There are a number of ways to have workers' remuneration linked more readily with firms' commercial performance.

The Economic Effects of Profit Sharing in Great Britain

David G. Blanchflower

International Journal of Manpower,
vol. 12 No. 1, 1991, pp. 3-9,

In recent years a growing number of Western governments have been attracted by proposals to link workers' remuneration more closely to their company's performance. Martin Weitzman[1] and James Meade[2] and others argue that the "fixed wage system" helps to create both excessive unemployment and excessive fluctuations in economic activity. They conclude that macroeconomic performance would be improved by the encouragement of payment systems where part of employee compensation is linked to the performance of the firm, thereby improving worker productivity and the firm's competitiveness.

There are a number of ways to have workers' remuneration linked more readily with firms' commercial performance. One is to link wages to profits by using cash-based profit sharing (where workers are made cash payments which vary with employer's profitability). A second is to have workers paid partly in their firms' own shares. A third, and more extreme alternative, is producer co-operatives where workers participate in profits, ownership and decision-making. Such sharing schemes involve workers accepting a degee of market risk; the more successful the organisation, the higher are the payments employees will receive. We will *not* be concerned here with individual incentive schemes such as payment-by-results and commission which do not directly involve market risk, but are determined more directly by the performance of the worker.

In this article we examine both the theoretical and empirical evidence in support of such schemes. We concentrate upon the evidence for Great Britain. Section 1 presents a series of new estimates of the extent of profit sharing in Great Britain. Section 2 surveys the empirical evidence. It describes tests done — by myself and others — of the various theories. It also presents new evidence on the attitudes of individuals in receipt of various types of profit shares. Section 3 contains the conclusions.

1. Coverage of Profit Sharing in Great Britain

In this section we examine the evidence that exists on the degree of coverage of three broad forms of sharing schemes in Great Britain. One is profit sharing, under which an employee receives a payment which depends upon the size of the employer's profits. (In some cases payments may be linked to value-added, productivity or revenue.) The second is employee share ownership, under which workers receive, or have an option to purchase cheaply, the shares in the employing company. In some cases firms make profit sharing payments in the form of shares which cannot immediately be sold. Third, we look at annual bonus payments.

Various governments in Great Britain have tried to encourage share ownership and profit sharing, by providing a series of tax breaks*. Currently tax relief is available for four types of scheme:

(1) Share schemes introduced in the 1978 Finance Act covering all employees.

(2) Savings related share option schemes for all employees, introduced in the Finance Act of 1980.

(3) Discretionary share option schemes introduced in the 1984 Finance Act.

(4) Profit related pay schemes approved by the Department of Inland Revenue. Tax relief was first made available in the 1987 Finance Act and extended in the 1989 Act.

In addition, during the 1980s, employees in a number of state-run enterprises were given preferential treatment in acquiring shares in their organisations when they were privatised by the Thatcher Government. Examples include

* For further details see Blanchflower and 0swald[3, pp. 6-7].

Table e1 *Industrial Distribution of Profit Sharing (Percentage)*

	Share ownership 1980	Share ownership 1984	Cash profit sharing 1984	Value-added bonus 1984
Energy		*	*	*
Minerals and chemicals	12	23	32	17
Metals, engineering and vehicles	9	14	11	15
Other manufacturing	8	13	14	18
Total manufacturing	9	15	16	16
Construction	9	17	18	25
Distribution, hotels and catering	18	29	18	18
Transport	11	18	12	8
Banking, insurance, finance and business services	32	44	39	10
Other services	2	14	5	7
Total non-manufacturing	17	29	21	14
Private sector	14	25	20	15

Base: All private sector establishments
Source: Blanchflower and Oswald (1988)

British Telecom and British Gas. With the exception of the privatisation of British Petroleum, share issues were significantly over-subscribed. Consequently, substantial gains were available on the opening day of trading on the stock market. Employees in such organisations were offered large numbers of shares than other subscribers at highly advantageous rates. Although large numbers of employees sold their holdings at an early stage taking advantage of the capital gain, many did not. This had the effect of increasing the number of employees with shareholdings in their own companies.

Table *The Incidence of Sharing Schemes (Percentage)*

	Private manufacturing	Private non-manufacturing	All private sector
Type 1 only	10.0	13.9	12.6
Type 2 only	7.4	6.5	6.7
Type 3 only	11.6	7.9	9.2
Type 1 and 2	4.4	10.9	8.7
Type 1 and 3	0.5	2.3	1.7
Type 2 and 3	2.8	1.4	1.9
Type 1, 2 and 3	1.2	2.4	2.0
Any scheme	37.9	45.3	42.7
Number of observations	432	834	1266

Notes: Type 1 = Share ownership scheme
Type 2 = Profit sharing scheme
Type 3 = Value-added bonus scheme (a 'profit' sharing scheme where pay is linked to value-added or revenue)

Base: all private sector establishments
Source: Blanchflower and Oswald (1988)

As one would expect, the above policies have had the effect of increasing the spread of income sharing in the British economy. Tables I and II illustrate this. These use data from a representative sample of establishments drawn from the 1980 and 1984 Workplace Industrial Relations Surveys*. Table I shows a remarkable increase in employee share ownership between 1980 and 1984. It also makes clear that profit sharing, broadly defined, is not at all uncommon in British establishments. Table II describes the incidence of the three kinds of sharing scheme across private manufacturing and services. It is interesting to note that over 40 per cent of all private sector establishments in 1984 operated at least one form of income sharing arrangement*.

Table III updates this information using data from a representative sample of individuals drawn from the 1985 and 1987 British Social Attitudes Surveys**. Individuals were asked to report on:

(1) whether their organisation had one or more of the following types of scheme:
   (a) productivity-linked bonus scheme,
   (b) annual bonus (at organisation's discretion),
   (c) share ownership or share option scheme,
   (d) profit sharing.

(2) Whether they had personally received any payments or benefits under the scheme(s) in the preceding twelve months. Table III confirms that income sharing arrangements have grown in importance in Great Britain in the 1980s. By 1987 such schemes were extremely widespread, with

* For further details see Blanchflower and Oswald[3, pp. 6-7].
** For details of the surveys see Blanchflower and Oswald[7].

Table III. *Incidence of Income Sharing Schemes in Great Britain (Percentage)*

	Organisation 1985	Organisation 1987	Individual 1985	Individual 1987
1. Annual bonus	21	23	15	19
2. Share ownership	15	19	5	8
3. Productivity-linked bonus	19	21	11	15
4. Profit sharing	12	13	7	9
5. Any scheme	52	54	33	41
No. of observations	511	838	511	838

Base: Private sector workers
Source: 1985 and 1987 British Social Attitudes Surveys — own calculations

more than half of all private sector organisations having one or more schemes and slightly over 40 per cent of individuals employed in the private sector. Annual bonuses were the most prevalent type of scheme covering approximately one in five of the sample. However, payments based on productivity or profits (rows 3 and 4 of Table III), which are closest in spirit to Weitzman's idea of a profit related component of pay, together accounted for nearly a quarter of all private sector workers.

Are these types of sharing arrangements alternatives to unionism? Table IV suggests that individuals receiving annual bonuses were less likely than average to be (a) employed in large plants or (b) to be a union member than the private sector average. However, those in receipt of productivity-linked bonuses and/or who owned shares in their employing organisations were particularly likely to be in big plants with at least 500 employees, be union members or covered by recognised unions. Presumably this occurs because of the high fixed costs of setting up and operating such programmes. Explaining the incidence of these schemes across individuals is the subject of current work (with Derek Jones)*.

2. Empirical Evidence on the Effects of Profit Sharing

Research into the effects of income sharing in Great Britain has been primarily in the following six areas:

(1) Employee attitudes to work
(2) Employment levels and variability.
(3) Investment.
(4) Profitability.
(5) Remuneration.
(6) Productivity.

We survey the somewhat limited evidence in each of these areas in turn.

Table IV. *Sharing Schemes, Unionisation and Plant Size, 1985-7*

	Union members*	Union recognition**	Big plants#
1. Annual bonus	22	38	15
2. Share ownership	46	77	32
3. Productivity-linked bonus	51	66	21
4. Profit sharing	31	57	24
5. Private sector	31	46	16
No. of observations	1349	1349	1349

Base: private sector workers averaged across 1985 and 1987.

Notes: * proportion of individuals who were union members
** proportion of individuals who reported that there were trade unions, staff associations, or groups of unions recognised by the management for negotiating pay and conditions of employment at the workplace.
# proportion of individuals employed at workplaces with 500 workers or more.

Source: 1985 and 1987 British Social Attitudes Surveys — own calculations.

Employee Attitudes to Work

Two of the earliest pieces of evidence on the effects of profit sharing were qualitative in nature. In both cases they were commissioned by pressure groups whose prime purpose is to promote income sharing. The samples used were small and in each case drawn exclusively from the membership of the relevant organisations. Although the results from these studies are of interest, clearly they need to be treated with some caution.

The Industrial Participation Association[11] found that "profit sharing does significantly improve employee attitudes and employee views of the company". They interviewed 2,703 individuals in 12 companies and found that 51 per cent of their respondents reported that they agreed, or strongly agreed, that profit sharing makes people try to work more effectively so as to help the firm be more successful.

The Wider Share Ownership Council[12] surveyed company attitudes towards employee share ownership

* For details of these surveys see Daniel and Millward[4] and Millward and Stevens[5] respectively. Blanchflower and Oswald[6] also show that these schemes were not restricted to small numbers of managerial staff. For earlier attempts at explaining the incidence of sharing schemes in organisations see Blanchflower and Oswald[8] and Estrin and Wilson[9] for Great Britain and Jones and Pliskin[10] for Canada.

schemes. Some 138 companies were asked what effect they believed profit sharing or share schemes had on employee attitudes. Three quarters of firms reported that such schemes had a significant effect. This compares with 40 per cent and 20 per cent respectively in the case of savings related schemes. Evidence regarding the effects of these two types of schemes upon productivity, staff turnover, recruitment and employee attitudes was much less clear-cut.

Estrin and Wilson[9,p.13] using a panel of 52 firms in the engineering and metal working sectors over 1978-82, found evidence in their sample that "profit sharing is widely regarded as an employee incentive scheme, likely to increase labour commitment and reduce anti-management attitudes". They also found that the number of working days lost, per employee in their profit-sharing group, on average was 22 compared with 10 for the non-sharers. In every year of their survey the quit rate was also lower in the former group than in the latter.

Although respondents in the 1985 and 1987 British Social Attitudes Surveys were not asked explicitly about their attitudes towards profit sharing, they did give their views on the state of industrial relations at their workplace plus their expectations on the change in their wage and employment at their workplace over the succeeding year.

Table V presents details of the respondents' views of the state of relations between management and workers at their workplace. With the exception of participants in employee share ownership schemes, we find little evidence that industrial relations are better in the presence of income sharing schemes. Indeed, in the case of annual bonuses, respondents reported that relations between managers and workers were poorer than the private sector average.

Table *Attitudes to the Quality of Industrial Relations (Percentage)*

	Very good	Quite good	Not **very** good	Bad
1. Annual bonus	32	44	20	4
2. Share ownership	50	40	7	3
3. Productivity-linked bonus	37	55	8	—
4. Profit sharing	43	44	10	3
5.Private sector	41	43	12	4
No. of observations	554	577	165	50

Base: Private sector workers averaged across 1985 and 1987.
Source: 1985 and 1987 British Social Attitudes Surveys — own calculations.

Table VI provides weak evidence that individuals with income sharing arrangements were more likely than the private sector average to report that they expected employment to increase in the following year. It does appear from Table VII that, with the exception of those in receipt of annual bonuses, individuals who participated in sharing schemes had higher expectations than average of the rate of change of their wages over the next year. Of course, these are only gross correlations; current work is exploring the influence of other variables such as unionisation, plant size, wage levels and other workplace and individual characteristics in a multivariate framework.

Table VI. *Worker Expectations — Employment over Following Year*

	Increase	Decrease	Constant	Other
1. Annual bonus	34	23	38	5
2. Share ownership	35	13	51	1
3. Productivity-linked bonus	34	27	49	—
4. Profit sharing	32	16	50	2
5. Private sector	29	17	52	2
No. of observations	386	224	703	25

Base: Private sector workers averaged across 1985 and 1987.
Source: 1985 and 1987 British Social Attitudes Surveys — own calculations.

Such *qualitative* evidence as does exist seems to suggest that income sharing schemes have little effect upon employees' attitudes to work. It is probable that these results are largely explained by uncontrolled differences in product demands, workplace characteristics such as workplace size, type of product etc. If this evidence is to be believed we would expect to observe some performance enhancing effects of profit sharing which, in principle, should be measurable. As we outline in the following subsections, there is little, if any, unequivocal evidence of a positive *quantitative* impact of income sharing (however defined) on any of the remaining variables to be examined. It should be pointed out at this stage, however, that very little information is available in these studies on the size of the "sharing" payments being considered. Such evidence as we have available suggests that these payments rarely constitute more than 5 per cent of total remuneration.

Employment

The available evidence on the employment effects of income sharing is inconclusive. Blanchflower and 0swald[3] used nationally representative survey data on 637 manufacturing establishments from the 1980 Workplace Industrial Relations Survey (WIRS1), in an attempt to determine whether or not the existence of share ownership schemes had beneficial effects upon employment. We could find no statistically significant evidence that the existence of such schemes affected

Table VII. *Worker Expectations — Wages over Following Year*

	Rise more than cost of living	Rise same as cost of living	Rise less than cost of living	Not rise	Other
1. Annual bonus	21	53	16	8	2
2. Share ownership	30	47	14	6	2
3. Productivity bonus	32	52	11	3	2
4. Profit sharing	35	48	12	3	2
5. Private sector	20	49	19	9	1
No. of observations	285	664	252	118	20

Base: Private sector workers averaged over 1985 and 1987.
Source: 1985 and 1987 British Social Attitudes Surveys — own calucation.

firms' decisions about the number of jobs. This was true whatever the age of the scheme or the proportion of individuals who participated.

A recent case study by Bradley and Estrin[13] investigated the effects of profit sharing on the level of employment between 1970 and 1985 in a large retail store, the John Lewis Partnership. In this firm the profit share varied between 13 per cent and 24 per cent of workers' income. They found that employment exceeded employment at each of four competitors by 20-30 per cent after controlling for remuneration, sales and retail sales. However, profit sharing did not have any significant influence on the rate of change of employment. In contrast, Estrin and Wilson[9] examined the employment effects of profit sharing (defined as cash profit sharing or value-added bonuses) in their panel of 52 firms in UK metalworking. They found that profit sharing had no significant effect upon the level of employment, although it had a small effect on the rate of change of employment.

Jones and Pliskin[14] examined the employment effects of profit sharing in a panel of British firms in the printing, footwear and clothing industries between 1890 and 1975 (because of missing values the most observations on any single firm was 77). The authors' principal finding was that the employment effect of profit sharing is dependent upon (1) the way in which profit sharing is measured (2) whether or not measures of employee participation in decision making were included in the employment equation. When such a measure was included they found that for a typical profit-sharing firm, employment effects were unstable, and ranged from -8 per cent to 4 per cent.

Investment

Weitzman[15] has argued that investment might be higher in a share economy, primarily because output would be stabilised near full-capacity. In addition, Grout[16] has studied the economics of employee share ownership. His model predicts that when there are tax incentives to employee share ownership, firms with share schemes will invest more than those without. In the only test of these hypotheses currently available for Great Britain, Blanchflower and Oswald[3] found that the presence of employee share ownership schemes in 1980 had had no statistically significant effect upon an establishment's investment behaviour over the preceding two to three years.

Profitability

Blanchflower and Oswald[6] used the 1984 Workplace Industrial Relations Survey (WIRS2) to study how the financial performance of workplaces was related to the three types of sharing identified in Table I — share ownership, profit sharing and value-added bonuses. It was found that none of the variables, either individually or when interacted together, significantly influenced the probability of an establishment having "above average performance". The major influences on this probability were:

(1) The size of the establishment.

(2) Growth of product demand.

(3) Percentage of turnover accounted for by wages and salaries.

(4) Unionisation.

Richardson and Nejad[17] analysed the impact of financial participation schemes on share price movements over the period 1978-1984 using a sample of 41 firms chosen from the UK multiple store sector. This sector was chosen because it was reasonably competitive, relatively free from foreign competition and unlikely to have its profit levels affected by the vagaries of the exchange rate. By the end of 1984, out of their sample of 41 firms, 23 were operating at least one employee share ownership scheme. Their main finding was that companies which introduced the schemes had a 5 per cent higher share appreciation than those that did not. This difference was statistically significant at only the 10 per cent level. It is questionable that one can infer from these results that share ownership schemes raise share prices. It is perfectly possible, for example, that share ownership might be an index of a high quality management and higher (uncontrolled) lagged profits. Firms that earn profits are the ones that (a) will survive (b) establish employee share ownership schemes (c) distribute share payments. Such differences need to be controlled for in any empirical analysis of the influence of profit sharing on firm performance.

Remuneration

A number of studies have estimated wage equations which include one or more profit sharing variables. Examples include Blanchflower and Oswald[18] on individuals, Blanchflower, Oswald and Garrett[7] on establishments and Estrin and Wilson[9] on firms. In none of these studies did the coefficient on any of the income sharing variables ever achieve significance.

Produdivity

The work in this area has involved estimating production functions augmented by variables measuring various forms of participation*. Estrin, Jones and Svejnar[19] estimated production functions for 50 producer cooperatives in the United Kingdom in three industries between 1948 and 1968. They found that profit sharing (measured by the average surplus distributed per worker) had a positive effect upon productivity.

Profit sharing had a positive, but statistically insignificant impact on productivity

Jones[20] studied the productivity effects of profit sharing in a sample of 50 British retail cooperatives in 1978. Profit sharing (measured by the dividend distributed per member) had a positive, but statistically insignificant impact on productivity.

Finally, in an interesting recent article Cable and Wilson[21] examined the extent to which profit sharing influenced productivity in a sample of 52 firms in the UK engineering industry from 19784982**. Their main finding was that firms operating profit sharing had productivity differentials of between 3 per cent and 8 per cent compared to firms without such schemes. These estimates came from models in which profit sharing was interacted with factor input levels and the firm's technological, organisational and labour-force characteristics. The authors argue that:

> "Contrary to what might be inferred from previous work indicating disembodied shift-effects, the introduction of profit sharing *ceteris **paribus*** will not necessarily have productivity enhancing effects; accompanying changes in other dimensions of organisational design are likely to be required" (p.373).

This work is clearly of some importance. However, as the authors themselves note, productivity gains could be associated with higher quality of management. The paper does suggest the need to allow for more complex specification of the profit sharing variable(s) than has been used in most of the existing work surveyed here.

3. Conclusions

In many respects Great Britain is already a "sharing economy". By 1987 over 50 per cent of private sector organisations and 41 per cent of private sector individuals received some form of income sharing. Government encouragement of profit sharing through tax incentives and other means has resulted in a substantial growth of such schemes in the 1980s.

We have found absolutely no evidence that profit sharing does any harm

There is little strong evidence for Great Britain that the presence of profit sharing significantly improves employment, profitability, productivity, investment or remuneration. However, the average payment under these schemes is small, amounting to less than 5 per cent of an employee's total remuneration. Given the small scale of these payments it seems unlikely that they would generate many very large effects.

We have found absolutely no evidence that profit sharing does any harm. For countries faced with severe economic problems it may be worthwhile experimenting with it, particularly if it is possible to influence employee attitudes. The success of the Japanese economy and of UK firms like the John Lewis Partnership is intriguing and may, although this is merely a matter of conjecture, be something to do with their adoption of profit sharing. I personally do not, however, see profit sharing as a great panacea — it is a harmless irrelevance.

---

* This section draws heavily on Jones and Pliskin[141.

** The same sample of firms was used in the Estrin and Wilson study discussed above.

References

1. Weitzman, M.L., "Some Macroeconomic Implications of Alternative Compensation Systems", *Economic Journal*, Vol. 93, 1983, pp. 763-83.
2. Meade, J., *Different Forms of Share Economy*, Public Policy Centre, London, 1986.
3. Blanchflower, D.G. and Oswald, A.J., "Shares for Employees: A Test of Their Effects" LSE, Centre for Labour Economics, Discussion Paper No. 273, 1987.
4. Daniel, W. and Millward, N., *Workplace Industrial Relations in Britain*, Heinemann, London, 1982.
5. Millward, N. and Stevens, M. *British Workplace Industrial Relations 1980-1984*, Gower, Aldershot, 1986.
6. Blanchflower, D.G. and Oswald, A.J., "Profit-Related Pay: Prose Discovered", *Economic Journal, Vol.* 98, 1988, pp. 720-31.
7. Blanchflower, D.G. and Oswald, A.J. and Garrett, M., "Insider Power in Wage Determination", *Economica*, 1989.
8. Blanchflower, D.G. and Oswald, A.J., "A Picture of Profit Sharing in Britain", mimeo, University of Surrey, 1987.
9. Estrin, S. and Wilson, N., "Profit Sharing, the Marginal Cost of Labour and Employment Variability", London School of Economics, mimeo, 1989.
10. Jones, D. and Pliskin, J. (Eds.), "Unionisation and the Incidence of Performance-Based Compensation in Canada" Hamilton College, Department of Economics, Working Paper, 1989.
11. Industrial Participation Association, Profit Sharing and Employee Shareholding Attitude Survey, London, 1984.
12. Wider Share Ownership Council, Employee Share Schemes, Copeman Paterson, London, 1981.
13. Bradley, K. and Estrin, S., "Profit Sharing in the Retail Trade Sector: the Relative Performance of the John Lewis Partnership", London School of Economics, mimeo, 1987.
14. Jones, D. and Pliskin, J., "The Effects of Worker Participation, Employee Ownership and Profit Sharing on Economic Performance: a Partial Review", in *International Handbook of Participation in Organisation*, Vol. 2, Rus, V. and Russell, R. (Eds.), Oxford University Press, 1989.
15. Weitzman, M.L., "The Simple Macroeconomics of Profit Sharing", *American Economic Review*, Vol. 75, 1985, pp. 937-53.
16. Grout, P., "Employee Share Ownership Schemes", University of Birmingham, mimeo, 1985.
17. Richardson, R. and Nejad, A., "The Impact of Financial Participation Schemes on Share Price Movements", *British Journal of Industrial Relations*, Vol. 24, 1986, pp. 233-50.
18. Blanchflower, D.G. and Oswald, A.J., "The Wage Curve", *Scandinavian Journal of Economics*, 1989.
19. Estrin, S., Jones, D., and Svejnar, J., "The Productivity Effects of Worker's Participation", *Journal of Comparative Economics*, Vol. 11, 1987, pp. 40-61.
20. Jones, D., "The Productivity Effects of Worker Directors and Financial Participation By Employees in the Firm: The Case of British Retail Cooperatives", *Industrial and Labor Relations Review*, October 1987, pp. 79-92.
21. Cable, J. and Wilson, N., "Profit-Sharing and Productivity: an Analysis of UK Engineering Firms", *Economic Journal*, Vol. 99, 1989, pp. 366-75.

Further Reading

Blanchflower, D.G. and Oswald, A.J., "Profit Sharing — Can it Work?", *Oxford Economic Papers*, Vol. 39, 1987, pp. 1-19.

Conte, M. and Tannenbaum, A., "Employee-Owned Companies: Is the Difference Measurable?", *Monthly Labor Review*, 1978, pp. 23-8.

Estrin, S., Grout, P. and Wadhwani, S., "Profit Sharing and Employee Share Ownership", *Economic Policy, Vol.* 4, 1987, pp. 13-51.

Fitzroy, F.R. and Kraft, K., "Profitability and Profit Sharing", *Journal of Industrial Economics*, Vol. 35, 1986, pp. 113-30.

Fitzroy, F.R. and Kraft, K., "Co-operation, Productivity and Profit Sharing", *Quarterly Journal of Economics*, 102, 1987, pp. 23-30.

Freeman, R. and Weitzman, M. "Bonuses and Employment in Japan", NBER Working Paper No. 878, 1986.

Jones, D. and Pliskin, J. "The Effects of Alternative Sharing Arrangements on Employment: Preliminary Evidence From Britain", *Industrial Relations*, (forthcoming), 1988.

Smith, G., "Profit Sharing and Employee Share Ownership in Britain", *Employment Gazette*, September 1986, pp. 380-6.

United States General Accounting Office, Employee Stock Ownership Plans: Benefits and Costs, 1986.

United States General Accounting Office, Employee Stock Ownership Plans, Interim Report on a Survey and Related Trends, 1986.

Wadhwani, S., "The Macro-Economic Implications of Profit-Sharing: Some Empirical Evidence', ISE, Centre for Labour Economics Discussion Paper No. 220, 1985.

Weitzman, M.L., *The Share Economy*, Harvard University Press, Cambridge, 1984.

David Blanchflower is based at Dartmouth College, USA.