

**Post-Keynesian Economics Study Group**

**26<sup>th</sup> Annual Workshop**

**10 June 2016, University of Greenwich**

**Trades unions, real wages and full employment**

**Abstract:** A core proposition of Keynes's General Theory is that money wages do not determine real wages or employment at the aggregate level in a closed economy. What then is the macroeconomic role of trades unions in the determination of real wages and employment? What are the mechanisms through which bargaining power takes effect? The paper argues that trades unions play important roles in countering employer monopsony as well as in determining the non-wage terms and conditions of employment and the incidence of risk between capital and labour. In the former role, it is the money wage that is relevant, while the latter role is a factor in the determination of aggregate real income and profit, yet the aggregate real wage itself and the wage share are residuals. Trades unions have the potential to support the promotion of full employment with price stability as part of a policy of demand management through the adoption of co-ordinated wage bargaining institutions.

**Key words:** collective bargaining, wage co-ordination, income distribution

JEL: E23 E25 J3 J51 J52

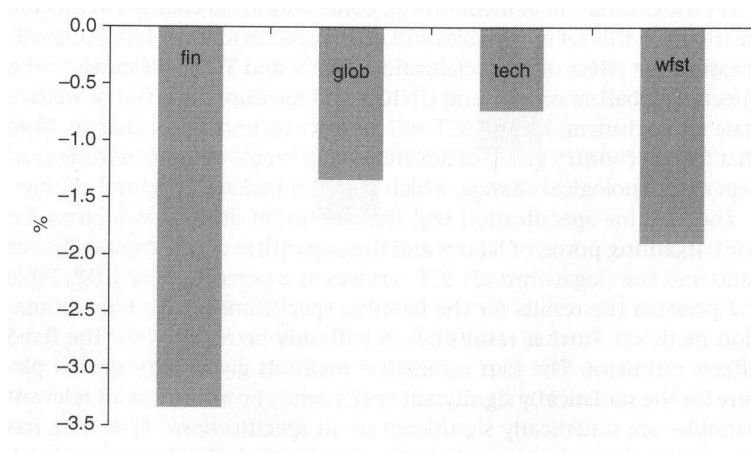
Dr M G Hayes  
Durham University Business School  
Durham UK  
DH1 3LB

[m.g.hayes@durham.ac.uk](mailto:m.g.hayes@durham.ac.uk)

## Trades unions, real wages and full employment

A central proposition of Keynes's *The General Theory* (Keynes, 1936) is that, taking the economy as a whole, money wages cannot determine real wages or the level of employment, leaving aside second-order effects such as changes in the terms of trade. A primary purpose of *The General Theory* was to counter Pigou's argument – rather more sophisticated than is usually recognised – for wage-cuts (Pigou, 1933).

Recent post-Keynesian work, in the tradition more of Kalecki than of Keynes, has shown that most individual economies and the global economy as a whole are wage-led, in the sense that an increase in the wage share will produce a higher level of employment and total income. Lavoie and Stockhammer (2013) distinguish between the regime (wage-led or profit-led) and distributional policies (pro-labour or pro-capital). Stockhammer (2013) discusses the determinants of functional income distribution and identifies a number of possible influences (financialization, globalization, technological change and welfare state retrenchment) on the wage share. Using the available proxies, such as they are, he finds statistically significant relationships between these variables and the wage share as set out in Figure 1:



**Figure 1 Contributions to change in the wage share for advanced countries, 1980/84–2000/2004** (Lavoie and Stockhammer, 2013, p. 62).

The contributions of financialization (3.3%), welfare state retrenchment (1.9%), globalization (1.3%) and technological change (0.7%) account for most of the reduction in the wage share in advanced countries from 73.4% in 1980 to about 65.0% in 2000/4. These results provide firm evidence against explanations of the functional income distribution in neoclassical terms, of technology alone or of the Stolper-Samuelson theorem. However the study is essentially empirical and the theoretical discussion of the possible mechanisms by which these influences affect the wage share is brief. The purpose of the present paper is to consider in more depth the mechanism by which such influences might be operating. In particular, what is the macroeconomic role of trades unions and collective bargaining institutions in the determination of real wages and employment? There are three parts to the argument.

First, we briefly rehearse the well-known argument for a trades union to balance the monopsony power of employers. This is a microeconomic issue, where the money-wage of a particular group of workers does indeed determine their real wage.

Second, the main theoretical contribution of the paper is to argue that the macroeconomic significance of trades union bargaining power relates to the non-wage terms and conditions of employment so that a reduction in bargaining power will be associated with an increase in total income and profits (and therefore a fall in the wage share) without a fall in aggregate real wages, *ceteris paribus*. The real wage and the wage share are residuals. The trades union movement as a whole can influence only the level of money wages and the non-wage terms and conditions of employment, but not the real wage of workers as a whole.

We consider empirically one specific channel through which the effect of a change in bargaining power might be measured. Using an analogy from physics, we specify a ‘heads I win, tails you lose’ mechanism through which risk is transferred from capital to labour. At this stage the readily available data is insufficient to test whether this channel is the main one through which the factors identified by Stockhammer take effect and further work is needed.

The argument leads in the third part of the paper to the policy conclusion, broadly following (Meade, 1982), that the trades union movement as a whole should target inflation and employment, not real wages, and promote a move to co-ordinated wage bargaining. This is something that could be done, and would be of benefit, independent of the political regime.

### *Trades unions and employer monopsony*

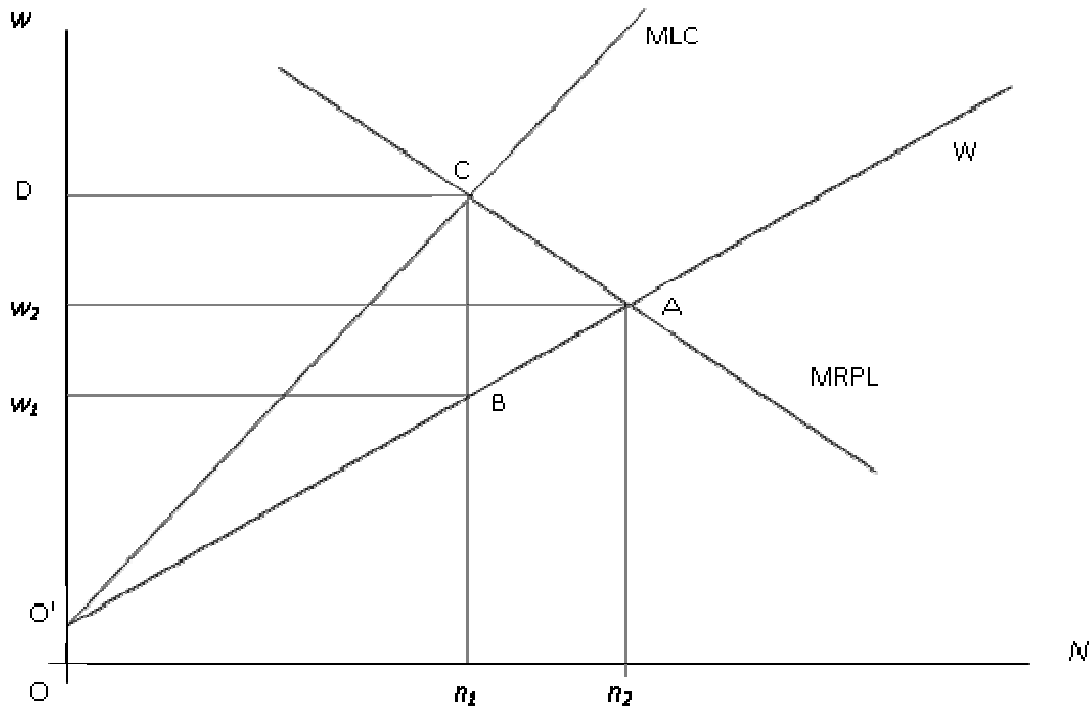
The circumstances in which trades unions emerge are characterised by a lack of competition for labour in aggregate, compounded by a lack of competition from the entry of new firms into differentiated labour markets. This section uses the theory of employer monopsony to identify the microeconomic effect of the union in these circumstances, based on the work of Pigou (1932, pp. 556–563), Robinson (1933, pp. 292–304) and Meade (1982, pp. 44–57).<sup>1</sup> The key assumption is a fixed number of employers in a discrete labour market, usually differentiated from others by geography or specialised skill.

Figure 2 plots on the horizontal axis units of labour of a particular type ( $N$ ) supplied by households to a particular local market, and the wage-unit for each unit of labour ( $w$ ) on the vertical axis. The labour supply curve ( $W$ ) plots the earnings of the marginal unit of labour as the total amount of labour supplied to this market increases. This supply curve slopes upwards, perhaps because of the costs of moving into or out of the local area, and is drawn linear for illustration. The MRPL curve represents the marginal revenue product of labour,

---

<sup>1</sup> The theory of employer monopsony has since progressed from the static partial equilibrium model presented here to stochastic general equilibrium models of dynamic monopsony and oligopsony, where oligopsony means employers are atomistic but still set wages. Manning cautions that “If a theoretical paper claims a strong conclusion about the direction of [allocative] inefficiency in the free market equilibrium, then this is almost certainly because they have not considered a rich enough model in the sense that there are not enough ‘marginal’ decisions to be influenced by incentives” (Manning 2003, p. 70).

the value which a single employer obtains by selling the output of the marginal unit of labour employed. The MRPL curve is here drawn sloping downward and again linear for simplicity.



**Figure 2 Employer monopsony**

If the employer maximises profit, employment will be offered at the level where the marginal revenue product equals the marginal cost of labour. This will be  $n_2$  in the case of perfect competition, when in fact the employer is not concerned with the labour supply curve  $W$  at all but solely with the market wage  $w$ . In that case the total earnings of all the workers are represented by the rectangle formed by  $On_2Aw_2$ , since all workers receive the same wage  $w_2$ .<sup>2</sup>

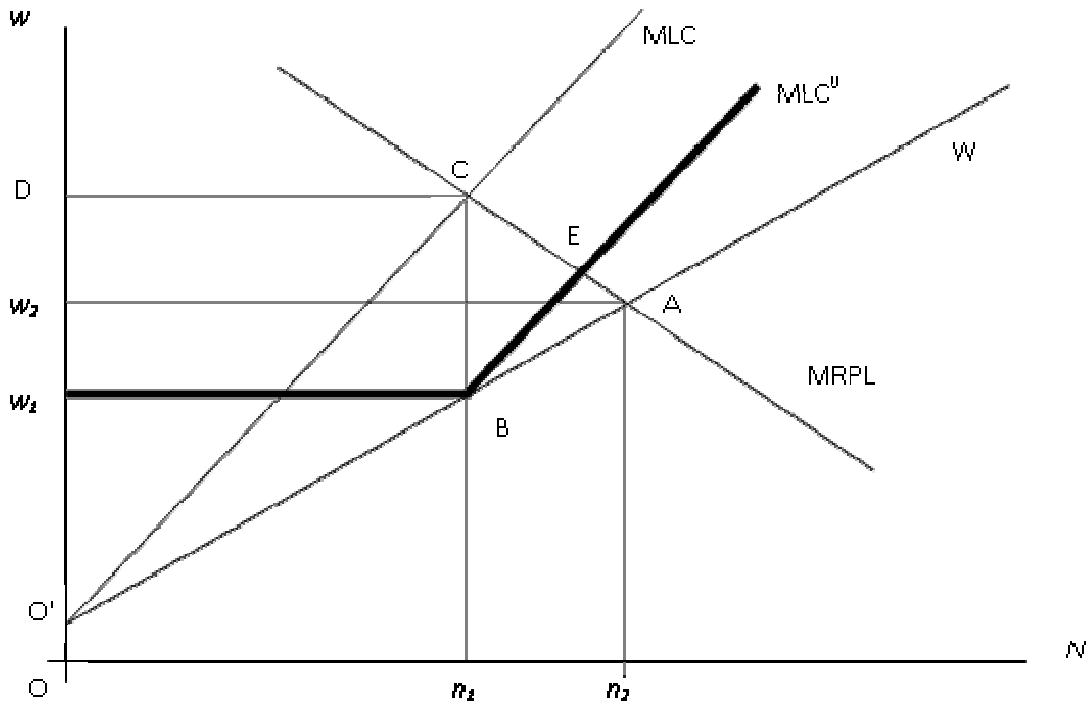
Employer monopsony means that the amount of employment the employer offers can affect the market wage; workers do not receive competing bids from other employers within their particular labour market and face costs of moving to other, better-paid, markets. In this case, the cost to the employer of hiring each additional unit of labour is not only the wage required by that worker, but the cost of increasing the wages of all the others. This marginal labour cost is shown in the diagram by the curve  $MLC$ , with twice the slope of  $W$ .

This means that the employer will hire labour only up to  $n_1$  where  $MRPL = MLC$ , the point  $C$ . Fewer workers are employed ( $n_1 < n_2$ ) and they all receive the same wage ( $w_1$ ) which is

<sup>2</sup> We assume that the employer is not strong enough to enforce discriminating monopsony, different wages for the same work, where each worker is paid only in accordance with their outside option. This may be particularly important in the case of sex discrimination.

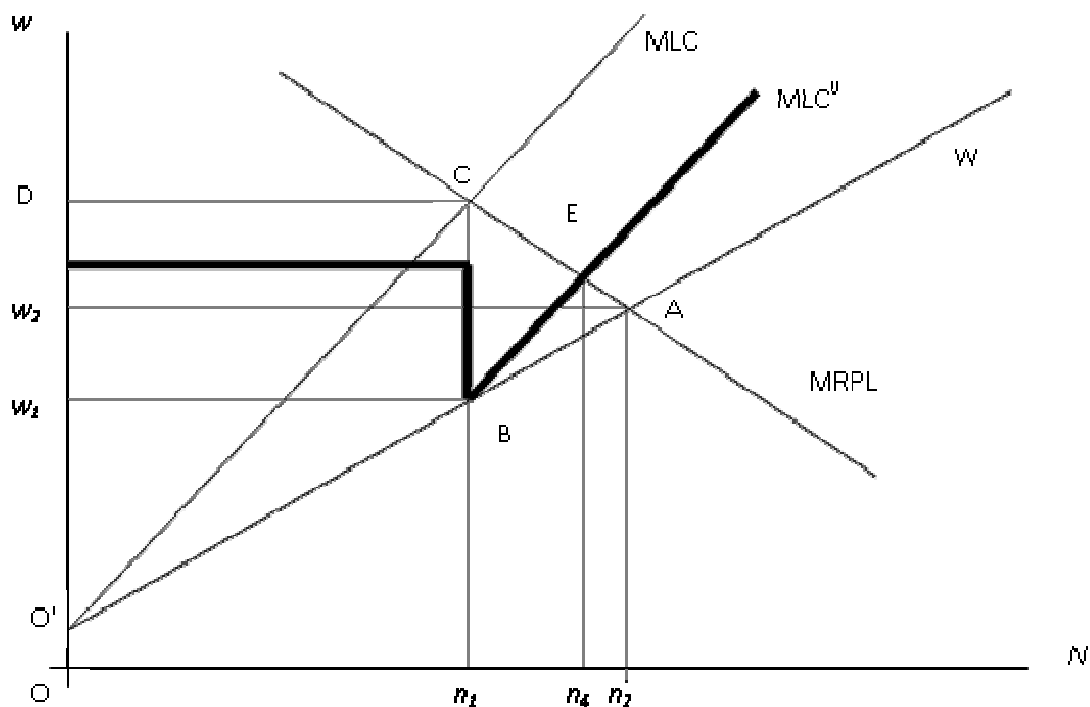
less than  $w_2$ . The workers' total earnings are now represented by the rectangle  $On_1Bw_1$ . The monopsony rent is represented by the rectangle  $w_1BCD$ .

A trade union operates by making the labor supply curve downwardly perfectly elastic; a reduction in the wage offer leads to a potential withdrawal of all labour. Since the primary source of monopsony is the ability of an employer to reduce wages by reducing employment, a union has the same effect as perfect competition. This is illustrated in Figure 3 by the horizontal portion of the  $MLC^U$  curve; note that the upper portion is parallel to the  $MLC$  curve, but shifted to the right. The entry of the union creates a new position of equilibrium (E) where  $MRPL=MLC^U$  (no longer the monopsony position C) creating an incentive for the employer to bid up the market wage and increase employment above  $n_1$ . If, as is likely, the union follows the market and ratchets up,  $MLC^U$  will shift upwards and to the right (not shown), so that employment and the wage will converge on the competitive equilibrium (A).



**Figure 3 Effect of union below competitive wage**

Should the union seek instead to capture all or part of the monopsony rent at the initial level of employment  $n_1$ , there arises a major discontinuity in the labor supply curve (see Figure 4). Non-unionized workers represented by  $(n_4 - n_1)$  are happy to accept employment below the union wage (note the relative position of W) and the employer has an incentive to employ them (note the equilibrium position E). The incentives of these non-unionized workers and the employer thus coincide and conflict with those of the union, leading to pressure on the union to reduce its wage. Both employer monopsony and union monopoly are disequilibrium states if there is freedom of association as well as freedom of enterprise.



**Figure 4 Rent-seeking by union**

*Trades unions, the aggregate real wage and the wage share*

The previous section has demonstrated, using very orthodox tools, the importance of trades union bargaining over the money wage in defending both real wages and employment against the monopsony power of employers in a particular labour market. Standard macroeconomics then commits the fallacy of composition by using representative agents and treating the whole economy as though real-wage bargains were determined by a single firm and union (e.g. Carlin & Soskice, 2006). The standard conclusion is that, under competitive conditions, union bargaining is either unnecessary or leads to monopolistic rents and restrictions on employment, as illustrated by Figure 4.

From a Keynesian perspective, it is a central proposition that, taking the economy as a whole, money wages cannot determine real wages or the level of employment, leaving aside second-order effects such as changes in the terms of trade. Demonstrating this was the purpose of Chapter 19 of Keynes's *The General Theory* ('Changes in Money-Wages'). It is clear that trades unions necessarily bargain over money wages, even if they may have some real wage target in mind. So how can changes in the bargaining power of organised labour affect the aggregate real wages of labour as a whole? The simple answer is that they cannot do so.

The real wage is the resultant of a money wage and the aggregate money price of a basket of goods. The real wage is not in fact an empirical, measurable quantity such as a sum of money or a quantity of bread. Statisticians recognise the essential arbitrariness of the real wage since the composition of the basket of goods depends on individual preferences. Thus we find

many different variants of price index, all of which are approximations to ‘the price level’. Keynes was very reluctant to give any theoretical role to the price level, although he reluctantly –perhaps unfortunately in retrospect – did so in Chapter 21 of *The General Theory* (‘The Theory of Prices’) in order to engage with the Classical quantity theory.

For Keynes, as a good Marshallian, the prices of goods are determined under competitive conditions by marginal prime cost, including factor cost and user cost (the depreciation of capital stock, including bought-in materials). The share of profits in income, including interest and rents, is then given by the difference between average and marginal cost. Modern post-Keynesians think in terms of mark-ups over variable costs. Some of these costs include imported goods and services and reflect the terms of trade. Nevertheless labour, directly or indirectly, is the major factor cost and money prices are heavily influenced by money wages, especially for the economy as a whole. Therefore a general increase in money wages will be reflected in the price level unless there is a reduction in the mark-up.

Is there any reason to believe that bargaining power can affect the mark-up? In the absence of price controls, product prices are set by firms. In markets for tradeable goods, these prices may largely be determined in international markets so that domestic firms will indeed suffer a profit squeeze; this is the terms of trade effect again. This strategy for raising real wages will reduce employment, as domestic firms lose market share to foreign firms. Leaving aside international trade and assuming a closed or heavily service based economy, the mark-up is determined by competition between firms. This competition may not be perfect in the ‘price-taking’ Walrasian sense, or even fully free in the Marshallian sense of ‘price-following’ without a single price leader. Nevertheless prices are set by firms and their level will be a function of the competitive interaction between firms and their desire to protect both market share and profit margin. It is not clear how trades unions can have any direct influence over these decisions.

What trades unions can influence, apart from the money wage, is the non-wage terms and conditions of employment. In a previous era of guild-style closed shops, they had an element of direct control over the employment of labour. Although such so-called ‘restrictive practices’ have disappeared from the UK, they persist in the German concept of *Handwerk* and their highly developed system of apprenticeships and vocational qualifications.<sup>3</sup> The post-1979 onslaught against UK labour rights and standards has severely weakened the trades union movement so that trades union representation (let alone recognition) and collective bargaining are now much less common outside the public sector. Trades unions have been unable to maintain a closed shop even on a national basis, as technology has permitted manufacturers to out-source globally and service industries to use offshore call centres. By contrast, there has been some progress through legislation, mainly driven by the European Union, in improving workers’ legal rights, although the UK has opted out of key directives.

---

<sup>3</sup> One cannot resist observing that German ‘restrictive practices’ have created the most competitive industrial economy in the world.

The detailed historical and empirical analysis of changes in bargaining power is beyond the scope of this paper. Furthermore the evidence from Stockhammer (2013) is that a falling wage share is a worldwide phenomenon and associated with global factors such as financialization, globalization, technological change and the general retrenchment of the welfare state. Nevertheless I suggest that increased bargaining power can affect the wage share through the non-wage terms and conditions of employment. The interesting point is that the effect comes not through an increase in the real wage but through a (relative) fall in total income and profits.

Given labour productivity and the mark-up over variable costs, profits depend on the intensity of use of capital goods, which are in great part a fixed cost. Thus over the last few years we have seen the reintroduction into service industries, nominally in the name of customer service, of shift systems that used to be the exclusive preserve of continuous process industries and essential services (e.g. hospitals). Seven-day '24/7' working is now the norm; the concept of a shared day off for sport, religion or other recreation<sup>4</sup> is under severe threat; a UK worker who fails to sign away her right to work no more than 48 hours per week places her job at risk. The relevance of Marx's analysis of the working day is clear (Marx, 1867, chapter 10), without necessarily subscribing to his theory of value.

Indirect non-wage financial benefits have also been reduced. The works canteen and the sports and social club have long disappeared. There has been a more or less complete repudiation by the UK private sector of defined-benefit pension schemes and the public sector is following suit under pressure from the austerity regime. The move to defined-contribution schemes reduces the cost and transfers the investment risk from employer to worker, while incidentally providing great opportunities for the financial services sector.

The effect of all this 'labour market flexibility' has been to create a 'heads I win, tails you lose' situation. More formally, as in the case of pensions, the cost of meeting fluctuations in demand has been transferred from employer to worker by the use of short-term insecure hourly-paid employment contracts, including the 'zero-hour' contract and other forms of casualisation reminiscent of the 19<sup>th</sup> century. This regime allows the employer to benefit from a surge in demand by extending shifts or calling in extra casual labour, while avoiding the cost of a temporary downturn by shortening hours or laying off workers without material cost. The use of information technology to monitor working time and customer demand has allowed a fine-tuning of labour hours (indeed, minutes) to match demand. Major companies no longer employ more than a core of highly skilled, less dispensable, workers on salaried 'staff' contracts, contracting out most of their workforce to specialist management companies who have refined the exploitation of labour into a science.

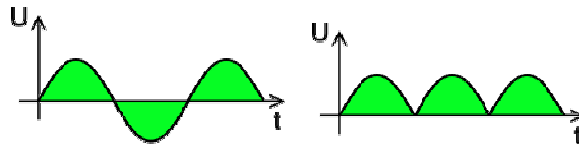
It is difficult to quantify the effect of these changes in working practices on the wage share. As a simple exercise, one can attempt to model and measure the quantitative impact of risk transfer by an analogy from physics. The mean value of an alternating current (AC) is zero,

---

<sup>4</sup> In Australia, even in the 1980s, ordinary shops closed on Wednesday afternoons and from Saturday lunch-time until Monday morning.



so the usual measure of AC is the equivalent direct current (DC) which produces the same electrical power. This happens to be the root mean square current (RMS), which is mathematically the same concept as the standard deviation in statistics. In physics, a full-wave rectifier has the effect of inverting the negative part of the cycle so as to produce a series of positive humps (see Figure 5) with the same RMS value. This is the analogue of ‘heads I win, tails you lose’: a positive shock increases profits, a negative shock decreases wages, the combined effect either way is a reduction in the wage share.



**Figure 5 Full wave rectification of an alternating current<sup>5</sup>**

Figure 6 plots the quarterly changes in UK real GDP, adjusted for average growth on the grounds that the trend is accounted for by technical progress rather than demand. The standard deviation for the period 1980-2004 (for comparison with Stockhammer, 2013) is 0.6%, although this is divided between 0.9% in the first half of the period and 0.3% in the second. The argument from the physics analogy is that these percentages represent the increase in the profit share (and therefore reduction in the wage share) from this source.<sup>6</sup> Since the total change is of the order of 8%, and the decline appears to be fairly steady over the period (and increasing rather than decreasing), there is clearly more to the matter than this simple calculation suggests. One limitation of the example is that it uses quarterly data, while the relevant fluctuations in demand are higher frequency. More significantly, the aggregation represented by the use of national income data is likely to damp the fluctuations experienced at firm level and to lead to a significant understatement of the effect. Nevertheless this idea can only be tested further by a disaggregated empirical analysis.

<sup>5</sup> Graphics by Wdwd - Own work, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=12693362>, adapted.

<sup>6</sup> This is an approximation. In fact, the average increase in the profit share will depend on the precise shape of the fluctuations. For a sinusoidal oscillation, the conversion factor from RMS to average is 0.9 ( $=2\sqrt{2}/\pi$ ).

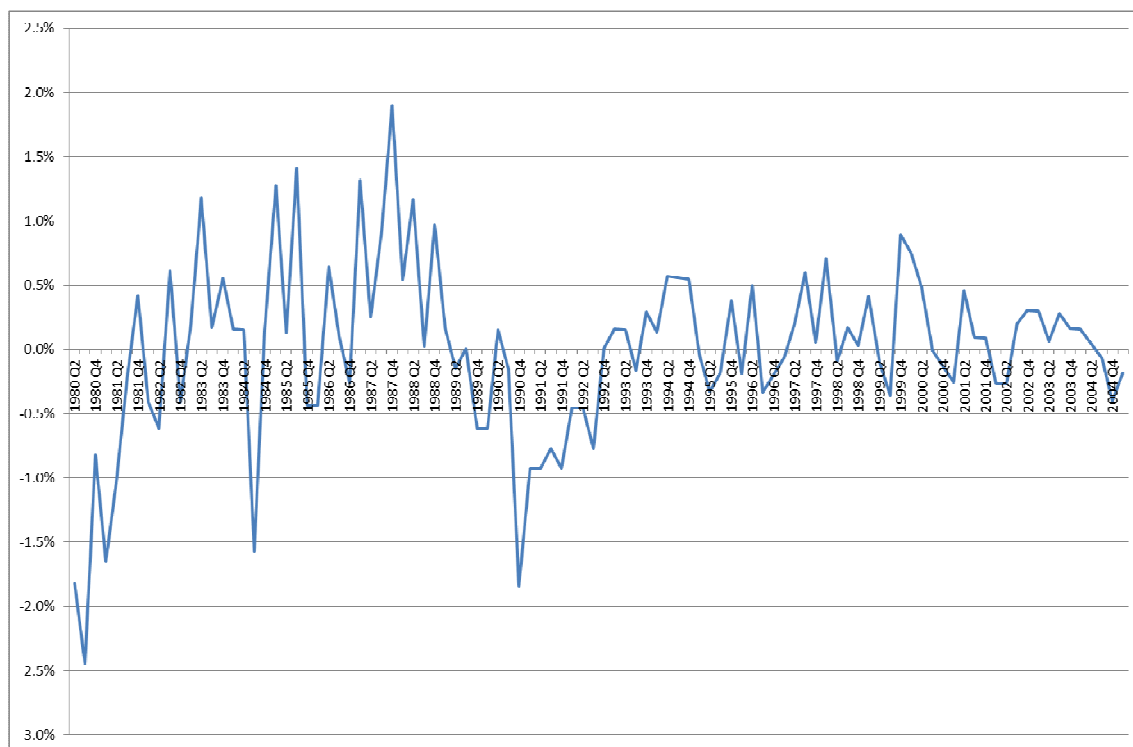


Figure 6 Quarterly changes in UK GDP adjusted for trend growth, 1980-2004. Source: YBEZ, ONS.

### *Trades unions and full employment*

The best way to improve bargaining power and the wage share is to restore full employment in the sense of Beveridge (1944). Full employment has come to be defined in terms of the NAIRU as a tautology, that the NAIRU is whatever Rate of Unemployment is associated with Non-Accelerating Inflation. Post-Keynesians have long recognised the invalidity of representing the NAIRU as a natural rate of unemployment grounded in fundamentals (Friedman, 1968). Beveridge defined full employment as ‘a seller’s market in labour’ something that would be regarded by modern mainstream economists as a situation of chronic excess demand, and indeed this was Friedman’s target. James Meade distinguished the NAIRU from the FERU (‘the full employment rate of unemployment’), defined as:

That level of employment that would result if, against a background of a steady growth in the total money demand for the services of labour, the principle of wage-fixing institutions in each sector of the economy were the promotion of employment in that sector. (Meade, 1982, p. 15)

Meade’s recommendation for wage-fixing institutions was a system of ‘not quite compulsory arbitration’. In the UK this would mean increasing (in large measure, restoring) the scope and powers of ACAS (the Advisory, Conciliation and Arbitration Service) to including national binding arbitration on pay awards on a pendulum system, choosing between the employer’s and employees’ claims on the criterion of which would better promote employment in that sector or firm. Awards would be fully legally binding on employers but not on workers: Meade recognised the political implications of imprisoning strikers. Nevertheless he

suggested a system of sanctions against unions and individual strikers to encourage compliance, most of which have been introduced in any case.

While Meade's FERU falls short of Beveridge, with appropriate regional and industrial policies, the FERU might reduce in the long run to the level envisaged by Beveridge as:

having always more vacant jobs than unemployed men, not slightly fewer jobs. It means that the jobs are at fair wages, of such a kind, and so located that the unemployed men can reasonably be expected to take them; it means, by consequence, that the normal lag between losing one job and finding another will be very short. (Beveridge, 1944, p. 18)

If the earlier analysis is correct, full employment in Beveridge's sense would lead to very different terms and conditions of employment but lower total income and profits relative to the productivity of labour. 'Dividends' would be drawn in the form of greater security of employment, labour income and quality of working life, including perhaps the reduction in the working week to which Keynes looked forward in his famous essay (Keynes, 1930).

There can be little doubt that to reach such a state of affairs would require significant political and institutional change and strikes at the heart of capitalism, if that is understood as a system by which the few can generate and extract a surplus from the many. Yet one necessary, if not sufficient, ingredient is in the hands of the trades union movement acting independently. In Meade's terms, the trades unions could work towards a situation where the NAIRU became equal to the FERU.

The basic case for doing so is that if trades unions act in the interests of workers as a whole, they have nothing to lose, as a group, by allowing money wages to be set so as to promote employment in each sector. They cannot, as a whole, increase (or decrease) their real wage by setting money wages at any particular level. This is a case for genuine solidarity in creating co-ordinated wage-fixing institutions that deal with disputes over differentials and adverse real wage shocks from import prices. It was the failure to address these difficult issues in the 1970s that led to the breakdown in the post-war consensus and the current neo-liberal regime.

For the trades union movement to promote such a system independently without legislative support would require offering the incentive of no-strike agreements to employers. It may be argued that at the present time, trades unions are too weak to make a credible offer. The situation of weakness can be turned to advantage if the union movement were to use it to build solidarity and commitment among its members to such an institutional framework at a time when even the most powerful unions are relatively weak. Once the framework is in place, it has a chance of enduring under pressure, both from within and without.

The adoption of co-ordinated and binding wage bargaining would allow the return to a government commitment to full employment through demand management. This paper has argued that it would cost the trades union movement as a whole precisely nothing to do so. The only losers would be sectional interests who were willing to use their economic muscle to enforce an increase in their relative wages. One hopes that the lessons of the 1970s and 1980s have been learned.

## *Conclusion*

The strength of trades unions derives from their unity, the willingness of individual workers to risk their own jobs and their family incomes in solidarity with their fellows for the common good. The challenge is to extend this solidarity beyond workers in a particular place of work, or an individual trades union, to the movement as a whole. The history of the movement tells us that this goal, while long recognised by many as desirable, has proved elusive.

This paper has analysed the channels through which trades union bargaining power takes effect. The traditional theory of employer monopsony shows how trades unions can defend real wages and employment in a particular industry or local labour market by resisting money wage cuts. However this partial equilibrium analysis cannot be extended to the economy as a whole. In aggregate, money wages do not determine real wages, which are determined mainly by technical productivity, the degree of competition in product markets and the terms of trade. Nevertheless there is an association between bargaining power and the wage share. Union bargaining power affects the non-wage terms and conditions of employment so that reduced bargaining power allows employers to increase output and profits per worker, for the same output per hour. This increase in the surplus is welcomed as progress by employers and the state but takes place at the expense of the worker's quality of life.

The best way to improve bargaining power is to restore full employment in the sense of Beveridge, meaning a seller's market in labour. Even a socialist government will not do this unless wage-fixing institutions are improved to address the risk of wage-push inflation in conditions that most economists would view as an excess aggregate demand for labour. The contribution of this paper is the argument that the trades unions movement as a whole has precisely nothing to lose by building a strong institutional commitment to using wage settlements to target inflation and employment rather than real wages. This requires powerful individual unions to bind themselves in solidarity to the interests of the movement and the workforce as a whole. The most likely time to do that is now, during the wilderness years.

## References

- Beveridge, W. H. (1944) *Full Employment in a Free Society*. London: George Allen and Unwin.
- Carlin, W. and Soskice, D. (2006) *Macroeconomics: Imperfections, Institutions and Policies*. Oxford: Oxford University Press.
- Friedman, M. (1968). 'The Role of Monetary Policy', *American Economic Review*, 58: 1–17.
- Keynes, J. M. (1930) 'Economic Possibilities for our Grandchildren', reprinted in *Essays in Persuasion*, vol. IX of *The Collected Writings of John Maynard Keynes*. London: Macmillan and Cambridge University Press for the Royal Economic Society.
- Keynes, J. M. (1936) *The General Theory of Employment, Interest and Money*, reprinted as vol. VII of *The Collected Writings of John Maynard Keynes*. London: Macmillan and Cambridge University Press for the Royal Economic Society.
- Lavoie, M. and Stockhammer, E. (eds) (2013) *Wage-led growth : an equitable strategy for economic recovery*. Houndmills: Palgrave.
- Manning, A. (2003) *Monopsony in motion*, Princeton and Oxford: Princeton University Press
- Marx, K. (1867) *Capital: Volume 1*. Reprinted 1976, Harmondsworth: Penguin.
- Meade, J. E. (1982) *Wage-fixing*. London: Allen & Unwin.
- Pigou, A. C. (1932) *Economics of Welfare*, 4<sup>th</sup> edition, London: Macmillan.
- Pigou, A. C. (1933) *The Theory of Unemployment*. London: Macmillan.
- Robinson, J. V. (1933) (2<sup>nd</sup> edition 1969). *The Economics of Imperfect Competition*. London: Macmillan
- Stockhammer, E. (2013) 'Why have wage shares fallen? An analysis of the determinants of functional income distribution', pp. 40–70 in Lavoie and Stockhammer (2013).