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Introduction

WHAT happens if an employer cuts the wage it pays its workers by one cent? Much of labor economics is built on the assumption that all existing workers immediately leave the firm as that is the implication of the assumption of perfect competition in the labor market. In such a situation an employer faces a market wage for each type of labor determined by forces beyond its control at which any number of these workers can be hired but any attempt to pay a lower wage will result in the complete inability to hire any of them at all. The labor supply curve facing the firm is infinitely elastic.

In contrast, this book is based on two assumptions about the labor market. They can be stated very simply:

- there are important frictions in the labor market;
- employers set wages.

The implications of these assumptions can also be stated simply. The existence of frictions means that there are generally rents to jobs: if an employer and worker are forcibly separated one or, more commonly, both of the parties would be made worse off. This gives employers some market power over their workers as a small wage cut will no longer induce them to leave the firm. The assumption that employers set wages then tells us that employers exercise this market power. But, with these two assumptions, it is monopsony, not perfect competition, that is the best simple model to describe the decision problem facing an individual employer. Not monopsony in the sense of there being a single buyer of labor, but monopsony in the sense of the supply of labor to an individual firm not being infinitely elastic. The actions of other employers (notably their choice of wages) in the market will affect the supply of labor to an individual firm so, if one wants to model the market as a whole, models of oligopsony or monopsonistic competition are what is needed.[1] The usefulness of the monopsonistic approach rests on the two assumptions so they need some justification.

[1] The Oxford English Dictionary credits the word monopsony to Joan Robinson (1933) though she credits it to B. L. Hallward, a classical scholar at Cambridge, who though born in 1901 is still alive at the time of writing. The suffix is derived from OPSONEN which means "to make your purchases often of dried fish" and which is found in Aristophanes, the Wasps (twice), Plutarch and the New Testament. The natural ONEOMAI ("I buy") was rejected as it does not sound good with the MONO prefix (personal communication to David Card). The invention of the word oligopsony is credited to Walker (1943) who introduced it with the curious phrase "it is surely only a matter of time before market situation number 23 is christened oligopsony," the time referred to being the time necessary for him to finish writing the sentence.

That important frictions exist in the labor market seems undeniable: people go to the pub to celebrate when they get a job rather than greeting the news with the shrug of the shoulders that we might expect if labor markets were frictionless. And people go to the pub to drown their sorrows when they lose their job rather than picking up another one straight away. The importance of frictions has been recognized since at least the work of Stigler (1961, 1962).

What are the sources of these frictions in labor markets? In the *Economics of Imperfect Competition*, Joan Robinson argued that:

> there may be a certain number of workers in the immediate neighbourhood and to attract those from further afield it may be necessary to pay a wage equal to what they can earn near home plus their fares to and fro; or there may be workers attached to the firm by preference or custom and to attract others it may be necessary to pay a higher wage. Or ignorance may prevent workers from moving from one to another in response to differences in the wages offered by the different firms.
>
> (Robinson 1933: 296)

It is ignorance, heterogeneous preferences, and mobility costs that are the most plausible sources of frictions in the labor market. The consequence of these frictions is that employers who cut wages do not immediately lose all their workers. They may find that their workers quit at a faster rate than before or that recruitment is more difficult, but the extreme predictions of the competitive model do not hold. The labor supply curve facing the firm is, as a result, not infinitely elastic. The existence of frictions gives employers potential market power over their workers. The assumption that firms set wages means that they actually exercise this power. Let us now consider this assumption in more detail.

Given the existence of rents caused by frictions one needs to specify how they are divided between employer and worker. The existence of the rents makes the relationship between workers and employer one of bilateral monopoly (in part) so that we need a theory of how the rents are divided. The development of such a theory is an old problem in economics in general, and labor economics in particular, going back to the discussion of Edgeworth (1932) who argued that the terms of exchange in bilateral monopoly were indeterminate. This indeterminacy has never been resolved.[2]

[2] For example, in recent years, there has been considerable interest in models of bargaining in bilateral monopoly following on from the work of Rubinstein (1982) who, for a particular specification of the negotiation process between the two parties, showed that there was a unique equilibrium, that is, a determinate outcome. But this literature does not really solve the indeterminacy problem, it just pushes it back one more stage for the rules of the negotiation process generally determine the division of the rents and these rules are essentially arbitrary. So the indeterminacy problem re-emerges in the indeterminacy of the rules of the game.

Given this problem at the heart of economics, which this book is going to make no attempt to solve, there seems little alternative but to grasp the nettle and make some assumption about the way in which the rents are divided. One should choose an assumption that is a reasonable approximation to reality. This is made difficult by the fact that there is no universally right assumption for how rents are shared in the labor market: there are different mechanisms in different labor markets, perhaps even co-existing in the same labor market. In spite of this, we focus on one mechanism for most of this book.

In this book, it is assumed that employers set wages.[3] This is a more appropriate assumption in some labor markets than others. For example, it would not seem to be appropriate when workers are organized into a union (the consequences of this are discussed in chapter 12), or for senior management who often seem to have considerable ability to set their own wages, or for the self-employed, or (most importantly of course) for academic labor economists. But, for the average worker in a non-union setting, this does seem to be the appropriate assumption. Open the pages of a newspaper and one sees firms advertising jobs at given wages. One also sees advertisements saying "salary negotiable" though typically only for higher level jobs and the extent to which they are actually negotiable is often rather limited. But it is very rare to see advertisements placed by workers setting down the wage at which they are prepared to work.

This view that the relationship between the employer and worker is one-sided has a long tradition. In the *Wealth of Nations*, Adam Smith (1976: 84) wrote that "in the long run the workman may be as necessary to his master as his master is to him; but the necessity is not so immediate." And Alfred Marshall in his *Principles of Economics* (1920: 471) wrote that "labour is often sold under special disadvantages arising from the closely connected group of facts that labour power is 'perishable', that the sellers of it are commonly poor and have no reserve fund, and that they cannot easily withhold it from the market." To these arguments that a worker is typically more desperate for work than an employer is desperate for that particular worker, Sidney and Beatrice Webb (1897: 657–58) added the argument that

> the manual worker is, from his position and training, far less skilled than the employer … in the art of bargaining itself. This art forms a large part of the daily life of the entrepreneur, whilst the foreman is specially selected for his skill in engaging and superintending workmen. The manual worker, on the

[3] Section 1.3 compares this assumption about wage setting with a prominent alternative, the ex post bargaining used in much of the matching literature (for a recent survey, see Mortensen and Pissarides 1999).

> contrary, has the smallest experience of, and practically no training in, what is essentially one of the arts of the capitalist employer. He never engages in any but one sort of bargaining, and that only on occasions which may be infrequent, and which in any case make up only a tiny fraction of his life.

The view that the relationship between employer and worker is not one of equals was the origin of pro-labor legislation in many if not all countries. Section 1 of the US National Labor Relations Act of 1935 says "the inequality of bargaining power between employees who do not possess freedom of association or actual liberty of contract, and employers who are organized in the corporate and other forms of ownership association substantially burdens and affects the flow of commerce." Our assumption that employers set wages is in this tradition.

The claim that labor markets are, in the absence of outside intervention, pervasively monopsonistic probably comes as something of a surprise to readers of labor economics textbooks. Table 1.1 documents the number of pages devoted to a discussion of monopsony and the total length in a selection of popular textbooks. As can be seen, monopsony does not figure prominently and, where it is mentioned, the discussion is generally not favorable: the final column of table 1.1 contains a selection of quotes, some of which capture the idea that frictions give employers some market power but most of which do not.[4] There is a noticeable trend in the most recent textbooks towards less hostile views[5] and a recognition that it is the existence of labor market frictions that is the main argument for the relevance of monopsony. But, while the overall perspective on the plausibility of monopsony may be changing, the range of labor market issues that contain some discussion of the implications of monopsony remains very limited. The first two volumes of the *Handbook of Labor Economics* (Ashenfelter and Layard, 1986) contain only two references to monopsony out of a total of 1268 pages, one in the chapter on dynamic labor demand by Nickell and the other in the chapter on discrimination by Cain. The three subsequent volumes published in 1999 (Ashenfelter and Card, 1999) contain three references in 2362 pages, in the chapters on labor market institutions, minimum wages and matching.

[4] My personal favorite is taken from the first edition of Fleisher and Kniesner (1980, pp. 203–4) "we feel confident that monopsony is not a widespread phenomenon today. The primary reason is that fame and financial awards await the researcher who can demonstrate empirically that a significant number of workers are victims of monopoly power of employers. As yet, no one has claimed these prizes."

[5] A trend that can be confirmed by a fixed effect estimator, comparing the discussion of monopsony in different editions of the most popular textbooks.

TABLE 1.1
Monopsony in Labor Textbooks

Author	*Pages on Monopsony*	*Total Pages*	*Selected Quotation*
Borjas (2000)	7	470	"upward-sloping supply curves for particular firms can arise even when there are many firms competing for the same type of labour" (p. 191)
Ehrenberg and Smith (2000)	14	651	"while examples of a single buyer of labour services may be difficult to cite, the monopsony model still offers useful insights if the labour supply curves are upward-sloping for some other reason. Recently, economists have begun to explore a variety of labour market conditions that would yield upward-sloping labour supply curves to individual firms even when there are many employers competing for workers in the same labour market" (p. 71)
Filer, Hamermesh, and Rees (1996)	8	654	"it does not seem plausible given the vast number of firms employing teenagers in the US" (p. 174) "while the cost of commuting long distances leaves some residual monopsony power to isolated employers, this power is much less than when commuting was more difficult" (p. 189)
Sapsford and Tzannatos (1993)	15	420	
Elliott (1991)	6	536	"appealing as such an outcome is to the advocates of minimum wage legislation it has to be said that this theoretical possibility is seldom encountered in practice" (p. 306).
Kaufman (1991)	12	778	"the pure form of monopsony (the one-company town) is relatively rare, although conditions of oligopsony and monopsonistic competition may have a wider applicability" (pp. 422–23)
Reynolds, Masters, and Moser (1991)	2	610	"there is little evidence to suggest that monopsony is important to our economy. Most firms are located in urban areas where there are many firms in the labour market and relatively little collusion among employers" (p. 135)

TABLE 1.1 (*continued*)

Author	*Pages on Monopsony*	*Total Pages*	*Selected Quotation*
Fallon and Verry (1988)	3	311	"imperfect information may … convey some monopsony power to the individual firm" (p. 103)
Gunderson and Riddell (1988)	19	600	"to a certain extent most firms may have an element of monopsony power in the short-run, in the sense that they could lower their wages somewhat without losing all their workforce. However, it is unlikely that they would exercise this power in the long run because it would lead to costly problems of recruitment, turnover and morale" (pp. 213–14) "Improved communications, labour market information, and labour mobility make the isolated labour market syndrome, necessary for monopsony, unlikely at least for large numbers of workers" (p. 224)
Hoffman (1986)	7	354	"A monopsonist is a firm that faces an upward-sloping supply curve for labor of a given quality. A university hiring economics instructors is most definitely *not* a monopsonist, because the relevant labor market is national and thus the number of other demanders is quite large" (p. 49)
McConnell and Brue (1986)	9	607	"monopsony outcomes are not widespread in the US economy" (p. 150)
Marshall, Briggs, and King (1984)	4	657	
Fleisher and Kniesner (1984)	16	536	"monopsony does not appear to be a widespread phenomenon in the United States, but rather specific to a few industries" (p. 219)
Hunter and Mulvey (1981)	4	403	
Fearn (1981)	8	272	"many modern American labor economists assume generally that labor markets are competitive. The presumption that labor markets are monopsonies, however, remains in the public consciousness, particularly in union circles and in the legislatures. The situation may represent a classic 'cultural lag'" (p. 117)

TABLE 1.1 (*continued*)

Author	*Pages on Monopsony*	*Total Pages*	*Selected Quotation*
Bloom and Northrup (1981)	4	836	
Kreps, Martin, Perlman, and Somers (1980)	9	477	"instances of monopsony are not that frequent as to make the chances that administered wages will not reduce employment" (p. 110)
Addison and Siebert (1979)	8	500	"we should qualify our discussion of monopsony by observing that imperfect worker information as to alternative wages will confer on each firm a margin of monopsony power. Thus, each firm will possess a degree of dynamic monopsony power arising from the imperfect information of its employees and can therefore administer wages" (p. 169)
Freeman (1979)	0	196	
Bellante and Jackson (1979)	4	351	"many economists argue that monopsony power by firms is likely to be greatly exaggerated given the occupational, industrial and geographical mobility that characterizes American labor markets" (p. 196)
Cartter and Marshall (1972)	11	570	
Lester (1964)	2	608	"the manipulation of wages by the purchase of labor according to monopsonistic calculations seems to be misguided academic speculation" (p. 281)
Phelps Brown (1962)	1	274	"the rate needed to attract labour in the first place is higher than that needed to retain it once it has settled in. Much of a firm's labour force is likely, for this reason, to be captive; the firm is a monopsonist in the short-run' (p. 137)

These statistics might be thought to be a little unfair as many of these textbooks interpret monopsony literally as being a situation of a single employer of labor rather than the interpretation of an upward-sloping supply curve of labor that is used here. But, mentions of oligopsony are even fewer than mentions of monopsony, and the

general impression given by most textbooks is that employers have negligible market power over their workers or that this is, at best, a trivial side issue.

This situation contrasts strongly with the situation in another part of economics, industrial organization, where the standard assumption is that all firms have some product market power, although some are thought to have more market power than others. As a result, the bulk of the *Handbook of Industrial Organization* is about imperfect competition in product markets and virtually every chapter has some reference to monopoly or oligopoly. This contrast between labor economics and industrial organization is odd given that one might think frictions are more important in the labor market as it is more costly to change one's job than one's supermarket.[6] The premise of this book is that labor economics should adopt a similar attitude to that in industrial organization and start analysis from the position that all employers have some labor market power.

This book discusses most if not all of the issues in labor economics from the starting point that the labor market is monopsonistic. Given the evidence cited above on the paucity of references to monopsony in textbooks, one might expect a radical reworking of labor economics. Such an expectation will, more often than not, lead to disappointment. Often, we will be able to draw heavily on existing work and simply look at issues from a different angle. Many explanations of labor market phenomena implicitly assume that the labor market is monopsonistic without articulating that fact. Perhaps the best example of this is search theory, an approach used to analyze a wide range of issues. The early developments, following Stigler (1962), were one-sided, treating the distribution of wage offers in the market as exogenous. Stigler (1962) provides a careful and interesting discussion of why the "law of one wage" is likely to fail in the labor market but does not consider the process of wage setting from the perspective of employers. But, when the process of wage determination was considered, the early models often seemed to collapse, and were incapable of explaining the existence of a non-degenerate wage distribution, a point made forcefully by Diamond (1971) and Rothschild (1973). All of the models then developed to explain the existence of equilibrium wage dispersion (e.g., Butters 1977) essentially assume that firms have some market power. It would be an exaggeration to say

[6] For example, individuals in the British Household Panel Survey commonly report employment-related events as major life events but none report that one of the most important things that happened to them in the past year is that they stopped shopping at Sainsburys and started going to Tesco, two of the biggest British supermarkets.

that all coherent models of frictions imply firms have some market power but it is close to the truth.[7]

1.1 The Advantages of a Monopsonistic Perspective

The main advantage of the monopsonistic approach is that the way one thinks about labor markets is more "natural" and less forced. Currently, labor economics consists of the competitive model with bits bolted onto it when necessary to explain away anomalies. The result is often not a pretty sight. A good example is the analysis of the returns to specific human capital. If one is a strict believer in perfectly competitive markets, one should believe that workers get no return from firm-specific human capital: as Becker (1993: 41–42) puts it "one might plausibly argue that the wage paid by firms would be independent of training." But, Becker goes on to argue that employers need to give workers some share to "deter quits," an idea formalized by Hashimoto (1981) which is the standard reference for this conclusion. But (and this is discussed in more detail in chapter 5), Hashimoto simply assumes that the supply of labor to the firm is not perfectly elastic, that is, he assumes the labor market is monopsonistic, a rather helpless fudge that has sown only confusion ever since.

Assuming labor markets are monopsonistic also brings the thinking of labor economists in line with the way in which agents perceive the workings of labor markets. Workers do not perceive labor markets as frictionless and changing, getting, or losing a job are routinely reported as major life events: for example, in the UK British Household Panel Survey (BHPS), job-related events are the most common category of self-reported important life events after births, deaths, and weddings. And, employers perceive they have discretion over the wages paid. Human resource management textbooks routinely state that the choice

[7] It is instructive to consider the models of frictions that do not give employers some market power. In the "islands" model of Lucas and Prescott (1974), workers must make a decision about the island on which to work before the realization of island-specific demand shocks. There are frictions as there is no ex post mobility between islands after the realization of the shocks. But, even though there are frictions, workers get paid their marginal product as Lucas and Prescott use a "wildebeest" model of the labor market in which each island has huge herds of employers who bid the wage up to the marginal product. Somewhat similar are the models of Moen (1997), Acemoglu and Shimer (2000), and Burdett et al. (2001) where each "island" has only one firm, workers have an ex ante free choice of islands and the uncertainty about the demand shock is replaced by a matching friction in which it is hard to get employment once one is on an island. However, it is assumed that each firm commits in advance the wage it is going to pay so that the relevant labor supply curve is the perfectly elastic ex ante supply curve rather than the completely inelastic ex post one.

of the wage affects the ability of the employer to recruit and retain workers (see, e.g., Jackson and Schuler 2000, chapter 10) and the choice of a wage is a very real one.[8]

It is simple to give examples of how a monopsonistic perspective makes life more comfortable for labor economists. The existence of wage dispersion for identical workers can readily be explained as the natural outcome of a labor market in which the competitive forces are not so strong as to make it impossible for low-wage employers to remain in existence: no recourse is needed to "unobserved ability" to deny the existence of the phenomenon. When we find that workers paid (other things being equal) higher wages are less likely to be looking for another job or that they are less likely to leave their employers, this can be readily explained by the fact that these workers have been lucky enough to find themselves in one of the good jobs in their segment of the labor market. It does not have to be explained away in terms of higher-wage workers having more specific human capital (see, e.g., Neal 1998).

Similarly, the robust empirical correlation between employer characteristics and wages does not have to be explained away in terms of unobserved worker quality: it is exactly what one would expect to find in a monopsonistic labor market. When one observes that employers pay for general training for their workers, one does not have to claim that such training is really specific or that workers are paying for it indirectly. It is what one would expect in a monopsonistic labor market in which part of the returns to general training will accrue to employers.

When we find that equal pay legislation substantially raises the pay of women, and does not appear to harm their employment, this is readily explained by a monopsonistic perspective but a serious problem if one believes the labor market is perfectly competitive. Similarly, finding that the minimum wage does not harm employment prospects in some situations is no particular mystery if one believes in monopsony.

Other examples can be added and are discussed at various points in this book. But, many labor economists instinctively feel very uncomfortable with the idea that labor markets may be pervasively monopsonistic and the next section tries to allay some of these fears.

[8] Issues of labor quality muddy this as, in a competitive labor market, the choice of a wage is really the choice of quality of labor to employ on a job. But, if the competitive model of a labor market was correct, a firm that pays all its workers on a particular job the same wage (such firms are easy to find; see chapter 5) should have no variation in quality among these workers. There would be no such thing as a "most-valued" worker. However, employers are aware that there is heterogeneity in the quality of workers who are paid the same wage. So, it is probably best to think of the wage paid as affecting both the quantity and quality of workers; see Manning (1994b) for the working out of a model with this feature.

1.2 Objections to Monopsony and Oligopsony

Many labor economists find the claim that labor markets are pervasively monopsonistic inherently implausible. It is doubtful that anyone would claim literally that the labor supply curve facing a firm is, in the short run, infinitely elastic as the perfectly competitive model assumes. Almost certainly, most labor economists think of the elasticity as "high" and that the competitive model provides a tolerable approximation to reality. But, once one concedes that the competitive model is not literally true, it becomes an empirical matter just how good an approximation it is. The claim of this book is that, for many questions, the competitive model is not a tolerable approximation, and that our understanding of labor markets would be much improved by thinking in terms of a model where the labor supply curve facing the firm is not infinitely elastic.

The belief that the elasticity of the labor supply curve facing a firm is infinitely elastic is not based on any great weight of accumulated empirical evidence. The number of papers written about the elasticity of the labor supply curve at firm level can almost be counted on the fingers of one hand (see the discussion in chapter 4). Rather, it is introspection (or revelation) which is the source of the faith of many labor economists in the irrelevance of monopsony.

There are a number of sources of this faith. First, there is the belief that large employers are necessary for employers to have some market power and that the vast majority of employers are small in relation to their labor market; Bunting (1962) is the classic reference for US evidence on this. But the approach developed in this book does not require employers to be "large" in relation to their labor market. It only requires that a wage cut of a cent does not cause all workers to leave employment immediately.

Secondly, some labor economists argue that labor turnover rates are so high that workers cannot be thought of as "tied" to firms. But, the *level* of labor turnover is irrelevant: the issue is the *sensitivity* of labor turnover rates to the wage. Existing studies of this find that separations are related to the wage but that the elasticity is not enormous (again, this literature is discussed further in chapter 4).

Some other labor economists think that the supply of labor to a firm is irrelevant because they believe that the normal state of affairs is that employers are turning away workers who want a job at prevailing wages. Involuntary unemployment might be taken as one piece of evidence in this respect, low vacancy rates as another. But, we argue (in chapter 9) that the existence of monopsony and involuntary unemployment are essentially orthogonal issues. Employers have market power over their workers whenever the elasticity of the supply of workers that the employer might

consider employing is less than infinite, while involuntary unemployment exists when the supply of the workers that the employer would want is less than the supply who would like to work at the going wage.

And, we argue (in chapter 10) that low vacancy rates and durations are perfectly consistent with the existence of labor supply being a constraint on employers. As job creation is costly, firms will not create jobs they do not expect to be able to fill. Hence, one should think of vacancies as "accidents" and a low vacancy rate is perfectly consistent with employers having some monopsony power.

Thus, the faith that so many labor economists have in the irrelevance of monopsony or oligopsony is not based on hard evidence, and the throw-away arguments sometimes heard are not as compelling as generations of labor economists have been led to believe. The idea deserves to be given more serious consideration and that is the aim of this book.

In much of the previous discussion, the idea of a monopsonistic labor market has been compared to the ideal of a frictionless labor market. But, there are other labor market models which acknowledge the existence of frictions yet would not commonly be thought of as monopsony models. Perhaps the most prominent example of these models is the Diamond–Pissarides matching model (see Diamond 1982; Pissarides 1985). How these models relate to the monopsony model is the subject of the next section.

1.3 Monopsony or Matching or Both?

Another tradition in labor economics, commonly called matching models (for a recent survey, see Mortensen and Pissarides 1999), also starts from the premise that there are important frictions in labor markets. But, these models differ from monopsony models in the assumptions made about wage determination. There are two main such differences (for an explicit formal comparison of the two approaches, see Mortensen 1998).

First, there is a difference in the assumption about the bargaining power of workers. In monopsony models, it is assumed that employers set wages unilaterally whereas the matching models typically assume some process of wage bargaining between employer and worker (although one could set up these models so that employers have all the bargaining power).[9]

[9] Adam Smith (1976, p. 84) had something to say about the practice of economists to see bargaining power of workers everywhere: "we rarely hear, it has been said, of the combinations of masters; though frequently of those of workmen. But whoever imagines, upon this account, that masters rarely combine, is as ignorant of the world as of the subject."

Secondly, there is a difference in the assumption made about the timing of wage determination. In the formal models of monopsony introduced in the next chapter, wages are modeled as being determined prior to an employer and a worker meeting each other: this is often called ex ante wage posting. In contrast, matching models typically assume that wages are determined after employer and worker have met (this is often called ex post wage bargaining).

If one judges theories by the realism of their assumptions, then I believe that the wage-posting monopsony model is to be preferred. This is not because it is the best description of the labor market in all circumstances (wage bargaining between employers and workers is observed), just that it is a better description most of the time. For example, chapter 5 documents the existence of a substantial number of firms (in labor markets without minimum wages or trade unions) that pay all their workers in a particular job the same wage. It is hard to see how this could be the outcome of individualized ex post wage bargaining between employers and workers given the heterogeneity of workers within the firms. Even in labor markets that one thinks of as being highly individualistic such as Wall Street, employers seem reluctant to engage in more than limited negotiation: Lewis (1989: 149) describes how Salomon Brothers lost their most profitable bond trader because of their refusal to break a company policy capping the salary they would pay. Models of wage posting seem to provide a better description of reality.

But, economists often also judge theories not by the realism of their assumptions but by the quality of their predictions. Comparing wage posting and wage bargaining models on this basis is difficult because so many of the predictions are the same and it may not matter greatly which assumption about wage determination is used in many circumstances.[10] There is a good reason for this: even though monopsony models appear to give all the bargaining power to the employer, both monopsony and matching models predict that the rents of the employment relationship get shared between workers and employers. In monopsony models, workers get some share of the surplus as long as employers are not perfectly discriminating monopsonists (and chap-

[10] However, there are some substantive differences. Ex post wage bargaining implies that all efficient matches will be consummated whereas ex ante wage posting may result in some efficient matches failing to be consummated (e.g., an unemployed worker with a particularly high reservation wage may not want the job at the offered wage even though there is a higher wage at which both employer and worker would gain from a match). However, ex post wage negotiation may not be effective in motivating ex ante investments by employers or workers as there is no guarantee that the rents from these investments will not be appropriated. On the other hand, the commitment implied by ex ante wage posting may be better able to motivate investments.

ter 5 argues that there are good reasons why they cannot be). Assuming that firms set wages and are monopsonists, at least in a formal sense, should not be taken to imply that their share of any rents is necessarily large.[11]

Another advantage of the monopsony over the matching approach is that it is much easier to forge links with other parts of labor economics. Although the underlying model of the labor market with frictions may be relatively complicated with a lot of dynamics and value functions, one can often represent and understand the decision problem of the individual employer in the monopsony model in terms of the textbook static model of monopsony. In contrast, the matching models do not have a simple static textbook counterpart model and the use of these models has led to unfortunate parallel literatures in which the same labor market phenomenon is "explained" by both a matching model and a conventional static model without the fundamental similarity between them being recognized. From those who specialize in the analysis of matching models, one often hears the claim that "dynamic models are different" to justify this state of affairs: while there is some truth in this statement, it is much less true than they commonly think. And empirical labor economists often feel that there is little benefit in terms of understanding and a considerable cost in terms of analytical complexity from using a dynamic model and fall back on the familiar textbook model of perfect competition.

Hence, although one should think in terms of monopsony and matching models as being fundamentally similar models of the labor market, the monopsony model is a better description of the way labor markets work and makes it much easier to forge links with the rest of labor economics.

1.4 Antecedents

As has already been pointed out, a number of distinguished economists have seen labor markets as operating in the way described in this book and bits and pieces of modern labor economics are, implicitly or explicitly, analyses of monopsonistic or oligopsonistic labor markets. But there are two particular traditions that need to be singled out as being important influences on this work.

The first is the labor economics of the so-called neorealist or neoclassical revisionist labor economists (Kaufman 1988) who thrived in the

[11] Some might object to the use of the word monopsony in a situation in which workers get some or even most of the rents. But, consumers are strictly better off with electricity than without although most people would be content with the description of the utility as a monopolist. The use of the word "monopsony" is simply meant to refer to the fact that employers set wages.

United States in the late 1940s and the 1950s before being supplanted by economists who drew their inspiration from Hicks' *Theory of Wages* and from the Chicago school of thought. These economists like John Dunlop, Clark Kerr, Richard Lester, and Lloyd Reynolds had been brought up on neoclassical economics but felt that the competitive model gave a seriously inaccurate picture of how labor markets operated.

There were two main reasons why they arrived at this conclusion. First, studies of labor mobility seemed to show that workers were extremely reluctant to change jobs and hence that the mechanism which was imagined to enforce the competitive law of one wage was, in reality, much weaker than most labor economists imagined. One consequence of this was that the "market" did not dictate the wage an employer had to pay or face ruin: employers had, in fact, considerable discretion in the wage that they chose to pay. Further evidence of this was the considerable dispersion in wages found in labor markets defined very tightly in terms of occupation and area (Lester 1946, 1948; Reynolds 1946a,b, 1951; Slichter 1950; Dunlop 1957, amongst others). They were well aware of the possibility that such wage dispersion might be driven by differences in the non-wage aspects of jobs or differences in worker quality, or be only short-term (see, e.g., the discussion in Lester 1952: 487–88) but they arrived at the conclusion (often more by the exercise of judgment than firm evidence) that the wage dispersion was real and permanent. The practical experience of several of these economists in the work of the War Labor Board which set out to find *the* market wage for particular classes of labor and found only wage dispersion was particularly important in convincing them that the competitive model suffered from serious deficiencies.

These economists were actively discussing the supply curve of labor to the firm, the issue that is at the heart of this book. Reynolds (1946a: 390) wrote in a paper entitled *The Supply of Labor to the Firm* that "the view that labor-market imperfections result in a forward-rising supply curve of labor to the firm appears to have been first elaborated by Mrs. Robinson. This conclusion has made its way rapidly into the textbooks and seems well on the way to being generally accepted as a substitute for the horizontal supply curve of earlier days." It is hard to imagine a paper with this title in the journals of today let alone a statement along these lines. Bronfenbrenner (1956: 578) wrote

> the typical employer in an unorganized labor market is by no means a pure competitor facing market wages which he cannot alter. The mobility of the labor force, even between firms located close together, is low by reason of the inability of workers to wait for employment or risk unemployment, plus the inadequacy of the information usually available to them regarding alternative

> employment opportunities. This low mobility permits each employer to set his own rates and form his own labour market within limits which at some times may be quite wide. In the technical jargon of economic theory, the typical employer in an unorganized labor market has some degree of monopsony power and can set his own wage policy

a statement of the central themes of this book which would be hard to better.

So these economists were writing about the issues on which I write and thinking about explanations along the same sort of lines. Yet, I cannot help feeling that these labor economists would not necessarily welcome my embrace.[12] My bald assumption that employers set wages to maximize profits is the kind of crass generalization from which someone like Lester instinctively recoiled. He came to emphasize how the lack of cutthroat competition in the labor market gave leeway for employers to pursue many ends and this was, for example, one explanation of wage dispersion observed (see, e.g., Lester 1952). Perhaps this was because he saw any model based on a single objective (like profit maximization) predicting a determinate outcome, a prediction that was then obviously falsified by observation of the world. But, the general equilibrium models that are used (see, e.g., the model of section 2.4) have as an equilibrium a range of wages even when the objectives pursued by all firms are identical: in a sense they are models of determinate indeterminacy.[13]

While Reynolds wrote about the supply curve of labor to the firm, his final conclusion was that "in actuality, an employer can usually expand and contract employment at will without altering his terms of employment" (Reynolds 1951: 227) so that the competitive labor supply curve gave the right answer though for the wrong reasons. He arrived at this conclusion primarily because of the observation that it did not seem to cost much in terms of time or money to recruit extra workers: that is, vacancy durations were (and are) extremely low. This is a serious objection to the relevance of the monopsony model and one which is discussed at length in chapter 10. But my conclusion is different: I argue that what we know about vacancies is perfectly consistent with the existence of non-negligible monopsony power.

The other important inspiration for this book is a single paper: Burdett and Mortensen (1998).[14] This paper was presented at the

[12] If one looks at the representative quotes about monopsony in the textbooks authored by these economists, it would be hard to see any more favorable inclination to monopsony than is found in the others.

[13] Though Lester's position does receive some support if our basic model is tweaked to introduce mobility costs and preferences over non-wage job attributes when multiple equilibria tend to be rife.

[14] It may have been published in 1998 but was originally written at least 10 years earlier.

LSE in 1990 and it was a revelation to me. Here was a simple elegant analytical framework that could explain the existence of equilibrium wage dispersion (and other stylized facts about the labor market). If I had not been quite so ignorant I would have realized that proving the possibility of equilibrium price or wage dispersion was not as new or as difficult as I had imagined (one might cite Butters 1977; Salop and Stiglitz 1977; Reinganum 1979; Burdett and Judd 1983; Albrecht and Axell 1984; Lang 1991; Montgomery 1991a, among others which did more or less the same thing). But the advantage of the Burdett and Mortensen model to me was that, whereas many of the other models of price or wage dispersion were too stylized to be able to take to labor market data, their model was expressed in terms of quit and recruitment rates, and job offer arrival rates that had obvious empirical counterparts. So it is their model that forms the basis of much of what follows, though I imagine that one could have built much of it on some of the other papers.

1.5 Summary of Chapters and Main Results

This book is based on two assumptions:

- there are important frictions in the labor market;
- employers set wages.

The consequence of the first assumption is that the employers have market power in the labor market and the consequence of the second is that they exercise it. The labor supply curve facing employers is not infinitely elastic so that they have some monopsony power. The style of this book is to systematically apply these two assumptions to most areas of labor economics.

The book is divided into four parts. In the first part, chapters 2 through 4, some basic models and results are laid out. Each chapter presents both the relevant theory and empirical evidence based on US and UK data. Every attempt has been made to make the main body of each chapter as accessible as possible with the proofs of the propositions and more technical material confined to an appendix at the end of each chapter. And, because the same data sets are used throughout, there is also a Data Sets Appendix at the end of the book, providing details of how the data were constructed.

Chapter 2, *Simple Models of Monopsony and Oligopsony* starts by presenting some partial equilibrium models of static and dynamic monopsony. While these partial equilibrium models are adequate for analyzing many questions, there are others for which it is necessary to model inter-

actions between employers, that is, to model the labor market as oligopsonistic. The chapter then presents a model of oligopsony based on the wage-posting model proposed by Burdett and Mortensen (1998).

The chapter derives the well-known result that the extent of employer monopsony power is related to the wage elasticity in the labor supply curve facing an individual employer: the less elastic the supply curve, the more market power the employer possesses. It also argues that the greater the ability of workers to move from employer to employer, the more wages will be driven up towards their marginal product. It suggests that the proportion of workers recruited directly from other jobs is a good simple measure of the competitiveness of labor markets. For both US and UK data sets, this proportion is shown to be in the region of 45–50%, a level that is argued to suggest employers have substantial market power.

Chapter 3, *Efficiency in Oligopsonistic Labor Markets*, considers the welfare implications of oligopsonistic labor markets in variations on the model of Burdett and Mortensen (1998). Most of the book is about the positive implications of assuming that employers have market power over their workers. But while "monopsony" as used in this book should be interpreted as a technical term to describe the situation where the labor supply curve to the firm is not infinitely elastic, the term often has more emotive connotations and is sometimes taken to imply that, in some sense, wages are "too low." This is certainly true for the textbook analysis of a single monopsonist where, if the employer has market power, one can always find a binding minimum wage that raises employment and welfare. However, as chapter 3 shows, this simple conclusion breaks down once one moves beyond the case of the single monopsonist. The main conclusion of the chapter is that the free market equilibrium is generally not efficient but that interventions like the minimum wage may improve or worsen efficiency, depending on the particular model being considered. Hence the chapter concludes that theory alone can be of little use in evaluating policy.

The final section of chapter 3 presents a simple model of a "ghetto," emphasizing how, in labor markets with frictions, it is relatively simple to generate multiple equilibria and agglomeration effects. For example, residents of a neighborhood may not invest in human capital if they think there are no jobs in which to use them, while employers may not locate in an area in which the residents have low levels of human capital. In a market with frictions, there is no mechanism to ensure that an act of investment in human capital by an individual will bring forward the investment of physical capital to employ it.

Chapter 4, *The Elasticity of the Labor Supply Curve to an Individual Firm*, presents evidence on the wage elasticity of the labor supply curve to the individual employer. This is the natural place to start to make the case

that monopsony is empirically relevant as the assumption that the labor supply curve to individual employers is not perfectly elastic is the fundamental idea in monopsony. There are astonishingly few papers in the labor economics literature on the supply of labor to individual employers in contrast to the volumes written about labor demand and individual labor supply to the market as a whole.

In estimating the supply curve to an individual employer, the obvious place to start is to regress log wages on the log of employment (plus other relevant controls). One finds, consistent with monopsony, a very robust positive correlation between wages and employment. This employer size–wage effect is well known in labor economics though it is rarely interpreted as evidence of an upward-sloping labor supply curve to an individual employer. The chapter reviews the more common explanations for the employer size-wage effect, concluding that none of them can explain it all, and that part of the employer size-wage effect does seem to be the result of an upward-sloping supply curve of labor to the individual employer. However, once one has controlled for other relevant factors, the elasticity of wages with respect to employment is often low, in the region of 0.04, implying that the elasticity in the labor supply curve to the employer is high—about 25. But, these OLS estimates are likely to be biased downwards because shifts in the supply of labor to the employer will tend to induce a negative correlation between wages and employment. Reverse regressions in which employment is regressed on wages suggest a much lower wage elasticity of the labor supply curve—often in the range of 1.5–3.5. Finding a suitable instrumental variable is the obvious way to try to sharpen up these estimates but that is not an easy task as the instrument needs to be firm specific. The few studies that do take this approach suggest that labor supply to individual firms is relatively inelastic.

The second half of chapter 4 takes a different approach to estimating the labor supply elasticity, based more explicitly on a dynamic model of monopsony. As, in steady state, employment, N, is equal to the recruitment rate, R, divided by the separation rate, s ($N = R/s$), the wage elasticity of employment can be written as the wage elasticity of recruitment minus the wage elasticity of separations. There is a relatively large existing literature that estimates the sensitivity of separations to the wage but estimating the elasticity of recruits is more difficult. However, it is shown how in models of dynamic oligopsony there will be a tight relationship between the separation and recruitment elasticities. In the simplest model, they must be equal to each other and, in more complicated models, a weighted average must be equal. Using this approach the wage elasticity of the labor supply curve to an individual employer is estimated to be in the region of 0.75–1.5, that is, relatively low.

The second part of the book, chapters 5 through 8, is about how monopsony can help us towards a better understanding of the observed distribution of wages.

Chapter 5, *The Wage Policies of Employers*, discusses the incentives for an employer to pay different wages to identical workers, that is, to become a discriminating monopsonist, and the difficulties with doing so. For example, employers would like to be able to pay low wages to workers with low reservation wages but it may be very difficult to observe reservation wages. Employers are more likely to base wage discrimination on non-manipulable characteristics of the workers like job tenure and age. The chapter shows how there are incentives for employers to use seniority wage schedules in line with what is observed. However, it is argued that there are good theoretical reasons and empirical evidence to suggest that the ability to wage discriminate may be severely limited in practice.

Chapter 6, *Earnings and the Life Cycle*, examines the way in which earnings evolve over a working life. The human capital approach to this question emphasizes the way in which both general and specific human capital accumulate over a lifetime and empirical correlations of earnings with experience (or age) and job tenure are normally interpreted in the light of the human capital model. Section 6.1 starts by presenting evidence that there is something wrong with this way of interpreting earnings functions. For example, the earnings losses of displaced workers are increasing in the level of experience, something that should not happen if the returns to experience represent the returns to general human capital. Section 6.2 then shows that a substantial part of the observed cross-sectional returns to job tenure is the result of the bias caused by the fact that those in high-wage jobs are less likely to leave them.

Section 6.3 then introduces a job-shopping model as a way to explain correlations between wages, age, and job tenure even if the wage offer distribution does not depend on age and job tenure. For example, there may be a correlation of wages with age because older workers are more likely to have found the better-paying jobs (Burdett 1978). One can then explain why more experienced workers suffer larger wage losses after displacement as job loss causes a reduction in "search capital." And there may be a correlation of wages with job tenure as those who have been lucky enough to find a high-paying job are less likely to leave it. However, as section 6.3 makes clear, the correlations predicted by the search model are more complicated than this simple discussion suggests.

Section 6.4 then proposes a new framework for decomposing the life cycle profile of earnings into three components: the growth in earnings on the job, the costs of job loss, and the return to job mobility. It is shown

how the returns to job tenure as conventionally measured are a weighted average of the change in the costs of job loss and the returns to job mobility but that this mixes up two very different processes as job mobility is mostly voluntary on the part of workers, leading to wage gains, while job loss is involuntary, leading to wages losses.

The final two sections then present two applications of this approach: estimating the returns to job mobility and the decline in average earnings among older men. It is shown how the decline in earnings among older men is primarily the result of substantial rates and costs of job loss.

Chapter 7, *Gender Discrimination in Labor Markets*, discusses how monopsony can help us understand the gender pay gap. It is argued that the weaker attachment of women to the labor market can go some way towards explaining the gender pay gap even if there is no gender productivity gap. The reason is that women will find it harder to work their way into the better-paying jobs. Furthermore, evidence is presented that women are less motivated than men by money in choosing jobs so that the female labor market is likely to be more monopsonistic than the male. Section 7.4 presents evidence for this from responses to questions on the motivation for changing jobs and section 7.5 presents evidence that the returns to job mobility are lower for women than for men. Human capital explanations of the gender pay gap also emphasize the weaker attachment of women to the labor market as a source of the gender pay gap but argue that this results in lower productivity. Two pieces of evidence inconsistent with this view are presented: in section 7.7, it is shown how the returns to job tenure are, if anything, larger for women than for men while section 7.8 analyzes the impact of the 1970 UK Equal Pay Act that resulted in a large increase in female relative wages but had no impact on relative employment contrary to the predictions of the human capital model.

Chapter 8, *Employers and Wages*, considers the well-known empirical "puzzle" that employer characteristics are correlated with wages. In a competitive market these correlations should not exist (abstracting from compensating wage differentials that do not seem to be empirically that important) as the wage should be determined solely by the characteristics of workers. However, as shown in section 8.1, we would expect wages to vary with employer characteristics like size, productivity, and profitability if employers have some market power. The "puzzle" is simply what we would expect.

Sections 8.2 and 8.3 discuss the implications of monopsony for the estimation of compensating wage differentials. It is argued that the conventional approach to estimating the value of non-pecuniary aspects of jobs that is based on estimating earnings functions is flawed if employers have market power as there is no reason to believe that utility is

equalized across jobs in the labor market. In particular, there is good reason to think that utility will be lower in jobs with worse work conditions. An alternative approach to estimating the value of non-pecuniary benefits based on estimating separation functions is proposed and an application to estimating the disamenity associated with night work is presented. Section 8.4 discusses the likely effect of mandated benefits, intervention to regulate the non-wage conditions of work, for example, health and safety legislation, maximum hours legislation, etc. In a competitive labor market, it is often argued that such legislation is likely to be bad as it imposes an inefficient wage-benefit combination and may actually harm rather than help workers. However, it is shown that this is not necessarily the case if employers have some market power: regulation of non-wage aspects of jobs will make workers better off as long as the non-wage attribute is a "normal" good and the regulation is not too onerous.

Finally, section 8.5 applies the framework established earlier in the chapter to the analysis of hours of work. The determination of hours of work as considered in the labor supply literature is normally treated as a completely different subject from the analysis of other non-wage job attributes. But there is no good reason for this: given the level of earnings, higher hours increase output and reduce worker utility just like any other non-wage attribute. It is argued that, if employers have monopsony power, then workers are likely to be overworked in the sense of being forced to work more hours than they would like given their wage.

The third part of the book, chapters 9 through 11, is concerned with the "quantity" side of the labor market, the supply of and demand for labor, and the determinants of investment in human capital.

Chapter 9, *Unemployment Activity and Labor Supply*, considers the determinants of the level and structure of unemployment and inactivity from the perspective of the worker. The employment rate of individual workers is determined by the rate at which they get jobs when not in employment and lose them when in employment. The main way in which individuals can influence the rate at which they get jobs is by their choice of job search activity. Section 9.1 endogenizes the choice of search intensity both on and off the job. The relative effectiveness of these two types of job search is important and a new test is proposed based on the fact that the reservation wage should depend positively (negatively) on the productivity of workers as off-the-job search is more (less) effective than on-the-job search. This empirical evidence strongly suggests that off-the-job search is more effective. Section 9.2 then discusses the distinction between unemployment and inactivity as defined in labor market statistics. Competitive models of the labor market do not have a meaningful distinction between these two labor market states but because the unemployed are defined as those with job

search intensity above a critical level, the framework of this chapter makes the distinction easy to understand. An application to the discouraged worker effect suggests that, when aggregate labor market conditions worsen, job search intensity falls resulting in a rise in measured inactivity rates.

Section 9.3 considers the job search intensity of the employed. Monopsony has a strong prediction, that job search activity should be declining in the wage as there are then fewer opportunities to find a better job. The empirical evidence reported is strongly in support of this prediction. Section 9.4 then considers the determinants of the rate at which workers will quit jobs for non-employment. Consistent with the empirical evidence, the model predicts that quit rates will be declining in the wage.

Sections 9.6 and 9.7 are concerned with conceptual issues about the nature of unemployment in labor markets where employers have market power. In the simplest models of monopsony, unemployment appears "voluntary" in the sense that all employers would like to hire more workers at the going wage. This seems hard to reconcile with the observation that jobs often seem to be hard to find and the feeling that many economists have that unemployment is "involuntary." However, as sections 9.6 and 9.7 show, it is a simple matter to reconcile models of monopsony with models of involuntary unemployment (represented by efficiency wage models).

Chapter 10, *Vacancies and Labor Demand*, considers the determinants of the level of employment from the perspective of employers. Sections 10.1 and 10.2 are concerned with the interpretation of vacancy statistics. It is argued that, to have a meaningful model of vacancies, one has to have a model in which the creation of jobs requires some ex ante investment and in which the supply of labor to the firm is stochastic. With these features, a model of the labor market in which employers have considerable market power is quite consistent with the observation that vacancy rates are low, and vacancies are typically of short duration and have relatively small numbers of applicants. Empirical evidence supports the conclusion that those firms that pay higher wages have fewer difficulties in filling vacancies.

Sections 10.3 and 10.4 are concerned with the technology by which workers and employers are matched. A crucial issue turns out to be whether large employers have an intrinsic advantage over small firms in recruiting workers, because this is important in determining the wage elasticity in the supply of labor to the firm. However, it is shown that large employers are not more likely than small firms to use recruitment methods in which they might be thought to have an advantage, like social contacts.

Finally, section 10.6 contains a brief discussion of the determination of lay offs, arguing that there are good reasons to think that they will occur while there is still some surplus in the relationship remaining for workers.

Chapter 11, *Human Capital and Training*, considers the incentives for the acquisition of human capital in monopsonistic labor markets. Section 11.1 considers the incentives for workers to engage in the acquisition of education before they enter the labor market. Because part of the returns to any such education is likely to accrue to future employers of the worker, there is a prima facie case for believing there will be underinvestment in human capital. However, there is some reason to believe that the labor market for more educated workers may be less monopsonistic in which case it may be that this conclusion is misleading. Section 11.2 then considers the provision of employer-provided general training. A key prediction of the monopsony model which contrasts very strongly with that of the competitive model is that employers will be prepared to pay for some investments in general training because they can expect to get some returns from it. However, because future potential employers of a worker might also expect to get a share of the returns from any investment in human capital, one would expect to see underinvestment. Section 11.3 then considers firm-specific training. A striking conclusion is that workers may capture a higher share of the returns to firm-specific investments than of general investments if employers have market power. Section 11.4 concludes with a discussion of the empirical evidence on training.

The final part of the book, chapters 12 and 13, considers the impact of institutions that interfere with the ability of employers to set wages and draws some conclusions.

Chapter 12, *Minimum Wages and Trade Unions*, is concerned with the impact of these wage-setting institutions on wages and employment. Although these institutions are often seen as essentially similar (they both raise wages above the market-clearing level), their effects in a monopsonistic labor market are likely to be rather different. For example, minimum wages have a direct impact on the lowest wages in a given labor market so are likely to "push" the wage distribution from below, while trade unions are likely to set the highest wages in a given market so will "pull" the wage distribution from above. Section 12.1 discusses the impact of the minimum wage on the wage distribution. Empirical evidence is presented that spillover effects from the minimum wage onto the US wage distribution are substantial. Section 12.2 then argues that much of the evolution of wage inequality in the bottom half of the US wage distribution from 1980 to 2000 can be explained by variation in the minimum wage. Section 12.3 then discusses the controversial issue of the impact of the minimum wage on employment. While a minimum wage does not necessarily cost jobs in an oligopsonistic labor market, it is shown that

the simple result from the model of a single monopsonist, that a suitably chosen minimum wage must raise employment, does not carry over to a labor market in which one models interactions between firms and heterogeneity among them. An open-minded empirical approach is appropriate for investigating the impact of minimum wages on employment.

Section 12.4 discusses how models of trade unions need to be modified to recognize the fact that employers have some market power. It also discusses the argument that "corporatist" systems of wage bargaining can do something to alleviate the problems caused by a "free market" system of wage determination. Section 12.5 discusses the impact of trade unions on wages. It focuses on the impact of unions on non-union wages, arguing that in a labor market where employers have some power over wages, the impact of unions on non-union wages is likely to depend on whether an on- or off-the-job search is more effective. The evidence presented in chapter 9 suggests that an off-the-job search is more effective in which case unions would be expected to raise non-union wages. Empirical evidence for this is presented and it is argued that the correlations cannot be explained by the "threat" effect.

Chapter 13, *Monopsony and the Big Picture*, offers some conclusions. Section 13.1 reviews the sources of monopsony power and the evidence that employers have it. Section 13.2 argues that recognizing the existence of monopsony power in the labor market does not mean supplanting all existing competitive analysis: in many cases, it simply adds to it. One might wonder about how important monopsony is in understanding the "big" issues of the day. Section 13.3 addresses this argument by arguing that a view that the labor market is monopsonistic is necessary for an adequate understanding of changes in the bottom half of the US labor market since 1980. Section 13.4 then discusses what monopsony has to say about the design of labor market policy. The main substantive conclusion is that labor economists should be more open-minded about the likely impact of labor market interventions: empirical evidence is more powerful than theory. Too often (e.g., in discussions of European unemployment), labor economists simply assume (often unthinkingly) that the alternative to a regulated labor market is a labor market that is well approximated by the perfectly competitive model.

In the book as a whole, virtually all of the main topics of labor economics are covered although not necessarily in a familiar order. Table 1.2 presents a simple key to where some topics may be found in this book.

TABLE 1.2
Topics in Labor Market Analysis

Traditional Subject	*Location in this Book*
Labor supply (hours)	Chapter 8
Labor supply (participation)	Chapter 9
Labor demand	Chapter 10
Compensating wage differentials	Chapter 8
Employers and wages	Chapter 8
Gender discrimination	Chapter 7
Earnings functions	Chapter 6
Employment contracts	Chapter 5
Efficiency wages	Chapter 9
Rent sharing	Chapter 8
Employer-size wage effect	Chapter 4
Human capital	Chapter 11
Minimum wages	Chapter 12
Trade unions	Chapter 12