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Achieving Cartel Profits through Unionization: Comment*

I. Introduction

In a note in this *Journal,* Maloney, McCormick and Tollison [2]—hereafter referred to as MMT—presented an alternative model of union management relations, in contrast to what they characterize as the adversary theory. According to their scenario, industrywide collective bargaining can provide the focus of an industry cartel. With strikes reducing output, this device keeps price at a monopoly level. Instead of coming at the expense of profits, union wage gains are but labor's share of cartel largess. Without explicitly stating their assumption, the authors base their argument on a structurally competitive industry, since firms are presumed to possess neither monopoly nor monopsony power prior to their collusion with the labor union.

This comment will show that the assumption of a competitive industry is the weak line in the logic of the MMT model. That model provides no mechanism by which firms are prevented for substituting other inputs—either non-union labor or non-human factors—for union workers. And without accounting for the maintenance of barriers to entry for non-union factors, the characterization of a symbiotic relationship between unionized labor and a large group of atomistic firms cannot be supported. This comment will show that the MMT logic, with appropriate refinements, allows for a union-strengthened cartel outcome in an oligopolistic industry.

II. Union-Management Collusion Under Competitive Conditions

The MMT model posits a large group of firms which, finding direct collusion impossible, conspire with organized labor to restrict input through periodic strikes; monopolistic profits resulting from this restricted input are then shared between labor and owners of firms. Supposedly a labor union already exists and members of that union agree to share cartel profits with firms, in exchange for the promise that other inputs would not be substituted for unionized labor.

The initial competitive price/quantity equilibrium is shown as P_e, Q_e in Figure 1. Figure 2 presents the equivalent competitive outcome in the labor market as W_c, L_c, for the market clearing wage rate and employment respectively. If it were impossible to exclude non-union labor from employment, any union attempt to raise wages above W_c would cause firms to

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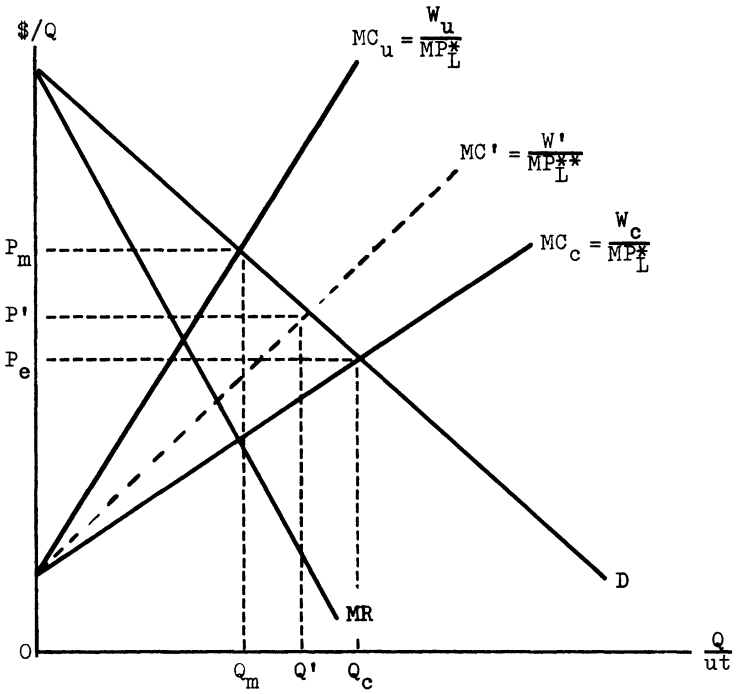

Figure 1. Competitive Output Market

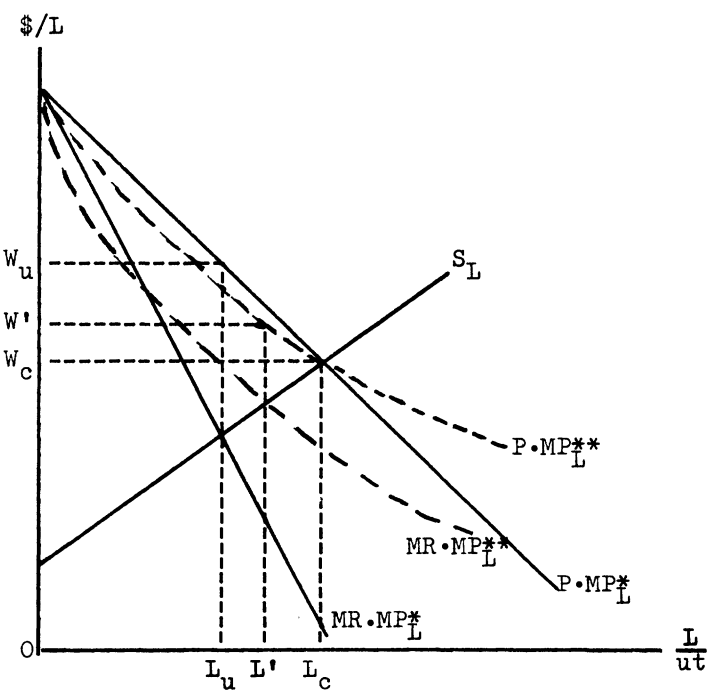

Figure 2. Competitive Labor Market

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hire non-union workers, restoring competitive equilibria to both the product and labor markets.

If the union could exclude non-union labor from employment at zero cost (e.g., through union managed, government enforced occupational licensing), and if non-labor substitutes for union labor did not exist, increases in union wages would increase each firm's marginal cost proportionately. Without input substitution, the marginal physical product schedule for labor would remain unchanged at each level of employment. By reducing employment to L_u, where labor's marginal product times industry marginal revenue equals the marginal reservation wage, the wage rate would increase to W_u. Competitive firms would face the marginal cost curve $MC_u = W_u/MP_L{}^*$, resulting in an equilibrium price of P_m, the same price which would result from a perfect cartel. As long as the union could prevent substitution for union labor, members of the union would be able to obtain monopoly profits, while firms are left with only normal returns on inputs.

If non-union labor could be excluded only at a cost (e.g., intimidation of employers or non-union workers), or if imperfect non-labor substitutes were available, an increase in the union wage would cause employers to substitute other inputs for union labor until the price of each input (including union generated costs) became proportional to its marginal physical product. This substitution would increase the elasticity of demand for union labor ($P.MP_L{}^{**}$ instead of $P.MP_L{}^*$ in Figure 2). Under these conditions, the optimal union wage would be W′, with corresponding employment of L'. Factor substitution would cause the marginal physical product schedule to shift upward, causing the competitive supply curve to shift to MC', which is more elastic than MC_u. This follows because W' is less than W_u while $MP_L{}^{**}$, reflecting input substitution, is greater than $MP_L{}^*$ at each level of employment.

The gains from collusion between labor and management require that neither party be independently capable of realizing all potential monopoly profits. If workers received a wage greater than W' but less than W_u, supposedly both firms and labor could gain if the perfect cartel price could be sustained.

> If the perfect monopoly price of P_m is to be supported over n periods, then output must be nQ_m. One technique to achieve such an output restriction is an industry wide strike which eliminates production for a given period of time. The industry and the union will bargain over the distribution of the n period profits. . . When the industry operates, its long run marginal cost curve is shifted leftward because of increased marginal cost *ex post* [2, 630].

One searches in vain for an explanation of the source of union power to exclude non-union labor and to prevent firms from substituting non-labor inputs (which would not share cartel profits) for union workers.

There is also no mechanism presented by which firms are deterred from storing output to sell during strikes; union members presumably forgo their share of cartel profits while striking without a guarantee of a similar sacrifice by firms. This obvious free rider problem for firms is answered with MMT imagining a similar problem for labor:

> Obviously, non-members of the cartel can free ride on the price P_m by producing constantly. There is thus a large incentive not to become a member of the industry-labor cooperative arrangement from any one firm's point of view. A simple way to handle free riding where striking is the least costly means of reducing industry output is to allow the union, whose membership has a low opportunity cost during the strike, to sanction non-union production [2, 632].

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It is difficult to see gains for labor in this labor-producer conspiracy. Workers who join such an arrangement suffer the costs of periodic strikes without the guarantee of jobs after the strike is "settled." Instead of obtaining what they need most—a means of preventing firms from using non-union inputs—these workers are expected to sanction non-union production during strikes.[1] Without preexisting entry restriction of labor and firms, the minimal gains from such union-producer cooperation would soon be eroded by free riding firms and workers.

As Stigler [3] and Becker [1, 98–101] have shown, the stability of collusive arrangements depends upon the ease with which the cartel can detect and punish cheaters. The probability of detecting cheaters decreases as the number of firms in the industry increases. The remainder of this comment will show how collective bargaining in a concentrated industry would tend to eliminate monopsony distortions of input use and yet strengthen the stability of collusion to monopolize the product price. This paper will also show that all of the "deductive consequences" of the MMT model [2, 632–3] can be explained by an oligopolistic market structure.

III. Collective Bargaining in Concentrated Industries

Consider an oligopolistic industry facing a positively sloped labor supply curve. The perfect cartel solution, from the firms' viewpoint, would be to collude by setting a monopsonistic input price for labor and a monopolistic output price. This result is shown in Figure 3 for the output market and in Figure 4 for the labor market. With monopsony collusion in the input market, the wage rate is set at W_0, resulting in employment of L_0. The higher marginal cost of labor is reflected in the higher marginal cost of production in the output market. The price/quantity solution of P_0, Q_0 results in monopoly profit of π_p and monopsony profit of π_L.

Suppose that the industry is unionized; workers now threaten to strike unless they receive a higher wage rate. Since the L_0 workers could receive a wage rate as high as W_u without suffering layoffs, the bargaining range would include all wage rates between W_0 and W_u. As is well known, the employment maximizing solution is given by the intersection of the marginal revenue product curve and the supply curve for labor. This solution, given by W_1, L_1 in Figure 4, also reduces the marginal cost of labor. If the collective bargaining process stimulated a competitive labor market by balancing management and labor power, labor would be used more efficiently, causing output to rise and product price to fall. The output market solution, corresponding to the employment maximizing labor market outcome, would also maximize monopoly profit (given by area ABC in Figure 3), even though monopsony profit would have disappeared.

Heretofore the possibility that bilateral monopoly would improve the allocation of resources has been obfuscated by the alleged indeterminancy of collective bargaining. By tak-

1. The use of the word "sanction" is perhaps unfortunate because it can mean either "the grant of official approval" or "the imposition of punishment." Presumably MMT had the latter meaning in mind; the cartel uses individual union members, idled by the strike, to punish non-union producers. Such activity would involve considerable risk, which individual workers would try to evade. Each union member would have an incentive to let a fellow worker chance bodily injury or criminal prosecution. The major significance of the MMT model may be the light it sheds on the chaos—e.g., the violence of the teamsters, wildcat walkouts by mineworkers—which often seems to characterize collective bargaining in a structurally competitive industry.

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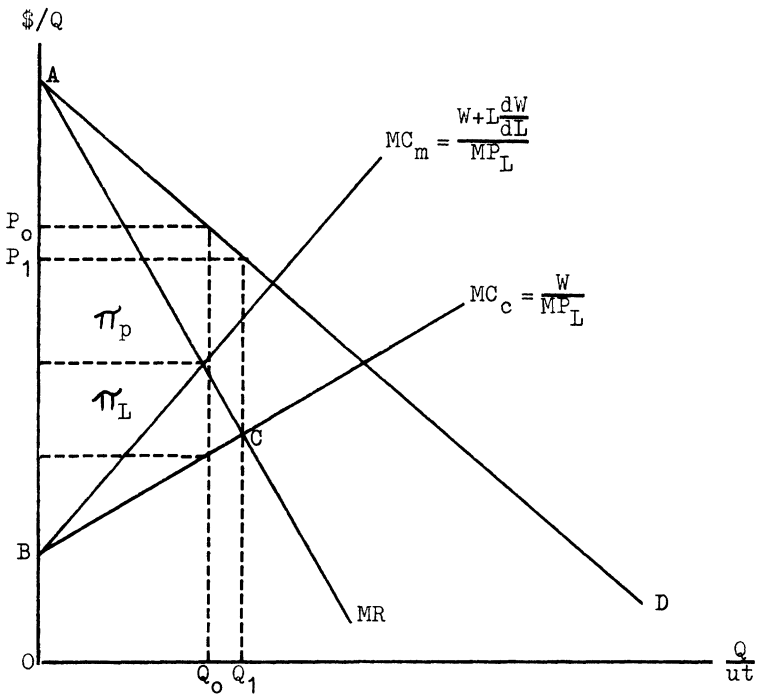

Figure 3. Oligopoly Cartel, Output Market

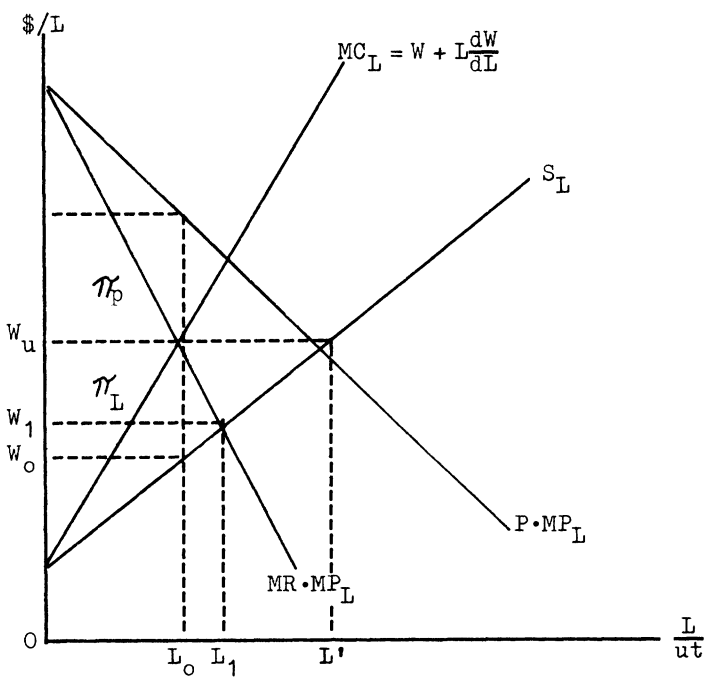

Figure 4. Oligopoly Cartel, Labor Market

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ing into account the necessary conditions for an oligopolistic cartel to function legally and successfully, it can be shown that the elimination of monopsony is the most likely outcome of collective bargaining in a concentrated industry.

Prior to collective bargaining, the options existing for a member of the monopsony/monopoly cartel are those depicted in Figure 5 (the product market) and Figure 6 (the labor market). If the firm could increase its output from its output of Q_i without detection, output could expand along the highly elastic demand curve dd_i. To expand output, the firm would have to hire more labor. Under collusive monopsony, all workers willing to work at the monopsony wage W_0 are employed somewhere in the industry. Either the ith firm must attract workers away from other firms (which would have a high probability of detection) or it must attract workers from other industries by offering a higher wage rate. Prior to collective bargaining, the oligopolistic firm faces a double deterrent against cheating on the collusive agreement. If other firms match the ith firm's price reduction, the firm's demand curve becomes the less elastic DD_i for prices below P_0, while remaining the highly elastic dd_i for prices above P_0. If price competition forces wage competition, the marginal cost of labor jumps from W_0 to the monopsony marginal cost curve MC_L. Monopsony/monopoly collusion confronts the firm with a kinked demand curve (and a discontinuous marginal revenue curve) as well as a kinked labor supply curve (resulting in a discontinuous marginal cost curve).

Now suppose collective bargaining resulted in a wage rate of W_u; the labor union would be able to confiscate all monopsony profit from producers. Since the marginal cost of labor after settlement would not have changed, the optimal output, employment and price for the cartel would remain Q_0, L_0 and P_0 respectively (see Figures 3 and 4). However, since L' work-

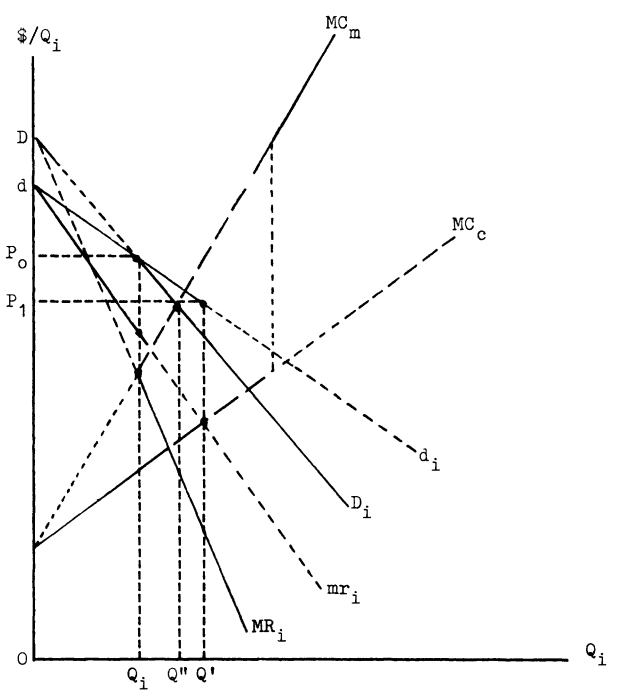

Figure 5. Cartel Problem, Product Market

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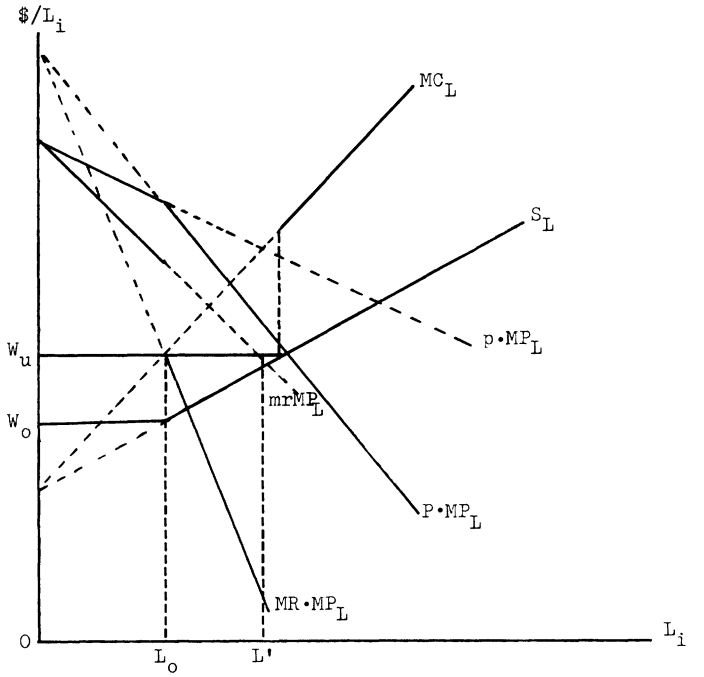

Figure 6. Cartel Problem, Labor Market

ers would be willing to work at wage W_u, while only L_0 would be hired, each firm would now face a horizontal supply curve for labor. Moving along marginal cost curve MC_c in Figure 5, the ith firm would be tempted to produce Q', since cheating would not be detected by a rise in the wage rate or by an exceptional turnover of employment in other firms.

Any negotiated wage settlement in excess of W_1 in Figure 4 would be strongly resisted by management negotiators, since a higher than competitive wage would generate a labor surplus. Firms would chance the costs of a strike rather than meekly submit to a wage settlement which would weaken the ability of the cartel to detect cheaters. On the other hand, an increase in the wage rate from W_0 to W_1, while eliminating monopsony profit, increases the size of monopoly profit. Furthermore, industry-wide collective bargaining periodically increases the production costs for all firms. If a simultaneous price increase resulting from price leadership raised the suspicion among anti-trust prosecutors, the simultaneous cost increases for those firms would provide a credible defense to a charge of price fixing.

Figure 7 and Figure 8 show the cartel solution resulting from industry-wide collective bargaining which generates the competitive outcome in the labor market. With a wage settlement of W_1, the firm faces a kinked labor supply curve in Figure 8, reflected in the discontinuous marginal cost curve in Figure 7. The upper portion of the firm's demand curve rotates from dd_i to DD_i because stable price leadership is legally defensible with collective bargaining. A shift in the demand curve for the product might make the price leader reluctant to raise the output price if such an increase would result in anti-trust prosecution. However, in the next round of collective bargaining, labor would receive an increase in the contract wage to W_2, where the new marginal revenue product of labor intersects labor supply. Pointing to increased labor cost, all firms would raise their price to P_2, the new cartel profit maximizing price.

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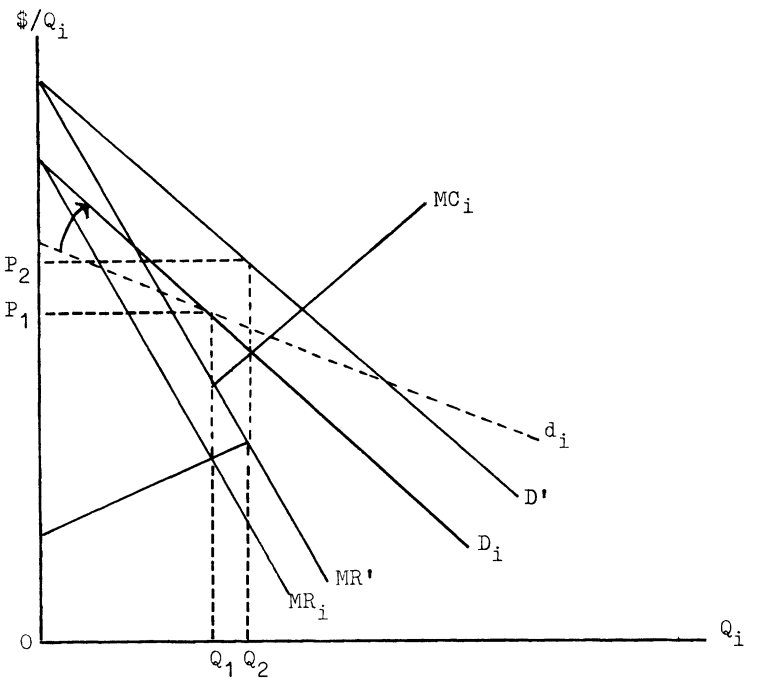

Figure 7. Cartel Solution, Output Market

IV. Implications of Collective Bargaining

It is now possible to see that an oligopolistic market structure provides an alternative set of explanations for the "deductive consequences" of the MMT model:

> First, the conventional theory implies that relative profitability of the industry should fall as the industry is increasingly unionized. . . . In fact a national union would be preferred in our model since this reduces domestic non-union production to zero during a strike. The industry and the union will thus have strong incentives to seek industry-wide collective bargaining arrangements as a means of restricting non-union production in our theory [2, 632–3].

Industry-wide collective bargaining is a natural consequence of the oligopolistic structure of a concentrated industry. The model presented here shows that lost monopsony profits are partially compensated by increased monopoly profits. Since the legal defense of industry-wide price leadership rests upon all firms having similar and simultaneous cost increases, industry-wide collective bargaining leads to a more stable cartel than if only part of the industry is unionized.

> Second, the conventional theory implies that the union should be desirous of seeing the industry and the number of firms in the industry grow, as it increases the demand for union services and increases the market power of the union. Our theory stresses that both the industry and the union have strong incentives to restrict entry into the industry in order to maximize firm-labor joint profits [2, 633].

The weak link in the MMT model is the unstated assumption that the industry is structurally competitive. Without pre-existing entry barriers, their theory falls apart. Entry bar-

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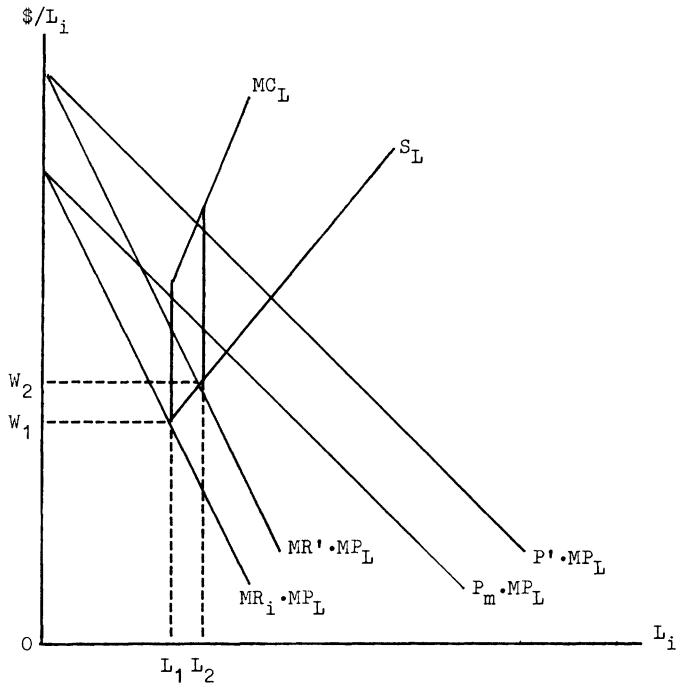

Figure 8. Cartel Solution, Labor Market

riers in an oligopolistic industry stem from economies of scale or other causes which could not be changed by a labor union. Nevertheless, both the industry and the union have an incentive to reduce competition from external sources. The United Auto Workers' support for government relief for Chrysler and United Steel Worker lobbying for import restrictions are easy to understand; factories in Japan do not hire members of American labor unions. Both union leaders and management understand the relationship between total product supply and domestic profit and wage levels.

> Third, the conventional theory implies that there will be inefficient use of inputs due to union behavior . . . [T]he only inefficiency in our theory comes from the monopolization of output and not of labor [2, 633].

This conclusion is not supported in the MMT model, since they ignore the policing problem that a structurally competitive cartel would have. By substituting non-union labor or non-labor inputs for union workers, firms would try to keep labor's share of cartel profits (since that share is embedded in the contract wage). Arguing that the competitive wage rate would serve as a shadow wage for negotiating purposes [2, 330], is not sufficient to eliminate employer incentives to cheat on the agreement. Individual firms would consider the union wage the marginal cost of union labor when selecting the least cost combination of inputs.

Under oligopoly, industry-wide collective bargaining is likely to eliminate monopsony distortions of input use, so that union workers receive the optimal market wage. Any attempt by the union to obtain a higher wage settlement would not only impose costs on the union of restricting union membership, but would be strongly resisted by management negotiators, lest the monopoly cartel be destabilized.

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V. Conclusions

It should be obvious from this comment that the MMT model of union-management conspiracy is a rather shakey basis for arguing "we must change our labor policy or get rid of antitrust policy" [2, 634]. Labor unions do sometimes lead to monopoly product prices which could not be sustained were wage rates and employment competitively determined. In some cases labor and management do work hand in hand; the trucking industry and the teamster union's mutual interest in influencing ICC policies on market entry and rate setting has been only one obvious example. In other cases, such as in the building trades, control over apprenticeships and occupational licensing make it unnecessary for monopoly gains by labor to be shared with employers. And it is also possible that some monopoly/monopsony cartels discover that monopsony profits lost in collective bargaining are recovered as higher monopoly profits and lower collusion costs. This richness of possible outcomes does not support radical reversals of laws against restraint of trade.

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