

Chapter 3: Change in Ownership and Public Finances in the United Kingdom. An Empirical Assessment

1. Introduction

In recent times, the most comprehensive transfer of assets from the state to the private sector in Western Europe took place during the last decades of the twentieth century in the United Kingdom. Privatization, defined here as the transfer of ownership rights and managerial control from the government to private investors, became a popular word during the conservative governments of the late 1970s, 1980s and 1990s. According to official statistics¹, nationalized industries accounted for 11 per cent of British GDP in 1979, while they represented only 2.3 per cent of GDP in 1993. Gradually, privatization programs became a common feature of governments' policies around the world, and in many countries privatization is still work in progress.

Naturally, the economic literature on privatization has flourished. Reports detail the way the various programs have been carried out, theoretical work explores the implications of different types of ownership on objectives, incentives, and constraints faced by the production unit, and empirical work assesses the effect of privatization on the economic efficiency of the enterprise.

The question this paper addresses is whether the British privatization program represented a profitable policy for the British government, and therefore for the British

¹ HM Treasury (1996), *Public Expenditure. Statistical Analyses 1996-1997*.

population at large. Did the massive asset sale improve the public finances? Or did the program impoverish the public finances? And what is the actual measure of the financial impact of the British privatization on the public budget?

The question is narrow in scope, yet important, especially in the context of the British experience. It is well known that the British government carried out the privatization policy with a multiplicity of objectives in mind. Selling the public corporations was viewed, at different points in time, as a way of containing the growing power of trade unions, as an instrument to increase share ownership among employees and the general public, as a cure for the inefficiencies of the public sector. And, of course, it was recognized as a convenient way of relaxing the government's liquidity constraints. As a matter of fact, some have accused the government of being, at times, more interested in the short-term budgetary consequences of the policy, rather than focusing its attention on the lasting effects of the sales on market structure, on managerial incentives, on economic efficiency and economic welfare².

The Public Sector Borrowing Requirement (PSBR) measures the public sector fiscal deficit, and it is the sum of all expenditures by central and local government, and public corporations, not covered by tax revenues. The receipts from asset disposals were clearly viewed by the British government as a convenient way to reduce the PSBR (and they greatly helped to turn the PSBR into a debt repayment by the late 80s), and/or to finance tax cuts or increases in expenditure without violating financial targets. In fact, the PSBR played a very important role in shaping the privatization program itself and determining the speed at which the program was carried out. Financial considerations played their role in shifting the government attention from

² See for example Vickers and Yarrow (1988 and 1989), and Kay and Thompson (1986).

selling small, relatively competitive firms, to selling big public utilities, a trend that started with the offer for sale of British Telecom in 1984. The same fiscal concerns help to explain why the government chose to sell big companies all at once, rather than in separate stages³.

In reality, selling equity is just an alternative to issuing bonds: both are means to finance the deficit, not to reduce it. Unfortunately, accounting practices helped reinforce the (wrong) impression that privatization effectively reduced the budget deficits. Government accounting is on a cash basis, and privatization receipts are not classified as borrowing. Instead, they are recorded as "negative capital expenditures". Therefore, selling equity automatically contributes to a reduction of the PSBR, because it artificially reduces total expenditures. Furthermore, selling the company eliminates from the accounts the firm's borrowing requirements for the fiscal year. Of course this is set against the removal of the company's gross profits from the accounts. The table below reports the impact on the PSBR in the fiscal year 1985/86 of the British Telecom sale in 1984.

The Effect of Privatizing British Telecom in 1984 on the 1985/6 PSBR

	£ million
Proceeds from the sale, second installment (collected June 1985)	-1,200
Removal of BT's gross trading surplus from public revenues	+3,000
Removal of BT's capital requirements from public spending accounts	-1,900
Receipts by government of its dividends on 3 billion shares (net)	-200
Tax receipts on all BT dividend pay outs	-170
Interest paid by BT to government	-350
Interest paid by BT to rest of private sector	-150

Note: Gross trading surplus for 1985/6 assumed to be 10% higher than in 1984/5
Source: Mayer and Meadowcroft, 1985, and Kay and Thompson, 1986.

³ See for example Vickers and Yarrow, 1989, p. 218-219.

The table indicates that in 1985/6 the government collected revenues of £ 1.2 billion from payments of the second installment of the BT sale, in 1984, of 50.2 per cent of the company. The sale implied the removal from the accounts of an estimated £ 3 billion in gross profits, of which estimated £ 1.9 billion would have been reinvested in the company. Overall, including receipts for interest and dividend payments, the sale of BT in 1984 reduced the 1985/6 PSBR by £ 970 million. This treatment of asset sales in the official statistics is very misleading, because it reinforces a short-term view of the financial effects of privatization.

What is the long-term effect of each sale? In selling the assets it owns to the private sector, the government gives up the future stream of dividends of the company. If the company's profitability does not change because of the change in ownership, and the government prices the stock so to correctly anticipate the future expected profitability of the firm, and finally assuming zero transaction costs⁴, then it is clear that privatization does not change the government's net worth.

Unfortunately, the British government systematically priced the shares below their stock market value, and transaction costs were often quite high. For many sales, out-of-pocket expenses (marketing costs, underwriting fees, and so forth) were not the main component of the cost of the transaction: costly incentive schemes, such as bonuses, vouchers, free and matching shares, were often introduced to facilitate employees and small investors' purchases and retention of shares. Therefore, privatization reduced the government's net worth, unless one can show that, because of the change in ownership structure, the expected profitability of the companies increased. If that was the case, then the transaction costs plus the implicit cost of underpricing

⁴ Or assuming the same total transaction costs for alternative methods of financing the PSBR (i.e. bond financing versus equity financing).

have to be compared with the expected increase in future tax revenues, to properly measure the long-term impact of the privatization policy on the government's finances.

Several authors⁵ have already pointed out the problems associated with the accounting procedures described above, and the implications of using a short-term versus a long-term approach to evaluating the financial effects of the privatization program. Nevertheless, to my knowledge there has been no attempt so far to construct a comprehensive, complete estimate of the long-term financial impact of the British privatization experience. This is what I do in this paper.

In section (2), I introduce a simple model that measures the effect of privatization on the government's net worth. It shows how selling a company to the private sector can reduce the government's wealth through low share prices and high transaction costs. This financial loss can be partially or totally recovered only if the effect of privatization on the firm's long term profitability is positive. Section (3) describes the data. Information on methods of sale, and data on proceeds and costs of each sale are presented here. Pre-tax profits/losses for 42 privatized companies over a 16-year period form the data set I use to estimate the effect of the change in ownership on company's financial performance. In section (4), the results of the regression analysis are presented and discussed. These results indicate that, on average, there was no significant improvement on British companies' profitability due to privatization. Section (5) presents the evaluation of the long-term impact of the British privatization program on the

⁵ See Hemming and Mansoor (1988), Mansoor (1988), Mayer and Meadowcroft (1985), Kay and Thompson (1986), and Vickers and Yarrow (1988). In a more recent contribution (Galal, Jones, Tandon and Vogelsang, 1994), the authors explore the details and the welfare consequences of three British sales, British Telecom, British Airways, and National Freight Consortium respectively. The authors' estimates were derived comparing the performances of each company in the private sector with a carefully constructed counterfactual scenario, describing what would have happened if the company had remained in the public sector. For each case study, the objective of the authors was to evaluate the social welfare consequences of privatization. In that context, they devote a section to the evaluation of the fiscal impact of the sale.

government's finances. The extent of the financial losses incurred by the British government because of its privatization policy is estimated at more than £8,000 million. Section (6) offers some final comments.

2. The Basic Model

Suppose that in period t the government sells a state-owned company i to the private sector, and that it does so through a fixed-price offer⁶ of shares to the general public. Under the hypothesis of efficient equity markets⁷, the quoted price of the share at the beginning of period t reflects the present value $V_{i,t}$ of company i 's expected stream of future net dividends, namely the market price should be equal to

[1]

$$V_{i,t} = \sum_{j=1}^{\infty} \left(\frac{1}{1+r} \right)^{j+1} D_{i,t+j/t}$$

where r is the constant rate of return on capital investment and $D_{i,t+j/t}$ is the expected value of period $(t+j)$ net dividends, taken at time t . Dividends are net of taxes. The formula assumes that the dividend earned on the share in period t is paid at the end of the period. Assuming that after-tax profits are entirely distributed as dividends, D reflects the company's after-tax profitability. Therefore, to simplify the notation, from now on I will indicate company i 's stock market value at time t as:

$$V_i = \Pi_i^{PR} - T_i^{PR}$$

[2]

⁶ With a fixed price offer, the government announces the sale of a certain number of shares of the company at a given share price.

⁷ The standard efficient market hypothesis states that all relevant information is taken into account by all stock market participants when considering the market price of a share. It therefore follows that the quoted price of a company's stock reflects the expectation concerning the firm's profitability, the industry performance, as well as the whole economy's expected performance.

where

Π_i^{PR} = present value of stream of gross private profits

T_i^{PR} = present value of stream of taxes/subsidies

The government announces a sale price for the company's assets of P_i ⁸. The sale price can be equal to or smaller than the company's expected net future value, namely $P_i \leq V_i$. The government's total expected revenues from the sale of company i are given by:

[3]

$$TR_i = P_i + T_i^{PR}$$

which is the sum of the sale price and the future stream of taxes collected from the private company. The government's total expected costs of the sale are:

[4]

$$TC_i = C_i + \Pi_i^{PU}$$

where C_i indicates the sale transaction costs, which include both out-of-pocket expenses and incentive costs, and Π_i^{PU} is the present value of the projected stream of gross profits under the assumption that the firm remained state-owned. In short, Π_i^{PU} represents the opportunity cost of the government's decision to privatize company i .

For the moment, let us assume that there is no underpricing, namely $P_i = V_i$. Then, according to equations [2] and [3], the entire gross private profits are eventually appropriated by the government in the form of both immediate revenues from the sale P_i and future tax revenues

⁸ For simplicity, the total number of shares is normalized to one.

T_i^{PR} . From [2], [3] and [4], and under the assumption $P_i=V_i$, it follows that the government's net financial gains from privatizing company i are:

$$\begin{aligned} \Delta NW_i &= (P_i + T_i^{PR}) - (C_i + \Pi_i^{PU}) = (V_i + T_i^{PR}) - (C_i + \Pi_i^{PU}) = \\ &= (\Pi_i^{PR} - T_i^{PR} + T_i^{PR}) - (C_i + \Pi_i^{PU}) = \Pi_i^{PR} - \Pi_i^{PU} - C_i \end{aligned} \quad [5]$$

Equation [5] shows the total net expected financial revenues of the government under the assumption of correct pricing of shares: the financial gains (net of costs of the sale) are measured by the difference between what the company's profits will be under private ownership and what they might have been under public ownership. If there is no improvement in profitability once the firm is privatized, then the government simply transfers assets from the public to the private sector and its finances are worsened by an amount equal to the transaction costs C_i .

Let us consider now the possibility of underpricing of shares: the government announces a sale price $P_i < V_i$. Under this assumption, the net expected gains from the sale are⁹:

$$\begin{aligned} \Delta NW_i &= (P_i + T_i^{PR}) - (C_i + \Pi_i^{PU}) = (P_i + \Pi_i^{PR} - V_i) - (C_i + \Pi_i^{PU}) = \\ &= (P_i - V_i - C_i) + (\Pi_i^{PR} - \Pi_i^{PU}) \end{aligned} \quad [6]$$

Equation [6] indicates that, when the government prices the stock below its market value, the net expected revenues will be diminished by an amount equal to $(P_i - V_i) < 0$. If the company's financial performance improves under private ownership, the government is able to sell a more valuable future income stream, and this might -or might not- offset the financial loss associated with a price below the stock market value and the transaction costs.

⁹ From [2]: $T_i^{PR} = \Pi_i^{PR} - V_i$

Therefore, when estimating the long-term effect of privatization on government finances, one has to consider two important factors, beside the sale price and the transaction costs associated with the sale. First, when the announced sale price is lower than the expected future value of the assets, the government is forgoing potential earnings. Secondly, if privatizing the company implies that its future profitability will change, that effect has to be taken into account when considering the impact of the sale on the government's finances.

Next, I will present the data and estimate the effect of privatization on the company's profitability.

3. Data Description

According to the model described in the previous section, establishing the long-term effect of the British privatization program on the government's public finances requires several pieces of information. Revenues and costs from the sales of the firms provide information on the immediate effect of each sale on the government's budget. For a correct long-term financial evaluation, information on the implicit cost of underpricing is required, as well as data on companies' profits over time. Profits will be used to estimate the effect of privatization on the firms' financial performance, so to verify whether the government, despite pricing the stock below its market value, was able to sell a more valuable income stream than the one it would have obtained under public ownership.

This section presents the data relevant to the analysis. The most complete and comprehensive sources of information on the British privatization program are official sources, the HM Treasury and the National Audit Office respectively. The HM Treasury published the *Guide to the Privatization Programme* (August 1995), which contains data on profitability,

before and after privatization, for all the 42 major companies privatized between 1979 and 1994 in the United Kingdom. Short of relying on individual companies' annual reports for a 16-year period and for 42 companies, which clearly would have been a quite daunting task, this data set was the most comprehensive one available to me for evaluating the effect of change in ownership on firms' financial performances. Another official source of information, particularly on the revenues and costs of each sale, is the National Audit Office, which published detailed reports after almost every sale. Finally, a report compiled on behalf of Ernst & Young, *Privatization in the U.K. The Facts and Figures* (1994), presents a large amount of data and information on the privatization program, largely derived from the official sources mentioned above, but it also includes additional data on share prices and stock market quotes for each privatized company.

Table 1 lists the major privatizations that took place in Great Britain between 1979 and 1993. It lists the name of the company, the dates of sales, and the method used in each offer, whether a tender offer, a fixed price offer or, as in the case of the National Freight Consortium, a manager buy-out. In a fixed-price offer, the government offers for sale the company announcing a share price, and applicants submit their requests concerning the number of shares they are interested in buying. In a tender offer, applicants submit their bids specifying the number of shares they want to purchase at or above a minimum price per share. Then a strike price is determined, typically at or below the market-clearing price and above the minimum tender price. In a manager buy-out, shares are not offered publicly for sale, and the company is purchased by a consortium of company's managers and possibly other company's employees. As Table 1 shows, the British government vastly preferred to sell its assets using fixed-price offers.

For the purpose of estimating the effect of privatization on the firm's profitability, I use data provided by the HM Treasury, and published in *Her Majesty's Treasury Guide to the UK Privatization Programme (August 1995)*. Table 2 presents profits for the 42 firms in the sample. For each company, annual pre-tax profits and/or losses are reported for the period 1979-1994, a total of 416 observations. For each company, the profit in the last full year of public ownership is marked in bold.

The list of companies in Table 1 matches the list of companies in the data set presented in Table 2, with the only exception of British Petroleum. The sale of BP was done in stages, with the first stage marking the beginning of the privatization plan, and with the last offer of 31.5 percent of the company in October 1987. At that time, the stock market crashed, and almost all the new shares were left to the underwriters¹⁰. BP constituted the first big sale in the British privatization-wave of the 1980s, although it is not part of the regression sample and it does not enter in my long-term financial evaluation.

A first look at the data presented in Table 2 reveals a general improvement in financial performances over time for almost all the companies in the sample. Also, it appears that private ownership is marked by increased profitability. For example, consider the performance over time of Cable & Wireless. In 1979, two years before the privatization of the company, profits were £ 59.4 million. In 1983, only two years after the sale, they almost tripled to £156.7 million, and they steadily increased over time, reaching £1,088.3 million in 1994. Whether the improved profitability over time for the companies in the sample is due, at least in part, to the privatization program, or should rather be attributed to a general (and industry/company specific) positive financial trend, remains to be established by the regression analysis.

Two companies in the sample, Britoil and Jaguar respectively, show a decline in their financial performances sometime after privatization, and their financial data are not recorded in the last six and five sample-years respectively. Britoil, created in 1982 from North Sea Oil Exploration and British National Oil Corporation (BNOC), was privatized in two stages. The first offer for sale of 51 percent of the company was a tender offer in 1982, followed by a fixed price offer of the remaining assets in 1985¹¹. The observations for the years following 1988 are missing because Britoil became a wholly owned subsidiary of British Petroleum (BP) in February 1988. Jaguar, the luxury car-maker originally a subsidiary of British Leyland (now Rover Group), suffered from the misfortunes of its parent company during the 70s. It then started out in the private sector showing remarkable improvements in performance. Finally it reverted to poor performances in the late 80s- early 90s, and it's now a wholly owned subsidiary of the Ford Motor Company.

As Table 2 shows, there are other missing observations in the sample, notably in the case of the regional electric utilities, and for the water companies. This is due to the fact that the company was created as an independent body in the years immediately preceding the sale, following radical restructuring of the industry. Before March 1990, generation and transmission of electricity in England and Wales were carried out by the Central Electricity Generating Board (CEGB), a public enterprise which owned and operated the national grid and most power plants (including the nuclear power stations). The twelve regional electricity companies were created on March 1990¹² to take over the distribution of electricity. National Power and PowerGen, on the other hand, were formed to take over the non-nuclear generation of electricity from the

¹⁰ I modified the list in Table 1 with respect to its original source, to include National Freight Consortium and National Grid, both of which are part of the sample.

¹¹ See Table 1.

Central Electricity Generating Board, in the proportions of 70 and 30 percent of the total generating capacity respectively.

A similar restructuring program preceding privatization was carried on in the water industry: previously called the English and Welsh Water Authorities, the nine English regional water companies and the Welsh water company came into being with the Water Act of 1989. The radical restructuring caused many changes to be applied in the companies' financial profiles, and this likely generated incompatibility between the old public enterprise's financial records and the newly created company's financial profile.

Table 3¹³ contains the information concerning proceeds and costs of sales for the 42 companies included in the sample, the only exception being Northern Ireland Electricity, for which I was unable to gather any significant information on the costs of the sale. Also, notice how the data on sales of the Water Companies and the Regional Electricity Companies are presented together, as they are in the original National Audit Office (NAO) reports. Column (3) indicates, for each sale, the percentage of the company's stock that was sold. After 1985, the British Government always sold the entire company in one stage, the only exceptions being the second and third sales of BT. A very small percentage of the stock was usually retained to satisfy employees' requests for loyalty bonuses. Column (4) in the table presents the equity gross sale proceeds, and it therefore excludes any other possible source of revenue for the government, such as debt repayments. Whenever possible, I chose to list the equity gross sale proceeds as they appeared in the NAO reports: the figures typically include the value of shares that were distributed for free to employees and pensioners, as well as the value of matching

¹² The twelve companies together own the National Grid company, which was privatized at the same time as the regional companies: all the shares in the grid's holding company went to the regional utilities.

¹³ Table A1 in the Appendix presents additional details on the individual companies' offers.

offers, employee discounts, bonus shares, and subsequent estimated revenues from sales of retained bonus shares. These all are part of the many incentive schemes the British government devised to encourage long-term diffusion of share ownership. I decided to include the value of the incentive schemes in the expenses, so that, whenever possible, column (5) in the table lists the total actual transaction costs of the sale (out of pocket expenses and implicit costs, such as bill vouchers, bonus shares, employee free shares and discounts). Monetary expenses typically include administrative costs, such as underwriters' fees and commissions, marketing and advertising.

If the revenues from privatization were often quite significant, so were the costs. As percentage of proceeds, expenses ranged between 1.3 and 8.1 percent. Transaction costs increased over time, and with the size of the company sold. On one hand, one might expect economies of scale to operate with respect to the out-of-pocket expense component of costs. On the other hand, selling the big public utilities to the private sector was associated with higher incentive costs, especially when the Government decided to make diffusion of share ownership among small investors a central objective of its privatization policies. The sales of BT and British Gas, for example, were carried out placing great emphasis on attracting small investors.

It is important to realize that there are different sources of information on the costs of the sales, and that their estimates often show quite some variability. Even the official sources, such as the HM Treasury reports and the National Audit Office reports, sometime present different data.

I therefore chose to base my estimates on costs as much as possible on one source, the NAO reports, and I applied adjustments based on the other available sources of information when it was necessary.

To give a better idea of how the NAO constructed its reports, Table 4 reproduces NAO estimated proceeds and costs of the sale of British Airways, in 1987. A comparison of the data in Table 4 with the corresponding information for British Airway in Table 3 provides an example of the way in which my classification of costs differs from the data produced in the reports. The equity sale proceeds for British Airways in Table 3 are £907 million, a figure that includes £900.3 million value of shares included in the offer at the selling price of 125p/share, plus the estimated premium from bonus share sale of £6.7 million. On the other hand, I decided not to subtract the value of employee discounts and free and matching offers (a total of £14.7 million) from the value of shares offered for sale, while I included that figure in the fifth column of table 3, as expenses.

It is my opinion that the calculation of expenses in Table 3 reflects more precisely the total real cost of the sale, which should include indirect costs, such as free shares, as well as direct financial disbursements. The apparent choice of the Audit Office was instead to classify as incentive costs only bonus shares and, when applicable, bill vouchers (both referred to as incentives for small shareholders), while excluding employee' discounts on share price, free and matching shares to employees and the like.

It has to be kept in mind that typically the data concerning incentives presented in the NAO reports constitute estimated values. For example, the incentives for small shareholders (bonus shares and/or bill vouchers) are based on the maximum figures, therefore assuming that all those eligible at the time of the sale hold on their shares and receive their benefits. The cost of bonus shares is based on the issue price. Clearly an estimate is the revenue figure "premium for bonus share sale", often added to the total sale proceeds: this figure refers to the receipt of sale of shares initially retained for bonus issues but no longer required.

4. Empirical Methodology and Regression Results

I previously emphasized how a correct evaluation of the long-term impact of the British privatization program on the public finances has to take into account potential differences in the firm's value due to privatization. If, once in the private sector, a firm's profits are higher than what they would have been otherwise, that implies that the government disposes of a more valuable asset. The difference in profitability should then affect the net gains from the sale, both in the short and in the long run. Potentially, the government can sell the company at a higher price, and it will obtain higher tax revenues in the future¹⁴.

I use the sample presented in Table 2 to estimate the effect of privatization on company's profitability. The sample consists of pre-tax profits for 42 companies over a 16-year period. All the companies in the sample were sold to the private sector sometime during the period considered.

Equation [6] indicates the elements needed to determine the effects of privatization on public finances: the sale prices (P), the government's transaction costs (C), gross public profits Π_i^{PU} , gross private profits Π_i^{PR} , and the market value of the firm (V).

Consider each of these elements in turn. Sale prices and transaction costs come from the data sources described earlier in this chapter. The market value of each firm is calculated using the information on individual companies' offers and their market values presented in Table A1 in the Appendix.

More difficult to measure are private and public profits. While the firm is in public hands, it is possible to observe public profits, but it is impossible to observe them after

¹⁴ See equations [5] and [6] in Section 2.

privatization. Likewise, it is possible to observe private profits after the firm has been privatized, but not before. As a result, we must infer what public profits *would have been* in the post-privatization period had the firm not been privatized, and we must infer what private profits would have been in the pre-privatization period had the firm been private.

To make these inferences, the following strategy is used. Public profits and private profits are observed when they are available. If the two sets of profits are consistent with one another- in ways to be described later- this would simplify the calculations because public profits and private profits would be the same.

In its most general form, the estimated equation can be represented as follows:

$$p_{it} = a_i + gT_t + bDP_{it} + e_{it} \quad [7]$$

where p_{it} is the profit level for company i at time t , a_i is company i 's fixed effect, T_t indicates a time trend variable, and DP_{it} is a dummy variable equal to one if firm i is a private company in period t . e_{it} is the error term.

The intercept a_i indicates by how much firm i 's profitability differs from the average, capturing any idiosyncratic, company-specific differences in profits, while g and b are common parameters measuring the impact of a possible sustained upward or downward trend, and the effect of privatization respectively, on companies' profits. Estimates of simpler versions of equation [7] have been considered, which are also discussed in this section.

The parameter of interest is β , that is, the average measure of the impact of privatization on each firm's earnings. If the estimated value of β is statistically significant, then that value can be used to approximate the difference in companies' performances between the pre and post privatization periods. In other words, it would be:

[8]

$$\begin{aligned}\Pi_i^{PR} - \Pi_i^{PU} &= \sum_{j=0}^{\infty} \left(\frac{1}{1+r} \right)^j (p_{i,t+j}^{PR} - p_{i,t+j}^{PU}) = \sum_{j=0}^{\infty} \left(\frac{1}{1+r} \right)^j b = b \sum_{j=0}^{\infty} \left(\frac{1}{1+r} \right)^j = \\ &= b \left(\frac{1}{1 - \frac{1}{1+r}} \right) = b \left(\frac{1+r}{r} \right)\end{aligned}$$

where Π_i^{PR} and Π_i^{PU} are the present values (at time t) of the future stream of pre-tax profits under private and state-ownership respectively¹⁵.

Table 5 presents the results of our statistical comparisons of pre-privatization public profits and post-privatization private profits. The key question in each comparison is whether there is evidence that private profits are any different than what profits would have been had the firm remained public. For all the regressions, the dependent variable is companies' annual pre-tax profits (losses). All numbers are in million of pounds. To adjust for the fact that firms are observed for differing number of years, the standard errors are calculated using White's robust estimator.

The first column, column (1), presents a simple comparison of mean profits prior to privatization and after privatization, averaged across firms. This corresponds to estimating the regression $p_{it} = a + b * DP_{it} + e_{it}$, where DP_{it} is the binary variable equal to 1 when the firm is private, and a is a common constant. In this model, the average effect of privatization on profits is quite big and statistically significant: post-privatization earnings are on average £187 million higher than under public ownership¹⁶.

¹⁵ The average rate of return on corporate assets can be approximated by the average value of the British nominal annual interest rate r over the period considered.

¹⁶ The constant is estimated at £91.81 million.

One problem with this specification is that each firm affects the calculation of profits a different number of times depending on how many years of information are available. For example, the fact that Associated British Ports has four years of information on public profits while British Aerospace has only two years of information, means that Associated British Ports receives twice as much weight as British Aerospace. This is especially problematic because the firms are so different in size. For example, most of the information for the relatively large firm British Telecom comes after privatization, while information for the smaller Water Companies are more evenly distributed between the pre-and post-privatization periods. To see why this is a problem, consider the following example. Suppose firm 1's profits are always 100 and firm 2's profits are always 50. Suppose three years of information are available for each firm, but that 2 years of firm 1's profits are pre-privatization while 2 years of firm 2's profits are post-privatization. Then average profits in the period before privatization are $250/3$, while average profits in the period after privatization are $200/3$. Comparing the simple averages makes it appear that privatization decreased profits even though profits remained the same for each firm.

To account for company's differences, I therefore estimate the model with firms' specific fixed effects, namely the equation $p_{it} = a_i + b * DP_{it} + e_{it}$. The results are presented in column (2) of Table 5.

Introducing company-specific intercepts does diminish the average effect of privatization on profits, but not by much. Still, the estimated value of β remains positive, and quite large. Selling the firms to the private sector seems to have, on average, a quite significant positive impact on financial performance.

Each of the firms sold by the British government was well established. Successful firms rarely stagnate, they instead tend to grow over time. If profits also grew over time, then post-

privatization profits would have been higher than prior to privatization merely because of this trend.

Chart 1 presents the entire sample's profits over the time period considered, and it reveals the possibility of a positive trend in profitability over time. Two companies clearly outperformed the other firms: they are British Gas and British Telecom respectively. They also happen to be among the biggest companies in the sample, and, lacking specific information to control for firm's size, the fixed effect coefficients are the estimated parameters that should reflect differences in size, among other things. In fact, for all the specifications used, the fixed effect for British Telecom is estimated to be the largest in the whole sample, and the coefficient for British Gas is the second biggest estimated value.

Chart 2 presents each firm's profits relative to profits in the year the company was sold, with profits in the year of privatization normalized to 100. For every company, year zero is the year in which the company is privatized, and the other years are measured relative to the year in which the firm went for sale. In Chart 2 the upward trend in average financial performances is more evident than in Chart 1. Also, normalizing profits in the year of the sale allows to better understand relative performance for each company. For example, in Chart 2, British Gas and British Telecom do not show exceptionally high profits in the years following their sale with respect to profits in their year of sale. Rather, Cable & Wireless and the National Freight Consortium are the two companies that out-perform the average trend in relative profitability over time, particularly in the latest years in the sample.

To adjust for this apparent trend in profits, a time trend variable was added to the regression, resulting in $p_{it} = a_i + gT_t + b * DP_{it} + e_{it}$, which corresponds to equation [7]. Estimates of this specification are reported in Table 5, column (3). The coefficient on the trend

variable, not reported in the table, is equal to 20.19, and statistically significant¹⁷. This number is quite high, saying that, on average, profitability is increasing at a rate of about £20 million per year per company. As column (3) indicates, the estimate for β , the privatization coefficient, is not significantly different from zero once the time trend variable is introduced: selling the firms to the private sector, per se, did not increase significantly their average financial performance.

The relatively large size of the time trend coefficient together with the insignificance of the effect of privatization on profits, confirm the idea that companies' profits did have a positive trend not only after privatization, but also before privatization. In fact, if the positive trend in profits were there only after privatization, then the estimated trend coefficient would be small and the estimated effect of privatization larger. The existence of an upward trend before privatization was also confirmed by the results of a regression that substituted the time trend variable with time dummies, one for each year (after 1979) in the sample. The estimated coefficients on the time variables take increasing values over the years, including the early years of observations, when most companies were still state-owned. These results, although not presented in Table 5, do confirm the existence of a positive trend before privatization as well as after it.

Among all the companies that went for sale between 1979 and 1994, many were subject to government regulation once privatized, while some were not. Regulation of private public utilities is the norm. British Telecom, British Gas, the Regional Electricity Companies, and the Water Companies are all regulated. They all follow a similar regulatory regime, carried out by autonomous regulatory bodies, instituted at the time of the sale. The stated purpose of regulation

¹⁷ £1,649.79 million is the estimate of British Telecom's fixed effect, and £594.54 million is the fixed effect coefficient for British Gas. They represent the highest estimated fixed effects among the companies included in the sample.

is the protection of consumers from abuse of monopoly power and, when possible, the promotion of entry and competition. In practice, regulated private companies are subject to various forms of price and quality of service controls. The fact that a subset of the privatized companies is subject to a similar regulatory regime, while other companies are not subject to the same control, suggests the possibility that the effect of privatization has been different for the two groups.

Intuitively, everything else equal, one could expect the privatized operations to be relatively more profitable for the unregulated companies, under the reasonable assumption that most of those companies actually operate in less-than-perfectly competitive markets.

Columns (4) and (5) of Table 5 report the estimates for the sub-sample of unregulated companies and regulated companies respectively. Both regressions estimate the effect of privatization for the specification that includes fixed effects and a time trend variable. As the results in columns (4) and (5) indicate, for both the unregulated and the regulated companies the estimated effect of privatization is still not statistically significant¹⁸.

Moreover, a test was performed to determine whether the pattern of profits were different for regulated and unregulated firms. Specifically, the following regression was run:

$$p_{it} = a_i + b * DP_{it} + g * T_t + b_R * R_i * DP_{it} + g_R * R_i * T_t + e_{it}$$

Note that the parameters β_R and γ_R indicate the difference between regulated and unregulated firms in how privatization affected profits and in the trend in profits. A joint test of the null hypothesis $\beta_R=0$ and $\gamma_R=0$, conducted using a Wald test, produced a p-value of 0.282 (reported in

¹⁸ The trend variable coefficient is estimated at £10.71 million for the unregulated companies, and £45.41 million for the regulated firms. The unregulated companies are: British Aerospace, Cable & Wireless, Amersham International, the National Freight Consortium, Britoil, Associated British Ports, Enterprise Oil, Jaguar, British Airways, Rolls-Royce, BAA, and British Steel. All the other companies in the original sample are subject to similar forms of economic regulation. I also run the same regressions on slightly modified sub-samples, including BAA in the regulated firms' group. BAA, formerly British Airports Authority, is the company that owns and operates all major British airport facilities, and it is subject to regulation, although it is not a public utility in the way all the other

the last row of Table 5), indicating that the similarity of regulated and unregulated firms could not be rejected.

Chart 3 and 4 show the trend in profits (relative to profits in the year of privatization) for the regulated and unregulated firms respectively. As in Chart 2, year zero represents the year in which each company was sold to the private sector, and profits in the year of privatization are normalized to be 100. Both charts reveal the existence of positive trends. They also suggest the possibility that the time trend was not constant over time; rather, it appears that the unregulated firms might have experienced a slightly higher trend rate after privatization, while the rate at which profits increased over time for the regulated firm seems to decrease after privatization¹⁹.

Although the results in column (3) imply that profits after privatization were not high after adjusting for the pre-privatization trend, it is also possible that privatization altered the rate at which profits were growing. To explore this possibility, a separate trend was estimated before and after privatization. Specifically, the following regression was estimated:

$$p_{it} = a_i + b * DP_{it} + g * T_t + d * T_t * DP_{it} + e_{it}$$

In this regression, the parameter γ represents the pre-privatization trend, while the parameter δ represents the difference between the pre-privatization trend and the post-privatization trend.

Parameter estimates for this regression are not shown in Table 5, but the result of a test of whether δ is significantly different from zero is reported at the bottom of Table 5. According to

regulated companies are. The results for those regressions are not shown because they did not constitute a departure from the estimates presented in the table.

¹⁹ If that was the case, one could argue that forcing the trend coefficient to be constant over time might explain the negative sign of the effect of privatization for the regulated sub-sample. That is because estimating a constant trend when indeed the actual trend in profits is positive but decreasing over time, would cause profits to be underestimated by the trend in earlier years, and overestimated in later years, when most companies were privatized. It would then be possible to obtain a negative estimate for the effect of privatization on profits.

this test, we cannot reject at conventional significance levels the hypothesis that the trend was the same before and after privatization (p-value of 0.265).

I also conducted similar tests separately for regulated and unregulated firms. The results, not presented in Table 5, partially confirm what the charts suggest. For the unregulated companies, the estimates show no indication of a significance difference in positive trend before and after privatization. For the regulated companies, the rate at which profits increased after privatization is lower (by approximately 10.3 million of pounds a year) than the rate pre-privatization (which is estimated around 59.6 million of pounds a year)²⁰.

The results presented in Table 5 might oversimplify the treatment of the time trend variable, imposing a constant rate of increase in profits when in fact for some companies the rate of change did vary before and after privatization. On the other hand, the results still indicate that there is no evidence of the average profitability being higher, relative to the trend, after privatization than it was before privatization.

To conclude, the results of this empirical analysis show how the tendency for the financial performances of the average British company in the sample to increase over a 16-years period was not significantly altered by the sale of the company to the private sector. Therefore, my measurements of the long-term effect of the privatization program on the British government's finances do not reflect any difference in expected future profitability due to differences in company's ownership and control.

The next section details the monetary impact of the privatization program for the British public budget.

²⁰ For the entire sample, the results indicate a non-linear, positive trend, with a slightly higher rate of increase in profits after privatization.

5. The Net Effect of the British Privatization Program on the Public Budget

The analysis in the previous section establishes that there is no empirical evidence of a statistically significant effect of privatization on the average profitability of the companies in the sample: average profits are no higher after privatization than they were before it, relative to the existing upward trend. That is to say, change in ownership alone did not significantly alter the average British company's market performance.

Therefore, in what follows I will assume that the value of each company did not change because of its privatization: the expected stream of profits under the alternative scenario (the company remaining state-owned) would have been the same as the expected future profitability under private ownership, everything else being equal:

$$\Pi_i^{PR} - \Pi_i^{PU} = 0$$

What was then the impact of the entire privatization program of the 1980s and early 1990s on the British public finances? According to equation [6], and because of the equality above, the change in the Government's net worth due to sale i is:

$$\Delta NW_i = P_i - V_i - C_i \quad [9]$$

The British Government received revenues from selling company i at the share price P_i , paid advertising, underwriting and incentive costs C_i , and, in selling the assets to the private sector, it gave up the stream of future net profits, V_i . As we will see next, the overall change in

the net worth of the British Government, ΔNW , was negative: the Government often underpriced its assets, therefore $P_i - V_i < 0$, and it paid significant transaction costs.

Table 6 shows the estimated net effect on the public budget of the sales of the companies in the sample²¹. For each company, the table reports gross sale proceeds, transaction costs and net sale proceeds, and the implicit costs (gains) associated with underpricing (overpricing) the stock. For each sale, the last column estimates the change in government net worth, as defined by equation [9]. Column (3) reports the equity gross sale proceeds, as they appear in Table 3, column (4). Equity sale proceeds include the total value of the shares offered for sale, calculated at the issue price, plus any additional estimated revenue from subsequent sale of retained bonus shares²².

Column (4) presents estimates of the transaction costs, which also appear as expenses in Table 3, column (5). Transaction costs reflect any out-of-pocket expense, or direct financial cost, such as printing the prospectus, advertising and marketing the sale, and paying underwriting fees. They also include, whenever detailed data were available²³, any cost associated with incentive schemes such as free shares, employee discounts, bonus shares, vouchers and the like.

With the exception of the sale of Associated British Ports in 1983, transaction costs in the earlier stages of the privatization program were not exceptionally high. If we exclude the sale of BT in 1984, from 1981 to 1984 the average cost of the privatization program was about 3.4

²¹ Two companies that are in the sample do not appear in Table 6. The first one is NFC, National Freight Consortium, which was sold to a management led consortium of company employees and pensioners. Its shares were not quoted on the Stock Exchange. The second company is National Grid, the holding company for the electricity industry. All its shares were allocated to the regional electricity companies, and therefore they were not offered for sale.

²² For more details on how I calculated gross sale proceeds and transaction costs, see the discussion of Table 3 and Table 4 in the previous section on data description.

²³ Again, see data description of Table 3 and Table 4 for more details.

percent of total proceeds, well below the 4.5 percent estimated average costs for private issues²⁴. Things started to change with the first sale of BT in 1984, which recorded expenses of £319 million, or 8.1 percent of gross sale proceeds. From then on, and with few exceptions, costs as percentage of proceeds increased substantially, and the average cost of the privatization program increased to 4.93 percent of total gross proceeds. The sales of British Gas, British Airways, BAA and National Power and PowerGen reported the highest transaction costs as percentage of proceeds: 7.1%, 6.3%, 7.7% and 6.5% respectively.

As shown in the National Audit Office's reports, the sales of big companies typically exhibited the highest costs, and in general the increase in costs positively correlates with the increasing emphases that the British Government placed on widening share ownership and attracting small investors. In fact, it was often the incentive component of the transaction costs that increased the most.

In addition to the information on sale proceeds and transaction costs, Table 6 documents the extent of the underpricing phenomenon that affected most sales. Columns (6) and (7) report the percentage changes in the stock market value and the corresponding estimates of the under (or over) valuation of the company's assets. The percentages in column (6) are positive when the market value of the company's shares increased after privatization, therefore reflecting Government's underpricing of shares during the offer for sale, and consequently under valuation of the company's total worth, as reported in column (7).

The percentage change in the price of each stock is calculated using the information presented in Table A1 in the Appendix. For each sale, Table A1 lists the offer price, whether it was paid in full or in separate installments, and what was the stock market value, or the

²⁴ See for example Vickers and Yarrow (1988), and Mayer and Meadowcroft (1985).

percentage premium on the offer price, typically at the end of the first day of trading in the London Stock Exchange. For the sales of the Regional Electricity Companies, the English Electricity Generators, the Scottish Electricity Generators, and the Water Companies, the premium on the fully paid price is calculated using the average of the individual companies' market quotations.

Column (6) of Table 6 emphasizes the magnitude of the underpricing phenomenon: many discounts are in double-digit, with the average discount for fixed price offers close to 16 percent. This average is in excess of the values typically recorded for similar sales of private issues: for private Initial Public Offerings, estimates indicate an average premium that ranges from 12 percent in times of rising equity markets, to 5.3 percent²⁵.

With the only exceptions of the third sale of Cable & Wireless and the second sale of British Telecom, the smallest discounts were recorded when a tender offer was used as the method of the sale. The sales of Cable & Wireless in 1983, Britoil in 1982, Associated British Ports in 1984, Enterprise Oil in 1984 and part of the sale of BAA in 1987, all used tender offers, and the average discount for these sales is -1.7 percent.

In general, tender offers can generate more accurate pricing, because the issuer relies on the market forces to determine the strike price. In this case, the average premium is negative because of the -8.83 percent decrease in market value of Britoil's shares in 1982, when 70 percent of the total offer was left to the underwriters. Otherwise, the data show that using tender offers rather than fixed price offers would have achieved the objective of pricing the stock to better reflect its market value. Despite the supporting evidence, the British Government quickly abandoned this method of sale. One possible justification for this decision relies in the

²⁵ See for example Vickers and Yarrow, 1988 (p.178), and Jenkinson and Mayer, 1988 (Table 1).

Government's declared desire of broadening share ownership among the general public: from the viewpoint of the small investor, a tender offer is more complex and more involving than a fixed price offer.

Another interesting fact revealed by the percentages listed in column (6) is that, whenever the Government sold the company in stages, the measure of the under valuation of the assets considerably diminished with subsequent partial offers. To a small extent it happened with the second sale of British Aereospace, it clearly happened with the third sale of Cable & Wireless, and especially with the second and third sale of BT: all these were partial fixed price offers that followed previous fixed price offers of the same stock. Selling a company in separate stages has the obvious advantage of establishing a market for the company's shares, and this will provide useful information for future pricing decisions. Despite the good pricing record of partial sales, the British Government soon began to sell the companies in one offer only, therefore forgoing any information possibly provided by previous stock market history²⁶.

Finally, the last column in Table 6 provides the estimated changes in the Government's net worth after each sale. As specified by equation [9], the long-term impact of each sale on the British public finances is determined by the degree of underpricing and by the transaction costs. Column (8) in Table 6 reports the estimates of such impact: overall, the total net loss for the British public is estimated at £8,213.2 million, of which £5,804.6 million from underpricing, and the remaining £2,408.6 from transaction costs. This loss represents a 17.72 percent of the total proceeds from the privatization program.

²⁶ Selling a company in stages not only allows for informed pricing decisions, but it might also provide useful experience in controlling the costs of the issue. This seems to be confirmed by the percentages reported in Table 3, column (6).

Two final observations concerning the numbers presented in Table 6. First, the actual transaction costs for many sales might have been higher than what the numbers in the table suggest. In fact, as previously noted, there is quite some variability in the numbers presented by alternative sources of information, and sometimes I found it impossible to obtain precise information on incentive costs, or to be able to match the information produced by different sources.

Second, I calculated the percentage changes in stock prices with respect to the full offer price. Since in many sales the Government allowed for payment in separate installments, this implies that I did not make any correction to take into account the time discount factor. For example, let us consider the first sale of British Gas in December 1986. Table A1 reports the details of the flotation. The full price was 135 p. per share, to be paid in three separate installments of 50 p., 45 p. and 40 p. respectively. The second payment was due in June 1987, and the last payment was due in April 1988. If a time discount factor is included, the actual price paid by investors as of December 1986 should be lower than the full offer price of 135 p. Since I did not adjust the offer prices to account for this, the numbers presented in Table 6 often underestimate the actual impact of underpricing on the long-term loss of public net worth²⁷.

²⁷ In few cases, the official estimates, as reported by the National Audit Office, did take into account installments' discounts. In those cases, the numbers presented in Table 6 reflect the official adjustments.

6. Conclusions

Undoubtedly, one of the preoccupations of the British Government while carrying out the privatization program was the size of the Public Sector Borrowing Requirement, and privatization receipts were viewed as a convenient way of reducing the PSBR²⁸.

Indeed, in the short-term the sale of assets to the private sector did improve the public finances. Nevertheless, what looked like a reduction of the British PSBR in the short-term, was not so in the long-term. Because of consistent underpricing of shares with respect to their market value, and because of significant transaction costs, the British Government's net worth was reduced by the privatization policy. Part, if not all, of the losses could have been recovered if the transfer of ownership and control had implied an increase in the future profitability of the companies sold to the private sector. But, as shown in this paper, the average financial performance of the privatized companies did not change because of privatization, and therefore the expected government's future tax revenues did not change as well.

My estimates show that financial losses amounted to more than £ 8.2 billion, of which £ 5.8 billion due to underpricing the stock, and £ 2.4 billion due to transaction costs. The numbers make it clear that more accurate pricing of shares would have greatly benefited the public finances.

As other authors have pointed out²⁹, the way the program was carried out had a significant impact on these results. The cost of underpricing could have been reduced by using tender offers and by selling the companies gradually, rather than offering the companies all at

²⁸ In truth, as previously pointed out, selling state-owned companies to the private sector is a way of financing, not reducing, the PSBR.

²⁹ See for example Vickers and Yarrow (1988), Mayer and Meadowcroft (1985).

once at fixed, predetermined prices. It has been pointed out that the cost of underpricing represents nothing more than a redistribution of wealth among the British population. Those who gained were the investors that bought shares at prices well below their true value; those who lost were the taxpayers that could have gained from lower taxes and/or higher public expenditures. Aside from any discussion concerning the redistribution consequences of privatization, underpricing represented a real net loss for the British public at least for the value of those shares that were purchased by foreign investors.

Transaction costs included costs of incentives to employees and to private investors, which, together with low share prices, were used to increase the demand of shares among small shareholders. It is questionable whether widening share ownership should have been, in itself, a concern for the government when selling the companies to private investors. If popular share ownership is important to the government, there are other, more general instruments that can be used to the same effect. The government could establish tax incentives for individuals to directly invest in shares, while at the same time it could limit or remove existing strong incentives to invest personal savings in home ownership and other forms of institutional investment.

Underwriting costs, although not much out of line with respect to those of private issues, are difficult to justify as well. First, paying fees to underwriters did not translate into accurate pricing of shares. Second, one can argue³⁰ that the government is the institution that needs external underwriting the least. In private issues, underwriting allows the issuer to share the financial risks of the sale with another party, the underwriter. But any financial risk associated with the sale of state-owned companies to the private sector is effectively born by the population at large, which is, per-se, an effective way to share the risk.

³⁰ See Mayer and Meadowcroft (1985).

In conclusion, the privatization exercise represented a net loss for the British public, a loss that could have been reduced significantly if the government adopted alternative methods of sale.

References

- Bishop, M. and J. Kay (1990). The Impact of Privatization on the Performance of the UK Public Sector. In Dankbaar, B., J. Groenewegen and H. Schenk (ed.), *Perspectives in Industrial Organization*. The Netherlands: Kluwer Academic Publishers.
- Boardman, A.E. and A.R. Vining (1989). Ownership and Performance in Competitive Environments: A Comparison of the Performance of Private, Mixed, and State-Owned Enterprises. *Journal of Law and Economics* 32: 1-33.
- Buckland, R. and Davis, E.W. (1984). Privatization Techniques and the PSBR. *Fiscal Studies* 5 (3): 44-53
- Caves, D.W. and L.R. Christensen (1980). The Relative Efficiency of Public and Private Firms in a Competitive Environment: The Case of Canadian Railroads. *Journal of Political Economy* 88(5): 958-976.
- De Alessi, L. (1982). On the Nature and Consequences of Private and Public Enterprises. *Minnesota Law Review* 67: 191-209.
- Ernst & Young (1994). *Privatization in the UK. The Facts and Figures*. Compiled by Peter Curwen. London: Ernst & Young.
- Galal, A., L. Jones, P. Tandon and I. Vogelsang (1994). *Welfare Consequences of Selling Public Enterprises. An Empirical Analysis*. New York: Oxford University Press.
- HM Treasury (1995). *Her Majesty's Treasury Guide to the UK Privatisation Programme*. London: Crown Copyright.
- HM Treasury (1996), *Public Expenditure. Statistical Analyses 1996-1997*. Cm 3201. London: HMSO.
- Hyman, H. (1989). Privatisation: The Facts. In Veljanovski, C. (ed.), *Privatisation & Competition. A Market Prospectus*. London: The Institute of Economic Affairs.
- Jenkinson, T. and C. Mayer (1988). The Privatisation Process in France and the UK. *European Economic Review* 32: 482-490.
- Kay, J.A. and D.J. Thompson (1986). Privatisation: a Policy in Search of a Rationale. *The Economic Journal* 96: 18-32.

Mansoor, A.M. (1988). The Budgetary Impact of Privatization. In Blejer, M.I. and K.Y. Chu (ed.), *Measurement of Fiscal Impact. Methodological Issues*. Washington, D.C.: The International Monetary Fund.

Mansoor, A.M. and R. Hemming (1988). *Privatization and Public Enterprises*. Washington D.C.: The International Monetary Fund.

Mayer, C.P. and S.A. Meadowcroft (1985). Selling Public Assets: Techniques and Financial Implications. *Fiscal Studies* 6(4): 42-56.

Meggison, W.L., R.C. Nash and M.van Randenborgh (1994). The Financial and Operating Performance of Newly-Privatized Firms: An International Empirical Analysis. *Journal of Finance* 49(2): 403-452.

National Audit Office (1985). *Report by the Comptroller and Auditor General. Department of Trade and Industry: Sale of Government Shareholding in British Telecommunications plc*. London: HMSO, 495.

National Audit Office (1987a). *Report by the Comptroller and Auditor General. Department of Energy: Sale of Government Shareholding in British Gas plc*. London: HMSO, 22.

National Audit Office (1987b). *Report by the Comptroller and Auditor General. Department of Transport: Sale of Government Shareholding in British Airways plc*. London: HMSO, 37.

National Audit Office (1988a). *Report by the Comptroller and Auditor General. Department of Trade and Industry: Sale of Government Shareholding in Rolls-Royce plc*. London: HMSO, 243.

National Audit Office (1988b). *Report by the Comptroller and Auditor General. Department of Transport: Sale of Government Shareholding in BAA plc*. London: HMSO, 312.

National Audit Office (1990). *Report by the Comptroller and Auditor General. Department of Trade and Industry: Sale of Government Shareholding in British Steel plc*. London: HMSO, 210.

National Audit Office (1992a). *Report by the Comptroller and Auditor General. Department of the Environment: Sale of the Water Authorities in England and Wales*. London: HMSO, 256.

National Audit Office (1992b). *Report by the Comptroller and Auditor General. The Sale of the Twelve Regional Electricity Companies*. London: HMSO, 10.

National Audit Office (1992c). *Report by the Comptroller and Auditor General. The Sale of National Power and PowerGen*. London: HMSO, 46.

National Audit Office (1992d). *Report by the Comptroller and Auditor General. The Sale of ScottishPower and Hydro-Electric*. London: HMSO, 113.

National Audit Office (1993). *Report by the Comptroller and Auditor General. The Sale of the Second Tranche of Shares in British Telecommunications plc.* London: HMSO, 568.

National Audit Office (1994). *Report by the Comptroller and Auditor General. The Third Sale of Shares in British Telecommunications plc.* London: HMSO, 663.

National Audit Office (1996). *Report by the Comptroller and Auditor General. The Second Sale of Shares in National Power and PowerGen.* London: HC, 310.

National Audit Office (1997). *Report by the Comptroller and Auditor General. Sales of Government's Residual Shareholdings in BP, BAA and in Other Privatised Companies.* London: HC, 265.

Perotti, E.C. and S.E. Guney (1993). The Structure of Privatization Plans. *Financial Management*, Spring: 84-98.

Veljanovski, C. (1987). *Selling the State. Privatisation in Britain.* London: Weidenfeld and Nicolson Press.

Vickers, J. and G. Yarrow (1988). *Privatization: An Economic Analysis.* Cambridge, Massachusetts: The MIT Press.

Vickers, J. and G. Yarrow (1989). Privatization in Britain. In MacAvoy, P.W., W.T. Stanbury, G. Yarrow and R.J. Zeckhauser (ed.), *Privatization and State-Owned Enterprises. Lessons from the United States, Great Britain and Canada.* Norwell, Massachusetts: Kluwer Academic Publishers.

APPENDIX: Details of Individual Flotations.

Table A1 contains many details on the individual companies' offers, such as offer price and stock market valuations of the newly privatized assets on the first day of trading, number of installments, and so forth. The table also provides additional details concerning the effort that the British government put into arranging various sales incentives. Especially when public utilities went for sale, the government's desire was to encourage wider share ownership, among the general public as well as among company's employees and customers. This is clearly reflected in many provisions for bonus shares, discounts, and bill vouchers, as listed in Table A1.

For most companies, the government retained what became known as Golden Share, or Special Share. The Golden Share entitles the government to maintain some interest in the privatized company, imposing restrictions on some of the firm's actions, as specified in the company charter. As Special Shareholder, the government has to receive notification of any shareholders' meetings and can speak at such meetings, but cannot vote. Sometimes, the Share allows the appointment of a Government Director. Among the most common restrictions that the government can exercise through its Golden Share are controls on the issue of new voting shares, and limits on the number of shares that can be held by a single shareholder (typically 15 per cent of the equity of the company). In addition, the Golden Share gives the government veto power against undesirable resolutions or company's takeovers, and it might require the consent of the government in order to change certain provisions in the company's statute, such as the nationality requirement of the chief executive officer, or disposal of assets. Quite often, the Special Shares do not have a minimum or maximum duration, therefore allowing the government to maintain some control over important firm's decisions indefinitely.

TABLE A1: Details of Individual Flotations⁽¹⁾.**Amersham International**

- 1st February 1982 (100 per cent)
Offer price=142p: fully paid
Market value: 188p⁽²⁾.
 £1 Special Share (redeemed July 1988)

Associated British Ports

- 1st February 1983 (51.5 per cent)
Offer price=112p: fully paid
Market value: 138p⁽²⁾.
 2nd April 1984 (48.5 per cent)
 Minimum tender=250p: fully paid
Striking price=270p. Market value: 272p⁽²⁾.
 100p payable in April, 170p in June 1984.

British Aerospace

- 1st February 1981 (51.6 per cent)
Offer price=150p: fully paid
Market value: 171p⁽²⁾.
 2nd May 1985 (59 per cent)
 Offer price=200p: part paid.
 (Opened at 261p)
 Further installment of 175p in Sept. 1985
Full price=375p. Accompanied by one in four right issue. **Market value: 420p⁽²⁾.**
 £1 Special Share held by Secretary of State for Trade and Industry.

British Airports Authority (BAA)

- 1st July 1987 (100 per cent)⁽³⁾.
 Offer price=100p: part paid.
 (Opened at 146p)
 Further installment of 145p in May 1988
Full price=245p. Market value: 291p⁽²⁾.
 Bonus of one share for every ten held for three years up to a maximum of 200 extra shares.
 £1 Special Share redeemable at any time.

British Airways

- 1st February 1987 (100 per cent).
 Offer price=65p: part paid.
 (Opened at 109p)
 Further installment of 60p on August 1987
Full price=125p. Market value: 169p⁽²⁾.
 Bonus of one share for ten held until Feb. 1990 up to a maximum of 400 extra shares.

British Gas

- 1st December 1986 (100 per cent).
 Offer price=50p: part paid.
 (Opened at 68p). Two further installment
 a) 45p. on June 9 1987 b) 40p. on April 19 1988.
Full price=135p. Market value: 147.5p⁽²⁾.
 Customers offered bonus of one share for ten held for three years up to maximum of 500 extra shares, or gas bill vouchers issued up to a maximum value of £250 over a three-year period on the basis of £10 for every 100 shares held continuously. £1 Special Share, redeemable at any time.

British Steel

- 1st December 1988 (100 per cent)
 Offer price=60p: part paid.
 (Closed at 62.75p.)
 Further installment of 65p on September 26 1989
Full price=125p. Closed first day of trading at 2.2% premium on fully paid price⁽⁴⁾.
 £1 Special Share redeemable on or before December 31, 1993.

British Telecom

- 1st December 1984 (50.2 per cent)
 Offer price=50p: part paid (opened at 91p)
 Two further installments: a) 40p on June 24 1985
 b) 40p on April 9, 1986.
Full price=130p. Market value: 173p⁽²⁾.
 Bonus of one share for ten held for three more years up to a total of £5,000 (max of 400 extra shares), or telephone bill vouchers (to a maximum of £216).
 2nd December 1991 (28 per cent)
 Offer price=110p: part paid (opened at 125.5p)
 Two further installments: a) 120p. on July 7, 1992. b) 120p. on March 2, 1993.
Full price=350p. At the close of the offer (December 6, 1991), **market value: 342p⁽⁵⁾.**
 3rd July 1993 (21.9 per cent).
 Offer price=160p: part paid (closed at 168p)
 Two further installments: a) 140p on March 1, 1994. b) 120p on October 11, 1994.
Full price: 420p. Closed first day of trading at 1.91% premium on fully paid price⁽⁴⁾.

(British Telecom)

Bonus of 1 share for 15 held for three years (max 100 extra shares) or installment discounts of 10p per share on 2nd and 3rd installments on a maximum of 1,000 shares held continuously. £1 Special Share redeemable at any time, 1984 onwards.

Britoil

- 1st November 1982 (51 per cent).
Tender offer price=100p: part paid (opened at 85p)

Further installment of 115p. on April 6, 1983.
Full price=215p. Market value: 196p⁽²⁾.

- 2nd August 1985 (48 per cent).
Offer price=100p: part paid (opened at 122p)
Further installment of 85p on November 1, 1985.
Full price=185p. Market value: 207p⁽²⁾.
BP offers to buy Britoil for 500p or 240p+1BP share. Offer goes unconditional on February 24, 1988.
£1 Special Share, retained by government after takeover but terminated July 1990.

Cable and Wireless

- 1st October 1981 (49.9 per cent)
Offer price=168p: fully paid.
Market value: 197p⁽²⁾.
- 2nd December 1983 (22 per cent)
Tender sale at minimum of 100p: part paid (opened at 97p).
Further installment of 175p on February 17, 1984. **Full price=275p. Market value=273p⁽²⁾**
- 3rd December 1985 (31 per cent)
Offer price=300p: part paid (opened at 295p).
Further installment of 287p on March 7, 1986.
Full price=587p. Market value: 590p⁽²⁾.
£1 Special Share redeemable at any time, 1983 onwards.

Enterprise Oil

- 1st July 1984 (100 per cent).
Tender sale at minimum of 100p: opened at 95p.
Further installment of 85p on September 12, 1984.
Full price=185p. Market value=185p⁽²⁾.
March 1989: loan stock converted into ordinary shares.
£1 Special Share redeemed in December 1988.

Jaguar

- 1st August 1984 (100 per cent)
Offer price=165p. Market value 179p⁽²⁾.
On November 3 1989, Ford Motor Co. bid 850p per share and took over Jaguar.
£1 Special Share waived at end of October 1988.

Northern Ireland Electricity

- 1st June 1993 (100 per cent)
Offer price=100p: part paid (**opened at 126.5p**)
Further installment of 120p on June 28, 1994
Full price=220p. Premium of 12.05% on fully paid price.
Customers: bonus of one share for ten held for three years subject to maximum of 300 bonus shares, or vouchers worth £17 for every 100 shares subject to a maximum voucher value of £340 over three years.
Non-customers: bonus of one share for twenty held for three years subject to a maximum of 150 bonus shares. £1 Special Share redeemable at any time.

Rolls-Royce

- 1st May 1987 (100 per cent).
Offer price=85p: part paid (opened at 147p)
Further installment of 85p on September 23 1987
Full price=170p.
Market value: 232p⁽²⁾.

Regional Electricity Companies

- 1st December 1990 (100 per cent).
- | | |
|-------------------|--------------------------|
| (a) Eastern | (g) Norweb |
| (b) East Midlands | (h) Seeboard |
| (c) London | (i) Southern |
| (d) Manweb | (j) South Wales (Swalec) |
| (e) Midlands | (k) South Western |
| (f) Northern | (l) Yorkshire |

Offer price=100p: part paid. Opened at various prices. Below are highest part-paid price quoted during first day of trading:

- | | |
|----------|----------|
| (a) 148p | (g) 152p |
| (b) 150p | (h) 142p |
| (c) 142p | (i) 150p |
| (d) 166p | (j) 164p |
| (e) 144p | (k) 150p |
| (f) 142p | (l) 160p |

Two further installments a) 70p on October 22, 1991 b) 70p on September 15, 1992.

Full price=240p. Average premium on fully paid price was 49p for the first 24 days of trading, to January 16, 1991⁽⁴⁾.

(Regional Electricity Companies)

Customer bonus of one share for ten held, up to a maximum of 300 extra if held for three years, or vouchers worth £18 for every £100 invested up to a maximum of £270 of vouchers
 Non-customers bonus of one share for twenty held, up to a maximum of 150 extra if held for three years. £1 Special Share held by Secretary of State for Energy, redeemable on or before March 31 1995

English Electricity Generators

1st March 1991 (60 per cent)

- (a) National Power
- (b) PowerGen

Offer price=100p: part paid.

(a) **Market value: 137p.**

(b) **Market value: 137p.**

Further installment of 75p in February 1992.

Full price=175p. Average premium of 21.14% on fully paid price.

Share bonus of one share for ten held up to a maximum of 400 extra shares (248 National Power and 152 PowerGen) if held to March 31, 1994, or discounts of 14p per share on second installment on the first 1,240 National Power shares and first 760 PowerGen shares.

£1 Special Share held by Secretary of State for Energy.

Scottish Electricity Generators

1st June 1991 (100 per cent)

- (a) Scottish Hydro-Electric
- (b) ScottishPower

Offer price=100p: part paid.

(a) **Market value: 122p.**

(b) **Market value: 116p.**

Two further installments: a) 70p in May 1992

b) 70p in April 1993. **Full price=240p. Average premium of 7.92% on fully paid price.**

Customer bonus of one share for ten held, up to a maximum of 300 extra if held to June 30, 1994, or vouchers issued in December 1991 and six-monthly thereafter to December 1993 on basis of £18 per 100 shares allocated and retained until each date. Maximum of £54 each time to maximum total of £270. Non-customer bonus of one share for twenty held, up to a maximum of 150 if held to June 30, 1994. £1 Special Share held by Secretary of State For Energy, redeemable at any time.

Water Companies

1st December 1989 (100 per cent)

- | | |
|------------------|----------------|
| (a) Anglian | (f) South West |
| (b) North West | (g) Thames |
| (c) Northumbrian | (h) Welsh |
| (d) Severn Trent | (i) Wessex |
| (e) South | (j) Yorkshire |

Offer price=100p: part paid. **Opened at various prices:**

- | | |
|----------|----------|
| (a) 149p | (f) 147p |
| (b) 135p | (g) 136p |
| (c) 157p | (h) 144p |
| (d) 131p | (i) 154p |
| (e) 141p | (j) 149p |

Two further installments: a) 70p on July 31, 1990 b) 70p on July 30, 1991.

Full price=240p. Average premium of 18.46% on fully paid price.

Customers: one for ten bonus if held to December 31, 1992 up to a maximum of 300 extra shares, or a reduction of 10p per share on 2nd and 3rd installments up to a maximum value of £300.

Non-customers: one for twenty bonus if held to December 31, 1992 up to a maximum of 150 extra shares.

Wessex Water: 1 for 6 rights issue January 1993
 £1 Special Share, redeemable on or before December 31, 1994.

Sources: Privatization in the UK. The Facts and Figures, compiled by Peter Curwen on behalf of Ernst & Young, 1994, Appendix 2, amended by author; Vickers, J. and G. Yarrow (1988); NAO Reports, various issues.

Market values typically refer to the market share price at the end of the first trading day.

⁽¹⁾ The individual sales are listed in alphabetic order according to the name of the company.

⁽²⁾ From Vickers, J. and G. Yarrow (1988). *Privatization: An Economic Analysis*, Table 7.1, p. 174.

⁽³⁾ BAA sale was partially carried out using a tender offer on July 29, 1987. Of the total gross proceeds of £1,281 million, £362 million came from the tender offer for sale. The tender price was 290p, while the price at the end of the first trading day was 291p.

⁽⁴⁾ From NAO reports.

⁽⁵⁾ The Treasury introduced quite few innovations in this offer for sale, in particular concerning the offer structure, with the explicit purpose of maximizing sale proceeds and preventing market price distortions with respect to previous issues. To this purpose, they decided to have an international tender offer and a domestic public offer, both with three installments. For the tender offer, the striking price was going to be set at the very end of the offer period, to account somewhat for the latest market quotes. The fixed price part of the offer, actually did not have a fixed pre-determined price: they fixed two out of three installment payments (110p, 120p), and they announced that the third installment would be due in an amount equal to the final installment under the international offer. At the end, when on December 6 1991 the international offer closed, the market price for a fully paid BT share was 342p, while the set price-in both offers- was 350p. According to NAO calculations, although higher than the stock market quote, this final price effectively reflected a discount, after taking account of the deferred payment terms for the investors.

TABLE 1: Major Privatizations, 1979-1993

Company	Date of Sales	Method of Sale
British Petroleum	October 1979	fixed price offer
	September 1983	tender offer
	November 1987	fixed price & tender offer
British Aerospace	February 1981	fixed price offer
	May 1985	fixed price offer
Cable & Wireless	October 1981	fixed price offer
	December 1983	tender offer
	December 1985	fixed price offer
Amersham International	February 1982	fixed price offer
National Freight Consortium (NFC) ⁱ	February 1982	management buy out
Britoil	November 1982	tender offer
	August 1985	fixed price offer
Associated British Ports	February 1983	fixed price offer
	April 1984	tender offer
Enterprise Oil	July 1984	tender offer
Jaguar	July 1984	fixed price offer
British Telecommunications (BT)	November 1984	fixed price offer
	December 1991	fixed price & tender offer
	July 1993	fixed price & tender offer
British Gas	December 1986	fixed price offer
British Airways	January 1987	fixed price offer
Rolls-Royce	May 1987	fixed price offer
BAA (formerly British Airports Authority)	July 1987	fixed price & tender offer
British Steel	December 1988	fixed price offer
Anglian Water	December 1989	fixed price offer
Northumbrian Water Group	December 1989	fixed price offer
North West Water Group	December 1989	fixed price offer
Severn Trent	December 1989	fixed price offer
Southern Water	December 1989	fixed price offer
South West Water	December 1989	fixed price offer
Thames Water	December 1989	fixed price offer
Welsh Water	December 1989	fixed price offer
Wessex Water	December 1989	fixed price offer
Yorkshire Water	December 1989	fixed price offer
Eastern Electricity	December 1990	fixed price offer
East Midlands Electricity	December 1990	fixed price offer
London Electricity	December 1990	fixed price offer
Manweb	December 1990	fixed price offer
Midlands Electricity	December 1990	fixed price offer
Northern Electric	December 1990	fixed price offer
Norweb	December 1990	fixed price offer
Seaboard	December 1990	fixed price offer
Southern Electric	December 1990	fixed price offer
South Wales Electricity ⁱⁱ	December 1990	fixed price offer
South Western Electricity	December 1990	fixed price offer
Yorkshire Electricity Group	December 1990	fixed price offer
National Grid ⁱⁱⁱ	December 1990	-----
National Power	March 1991	fixed price offer
PowerGen	March 1991	fixed price offer

Scottish Hydro-Electric	June 1991	fixed price offer
Scottish Power	June 1991	fixed price offer
Northern Ireland Electricity	June 1993	fixed price offer

Source: Privatization in the UK. The Facts and Figures, compiled by Peter Curwen on behalf of Ernst & Young, 1994, p.1, amended by author.

ⁱ NFC was bought out by a management led consortium of employees and pensioners.

ⁱⁱ Renamed Swalec in November 1993.

ⁱⁱⁱ National Grid was the holding company for the electricity system in England and Wales. It was privatized at the same time as the regional electricity companies. All shares of National Grid were owned by the regional electricity companies and no shares were offered for sale.

TABLE 2. Pre-Tax Profit (Loss)⁽¹⁾, Historic Cost Convention, 1979-1994, £ million.

(A number in **bold** marks the last full year in the public sector)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
British Aerospace	50.3	52.8	70.6	84.7	82.3	120.2	150.5	182.2	161	259	293	403	150	(219)	51	172
Cable & Wireless	59.4	61.0	64.1	89.2	156.7	190.1	245.2	287.3	340.5	356.1	420.5	526.7	617.6	713.8	823.7	1,088.3
Amersham International	6.0	4.0	4.8	8.5	11.7	13.7	17.1	17.6	22.1	25.3	21.4	23.9	15.5	20.7	26.3	43.5
NFC			4.3	10.1	11.8	16.9	27.2	37.0	47.4	60.4	69.9	71.3	79.4	85.4	95.1	106.3
Britoil		294.0	423.1	486.3	550.4	650.4	730.9	134.0	403.9	(5)						
Associated British Ports	22.4	11.5	(10.3)	5.5	14.5	(7.0)	17.2	26.0	38.1	46.5	57.2	60.2	31.0	(36.6)	62.1	80.3
Enterprise Oil					83.2	138.5	111.1	2.9	72.5	67.5	148.8	210.3	114.4	144.9	99.8	93.9
Jaguar		(47.3)	(31.7)	9.6	50.0	91.5	121.3	120.8	97.0	47.5	(49.3)					
BT		424	570	936	1,031	990	1,480	1,833	2,067	2,292	2,437	2,692	3,075	3,073	1,972	2,756
British Gas ⁽²⁾							712	800	1,067	1,018	1,065	1,063	1,556	846	(613)	918
British Airways				(108)	74	185	191	195	162	228	268	345	130	434	185	301
Rolls-Royce					(115)	26	81	120	156	168	233	176	51	(184)	76	101
BAA ⁽²⁾						84	104	119	122	166	198	255	247	191	285	322
British Steel ⁽²⁾						(229)	(378)	42	177	419	593	733	254	(55)	(149)	80
Anglian Water							21.1	37.4	52.2	58.7	73.4	78.4	152.6	171.3	185.4	192.2

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Northumbrian Water	0.1	3.0	7.1	10.8	10.1	10.0	46.9	61.1	69.4	62.8
North West Water	(26.0)	(6.9)	8.9	25.3	44.3	68	214.5	230.1	247	269
Severn Trent	(17.8)	39.0	52.0	96.6	97.5	121.0	239.3	274.0	270.1	281.4
Southern Water	22.0	36.9	47.3	59.3	65.1	54.3	97.1	115.1	119.2	127.5
South West Water	20.6	23.9	28.1	33.5	38.1	45.3	88.2	90.0	92.7	93.0
Thames Water	99.4	144.1	151.1	180.7	207.2	160.5	213.0	236.3	251.3	241.7
Welsh Water	(12.8)	(3.5)	11.9	16.4	24.9	39.5	128.1	138.2	155.5	144.2
Wessex Water	9.9	15.0	21.5	25.0	24.1	22.8	66.0	76.9	86.0	103.3
Yorkshire Water	18.4	22.2	37.0	56.7	55.7	57.7	114.1	123.9	138.6	143.5
Eastern Electricity		88.0	100.5	99.9	119.0	124.4	130.6	143	183.4	176.8
East Midlands Electricity		48.2	70.9	81.9	87.0	90.9	119.1	150.0	155.1	151
London Electricity		84.7	95.6	96.2	112.7	126.2	141.8	142.5	145.5	186.5
Manweb		26.9	33.1	28.5	39.5	37.7	58.9	94.7	111.2	126.3
Midlands Electricity		64.5	68.2	62.0	76.6	88.9	109.7	142.1	167.1	195.4
Northern Electric		48.1	48.7	47.1	58.0	66.1	89.2	98.2	111.4	128.7
Norweb		53.9	59.5	53.3	65.8	71.7	63.4	137.9	157.1	178.3
Seeboard		47.6	57.7	44.0	58.0	57.6	81.4	98.4	112.7	131.7
Southern Electric		69.2	92.5	79.4	113.8	128.2	139.6	166.3	187.3	222.0
South Wales Electricity		24.9	31.6	21.0	30.8	26.2	58.1	72.9	87.0	104.0

	1986	1987	1988	1989	1990	1991	1992	1993	1994
South Western Electricity	47.6	45.6	32.2	55.8	66.1	66.2	83.0	101.1	116.8
Yorkshire Electricity Group	55.3	64.5	71.8	90.2	109.5	129.4	141.9	156.3	149.0
National Grid					428.6	385.7	497.9	533.2	579.5
National Power					178	479	514	580	677
PowerGen					233.6	300.7	359	425	476
Scottish Hydro-Electric						60.3	122.7	146.4	164.2
Scottish Power						144.7	260.5	297.1	351
Northern Ireland Electricity						40.1	15.0	64.1	74.9

Source: HM Treasury Guide to the UK Privatisation Programme, August 1995, amended by author.

⁽¹⁾ All figures post-privatization derived from Annual Reports and Accounts (adjustments may have been made to earlier years to ensure consistent presentation of the financial information).

⁽²⁾ Current cost convention used.

TABLE 3: Government Proceeds and Costs of Sale, UK Privatizations.

Company	Year of Sale	% Sold (a)	Equity Sale Proceeds (b)	Expenses (c)	Expenses as % of Proceeds	Net Proceeds
		(%)	(£m)	(£m)	(%)	(£m)
British Aerospace	1981	51.6	149	6 ⁽¹⁾	4.0	143
	1985	59.0	551 ⁽²⁾	18	3.3	533
Cable & Wireless	1981	49.4 ⁽³⁾	224	7 ⁽⁴⁾	3.1	217
	1983*	22.0	275	5	1.8	270
	1985	31.0	933 ⁽⁵⁾	12 ⁽⁶⁾	1.3	921
Amersham International	1982	99	69 ⁽⁷⁾	3 ⁽⁸⁾	4.4	66
Britoil	1982*	51.0	549 ⁽⁹⁾	12 ⁽¹⁰⁾	2.2	537
	1985	48.0	449	15	3.3	434
Associated British Ports	1983	49.0 ⁽³⁾	48 ⁽¹¹⁾	3	6.3	45
	1984*	48.5	52	2	3.9	50
Enterprise Oil	1984*	100	393	11	2.8	382
Jaguar	1984	99 ⁽³⁾	294	6	2.0	288
BT	1984	50.2	3,919 ⁽¹²⁾	319	8.1	3,600
	1991**	25.6	5,433.8 ⁽¹³⁾	300	5.5	5,133.8
	1993**	21.9 ⁽¹⁴⁾	5,405 ⁽¹⁵⁾	299	5.5	5,106
British Gas	1986	97 ⁽³⁾	5,628 ⁽¹⁶⁾	397	7.1	5,231
British Airways	1987	100	907 ⁽¹⁷⁾	57.3	6.3	849.7
Rolls-Royce	1987	97 ⁽³⁾	1,362.8 ⁽¹⁸⁾	43.5	3.2	1,319.3
BAA	1987**	95.6 ⁽³⁾	1,281 ⁽¹⁹⁾	98.1	7.7	1,182.9
British Steel	1988	99 ⁽³⁾	2,500 ⁽²⁰⁾	63.3	2.5	2,436.7
The Water Holding Companies ⁽²¹⁾	1989	97 ⁽³⁾	5,239.2 ⁽²²⁾	145.5	2.8	5,093.7 ⁽²³⁾
The Regional Electricity Companies ⁽²⁴⁾	1990	96 ⁽³⁾	5,181.6 ⁽²⁵⁾	280.3	5.4	4,901.3 ⁽²⁶⁾
National Power and PowerGen	1991	60 ^(*)	2,227.9 ⁽²⁷⁾	144.1	6.5	2,083.8 ⁽²⁸⁾
Scottish Hydro-Electric and Scottish Power	1991	96 ⁽³⁾	2,918 ⁽²⁹⁾	161.5	5.5	2,756.5 ⁽³⁰⁾
Northern Ireland Electricity	1993	96.5 ⁽³⁾	362	n/a	n/a	n/a

* Tender Offer ** Combined fixed price and tender offer.

Sources: National Audit Office reports, HM Treasury Guide to the UK Privatisation Programme, August 1995, Privatization in the UK. The Facts and Figures, compiled by Peter Curwen on behalf of Ernst & Young, 1994, p.4 and p.12. Sources amended by author.

(a) May total more than 100% due to right issues or less than 100% due to shares retained for loyalty bonus of employees.

(b) Therefore excluding any debt repayment.

(c) Expenses typically include administrative costs, such as fees, commissions, marketing costs, and incentive-related costs, such as bill vouchers or bonus shares. These implicit costs were typically estimated using the issue share price and adopting the maximum figures, assuming all those eligible would hold on their share and therefore receive the benefits.

(1) Excludes £100 million capital injection and £55 million PDC dividends forgone by the government.

(2) Of the £551 million, £188 million accrued to the company.

-
- (3) Sufficient shares retained to satisfy loyalty bonus arrangement. In the 1981 sale of Cable & Wireless, a further 0.5% went directly to the Employee Share Ownership Plan.
- (4) Excludes £35 million subscribed by the Government for new shares.
- (5) Of the £933 million, £331 million accrued to the company.
- (6) Includes £7 underwriting fees, £3 other fees and commissions, £2 advertising costs.
- (7) Includes £6 million of proceeds paid to the company; it excludes interest on amounts held temporarily in respect of unsuccessful applications; it excludes debt repaid.
- (8) Includes Stamp Duty (£0.86 million).
- (9) Excludes £88 million debenture repayment.
- (10) Excludes costs of employees' free shares and discounts, bonus shares and vouchers.
- (11) Excludes £25 million paid by the company to the Consolidated Fund and interest held temporarily in respect of unsuccessful applicants.
- (12) Of the £3,863 million, £1,290 accrued to the company, primarily to eliminate a liability to the BT pension fund resulting from under-funding.
- (13) Includes £192.5 million in proceeds forgone by way of incentives for retention of shares (installment discounts, bonus shares), which I added to the cost figure.
- (14) Leaving the government with a residual 1.5 % holding primarily to meet bonus shares arrangements from the offers of 1991 and 1993.
- (15) Includes £203 million in proceeds forgone by way of incentives for retention of shares (installment discounts, bonus shares), which I added to the cost figure.
- (16) Includes £37 million in share-value forgone because of free and matching offers to employees and pensioners (£33) and because of employee discounts (£4), which I added to the cost figure. It includes estimated £25 million from sale of unallocated shares and further bonus share sale.
- (17) Includes £14.7 million in share-value forgone because of free and matching offers to employees, which I added to the cost figure. It includes estimated £6.7 million from bonus share sales.
- (18) The figure includes £12.0 million in free shares and matching offers to employees and pensioners and £2.4 million in employee discounts, which I added to the cost of the sale. It includes estimated £0.3 million from sale of unallocated shares.
- (19) It includes £3.3 million of free and matching shares given to employees, which I added to the cost figure. Of the £1,281 total revenues, £918.8 were the proceeds of fixed price offer, while the remaining amount constituted proceeds of the tender offer.
- (20) Includes £17.8 million in free, discount, and matching shares given to employees and pensioners, which I added to the cost figure.
- (21) The data refer to the sale of 10 Water Authorities in England and Wales. For a list of the companies, see for example Table 1.
- (22) Includes £14.6 million in free and matching shares distributed to employees, which I added to the cost figure.
- (23) Excludes the introduction of £72.9 million of debt and it includes £1,572.2 million of cash injected in the companies. If correspondingly adjusted, net sale proceeds would be £3,594.4
- (24) The data refer to the sale of 12 regional electricity companies. For a list of the companies, see for example Table 1.
- (25) Includes £89.3 million proceeds forgone by way of incentives, namely free and matching shares to employees, and individual investors' bonus shares. I added this amount to the total cost figure.
- (26) Excludes £2,815 million proceeds from repayment of debt.
- (27) Includes £41.5 million of proceeds from back-end tender offer. It also includes £65 million in free and matching shares and in individual investors' bonus and discount, which I added to the cost figure.
- (28) Excludes £768 million proceeds from debt repayment.
- (29) Includes proceeds from back-end tender (£42.2 million). It also includes £63.5 million proceeds forgone by way of incentives, which I added to the cost figure.
- (30) Excludes £625.9 million proceeds from debt repayment.
- (*) In March 1995 the Treasury offered for sale the government's remaining holdings of shares in National Power and PowerGen.

TABLE 4: Estimated Receipts from and Costs of Sale of Shares in British Airways plc.

	£ million	£ million
Value of shares included in offer at selling price		900.3
Shares to employees under free and matching offer		
UK	12.3	
Other	0.8	
Employee discounts (including overseas)	1.6	
Estimated premium from bonus share sale	<u>(6.7)*</u>	<u>8.0</u>
Sales proceeds		892.3
Cost in respect of UK offer		
Underwriting	7.8	
Selling Commission	2.9	
Clearing Bank costs	7.5	
Marketing	6.2	
Advisers fees 86-87	2.4	
Advisers fees pre 86-87	<u>1.9</u>	
Total costs in respect of UK offer	28.7	
Total costs in respect of overseas offer (excluding incentives)	<u>5.2</u>	
Total costs (excluding incentives)	33.9	
Receipts to be netted against costs		
Interest on application money	<u>(4.4)</u>	
Net costs (excluding incentives)		29.5
Incentives for small shareholders		
Bonus Shares		<u>13.1**</u>
Net costs (including incentives)		<u>42.6</u>
Net proceeds		£849.7 million

Source: National Audit Office, Report by the Comptroller and Auditor General; "Department of Transport: Sale of Government Shareholding in British Airways plc." (July 8, 1987).

*Premium based on estimated shares available and share price on 7 May 1987.

** Based on latest known requirement for distribution at the offer for sale price.

TABLE 5: Pooled LS Estimates of the effect of privatization on companies' profits**Dependent Variable: Pre-Tax Profit (loss)**

	Full Sample	Full Sample	Full Sample	Unregulated Firms	Regulated Firms
Constant	included	-----	-----	-----	-----
Fixed Effects	-----	included	included	included	included
Time Trend	-----	-----	included	included	included
DP	187.0615 (67.51444)	152.0886 (59.82711)	45.83422 (36.75762)	50.57092 (50.00136)	-48.22936 (106.7708)
t-statistic	2.756	2.538	1.244	1.011	-0.451
Prob.	0.009	0.012	0.214	0.314	0.652
R ²	0.049650	0.762479	0.773808	0.465366	0.810285
N	416	416	416	156	260

Test statistics (p-value):

Trend is the same pre- and post-privatization: 0.265

Effect of privatization is the same for regulated and unregulated firms: 0.282

All numbers in £ million. Standard errors are in parentheses. The parameter-estimates shown are for the main dummy variable, DP, which is set to equal one when a company is in the private sector. Each column indicates the estimates for the main parameter under different models. The model presented in column (1) includes a common intercept, the model in column (2) substitutes the common intercept with firms' fixed effects. Column (3) gives the estimates of the effect of privatization when a trend variable is introduced, in addition to the fixed effects dummies. Finally, columns (4) and (5) show the estimates for the separate samples of unregulated firms and regulated firms respectively (both regressions include a trend and fixed effects).

TABLE 6: Estimated Long Term Effect on Public Finances of UK Privatizations.

Company	Year of Sale	Sale Proceeds (a)	Transaction Costs (b)	Net Cash Proceeds (c)	% Change in Prices (d)	Under(over) Valuation	Net Losses (gains) (e)
		(£m)	(£m)	(£m)	(%)	(£m)	(£m)
British Aerospace	1981	149	6	143	+14.00	20.86	26.86
	1985	551	18	533	+12.00	66.12	84.12
Cable & Wireless	1981	224	7	217	+17.26	38.66	45.66
	1983	275	5	270	-0.73	(2.01)	2.99
	1985	933	12	921	+0.51	4.76	16.76
Amersham International	1982	69	3	66	+32.39	22.35	25.35
Britoil	1982	549	12	537	-8.83	(48.48)	(36.48)
	1985	449	15	434	+11.89	53.39	68.39
Associated British Ports	1983	48	3	45	+23.21	11.14	14.14
	1984	52	2	50	+0.74	0.39	2.39
Enterprise Oil	1984	393	11	382	0.00	0.00	11
Jaguar	1984	294	6	288	+8.49	24.96	30.96
BT	1984	3,919	319	3,600	+33.08	1,296.41	1,615.41
	1991	5,433.8	300	5,133.8	-2.29	(124.43)	175.57
	1993	5,405	299	5,106	+1.91	103.24	402.24
British Gas	1986	5,628	397	5,231	+9.26	521.15	918.15
British Airways	1987	907	57.3	849.7	+35.20	319.26	376.56
Rolls-Royce	1987	1,362.8	43.5	1,319.3	+36.47	497.01	540.51
BAA ^(*)	1987	919	98.1	820.9	+18.78	172.59	270.69
	1987	362		362	+0.35	1.28	1.28
British Steel	1988	2,500	63.3	2,436.7	+2.20	55.00	118.3
The Water Holding Companies	1989	5,239.2	145.5	5,093.7	+18.46	967.16	1,112.66
The Regional Electricity Companies	1990	5,181.6	280.3	4,901.3	+20.42	1,058.08	1,338.38
National Power and PowerGen	1991	2,227.9	144.1	2,083.8	+21.14	470.98	615.08
Scottish Hydro-Electric and Scottish Power	1991	2,918	161.5	2,756.5	+7.92	231.11	392.61
Northern Ireland Electricity	1993	362	n/a	362	+12.05	43.62	43.62
TOTAL		46,351.30	2,408.60	43,942.70		5,804.6	8,213.2

Sources: *Privatization in the UK. The Facts and Figures*, compiled by Peter Curwen on behalf of Ernst & Young, 1994, Appendix 2, p.62, *Privatization: An Economic Analysis*, by John Vickers and George Yarrow, 1988, Table 7.1 p.174, *The Financial Times*, *National Audit Office Reports*.

^(a) Reported from Table 3, column 4.

^(b) Reported from Table 3, column 5.

^(c) Net proceeds are calculated as the difference between total gross proceeds (column 3) and transaction costs (column 4).

^(d) It indicates the percentage rise (or fall) in market price relative to the fixed price and/or tender price offer. The percentages are derived from the information on offered prices and quoted prices presented in Table A1.

^(e) This column provides the estimates of the long-term net financial impact of each denationalization on the government's finances. Numbers are the sum of transaction costs (column 4) and under (over) valuation (column 7). See also equation [9].

^(*) BAA sale was done using a fixed price offer (£919m.) and a tender offer (£362m.), for total gross proceeds of £1,281 million.

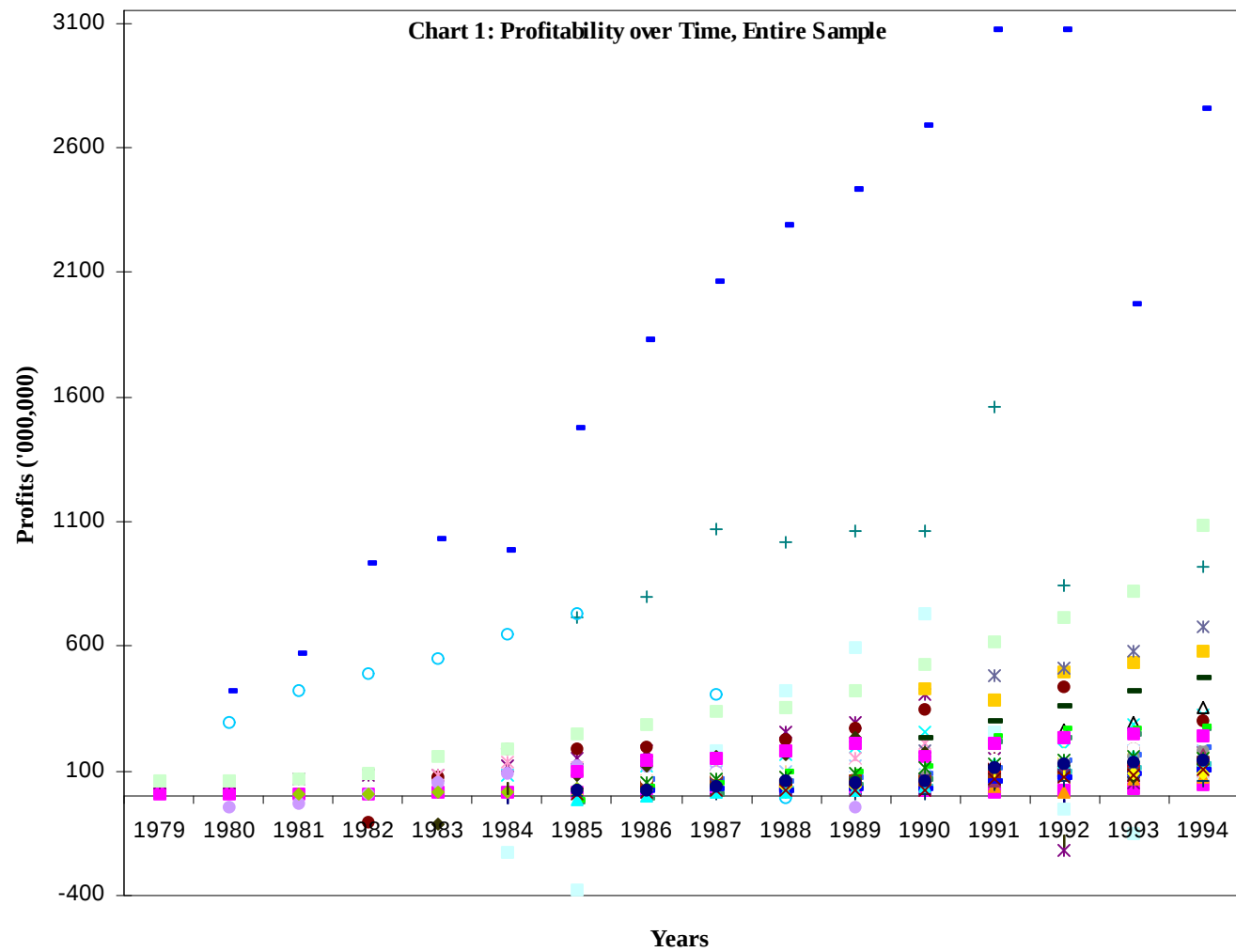


Chart 2: Trend in profits over time for privatized firms, entire sample.

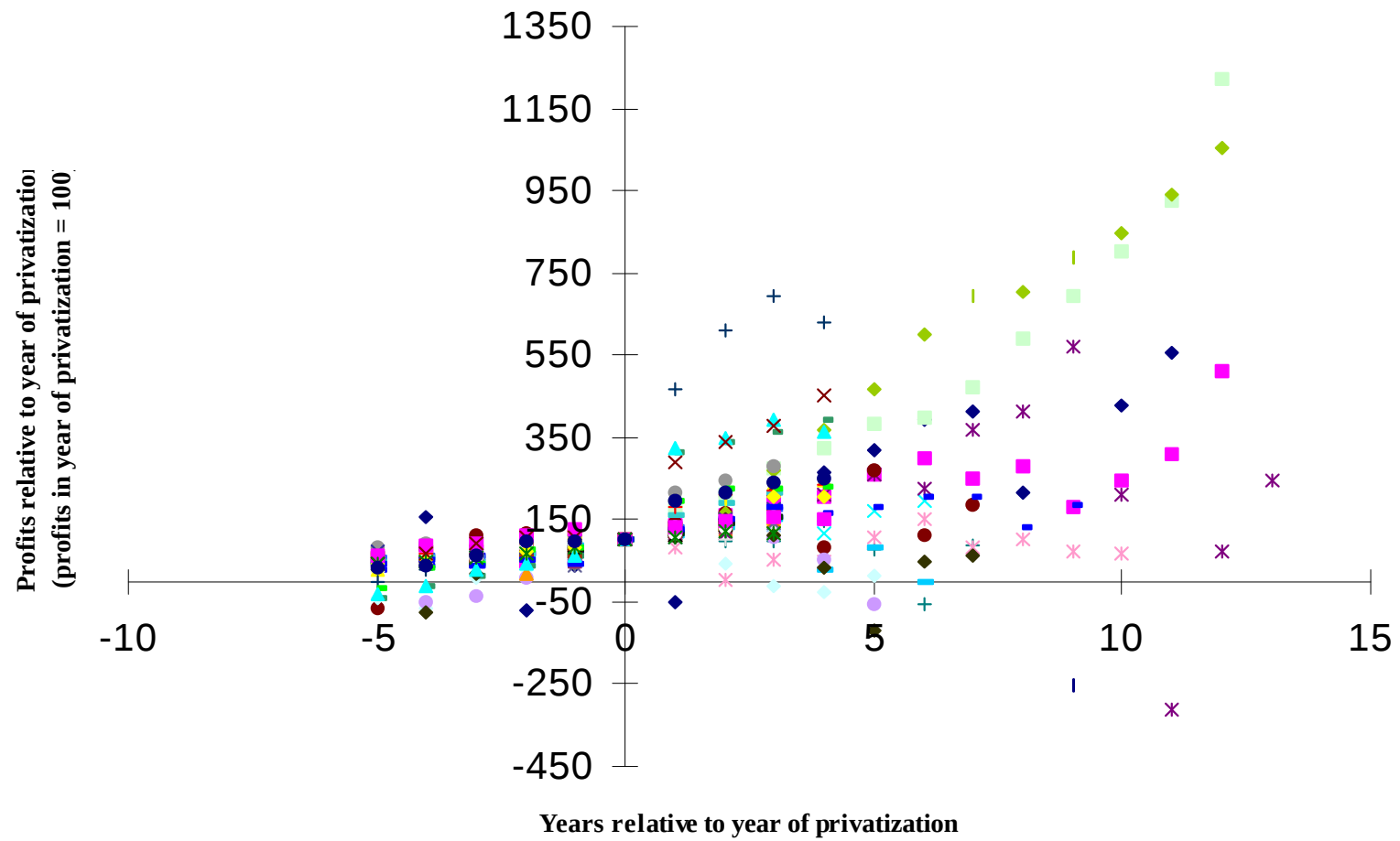


Chart 3: Trend in profits over time, regulated firms

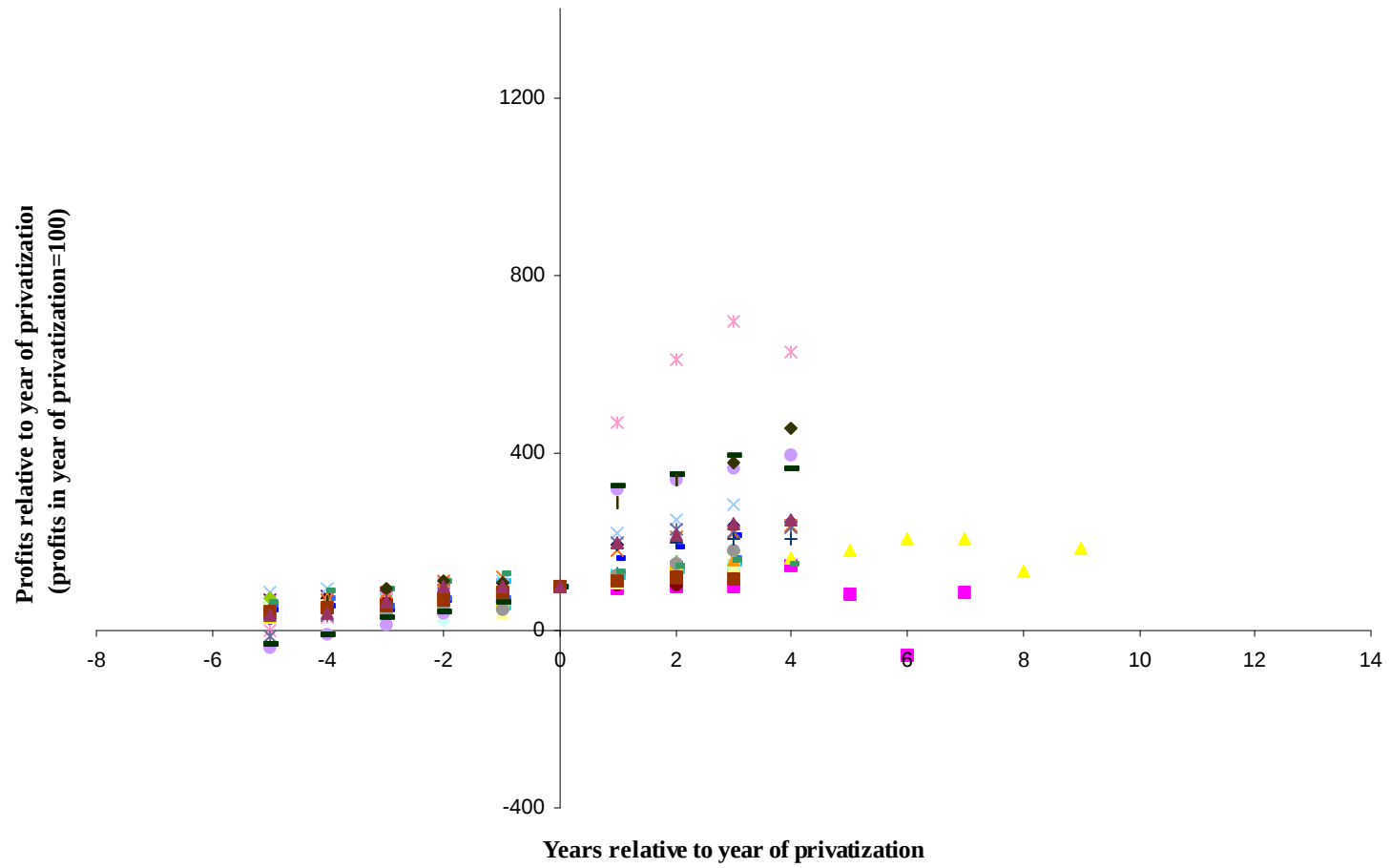
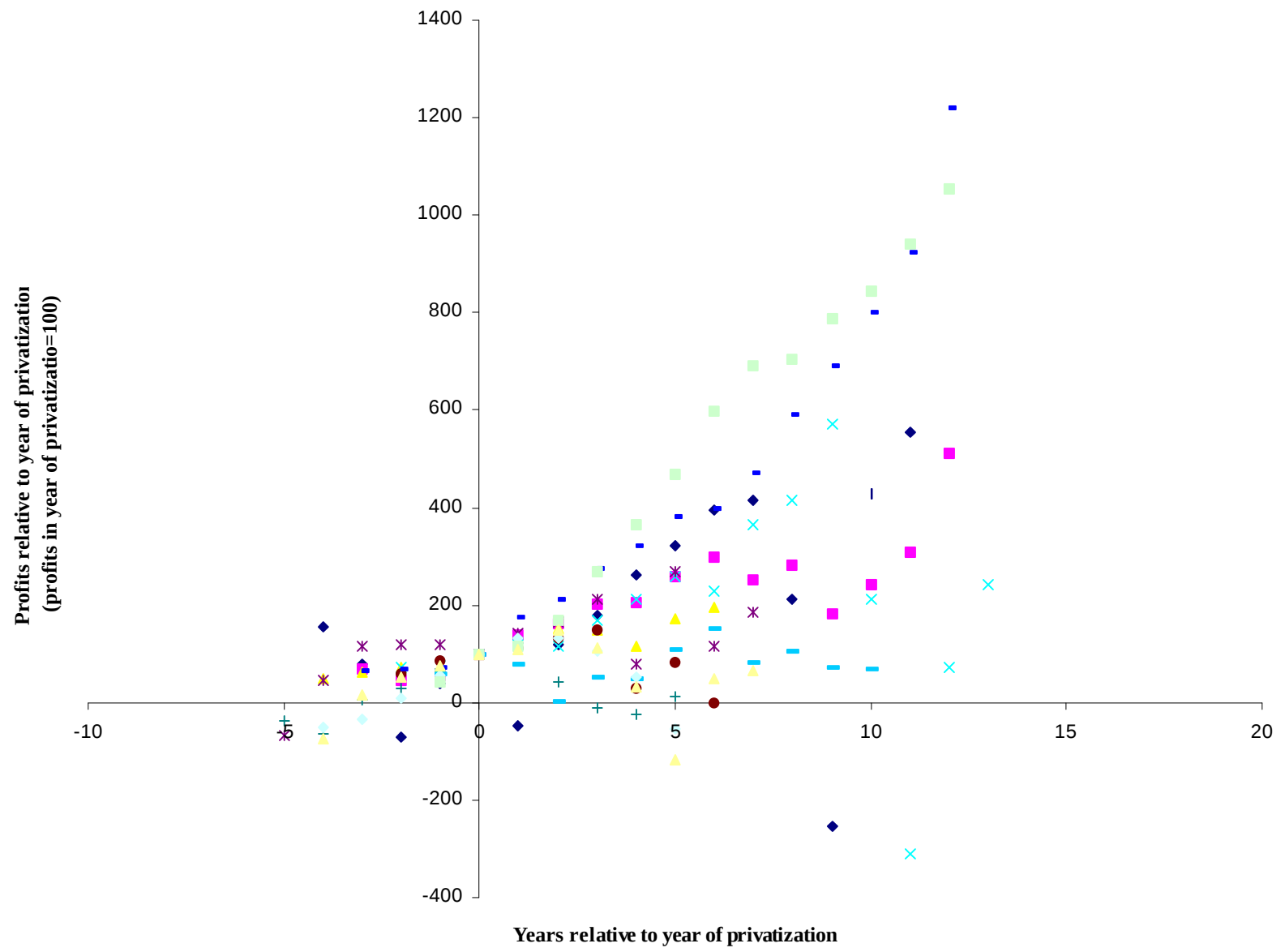


Chart 4: Trend in profits over time, unregulated firms



Vita

Chiara Gratton-Lavoie

Chiara Gratton-Lavoie was born in Udine, Italy in 1963. She graduated magna cum laude from the University of Trieste, Italy. She earned her Master of Arts in Economics from Virginia Polytechnic Institute and State University, Virginia. She is currently teaching Economics at California State University in Fullerton, California. She previously taught at Wake Forest University, North Carolina, and at the University of California in San Diego, California.