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CHANCELLOR OF THE EXCHEQUER

FROM: N MONCK  
DATE: 16 August 1985

cc CST  
FST  
MST  
EST  
Sir P Middleton (o/r)  
Sir T Burns (o/r)  
Mr Bailey  
Mr Kemp  
Mr Byatt  
Mr Cassell  
Mr Burgner  
Mr Odling-Smee (o/r)  
Mr Monger  
Mr Spackman  
Mr Wicks (o/r)

Mr Culpin  
Mr Gilhooly  
Mr C Riley  
Mr Shaw (o/r)  
Mr G White (o/r)  
Ms Sinclair  
Mr Folger  
Ms Henderson (o/r)  
Mr L Hunt  
Mr Halligan  
Mr H Davies  
Mr Cropper  
Mr Lord  
PS/Inland Revenue  
Mr Farmer - I/R  
Mr Weeden - I/R

*for Budget*

## PROFIT SHARING, CO-OPERATIVES, TWO-TIER WAGES AND JOBS

This submission:

- (a) reports the work we have done so far on various mechanisms, operating at the level of the individual firm, which might reduce labour costs at the margin. Their attraction is, of course, the claim that by putting the pay and jobs thesis into practice they would increase employment within the nominal macro-economic policy framework; and
  - (b) asks you to decide whether you want further work done on one or more of them. The possible outcome might include a consultative document and legislation in the Finance Bill at least for profit sharing.
2. Despite the attractions in theory, the submission is discouraging about substantive benefits in the next two or three years, partly because of doubts about the practical scope for getting such schemes adopted on any scale. There are, however, potential presentational gains (at the expense of some risk) which you will want to consider.
  3. You will want to look at this submission alongside Mr Kemp's on the Jobs Added Contribution and variants.
  4. The field is a wide one and I have summarised the work we have done in the attached paper. The main bit of economic analysis of the Weitzman profit sharing payments and co-operatives is in its Annex A; it was prepared by Mr White's

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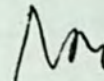


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EI Division with a macro-economic input from MP. Pay, FP, IAE as well as the Inland Revenue, who produced Annex B, have all contributed.

5. I should record that several participants think for various reasons, not least the continuing strength of the existing obstacles to wage flexibility, that profit-sharing is not worth pursuing further. I certainly agree that the practical problems are great, (eg the Inland Revenue's capacity problem and the trade-off between a wastefully loose qualification for tax relief and low take-up may prove insoluble or too difficult), that the benefits of pursuing profit-sharing for employment are likely to be very small in the next two years and uncertain in scale in the longer term. But if you are attracted by the possibility of a modest, though by no means assured, presentational gain in the next year or so, I think it would be worth taking the work at least one stage further.

6. You may want to discuss this with us. It would be helpful to know whether:
- (a) you want us to do further work, bringing in DE and DTI, to see whether we can produce the outline of a plausible consultative document;
  - (b) if so, whether you would envisage publication in the late autumn so that you would assess reactions in time to decide whether to include a tax incentive in the 1986 Budget and Finance Bill; and
  - (c) whether a consultative document should cover only profit-sharing and perhaps co-operatives; or whether you want two-tier pay - which I think best pursued in a very low key way - covered as well.
  - (d) whether you wish the Revenue to examine ways of overcoming their capacity problem (see paragraph 6(e) of the paper).



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## PROFIT-SHARING, CO-OPERATIVES AND TWO-TIER WAGES

The Mechanisms

The paper is mainly about profit- (or value added) sharing by employees on lines proposed by Martin Weitzman, but also covers co-operatives and, as the Chancellor asked, two-tier wages. All these mechanisms have in common an actual or claimed potential for reducing labour costs at the margin and thus promoting wage flexibility, particularly downwards. But there is an important difference between Weitzman and two-tier wages. The Weitzman proposals involve increasing employment by lowering, at least at the outset, the remuneration\* of existing employees or "insiders" as well as the "pay" offered to new employees or "outsiders". Two-tier wages by definition do not threaten the pay of insiders (unless they change jobs) and might even be accompanied by an increase. (Co-operatives may or may not do either, depending on their rules). This difference is important because the case for a fiscal incentive to insiders is much stronger for Weitzman than for two-tier bargaining. Without a fiscal incentive insiders might either reject share contracts completely or accept them only at the expense of a disastrous increase in base pay.

2. For clarity of exposition the effects of each mechanism are set out first in the rest of this note on the hypothesis that it could be introduced and spread reasonably widely. But such a hypothesis effectively wishes away unions and other obstacles to pay flexibility as well as employers' wish for a quiet life. In reality these obstacles mean that there are great difficulties and/or disadvantages in fulfilling the hypothesis of widespread introduction. In the case of profit-sharing, at least it also assumes a tax relief whose cost effectiveness would be uncertain. Different considerations would apply if only a few firms introduced such mechanisms. If they pitched their remuneration packages wrongly, they could lose labour to competitors.

## II PROFIT SHARING AND CO-COPERATIVES

(i) Characteristics and effects

3. The economics of the Weitzman proposal are analysed in Annex A which ends with a brief summary (flag A). This analysis is not by any means the last word. Weitzman claims that profit-sharing will improve the short run adjustment process

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\*After the introduction of a profit-sharing contract "remuneration" would count either wholly of a share in profits or, more probably, of a combination of a profit share and a continuing conventional wage described as "base pay" in this paper.

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in the labour market. Annex A argues that Weitzman ignores some disadvantages and overstates the advantages. You should be extremely wary of the illustrative numbers given in the tables at the end of Annex A. However, it suggests that if the hurdle of introduction and probable transitional costs (see paragraph 6(b) below) were crossed, Weitzman contracts could create an incentive for a profit maximising employer to increase sales volume by lowering prices and increasing employment (or at least employment hours). If employment rose, the total remuneration per hour of insiders would fall. But their after-tax income could rise, at least on certain combinations of assumptions, if a new tax relief were introduced for workers who contracted to take a significant proportion of their remuneration as share income. We envisage that the qualifying proportion might be 20 per cent. The costing in paragraph 6(f) below assumes that the tax relief would be complete exemption for 10 per cent of income from employment - roughly corresponding to a 15 per cent rate cut on the 20 per cent of share income.

4. The existence and size of this beneficial zone in which sales volume, profits, employment and post-tax remuneration could all be higher than with a fixed wage system depends on a number of assumptions including:

the elasticity of demand for the product, the production function, the form of the new share contract and the numbers in it, and the generosity of the tax relief.

The analysis suggests that a contract linked to profit rather than value-added would be more promising. On optimistic assumptions Table 1 in the technical appendix to Annex A indicates the possibility of a 15 per cent increase in employment hours if the profit link initially were 20 per cent of total remuneration. The incentive to employers of an increase in profits is modest, amounting to only 2 per cent over the base case. Moreover, the elasticity of demand is assumed to be 3, as Weitzman assumes, whereas the elasticity implied by the pay and jobs work for the economy as a whole is more like 1. Table 2 in the technical appendix to Annex A gives figures for less optimistic assumptions about elasticity and the marginal productivity of labour. The least optimistic figures are more relevant to the economy as a whole, though they may still overstate employment gains.

5. There are other factors which would reduce the net effect of any employment benefits of Weitzman contracts:

(a) a Weitzman scheme gives employees an incentive to see that profits per head are as high as possible. It should thus encourage productivity improvements, but at the same time gives insiders an incentive to restrict, and possibly reduce, employment levels and to work overtime;



- (b) the revenue cost of the tax incentive would reduce the scope for conventional cuts in income tax which would otherwise have exercised some moderating effect on pay, so helping jobs. This needs to be allowed for in estimating the net effect of the incentive.

Weitzman contracts would also inhibit investment which raises the capital:labour ratio. But in the short run this would not have much effect on employment.

(ii) Introducing share contracts

6. Annex B outlines the sort of tax relief that might be introduced as an incentive to the introduction of share contracts, and identifies some of the likely policy and practical problems. A good deal more work would be needed on this, but the following aspects are clearly important:

- (a) Definition. Tax relief would require Inland Revenue approval of the share contract. Only employees participating in the contract who accepted the conversion of at least 20 per cent of their total remuneration in the latest completed pre-contract year into share income (linked to profits, or some measure of performance) would qualify. The requirements would be both difficult to formulate and probably lengthy, if waste and abuse were to be minimised. Individual payment-by-results systems would not qualify but systems related to group performance, probably including existing schemes (eg John Lewis), would qualify;
- (b) Employees and Unions. It is essential to the proposal that employees would be asked to accept in advance a downside risk on total remuneration, as well as an upside potential. Unions and employees would also need to accept more employees being taken on if the employers thought it profitable to do so, even if the reduction in total gross remuneration were not fully compensated by the tax relief. There is no reason to expect unions and employees to be significantly more ready to accept the pay and jobs thesis in this form than they are at present, apart from the possible lure of the tax relief and the element of upside potential. If qualifying share contracts were not required to cover all the employees in a particular enterprise but only those willing to join, the benefit for jobs would be reduced and growing disparities of remuneration in a single workplace income could cause difficulties. Negotiators of contracts would almost certainly want to raise the base wage or impose costs on the employees in some other form in return for accepting the downside risk; and once the contract was operating,



employees might seek large compensatory base wage increases if share income had fallen;

- (c) Period of operation of the tax relief. As the effects of the scheme are speculative it might be appropriate to introduce it on an experimental basis for a period of say 3 or 5 years but a temporary scheme would be less attractive;
- (d) Employers. The number of employers who would want to negotiate share contracts might be limited. The combination of the burden of negotiation itself, the compensating initial pay increase unions might demand, the demand elasticities they face, uncertainties about whether their employees would honour the terms of the contract or demand further Vredeling-type rights of consultation, and perhaps the relatively small potential increase in profits might deter employers from starting talks about a share contract or lead them to break them off in favour of a conventional wage deal. If this happened, the scheme might be a very damp squib. On these grounds tax relief for employers as well as employees could be advocated. But apart from the cost, this would lessen the pressure on employers to ensure that the terms on which share contracts were introduced really offered the prospect of lower employment costs.
- (e) Inland Revenue capacity. Depending on the kind of tax relief contemplated, and the estimate of its likely popularity, Inland Revenue advise that it is most unlikely they could take on the introduction and operation of such a measure over the next two or three years. As the Chancellor is aware, this view reflects their concern about the current state of work in local offices, the need to reduce the record level of arrears and keep them under control - and, above all, the priority that must be given to the successful implementation of COP to provide staff savings and pave the way for Transferable Allowances. Staff costs would in any event seem likely to be considerable, though it has not been possible to estimate those at this stage;
- (f) Revenue cost. It is possible to estimate the revenue cost for a given number of takers. For each one million workers covered by such contracts, the revenue cost in a full year, assuming average earnings, might be of the order of £275 million. The extent to which such costs would buy extra employment in the short-term would depend on the extent of initial compensation achieved by unions: this might raise labour costs sufficiently to offset much of the potential jobs gain. In the longer-term, however, this initial disadvantage would wear off.



Co-operatives

7. The paper at Annex A suggests that conventional co-operatives would contribute less to expanding employment, though they probably would help to preserve existing jobs by reducing remuneration involuntarily or voluntarily. It is possible, however, that the tax relief might lead to the creation of co-operatives with Weitzman-type rules; if so, the gain to employment would be the same as for ordinary companies.

8. The definition of qualifying contracts could in practice exclude a good many existing co-operatives by setting a minimum number of members above the average of nine.

## III TWO-TIER WAGE BARGAINING

(i) Characteristics and effects

9. Mr Gilhooly's submission of 29 July described the main features of two-tier pay and the little we know of it in the US and here. Outsiders, often but not exclusively young workers, are taken on at lower rates than existing insiders. This should help the unemployed to find employment. But a formal scheme could damage the labour market by inhibiting job changes unless some way could be found of allowing insiders in a firm to switch to another on insider rates of pay. This would be complicated. We have asked the Department of Employment to assemble more information on two-tier bargaining in the US and its effectiveness as quickly as they can.

(ii) Introducing and extending two-tier pay

10. Mr Gilhooly's note argues that it would be worth considering:

- (a) trying to get management organisations and individual employers in the private sector interested in a low key way;
- (b) proposing two-tier pay in the public sector, including the public services;
- (c) exploring two-tier pay in NEDC.

He pointed out that (c) risks outright condemnation by the TUC on the grounds that two-tier pay undermines the rate for the job principle.

11. You asked us to consider tax reliefs or grants as a further means of encouraging two-tier pay. There are two reasons for thinking this much less



appropriate than in the case of profit sharing contracts:

- (a) although in practice insiders may object to two-tier pay on rate for the job grounds, they are not themselves, as in Weitzman, being asked to accept a downside risk, unless they change jobs. Employers also have a direct incentive to negotiate two-tier pay wherever they can do so. It is not clear to whom an incentive should be paid;
- (b) an incentive provided by the Government would entail a high profile for two-tier arrangements because there would have to be rules and procedures for getting hold of the incentive. Among other things these would have to specify some gap between the remuneration of insiders and outsiders. Except in areas where unions are very weak, employers would probably have to negotiate two-tier arrangements formally with the unions. This process might either set back the spread of two-tier pay or raise the cost to the Government of achieving what could have been done anyway.

12. If, nevertheless, the Chancellor favoured an incentive, it would no doubt be possible to devise one. Three possible groups might receive a subsidy: employers; insider employees; and outsider employees.

13. If employers got the subsidy, the scheme would be like Professor Layard's marginal employment subsidy (MES). Because of high dead weight, such schemes have normally scored very badly on cost-effectiveness. The net Exchequer cost per net job or per person off the unemployment count would be about £5,000 or £15,000 respectively if, as DE currently assume, the subsidy to the employer was £80 a week. This would still compare pretty badly with Exchequer costs of the order of £2,000 a year per person off the count for the cheaper Special Employment Measures, though the extra jobs induced might have a better prospect of lasting.

14. It is unlikely for several reasons that the cost per job figures would be improved by imposing the two-tier wage restriction. Indeed, they could well rise primarily because wages for insiders may well be increased as part of negotiations about a lower wage for new recruits. In addition the imposition of the second-tier wage as a condition for subsidised recruitment may increase substitution by employers of new employees for existing workers. Because of the relative average age of new recruits compared with existing workers, there is already, in practice often a differential in terms of earnings and labour costs. Second-tier wages for newly hired workers would result in lower revenue flowbacks under an MES.



15. Giving the subsidy to outsiders might in principle be the least hard to defend and would also help to blunt the unemployment trap. But this would presumably provoke even stronger opposition from insiders than there would be anyway. If insiders got it as well, the purpose would be to overcome their resistance on rate for the job grounds rather than to compensate them for a downside risk; it would, of course, greatly increase the cost.

#### IV PROVISIONAL ASSESSMENT AND POSSIBLE NEXT STEPS

16. The attraction of all these schemes is as a way round the obstacles to straightforward downward pay flexibility in the interests of getting more jobs in a non-accommodating macro-economic policy framework. Those obstacles would, however, still be there and are likely to restrict the extent to which any of these devices could be introduced and produce useful job effects in the next two years or so. They are not going to change the world in that period even with a fiscal incentive.

17. However, although the job benefits are at best likely to be much smaller than Weitzman suggests, there is in principle a clear case for such an incentive to employees for profit-sharing: and an extension of two-tier bargaining would also help employment, though in this case a low-key approach seems much more promising than any formal public initiative or incentive or even Government backing outside some of its own negotiations. To these arguments about merits might be added a presentational case for pursuing profit-sharing in a public way. The two year exemption from employment protection rights has been extended from small employers to all employers and Ministers collectively have decided on reform rather than abolition of the wages councils. There is now no obvious statutory change in the institutional structure of the labour market which would advance the pay and jobs thesis. Without some initiative on profit-sharing (or along JAC lines) the Government will probably have nothing better than exhortation to fall back on in defending the unemployment figures over coming months.

18. The Chancellor will want to consider initiating public discussion of profit sharing schemes of the Weitzman type, combined with a tax incentive. The presentation would have to be fairly low key. There are risks, and employers might not be greatly attracted, let alone employees. But testing reactions may be better than doing nothing. The case for the incentive also has the positive virtue of highlighting the connection between the attitudes of the employed and helping the unemployed which we tried with meagre success to get across in the NEDC jobs debate.



19. If the Chancellor were attracted by this, it would be natural to have in mind a consultative document. If the response was negative, the proposals could be dropped without too much loss of face provided the presentation had been low key. If the response was positive and the practical problems proved soluble, legislation in the 1986 Finance Bill could be announced in the Budget. This would imply a consultative document in the late autumn. One difficulty in producing a plausible document would be the balance between presenting share contracts as a way of increasing jobs and, more traditionally, as a way of getting employees involved in high productivity. It may be difficult to ride both horses without exposing the conflict implied in paragraph 5(a) above. The immediate next step for us would be to complete the work on the analysis and practicalities which we have started and to consult DE and DTI about it. It would be premature to reach a view at this stage on anything more than the next steps outlined at the end of the covering minute.

ANNEX A Economic Analysis by EI of Weitzman Share Contracts and  
Co-operatives

Annex B Note by the Inland Revenue on a Weitzman Tax Relief.

16 August 1985



ALTERNATIVE LABOUR REMUNERATION SYSTEMSA. Weitzman's propositions

1. In a recent book (The Share Economy) Weitzman\* has proposed an approach to compensation payments for labour which would mean that there was less tendency for a producer to shed labour and reduce output in response to any given shock. The short term response of business to an external shock would on the proposed approach tend to be to hold the quantity of labour and output at its full employment level, whilst taking the adjustment on price in both product and factor markets. This paper gives our preliminary analysis.

2. This desirable state of affairs is said to be brought about by changing the compensation payments to labour from a wage system to one based on some share of business income. At the heart of Weitzman's argument for this change is his view that it will transform the incentives of the employers to employ more workers. As long as each worker must be paid a given money wage, the employers will take on workers only to the point at which the extra worker increases the value of the firm's net output by at least as much as the extra worker's wage. But if the workers as a whole are paid 80 per cent of the value of the firm's net output, the employer will receive 20 per cent of whatever is produced. So, assuming profit maximisation, an additional worker will be taken on as long as he or she adds anything to the value of the firm's net output, or until the employers can find no more unemployed workers to employ.

3. An economy in which firms had a pure share payment system would be one in which there was excess demand for labour. In Weitzman's analogy, firms would "cruise around like vacuum cleaners on wheels, searching in nooks and crannies for extra workers to suck in at existing compensation parameter values."

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\* M L WEITZMAN The Share Economy  
(1985)



4. The share system proposed by Weitzman, will tend to imply short-run flexibility in compensation payments but it cannot escape longer term tendencies to equilibrium which may involve adjustment to the compensation coefficient (eg the 80 per cent referred to in paragraph 2). He argues that in the long run all labour remuneration systems converge to the same equilibrium, but under fixed wages the adjustment mechanism is through quantities rather than prices.

#### **B. Weitzman's assumptions**

5. The propositions advanced by Weitzman (much more formally in the EJ article than in the book or as summarised above) are based on a number of assumptions\*. In the first place, the typical firm is assumed, in the jargon, to be monopolistically competitive. In other words, there are a large number of such firms with relatively free entry into and exit from the industry, but each firm sells a product which is somewhat different from other products in the same market. Hence, each firm faces a downward sloping demand curve - a rise in price will lose it some but not all business to competitors. Demand is further assumed to be sufficiently elastic so that a cut in price allows sales to increase to such an extent that the firm's total revenues increase. However, the extent of any employment generating effects will depend upon the production and market conditions the firm faces.

6. Secondly, Weitzman treats labour as a uniform, homogeneous and freely substitutable factor of production. On the face of it, this seems unrealistic, but it is no more so than many other theoretical expositions about the operation of labour markets. However Weitzman goes further and assumes that even a firm with a fixed capital stock may add to its labour force without diminishing the output per man.

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\* M L WEITZMAN Some Macroeconomic Implications of  
(1983) Alternative Compensation Systems.  
EJ: Pp 763-783



7. Thirdly, a share economy is assumed to be one where a significant proportion of firms use share compensation systems. Weitzman concedes that a share system would not have all the virtues claimed for it where only a small minority of firms had such compensation procedures since the firm operating the share system would tend to lose workers to the firms remaining on the fixed wage system. Indeed, since an individual firm and its workers do not consider the externalities (the macroeconomic benefits) of the compensation system they adopt, Weitzman argues that there may be an interventionist role for government in encouraging the adoption of share systems by tax incentives. These incentives should thus attempt to bring about a critical mass of profit sharing firms, however, perhaps the best that could be done in practice is to introduce a permissive regime encouraging the adoption of share systems.

8. Fourthly, Weitzman assumes that the compensation parameter (the 80 per cent referred to in paragraph 2) is sticky over the short-run and certainly stickier than the firm's decision to hire or fire labour. He does envisage the parameter forming part of the annual wage negotiation.

### C. Comments

9. There have been a number of academic comments on the Weitzman propositions but no-one seems to have systematically taken them apart. The following comments seem relevant and taken together suggest caution in claiming too much for the Weitzman arguments.

#### (a) The nature of the product market

10. The assumption that the typical firm is monopolistically competitive does not seem unreasonable. Weitzman interprets this product market condition to mean that firms are "eager to find new customers and to sell more output at existing



prices without limit". For this to be so the firm must be able to produce additional output at a unit cost less than the cost of existing output. The thrust of Weitzman's work is to transform the labour cost structure facing the firm to make this so.

11. Weitzman's analysis is at the level of the individual firm, and while the firm's demand may be fairly elastic, total demand in the economy is much less. It follows from this that the share firm's expansion will tend to be restricted by competition from other share firms, or offset by falls in output and employment in fixed-wage competitors who have been undercut. So that the aggregate effect on employment could be somewhat smaller.

**(b) Labour market conditions**

12. The assumption of homogeneous and freely substitutable labour is unrealistic, but is widely used in economic analysis to simplify problems. However the assumption seems particularly critical in this case when the only constraint on the vacuum cleaner's cruising is full employment. Constraints on substitution between skilled and unskilled labour are unavoidable, at least in the short-run, and bottlenecks in skilled labour supply may be encountered before full employment is achieved.

13. The assumption of constant returns to labour (paragraph 6) is equally unrealistic and certainly is not standard economic practice. Changing the assumption will not affect the incentive to employers to take on more labour provided it adds something to output, however little. Labour remuneration per head is, however, reduced when employment increases, which means that existing employees are given an incentive to resist any increase.

14. In the labour market envisaged by Weitzman, the suppliers of labour are assumed not to act collectively to ration jobs, although this might seem an obvious response



to an employer eager to take on more employees and by so doing depress the average levels of compensation. More generally, all impediments to the expansion of employment, including hiring and training costs and capacity constraints tend to be assumed away. Impediments to the firing of labour are not relevant in Weitzman's share economy because he considers the situation of redundancy to be unnecessary.

15. The shift to a share economy may raise the degree of uncertainty on the part of suppliers of labour as to the total remuneration they will receive but on the other hand the risk of unemployment may be diminished for a given real wage. The total effect of this on labour supply is therefore ambiguous. In any event, since firms are more likely to adjust to external shocks in a share economy through prices rather than quantities, there may be some offsetting incentive for firms to invest more in training as well as for them to take on more labour.

**(c) Disincentives to Capital-Investment**

16. If it is assumed that firms are managed in the interests of the existing owners of the capital invested in them, then there would be reduced incentive to contemplate new capital investment. A proportion of the value added of any new capital equipment would accrue to the workers automatically, given a sticky compensation share parameter (the 80 per cent of paragraph 2). Unless managers could rely on negotiating downward flexibility of the share allocated to wages, capital investment projects would be discouraged relative to the position prevailing in a pure wage economy, though in practice productivity improvements may partly be shared even in that case. However, this difficulty would only arise in the context of substituting capital for labour. In the present context with the need to substitute labour for capital rather than the reverse this may not be too much of a problem.



(d) Macro-economic Implications

17. Weitzman claims that profit sharing itself will not alter the state of the economy in the long run. But it will alter the speed with which the economy approaches equilibrium and reduce the extent to which employment varies in response to shocks hitting the economy. It does this by providing a mechanism for wages to adjust more quickly to the market clearing level. Among the implications of this, taken at face value, are:

- (i) inflation is not affected in the long run. It is determined essentially by monetary and fiscal policies via the growth of nominal demand.
- (ii) the level of unemployment which is consistent with stable inflation (the NAIRU), to which the economy tends in the long run, is not affected. Thus the scope for profit sharing to help in reducing unemployment depends on where the NAIRU is.
- (iii) if the economy is some way above the NAIRU, profit sharing will enable it to be achieved more quickly, and it will do so without any long term adverse effect on inflation.
- (iv) cyclical variations in unemployment will be reduced in scale. Adjustments will be concentrated more on real wages - prices rather than quantities - which will fall in cyclical downturns as profits fall, and vice versa in upturns, partially reversing the cyclical pattern that is normal in a fixed wage system.

18. While (i) and (iv) can probably be accepted, the other two conclusions are in practice subject to doubt. It is quite likely, for example, that profit sharing will alter the long run equilibrium of the economy. It may



well lead to increased demand for labour at any given level of real wages, so that in the long run the economy is likely to run with some combination of higher real wages, higher employment and higher output. The more responsive is the labour supply to changes in real wages, the more likely is employment to be higher - and the NAIRU lower - in the long run.

19. Another feature of profit sharing is that it provides workers with a stronger incentive to improve working practices and increase productivity, and hence profit per head, since this will lead directly to higher wages. This, may not increase employment much if at all in the long run equilibrium, but it is likely to raise output and real wages. On the other hand to the extent that some investment is inhibited there may be an offset to this effect.

20. Much of Weitzman's analysis about the comparative properties of profit sharing and wage systems assumes that the systems are already in place. This may not affect the longer run analysis, but it clearly does affect the dynamics of behaviour in the short run. The transition from a wage system to a profit sharing system will itself have short run effects which need to be taken into account in assessing the conclusion (iii) that the economy will move more quickly to the NAIRU without adding to inflation.

21. Factors which need to be taken into account in assessing the short term effects include the following:

- (a) the level of wages agreed ex ante at the initiation of share contracts. This could be higher than the initial level of wages if Trades Unions perceive that share schemes will tend to drive average wages down, given the sort of publicity Weitzman's ideas have already received, this seems quite likely.



- (b) the effects of the (temporary) tax incentives in relation to other ways of spending any given fiscal adjustment. The tax incentives may reduce the scale of ex ante upward pressure on wages noted at (a), and may even reverse it. But this effect may not be much greater than for a straightfoward cut in income taxation.
- (c) the effects of increased productivity induced by profit sharing. This would tend to reduce the scale of short term benefits to employment, and could in principle even lead to a temporary net shedding of labour.

#### E. Empirical testing of Weitzman's propositions

22. Weitzman asserts that "Japan offers a living laboratory" for many of his ideas and that it "displays all the broad tendencies predicted by the theory". In a recent working paper\* from the Centre for Labour Economics, Wadhvani examines the validity of these assertions.

23. Wadhvani concludes that bonus payments (which in the late 1970's comprised about 20% of total earnings) do respond to corporate profitability. However there is little evidence that this leads to the predicted "broad tendencies". The predicted high levels of labour utilisation in Japan cannot be inferred from the low Japanese unemployment rate. This is because the policy of life-time employment, the existence of large numbers of temporary workers, agricultural and other self-employed persons, and the presence of many unpaid family workers in the labour force, all tend to disguise the level of labour under-utilisation in times of slump. This cyclical under-utilisation is high-lighted by Wadhvani's finding that Japan's record of cyclical variability in output is not noticeably better than other economies. This conflicts with Weitzman's predicted output stability.

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\* S WADHWANI The Macroeconomics of Profit-Sharing: Some  
(1985) Empirical Evidence.



24. On inflation Wadwhani's evidence is no kinder. According to Weitzman's model profit-sharing should reduce wage inflation and import-price inflation, and increase monetary growth. An examination of Japanese trends pre-war (when profit-sharing was less pronounced) and post-war shows the differences to be the opposite of those predicted.

**F. Theoretical testing of Weitzman's propositions**

25. In his book Weitzman suggests two possible alternatives for his share system. In both any change to earnings as a result of employment changes is shared by all employees not just new entrants. The first is a pure share-system in which all earnings are related to some measure of firm performance. Different terms are used by Weitzman for this performance measure. Weitzman's terminology is vague because he considers that the employment generating properties of his model are not dependent on the company performance measure chosen. However, he seems to have in mind some measure of value-added (ie gross revenue less materials, components etc costs). At the risk of perpetuating confusion, in what follows this measure will be referred to as revenue.

26. Analysis shows that the employment generating potential of a pure share system is limited only by demand for output. Regardless of the firm's production function employment will increase as long as new output increases total revenue. In practice such a system would be difficult to introduce, and would be restricted by the benefit floor, which constitutes a "minimum wage".

27. The alternative share-system considered by Weitzman is a hybrid system in which earnings are made up of a base wage and a share component. Two possible forms of this hybrid system are considered here, both of which have a component of earnings as a base wage in which the share component is related either to revenue or to revenue less the base wage.



28. The hybrid share systems will at the outset have to be negotiated and this will determine the initial proportion of earnings represented by the base wage and the share component. Over time as the firm adjusts its employment this proportion will change. While under the pure-share system the cost of hiring the last unit of labour is zero, with a base wage this is not so. A "cut-off point" is introduced. When the value of output produced by that last unit falls below the cut-off point the firm will not hire more labour. Under the shared-profit system the cut-off point is equal to the base wage itself; under the shared-revenue approach it is somewhat higher. The shared-profit system may therefore be a better option than shared-revenue, though the higher gearing of wages to revenue involved may in practice mean that a higher base wage would be demanded.

29. As an indication of the kind of results which might be obtained: with a base wage set at 80% of the original fixed wage, the shared-revenue system would raise the optimal labour force for an individual firm by between 3% and 5% under a range of plausible assumptions about the elasticity of demand and the production function. Under the same assumptions the effects of a shared-profit system could be between 4% and 15%. A base wage of 90% roughly halves these increases, while at 50% the increases would be higher. The details of the calculations are set out in the technical appendix.

30. Such employment increases could also be obtained by reducing wages in a fixed wage system. The advantage of the share systems is that they allow similar increases in employment with smaller reductions in labour remuneration. But our analysis suggests that if workers participating in share schemes were exempt from tax on 10% of their total income, this would be sufficient to prevent any fall in take-home pay even for cases where employment increased by, say, 10%.



31. But it must be stressed that the numbers above should be treated with great caution and almost certainly overstate the overall effects. First, the analysis has been conducted for an individual firm, thus ignoring any economy wide effects. Some of the employment increases would be at the expense of the other firms. Even if all firms were operating in similar fashion, the increases in demand (and thus employment) generated by wage and price reductions would be greatly reduced as competitors cut prices in line. Effects for the economy as a whole would be proportionately much smaller. Second, they ignore the possibility of wages being set initially at a higher level than prevailed previously and ignore any tendency for contracts to be renegotiated. Third the effect of productivity changes which are likely to occur given the increased interest the workers have in the profits of the firm, have been ignored. The possible increase in productivity could at least in the short run, offset the increases in employment and loss in pre tax earnings. Finally, the likely increases in material and capital costs as output and employment rise have been ignored, thus the possible employment generating effects would tend to be reduced.

**G. Meade's discriminating labour-capital partnerships**

32. Another share system is the 'Discriminating Labour-Capital Partnerships' proposed by Meade\*. This proposed system avoids the possible disincentives for capital investment, while preserving the effects of the Weitzman proposals on the level and stability of employment.

33. Meade proposes that two types of 'share certificates' should be issued.

- (a) Capital Share Certificates. Issued to all people receiving directly or indirectly through profits, interest, rent etc. in proportion to their existing income from the business. These Certificates could be traded as thus transferable from one owner to another.

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\* J MEADE Discriminating Labour-Capital Partnerships.  
Paper given at CLE, LSE on 3 May 1985.



(b) Labour Share Certificates. Issued to all employees in proportion to their existing earnings from the business. Unlike the Capital Share Certificates the Labour Share Certificates are not transferable, but tied to the individual employee and cancelled when the employee quits or retires. However, these Certificates would not be cancelled if the employee leaves the firm involuntarily. Therefore, the employee is guaranteed his share of income/employment until retirement.

34. The result of this is that both capitalists and workers receive the same income as before the issue, but everyone concerned would be able to share in the success or failure of the business. Thus decisions about capital investment would be taken jointly with resultant action only if it is advantageous to both types of shareholders. Therefore, the problem of sticky share parameters on investment incentives are avoided in Meade's model. The issue of additional Capital Share Certificates to finance capital investment automatically results in the appropriate increase in the share of revenue accruing to capital.

35. A different feature of Meade's proposals is that the 'equal pay for equal work' idea, embodied in a wage and Weitzman share system, is rejected. Since any additional worker reduces the marginal revenue product, he or she is paid a fixed wage or expected dividend on newly issued Labour Share Certificates related to this lower marginal revenue product. Thus, whenever a new worker is employed all existing capital-labour partners would be better off - thus encouraging the employment of new workers. The apparent unfairness of the 'unequal pay for equal work' idea, will according to Meade, disappear over time, as the new hands become old hands and enjoy the privileges of the 'insiders'.

36. Although the idea of labour-capital partnerships does offer a way round the investment disincentives of a pure



share system, it is rather cumbersome. For example, the idea to weight the number of votes to which each Share Certificate is entitled by some formula which measured the present value of the interest which each shareholder had in the fortunes of the firm, would be extremely difficult to apply in practice. [This idea is suggested because of the problem of workers close to retirement voting on a long-term investment project; for example]. In addition as Meade himself suggests, a labour-capital partnership could only work in an atmosphere of mutual trust in which the partners wished to make the partnership work, a situation which may not be easily obtainable.

#### H. Cooperatives & Employment

37. In the conventional view cooperatives differ from the share-income proposals because they aim to maximise average labour remuneration, rather than total profit. Hence the optimal labour force of a cooperative is reached when the value added to production by the last member (the Value of the Marginal Product, or VMP) equals existing earnings per head, while the entrepreneurial firm equates VMP and wage rate.

38. Faced with a fall in demand for output the entrepreneurial firm sheds labour since VMP is now lower than the wage rate. In the cooperative average earnings also fall at least as much as VMP, and the cooperative has no incentive to shed labour. It may even have an incentive to increase membership.

39. A rise in demand reverses this effect: the cooperative may now have an incentive to shed labour. Two things follow from this. Firstly, a cooperative will tend to react to changes in demand with price changes while the entrepreneurial firm tends to adjust both. Secondly employment in a cooperative economy would tend to be static except where cooperatives are formed or dissolved.



40. Hence faced with unemployment the need to create new business is greater in a cooperative economy than in an entrepreneurial economy. Although it has been argued that new cooperatives would be more easily established than new entrepreneurial firms since lenders of capital would be attracted by the absence of a fixed wage bill. Against this must be set the probable lack of security and management expertise, and the organisational problems of forming a new cooperative by joint decision compared with the ability of the entrepreneur to act on opportunities as they arise.

### I. Conclusions

41. Cooperatives do not offer the employment-generating advantages of Weitzman's proposals and should not be considered with them.

42. A pure-share system, even with a minimum wage provided this is not set too high, produces the greatest incentive for employers to increase employment (with the lowest remuneration) in the short run. However such a system may be difficult to introduce.

43. Hybrid systems which incorporate a basic wage as well as a share of revenue or profit, could produce short run increases in employment for individual firms. This increase would be larger:

(a) the more elastic the demand for output

(b) the less marginal product falls as labour is increased

(c) the lower the basic wage.

44. For any given basic wage a shared-profit system may generate more employment in the short run than a shared-revenue system.



45. In a share economy the objectives of workers and management still diverge: workers have an interest in raising the basic wage and in restricting employment, whereas managements interest is in reducing the basic wage and increasing employment.

46. An examination of Weitzman's theory, and the little empirical testing that has been carried out of its predicted effects, suggest that the more extravagant claims that profit-sharing "eliminates the worst features of stagflation" should be treated with due caution, if not scepticism. There seems in particular to be insufficient regard given to capacity constraints (skilled labour), the effects on capital-labour substitution, and wage pressure as full employment is approached. Nevertheless, although Weitzman's vacuum cleaner's cruising may be more limited than he claims, the point remains that the stronger link between prices and wages brought about by profit-sharing does seem likely to make the adjustment process to shocks more concentrated on prices than quantities. As such it seems likely to reduce cyclical fluctuations in employment. But it would be wrong to imagine that substantial gains to employment in the short term, following the introduction of share contracts would be guaranteed. They could be smaller or even, under not implausible assumptions about productivity, negative.

47. Finally, a drawback with the Weitzman proposals is the possible disincentive effects on capital investment. But this is only likely to be a serious problem for labour-saving investment, which anyway may not be particularly desirable in current circumstances. Meade, offers a way round the problem with his proposed discriminating labour-capital partnerships, but this proposal does involve rather cumbersome arrangements relying on the mutual trust between both parties.



## APPENDIX

### PROFIT SHARING: A TECHNICAL APPENDIX

This appendix sets out the derivation of the "cut-off points" which are the central feature of the theoretical assessment in Section E of the main paper. Analysis starts from Weitzman's initial position of  $MRP = \$24/hr$  and a labour force of 500,000 hours. Table 1 displays the preliminary results obtained with an elasticity assumed to be  $-3$ , and labour exponent\* of  $0.5$  a "favourable" case. Table 2 contains comparative results for two sets of assumptions, one, an intermediate case with elasticity  $-2$  and labour exponent  $0.5$  and an "unfavourable" case  $(-1.5, 0.2)$ . Figure 1 graphs  $MRP$  against labour under these assumptions.

\* The labour exponent reflects the change in marginal product as labour is increased. The higher the exponent the less MP declines, a value of  $1$  produces constant MP,  $0$  produces zero MP.



TABLE 1

CALCULATIONS UNDER FAVOURABLE ASSUMPTIONS<sup>1</sup>

	Base Wage as % of original wage	Base Wage \$/hr	Equilibrium Share income component \$/hr	Total labour Remuneration \$/hr	Post-tax <sup>2</sup> Labour Remuneration \$/hr	Cut-off point \$/hr	Equilibrium labour force 1,000 hours	% increase in hours over \$24 fixed wage	Profits \$m	% increase in profits over \$24 fixed wage
1	100	24	0	24	16.80	24.00	500.0	0.0	6.00	-
Fixed Wage	75	18	0	18	12.60	18.00	595.6	19.0	9.27	54.5
	50	12	0	12	8.40	12.00	720.0	44.0	13.20	120.0
2/3 Pure share <sup>3</sup> of 66.67%; "minimum wage" of \$16/hr		-	16.00	16.00	11.68	3.13	991.58	98.3	7.93	32.2
4	95	22.80	1.19	23.99	17.51	23.59	505.7	1.1	6.00	-
Shared Revenue	90	21.60	2.38	23.98	17.51	23.14	512.2	2.4	6.01	0.2
	80	19.20	4.71	23.91	17.45	22.15	526.7	5.3	6.02	0.3
	50	12.00	11.91	23.19	16.93	18.00	595.0	19.0	6.18	3.0
	20	4.80	15.60	20.40	14.59	10.29	762.9	52.6	6.75	12.5
5	95	22.80	1.16	23.96	17.49	22.80	517.1	3.4	6.01	0.1
Shared Profit	90	21.60	2.26	23.86	17.42	21.60	535.1	7.0	6.03	0.3
	80	19.20	4.27	23.47	17.13	19.20	574.0	14.8	6.12	2.0
	50	12.00	9.17	21.17	15.45	12.00	720.0	44.0	6.60	10.0
	20	4.80	12.64	17.44	12.73	4.80	929.8	86.0	7.34	22.3

Notes: 1. Elasticity = -3 (following weitzman), labour production exponent = 0.5.

2. Assuming the whole fixed wage is taxed at 30%, and that 10% of the total remuneration of share systems is tax-exempt, the remainder taxed at 30%.

3. Being the share giving an initial labour remuneration of \$24/hr.



TABLE 2

## CALCULATIONS UNDER LESS FAVOURABLE ASSUMPTIONS

	Base Wage as % of original wage	Base Wage \$/hr	Equilibrium Share income component \$/hr	Total Labour Remuneration \$/hr	Post-tax <sup>2</sup> Labour Remuneration \$/hr	Cut-off point \$/hr	Equilibrium Labour force 1,000 hours	% increase in hours over £24 fixed wage	Profits \$m	% increase in profits over £24 fixed wage
A. UNDER INTERMEDIATE ASSUMPTIONS: ELASTICITY OF DEMAND = -2, LABOUR PRODUCTION EXPONENT = 0.5										
1 Fixed wage of \$24/hr		24.00		24.00	16.80	24.00	500.00	-	12.00	-
2/3 Pure share of <sup>1</sup> 50% + "minimum wage" of \$16/hr	-	0	17.28	17.28	12.61	0	781.25	56.25	13.50	12.5
4	90	21.60	2.37	23.97	17.50	22.74	510.67	2.13	12.01	0.1
shared	90	19.20	4.69	23.89	17.44	21.33	523.02	4.60	12.03	0.3
Revenue	50	12.00	11.09	23.09	16.86	16.00	573.98	14.80	12.21	1.8
5	90	21.60	2.31	23.91	17.45	21.60	520.62	4.12	12.02	0.2
Share	80	19.20	4.45	23.65	17.27	19.20	542.53	8.51	12.08	0.7
Profit	50	12.00	10.08	22.08	16.12	12.00	617.28	23.46	12.44	3.7
B. UNDER UNFAVOURABLE ASSUMPTIONS: ELASTICITY OF DEMAND = -3, LABOUR PRODUCTION EXPONENT = 0.2										
1 Fixed Wage		24.00	0	24.00	16.80	24.00	500.00	-	24.00	-
2/3 Pure share of <sup>1</sup> 33.33% + "minimum wage" of \$16/hr	-	19.59	19.59	19.59	14.30	0	638.14	27.63	25.00	4.2
4	90	21.60	2.38	23.98	17.50	22.34	507.33	1.47	24.01	0.0
Shared	80	19.20	4.70	23.90	17.45	20.57	515.42	3.08	24.02	0.1
Revenue	50	12.00	11.25	23.25	16.98	14.40	546.13	9.23	36.88	53.7
5	90	21.60	2.35	23.95	17.48	21.60	510.67	2.13	24.01	0.0
Shared	80	19.20	4.61	23.81	17.38	19.20	521.89	4.38	24.05	0.2
Revenue	50	12.00	10.85	22.85	16.68	12.00	559.27	11.85	24.27	1.1

Notes: 1. Being the share giving an initial labour remuneration of \$24/hr

2. Assuming the whole fixed wage is taxed at 30%, and that 10% of the total remuneration of share system is tax-exempt, the remainder taxed at 30%.



MARGINAL  
REVENUE  
PRODUCT

FIGURE 1: MARGINAL REVENUE PRODUCT AGAINST LABOUR

60  
50  
40  
30  
20  
10  
0

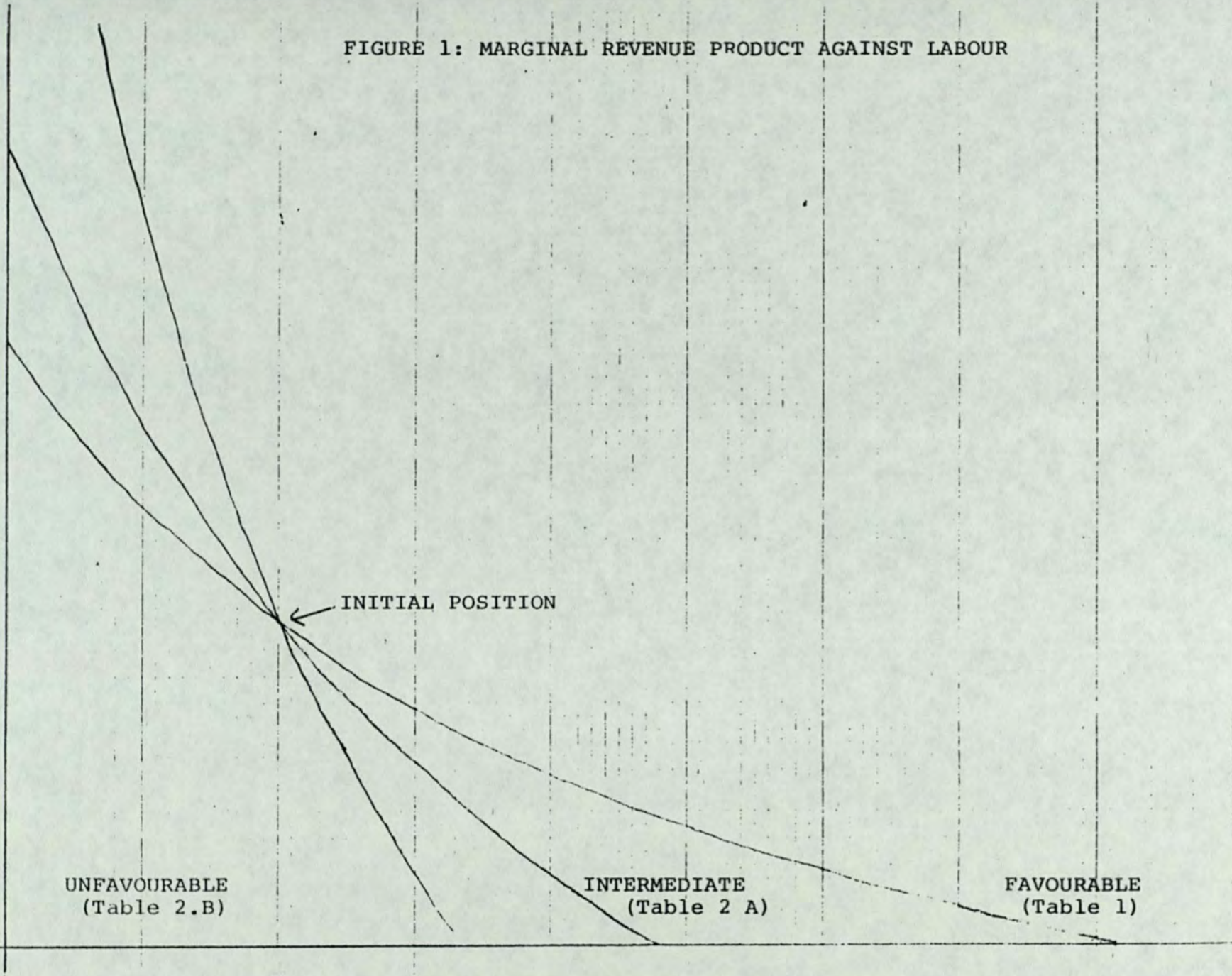
INITIAL POSITION

UNFAVOURABLE  
(Table 2.B)

INTERMEDIATE  
(Table 2 A)

FAVOURABLE  
(Table 1)

300 400 500 600 700 800 900 1000 1100 1200  
LABOUR  
(THOUSAND HOURS)





## THE REMUNERATION SYSTEMS

A1.  $W$  = earnings per employee

$BW$  = base wage =  $\lambda W_0$ , where  $W_0 = W$  under fixed wage system  
and  $\lambda$  = proportion of  $W_0$  used to set  $BW$

$R$  = total revenue

$L$  = quantity of labour

$r$  =  $R/L$

$k$  = proportion of  $r$  or profit received by labour, determined by the requirement that initial remuneration equal  $W_0$

$\pi$  = profits before deduction of fixed costs

All five systems are variants of two basic models:

(i)  $W = BW + kr$  (shared revenue approach)

(ii)  $W = BW + k(r - BW)$  (shared profit approach)

A2. A company using the shared revenue approach (A1(i)) would maximise the following profit function:

$$\begin{aligned}\pi &= R - BWL - (kr)L \\ &= (1 - k)R - BWL\end{aligned}$$

At a maximum  $\frac{d\pi}{dL} = (1 - k) \frac{dR}{dL} - BW = 0$

$$\therefore \frac{dR}{dL} = \frac{BW}{1 - k} \quad (1)$$

ie the marginal revenue product (LHS) is equal to the base wage divided by one minus the share parameter (RHS).

A3. Weitzman's pure share approach is a special case of equation (1) where  $BW = 0$

$$\text{ie } \frac{dR}{dL} = 0 \quad (2)$$

A4. The fixed wage system is a special case of equation (1) where  $BW = W_0$  and  $k = 0$ .

$$\text{ie } \frac{dR}{dL} = W_0 \quad (3)$$

A5. The pure share/minimum wage system is a special case where  $\frac{dR}{dL} \gg W_m$

$W_m$  = minimum wage

if the constraint is operative:  $\frac{dR}{dL} = W_m \quad (4)$



If inoperative the model behaves as the pure share approach.

A6. A company using (A1 (ii)) would maximise the following profit function:

$$\begin{aligned}\pi &= R - [BW - k(r - BW)L] \\ &= (1 - k)(R - BWL)\end{aligned}$$

At a maximum  $\frac{d\pi}{dL} = (1 - k) \cdot \left(\frac{dR}{dL} - BW\right) = 0$

$$\therefore \frac{dR}{dL} = BW \quad (5)$$

A7. Equations (1) to (5) define the "cut-off" points of the five systems. Only if the LHS of the equation is greater than the RHS will the firm wish to employ more workers. So employment is determined as the value of L that satisfies  $MRP = W_c$ , where MRP is the Marginal Revenue Product of Labour ( $= \frac{dR}{dL}$ ) and  $W_c$  is the cut-off point.



A HYPOTHETICAL TAX RELIEF TO ENCOURAGE 'WEITZMAN' SHARE  
INCOME CONTRACTS

Note by the Revenue

1. A variety of difficulties would be met in designing, introducing and operating a fiscal incentive for "Weitzman" share contracts. In order to identify these we have considered the effects of promoting a relief taking the following form.

I A Hypothetical tax relief

2. Employees who contract to convert a minimum percentage of their earnings (we have assumed 20 per cent) to variable share income, linked to a performance indicator for their employer's firm in accordance with a scheme approved by the Inland Revenue, would qualify for total income tax relief on a designated percentage (we have assumed 10 per cent) of their total remuneration from that employment. The scheme might be introduced for a experimental period, say, three years.

Essential features on approved contract

3. To obtain Revenue approval a contract would have to provide

- (a) that at the outset a minimum of 20 per cent consisted of or would be converted into (variable) share income rather than (fixed) wage/salary income;
- (b) that share income would be linked to a measurable (and verifiable) index of the performance of the firm or a clearly definable unit of the firm;



- (c) that the employer was and would continue to be free to engage new employees as and when he chose;
- (d) that increases in the base wage element would not be granted <sup>for at least a year</sup> / or would be limited in a specific way.

In addition, it may be necessary to restrict approval to employers of a certain size and to contracts of a certain minimum length; and a variety of other conditions would be needed.

## II Problems

- 4. These fall broadly under four headings:
  - a. fiscal policy;
  - b. approval
  - c. monitoring of operation of approved contracts;
  - d. operating procedures of the tax relief.

### Fiscal policy

5. To guard against abuse and wasted tax expenditure legislation for the tax relief would probably be lengthy and complex. Apart from running counter to pressures for tax simplification and compliance burden reduction, initial comprehension of and ongoing compliance with these complex provisions might prove an offputting and excessive burden to employers.

6. It is assumed that, as with other tax reliefs, this one could operate at the employee's marginal rate and its value to the employee would depend on the level of his total taxable income. Higher rate taxpayers would benefit most. At the other end of the scale, tax relief might simply reduce entitlement to Mr Fowler's proposed family credit.



7. As well as conflicting with the interest of tax neutrality, a relief of this kind might be seen as acknowledging an inadequacy in the Government's policies favouring employee involvement and wider share ownership through tax relief for approved employee share schemes. It might well displace such schemes. It could be criticised for encouraging only the means and not the end. (For example, an existing employee's relief would be maximised if, instead of taking on more employees, an employer sought to increase profits by using overtime).

8. Introducing complex legislation of this kind for a short experimental period, particularly in the light of the considerable doubts about the main proposal's merit, would be very difficult to justify.

#### Approval of share contracts

9. The expertise required to ensure that contracts satisfied in every detail the conditions for approval would call for Revenue staff with a specialist accounting background but would extend to matters which on the whole would not be within the experience of Inspectors. Checks would have to include the adequacy of descriptions of

- a. the share income units
- b. the method chosen for the measurement of performance
- c. how adjustments would be made in the event of changes in working methods, investment etc, or the movement of employees from work with the share income 'unit' to somewhere else in the firm.



This work would almost certainly have to be done under pressure from employers to obtain swift approval (because of linkage with pay negotiations) and would require high calibre (and scarce) staff.

#### Monitoring of approved contracts

10. This would require the same high competence as approval and would be a major and technically complicated commitment even if undertaken on a sample basis. It is difficult envisaging this work being done other than by visits to employer's premises to examine six monthly accounts and wages records. (Accounts received in tax offices relate to accounting periods long since ended and would not in any event give detailed information required to check that the approved contract was being properly observed.) The fact that employers and employees would share an interest in maximising the tax relief would compound the problem.

#### Operating the tax relief

11. The compliance and administrative burden for employers and the resource cost for Inland Revenue would be large whatever method was adopted to give the tax relief. In addition, enhancement of Revenue computer systems and, where appropriate, those of employers would almost certainly be necessary.