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Wage determination and imperfect competition ☆

Alison L. Booth *

Australian National University, Acton, ACT 0200, Australia

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ABSTRACT

A striking feature of the past few decades has been the development of wage-determination models that assume that labor markets are imperfectly competitive. This paper discusses two such models (trade unions and oligopsony), although there are many more. It also asks if imperfectly competitive models should be used whenever researchers are modeling the labor market. Some people would argue for this only in cases when the predictions and comparative statics of the imperfectly competitive model differ from those of the competitive model. Of course, to know this, one needs to know precisely what the predictions and comparative statics of the respective models are. Moreover, for policymakers to be able to determine if an intervention is required in the first place, there does need to be some analytical framework to act as a guide. In the perfectly competitive model of the labor markets, for example, typically no intervention or regulation would be justified. However, labor economics has moved far beyond this position, with the incorporation of new ideas into modeling wage determination in imperfectly competitive labor markets, and with the availability of better datasets to facilitate empirical investigation.

1. Introduction

How have labor economists' perspectives about theories of wage determination altered over the past quarter of a century? In this anniversary issue of *Labour Economics*, celebrating 20 years since the journal's inception and 25 years since the establishment of the European Association of Labour Economists, it seems particularly appropriate to consider this question.

It would be fair to say that even a quarter of a century ago many economists viewed the labor market as intrinsically perfectly competitive. Of course there were earlier exceptions to this perfectly competitive approach. From our 2014 vantage point, two examples seem especially insightful. These are Joan Robinson's, 1933 monopsony theory and Alfred Marshall's, 1920 summary of the features of labor that distinguish it from other inputs.

There are a number of different models of wage determination in the labor economics literature, all deviating from perfect competition in various ways. These include search theory, efficiency wages, and others, some of which are covered in this volume. Here I shall look only at two. These are my own personal favorites, partly because they can be viewed as representing two polar extremes but also because they are intuitively appealing and tractable. The first considers a situation with few sellers of labor (wage determination under trade unions), while the second considers a situation in which there are few buyers (wage determination under oligopsony).

In the 20th-century no analyst of the labor market could have failed to be aware of the importance of trade unions. These were typically viewed as operating within an otherwise perfectly competitive labor market, and having harmful effects on the economy through their control over the supply of labor. This monopoly power forced up wages, generating rents for those workers fortunate enough to be in employment, and causing allocative inefficiencies. The magnitude of these rents depended crucially on the elasticity of labor demand. The more elastic is labour demand, the smaller is the size of any surplus that could be appropriated.

While there were some rare dissenting voices claiming that trade unions could in some instances be efficiency-enhancing, the dominant opinion in the late 1970s were that they caused allocative inefficiencies.

From the late 1970s through to the 1990s there was a tremendous growth in the economics of the trade union. This focused on the wage-setting behavior of unions as well as in measuring their impact on other outcomes. Initially the models viewed trade union behavior as a modification of perfect competition in which trade unions represented workers and were characterized by monopoly power. As the years rolled by, the notion that union workers possess monopoly power and expropriated all the surpluses gave way to the idea that the surpluses might be shared between union workers and the firm. Insights from bargaining theory were employed to show how this would be managed. It came as no surprise that the share each party received depended on their relative bargaining power. Moreover the size of the surplus also mattered. And in time it became clear that the size of the surplus was positively related to the degree of imperfect competition in the product market.

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* Tel.: +61 2 6125 3285; fax: +61 2 612 55124.

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Paralleling these developments in theories of union wage determination and employment were innovations in macroeconomic thinking. Here researchers were beginning to utilize models of, for instance, monopolistic competition to explain how small adjustment costs could give rise to large business cycle fluctuations that could happen without any trade union presence. Increasingly labor economists began to take on board these ideas. Other approaches, such as heterogeneous job characteristics that Salop (1979) incorporated into the theory of the firm, were also to filter into labor economics.

Perhaps the most interesting development in wage determination theories of the past decade or so has been the realization that *employers* have some market power in wage-setting.[1] This is not only a plausible and reasonably tractable characterization of the labor market, but it can also help explain certain labor market phenomena. An early example of an oligopsonistic competition model is that of Stevens (1994). Another example is Bhaskar and To (1999), who assume asymmetric information in analyzing the impact of minimum wages. Their starting point was that workers have idiosyncratic preferences over employment at different firms, and that these preferences are private information. Manning (2003) further develops this in the context of other characterizations (including search theory which is the subject of Pierre Cahuc's paper in this special issue.)

There are a number of other sources of rents in the employment relation. Not only do individuals have heterogeneous preferences for jobs, but they also have differences in mobility costs and they face imperfect information. Because of this, it takes time for a worker to find an alternative employer who is a perfect substitute for her current one. Moreover it is expensive for the firm to find another worker who is perfectly substitutable for his current one. This heterogeneity, and search and mobility costs, imply that there are rents in the employment relationship.

The remainder of the paper is set out as follows. Section 2 describes the perfectly competitive benchmark. Section 3 is devoted to wage determination under trade unions. There has been a dramatic decline in research in this area since the early 2000s. I shall discuss whether this happened because of fashion or irrelevance, and will argue that unions remain relevant but that fashion has moved away. In Section 4, I shall explore wage determination under oligopsonistic competition. This is currently the flavor of the decade and I shall give the reasons why. In the penultimate section I shall examine where imperfect competition/monopsony theory and trade union economics have helped us better understand wage determination and the workings of labor markets.

This paper gives only a brief overview. It is *not* a survey of all the wage determination literature nor does it touch on the extensive empirical literature on wages and wage inequality. Rather, it simply presents my own view, an idiosyncratic one perhaps, but all as requested by the founding editors of *Labour Economics*, Joop Hartog and Jules Theeuwes. It is to Jules' memory that I dedicate this paper.

2. The perfectly competitive labor market

Perfectly competitive markets are described in economic theory as those in which no participants (buyers or sellers) have the market power to set the price of a homogeneous product. The conditions for perfect competition are strict; for example, an infinite number of agents, no barriers to entry or exit, perfect factor mobility, perfect information, and no transactions costs. While the assumptions underlying perfect competition might sometimes be applicable for auction markets for certain commodities, they are rather less applicable for labor markets.

Labor has several features distinguishing it from other inputs, and that mean that labor markets cannot be considered in the same way as the markets for other factor inputs (Marshall, 1920). The two principal distinguishing characteristics of labor are first that workers retain ownership of their human capital (in the absence of slavery) and second that workers must be present at the workplace for the delivery of their skills. The fact that workers retain ownership of their human capital has the implication that any education or skills associated with employment are the property of the worker, who can therefore exercise some control over the use of the skills, and perhaps extract any surplus associated with them. The fact that workers must be present for the delivery of their skills means that they must live near the workplace.[2] This may constrain the opportunities of other family members, and make workers vulnerable to opportunistic behavior. (We shall return to this point in the section on oligopsonistic competition below.) This embodiment of human capital within a person also means that the social aspects of the work environment are important.

In spite of these caveats, perfect competition may sometimes serve as a useful benchmark against which to measure imperfectly competitive labor markets and also to measure allocative inefficiency. However, once one accepts that there are rents in the employment relationship, then there is more of a role for policy.

3. Wage determination under trade unions

3.1. Do trade unions still matter?

Although the bargaining models used in trade union theory have a wider application compared to unionized labor markets, I shall confine my discussion here to trade unions and union wage-setting. The reader may well ask why. After all, we regularly read in the media about the declining power of trade unions, so should we as labor economists forget about the union wage-setting models? In my opinion we should not. This is not only because the modeling framework is applicable to other non-union situations, but also because union power is not declining across OECD countries to the extent suggested by the union membership figures alone.

While in the 1990s trade union density averaged 40.1% across OECD countries, by 2009 it had declined to 28%.[3] (Trade union density refers to the number of trade union members as a percentage of wage and salary earners.) This is indeed a large drop, but the averages conceal an extraordinary degree of heterogeneity across countries, as inspection of Table 1 reveals. For example, of the 28 countries listed in the table, six have union density exceeding 50%, and four have union density exceeding two thirds (these are Denmark, Finland, Iceland and Sweden). On the other hand, fourteen countries have union density of less than one-fifth of the workforce. Can we conclude from this that unions are a dead institution? I think the answer is no. Union presence is still very important for some countries, especially European ones.

For European countries, Australia and New Zealand, the influence of trade unions at the macroeconomic level is better indicated by the extent of collective bargaining coverage of the work force, rather than by union density. (The definition of the collective bargaining coverage rate, or coverage rate for short, is the number of workers covered by wage bargaining agreements as a proportion of all wage and salary earners.) Across OECD countries, union coverage averaged 70% in 1990 and declined to 62% two decades later.

France provides an interesting example of how misleading focusing on union membership alone can be. With just under 8% of the workforce union members, nonetheless union coverage is high, at 90%. Clearly a lot of French workers are taking a free ride on union membership. Elsewhere I and others have argued that union coverage is a better measure of union influence than density, and that the level at which union bargaining occurs is also important (see for example Booth, 1995; Boeri et al., 2001; Fitzenberger et al., 2013).

[1] Of course this had been realized by many economists years earlier, but the idea has only relatively recently been embraced more widely by labor economists.

[2] This may well change in the future in occupations in which homeworking may become more feasible.

[3] The figures given in this paper come from the OECD database on trade unions and from Visser (2011).