership with a change in the competitive environment should lead to significant changes in performance and this was broadly confirmed in two of the cases. The HMSO's performance improved more noticeably after 1982 when it lost its monopoly of public sector supplies and London Transport registered a clear improvement in performance after 1984. The British Aerospace results were less obvious, but there was no overwhelming evidence of a deterioration in performance. This might, however, be explained by the fact that the corporation worked in an industry heavily dependent on state aid and government contracts so that even before 1977 there was only limited competition between the constituent companies of British Aerospace.

It is always dangerous to draw firm conclusions from what was clearly a small sample. However, the results do not contradict the view that privatisation improves performance and they provide some support for the argument that political intervention in an organisation's operations damages efficiency. They seem to bear out Stephen Littlechild's warning some years ago in relation to organisations which retain some government ownership, that "..... as long as ultimate control lies with government, one cannot realistically hope to avoid all the problems...." (Littlechild, 1981, p.14). The introduction of trading fund or public corporation status within government had a less reliable effect on performance than outright privatisation in the cases studied.

The scheme in Figure 1 performed well. Longer movements along the horizontal axis (public to private ownership) did seem to be associated with more noticeable performance changes. Also, the independent effect of product market competition on efficiency seems to have been born out. This conclusion has obvious implications for programmes which introduce agency status within government, such as the "Next Steps" initiative, as well as for the on-going debate about the merits of public and private ownership, especially where there is continuing state regulation.

FOOTNOTES

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2. This, of course, may not be true where there are appreciable scale or scope economies. However, for the purposes of the remainder of this chapter this need not detain us.

3. Figure 1 and the reasoning on which it is based also implies that movements *within* the private sector (eg D to F or F to D) will be associated with changes in efficiency. However, this chapter is concerned only with agency status within government and movements across the public-private boundary.

4. Although the government retained 48.4% of the shares until May 1985, 1981 can be taken as the date of privatisation because from that date the government ceased to intervene in the affairs of the company.

5. Calculating profitability before interest charges removes the effect of different types of financing. In particular, public sector activities have no equity, hence privatisation, by substituting equity for loan stock, reduces the interest charge and increases post-interest profitability. Taking post-interest figures would introduce a bias in favour of the profitability results

after privatisation or before nationalisation.

6. In interpreting the results it would be useful to know more about the history of the organisations and their internal management with a view to explaining why it is in some cases performance changed as expected but in other cases it did not. This might permit answers to an important question. What are the internal organisational changes that lead to improved efficiency? In other words, what are the critical factors for success when ownership changes? Clearly, changing ownership cannot in itself change performance, something must change within the organisation, but what is it?. This issue is addressed elsewhere (Parker, 1992).

NOTE

1. The ordinary least squares (OLS) method was adopted for the employment and financial ratio tests. In undertaking the statistical analysis, due attention was paid to the possibility that the results were unreliable because of the existence of multicollinearity, heteroscedasticity and autocorrelation.

   Multicollinearity leads to large standard errors of the regression coefficients, though given that in this study, the primary objective was to identify differences in organisational efficiency, collinearity was of limited importance provided it did not affect the dummy variables. Its existence was detected by the use of a correlation matrix, which picks up collinearity between pairs of variables (though it is less reliable in detecting collinearity between three or more variables where no two alone exhibit high correlation). In only two cases reported below was there evidence of high collinearity impacting on the results (see Parker and Hartley, 1991a) and to overcome it, one of the variables was removed.

   Heteroscedasticity makes the OLS estimators inefficient, ie. they no longer have minimum variance. This tends to be more of a problem, however, in cross-sectional studies rather than where time series data are used as in this study. Nevertheless, in an effort to ensure that it was not a factor in the results, the residuals were plotted - no significant heteroscedasticity was discovered for the equations reported below. By contrast, autocorrelation among the disturbances is more common in time series data (though less so in annual data as used here). If it exists, once again the OLS estimators are no longer efficient so that the tests of significance are less powerful. A standard method of detecting autocorrelation is the Durbin-Watson h statistic, however this cannot be used for autoregressive models. Thus it could be used for the financial ratio tests but not in the employment function study. The Durbin h statistic has been developed for use in autoregressive models but it is only asymptotically efficient and therefore should not be used for small samples. There appeared to be no readily accepted test for autocorrelation for small sample autoregressive functions, so detecting of first-order autocorrelation was undertaken by plotting the residuals. Where there was evidence of autocorrelation, a first-difference transformation was undertaken using the Cochrane-Orcutt iterative procedure.

REFERENCES

Alchian, A.A., 1965, "Some Economics of Property Rights", *Il Politico*, vol.30, pp.816-829.

Ball, R.J. and St Cyr, E.B.A., 1966, "Short-run Employment Functions in British Manufacturing Industry", *Review of Economic Studies*, vol.33, pp.179-207.

Bishop, M. and Kay, J., 1988, *Does Privatization Work? Lessons fromthe UK*, Centre for Business Strategy, London Business School, London.

Borcherding, T., Pommerehne, W. and Schneider, F., 1982, "Comparing the Efficiency of Private and Public Production: the evidence from five countries", *Zeitschrift fur Nationalokonomie*, vol.42, supplement 2.

Buchanan, J.M., et.al., 1978, *The Economics of Politics*, Institute of Economic Affairs Readings, 18, London.

De Alessi, L., 1980, "The Economics of Property Rights: a Review of the Evidence", *Research in Law and Economics*, vol.2, pp.1-47.

Furubotn, E.G. and Pejovich, S., 1974, *Economics of Property Rights*, Ballinger, Cambridge, Mass..

Grossman, S.J. and Hart, O., 1980, "Take-over Bids, the Free Rider Problem and the Theory of Corporations", *Bell Journal of Economics*, vol.11, pp.42-64.

Hartley, K., Parker, D. and Martin, S., 1991, "Organisational Status, Ownership and Productivity", *Fiscal Studies*, vol.12, no.2, May, pp.46-60.

HMSO, 1988, *Civil Service Management Reform: the Next Steps*, Cmnd. 524, London.

Lawriwsky, M.L., 1984, *Corporate Structure and Performance: the Role of Owners, Managers and Markets*, Croom Helm, London.

Millward, R. and Parker, D., 1983, "Public and Private Enterprise: Comparative Behaviour and Relative Efficiency", in R. Millward, D.Parker, L. Rosenthal, M.T. Sumner and N. Topham, *Public Sector Economics*, Longman, London.

Mitchell, W.C., 1988, *Government as It Is*, Hobart Paper 109, Institute of Economic Affairs, London.

Niskanen, W.A., 1971, *Bureaucracy and Representative Government*, Aldine-Atherton, New York.

Parker, D., 1989, "Public Control of Natural Monopoly in the UK: Is Regulation the Answer?", in M. Campbell, M. Hardy and N. Healey (eds.), *Controversy in Applied Economics*, Harvester/Wheatsheaf, London.

Parker, D. and Hartley, K., 1991a, "Organisational Status and Performance: The Effects on Employment", *Applied Economics*, vol.23, no.2, February, pp.403-416.

Parker, D. and Hartley, K., 1991b, "Do Changes in Organisational Status affect Financial Performance?", *Strategic Management Journal*, vol.12, no.8, November, pp.631-641.

Parker, D., 1992, "Ownership, Organisational Changes and Performance", in T. Clarke and C. Pitelis (eds.), *The Political Economy of Privatisation*, Routledge, London.

Peel, D.A. and Walker, I., 1978, "Short-run Employment Functions, Excess Supply and the Speed of Adjustment: a note", *Economica*, vol.45, pp.195-202.

Pryke, R., 1971, *Public Enterprise in Practice*, MacGibbon and Kee, London.

Pryke, R., 1981, *The Nationalised Industries*, Martin Robertson, Oxford.

FIGURE 1 MAPPING FOR EFFICIENCY IMPROVEMENTS

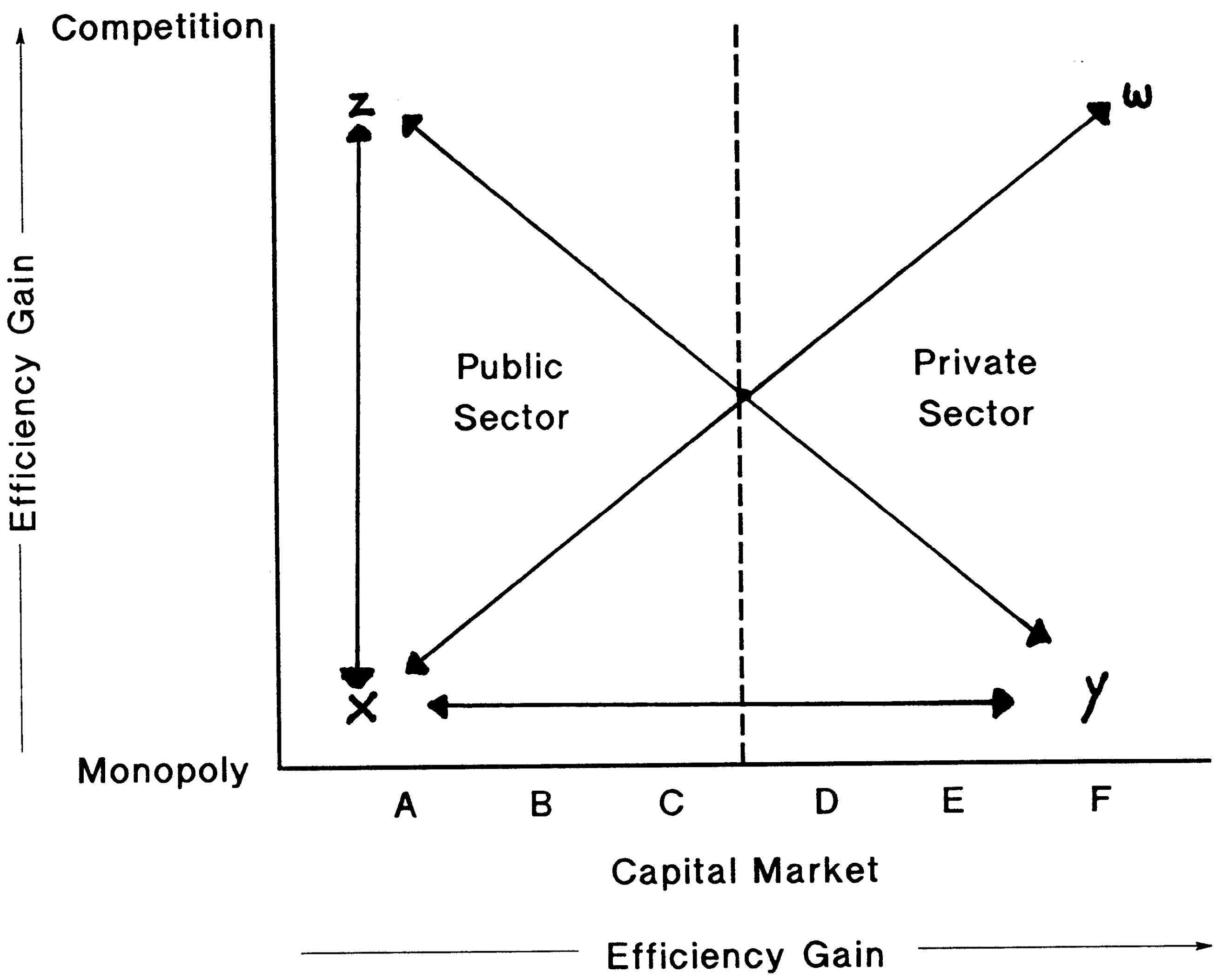

TABLE 1: PERFORMANCE OF NATIONALISED INDUSTRIES

	Labour Productivity (annual % change)		
	Nationalised Industries	Whole Economy	Manufacturing
1979/80	0.1	0.7	0.9
1980/81	-0.5	-3.8	-5.3
1981/82	6.5	3.5	6.9
1982/83	2.4	4.0	6.4
1983/84	7.2	4.0	8.3
1984/85	6.0	2.9	4.8
1985/86	9.6	1.1	2.4
1986/87	6.2	3.6	4.8

Source: Treasury, *Economic Progress Report*, No 193, December 1987, p5.

TABLE 2: ORGANISATIONAL STATUS CHANGES

Type of change	*Organisation*	*Date*	*Prediction from central hypothesis of change in performance*
Government department to trading fund	Royal Ordnance Factories	July 1974	Improvement
	Royal Mint	April 1975	Improvement
	HMSO	April 1980	Improvement
Government department to public corporation	Post Office Postal	April 1969	Improvement
	Post Office Telecommunications	April 1969	Improvement
Public corporation to (local) government department[a]	London Transport	Jan 1970	Deterioration
Local government department to public corporation	London Transport	June 1984	Improvement
Change of ownership:			
(a) Public limited company to public ownership	Rolls-Royce	Feb 1971	Deterioration
	British Aerospace	April 1977	Deterioration
(b) Public corporation to public limited company	British Aerospace	Feb 1981	Improvement
	National Freight	Feb 1982	Improvement
(c) Anticipation effects — public corporation to public limited company	British Airways	1980–87	Improvement

TABLE 3 THE EMPLOYMENT FUNCTION RESULTS

	a	log Q	log N_{t-1}	t	D_1	D_2	X_1	X_2	R^2
HMSO	6.22* (2.29)	+0.20# (2.08)	+0.36# (2.16)	-0.02^x (1.59)	-0.19** (3.95)				0.99
Royal Mint	3.44^x (1.82)	+0.21* (2.42)		+0.01 (0.24)	-3.25* (2.32)		-0.41* (2.17)	+0.43* (2.30)	0.69
Royal Ordnance Factories	1.91# (1.82)	+0.18* (2.78)	+0.88** (8.20)	-0.02** (4.94)	+0.11** (3.61)				0.87
PO Postal	7.04** (3.50)	+0.10* (2.15)	+0.35* (1.97)	+0.01* (2.23)	-0.01 (0.55)				0.72
PO Telecom	10.76** (46.03)	+0.74** (3.69)		-0.05* (2.76)	-0.12** (3.12)				0.78
London Transport	-2.04 (1.72)	-0.38** (4.33)	+1.38** (13.59)	-0.01 (0.87)	-0.01 (0.50)	-0.04# (1.86)			0.96
Rolls Royce	4.65** (3.23)	+0.12* (2.20)	+0.51** (4.20)	+0.01 (0.03)	-0.13** (4.32)				0.92
British Aerospace	6.65** (3.36)	+0.80* (2.79)		-0.02* (2.50)	+4.73* (2.16)	+5.19* (2.36)	-0.66# (2.15)	-0.71* (2.32)	0.53
National Freight	21.48** (4.41)	-0.25 (1.03)	-0.26 (1.22)	-0.09** (4.12)	-7.46** (3.27)		+1.46** (3.24)		0.99
British Airways	0.91 (0.71)	+0.79** (5.38)	+0.51** (4.85)	-0.03** (3.95)	-0.07# (2.14)				0.97

TABLE 3 Notes

(1) R^2 is adjusted for degrees of freedom; ** indicates significant at the 1% level, * at the 5% level, # at the 10% level using 2 tail tests, x indicates significant at the 10% level using a 1 tail test only. Figures in brackets are t ratios. There was no evidence of significant first order autocorrelation.

(2) Q = output; N_{t-1} = lagged employment; t = time trend; D = binary variable; $X_1 = D_1 \times \log Q$ except for RM where = real wages; $X_2 = D_2 \times \log Q$.

(3) For HMSO the dummy variable is lagged to 1982. See discussion in text.

Source: Parker and Hartley, 1991a, Table 3, p 412.

TABLE 4: THE LABOUR AND TOTAL FACTOR PRODUCTIVITY RESULTS

Organisation	*Whole economy* LP	TFP	*Public corporations* LP	TFP	*UK manufacturing* LP	TFP
Trading funds						
HMSO						
1977–80	0.5	–2.4	–1.3	–0.8	1.1	2.5
1981–84	0.2	–5.0	–3.3	–1.0	–2.8	–9.4
1982–85	7.1	–3.5	3.8	–3.2	4.1	–7.7
Royal Mint						
1972–75	–6.3	–3.6	–8.5	–6.9	–8.1	–7.0
1976–79	6.2	1.7	2.3	4.2	6.6	5.7
Royal Ordnance Factories						
1971–74	9.6	2.5	8.9	1.8	7.6	–1.2
1975–78	6.3	1.2	3.4	1.3	6.6	4.5
Public corporations						
Post Office Postal						
1966–69	–4.0	–4.4	–8.1	–5.6	n.a.	n.a.
1970–73	–1.5	–4.8	–0.4	–3.6		
Post Office Telecommunications						
1966–69	2.2	–0.4	–2.0	–1.6	n.a.	n.a.
1970–73	8.6	–1.0	9.7	0.2		
London Transport						
1966–69	–0.6	–1.5	–3.8	–2.7	n.a.	n.a.
1970–73	–0.1	–4.4	–1.3	–3.2		
1980–83	–0.5	–4.9	–5.7	–3.8		
1984–87	7.2	4.8	*	*		
Ownership changes						
Rolls-Royce						
1967–70	–10.4	–5.6	–13.6	–6.9	–11.1	–6.0
1971–74	10.6	2.5	9.9	1.8	8.6	–1.2
British Aerospace						
1973–76	4.0	0.1	–0.9	–3.2	2.4	–2.0
1977–80	–1.2	–3.0	–4.0	–1.3	0.1	1.9
1981–84	4.0	–1.8	0.5	2.2	0.9	–6.2
National Freight Consortium						
1977–80	–0.7	–0.6	–3.5	1.0	n.a.	n.a.
1980–83	5.0	0.3	–0.2	1.4		
1983–86	5.8	0.4	0.3[a]	1.2		
British Airways						
1976–79	3.7	1.0	–0.3	3.5	n.a.	n.a.
1980–83	5.7	3.6	0.5	4.7		
1981–84	5.3	1.1	1.8	5.1		

Source: Hartley, Parker and Martin, 1991, Table 3, p 56.

TABLE 4: Notes:

*	Privatisation distorts public corporation figures in this period, therefore results not reported.
(1)	Figures show difference, in percentage points, between an organisation's average annual productivity growth and the corresponding national average figure (organisation - UK).
(2)	LP = average annual growth in labour productivity (%). TFP = average annual growth in total factor productivity (%).
(3)	Figures based upon output deflated by each organisation's nearest own price deflator or a physical output series where available.
a	1983-85 only.
n.a	not applicable, service industry.

TABLE 5: SUMMARY OF THE FINANCIAL RATIO TESTS

Organization	Date of status change	Stocks ratio	Debtors ratio	Wages ratio	Fixed assets ratio	Profitability ratio	Value added ratio	Net total	Net total treating any change in the stocks and debtors ratios as improvements
London Transport	1970	Improved	No change	No change	No change	No change	No change	1	1
London Transport	1984	Improved	Deteriorated	No change	Improved	No change	No change	1	3
HMSO	1980	Improved	Deteriorated	Deteriorated	No change	Improved	n/a	0	2
National Freight	1982	Deteriorated	No change	Improved	Deteriorated	Improved	No change	0	2
Post Office (telecommunications)	1969	n/a	Deteriorated	Improved	No change	No change	No change	0	2
Post Office (postal)	1969	Improved	n/a	Improved	Deteriorated	No change	No change	1	1
British Airways	1980	Improved	No change	No change	No change	Improved	Improved	3	3
Rolls Royce	1971	Improved	Improved	Improved	No change	Improved	Improved	5	5
Royal Ordnance	1974	Improved	n/a	No change	Improved	Improved	Improved	4	4
British Aerospace	1977	No change	n/a	Improved	No change	No change	No change	1	1
British Aerospace	1981	Deteriorated	No change	No change	No change	No change	No change	−1	1

n/a: not available

Source: Parker and Hartley, 1991b, Table 5, p 640.

TABLE 6

OWNERSHIP STATUS AND PERFORMANCE - DID PERFORMANCE CHANGE AS EXPECTED?

Organisation	Labour Productivity	Total Factor Productivity	Employment Function	Financial Ratios
British Airways	Yes	Yes	Yes	Yes
London Transport (1984 change)	Yes	Yes	Yes	Yes
NFC	Yes	Yes	Yes	Yes?
Royal Mint	Yes	Yes	Yes?	N/A
British Aerospace (privatisation)	Yes	Yes?	Yes?	Yes?
HMSO	Yes	No	Yes	Yes?
Post Office Telecommunications	Yes	Unclear	Yes?	Yes?
Post Office Postal	Yes	Unclear	No	Yes
British Aerospace Nationalisation	Yes	Unclear	Yes?	No
Royal Ordnance Factories	No	No?	No	Yes
London Transport (1970 change)	No	Yes	No	No
Rolls Royce	No	No	No	No

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