



Cornell University  
ILR School

**ILR Review**

---

Volume 58 | Number 4

Article 86

---

July 2005

# Wage Dispersion: Why Are Similar Workers Paid Differently?

Dale T. Mortensen

Follow this and additional works at: <http://digitalcommons.ilr.cornell.edu/ilrreview>

Thank you for downloading an article from DigitalCommons@ILR.

[Support this valuable resource today!](#)

---

---

## Wage Dispersion: Why Are Similar Workers Paid Differently?

*Veblenian Economics*. One argument for “Veblenian” is that it would recognize the founding father of the tradition in the same way that “Keynesian” and “Marxian” do. The term would also have the advantage of suggesting an overall rubric for the field, resting on three emphases: *evolution*, *culture*, and *instrumental value theory*. And such a name might dispel the air of mustiness that has sometimes clung to discussions of “old” institutional economics.

Kaufman, whose contribution is one of the best in the book, does address the question of definition. When we “step back and examine the corpus of institutional economics writ large,” he writes, we must ask, “What defines the common denominator that unites [these works] as institutional?” (pp. 14, 24). But his answer and conclusion are wanting, I believe: “institutional economists in recent years have succeeded in formalizing and developing a core theoretical model, built around the concept of transaction cost . . . an agenda of heterodox-theory development built around the transaction concept” (p. 35). While this quasi-definition can certainly be defended—it is close to John Commons’s conceptualization of the field—I believe it lacks the holistic scope and interdisciplinary connections afforded by the concept of culture that is a core concept of Veblenian Economics.

Overall, this book is a welcome, necessary addition to labor economics literature. The editors succeed in “demonstrate[ing] the continuing vibrancy and relevance of the institutionalist approach to labor economics.” The book also makes a strong case that the neoclassical framework misrepresents and obfuscates key aspects of challenges facing labor today: “One clear message of these chapters is a rejection of neoclassical labor theory as a useful or appropriate model” (pp. 9, 317).

In the final analysis, however, the extent to which heterodox labor economics breaks into the mainstream and becomes standard textbook fare will depend only secondarily on the validity or usefulness of the theoretical framework presented in the book under review. The economists represented in this collection have done their job: they have made a solid argument on behalf of a rejuvenated Veblenian Economics. For what happens next, look to the insights provided by the field of the sociology of knowledge; in particular, look to the interplay of power elites in economics (Kaufman, p. 34). As Wesley C. Mitchell aptly wrote, “That economists still cling to their traditional analysis is to Veblen merely the latest illustration of the cultural lag theory—a lag readily accounted for by

the institutional approach” (*What Veblen Taught* [Augustus M. Kelley, 1964], p. xlviii).

Richard L. Brinkman

Professor Emeritus  
Economics  
Portland State University

*Wage Dispersion: Why Are Similar Workers Paid Differently?* By Dale T. Mortensen. Cambridge: MIT Press, 2004. 160 pp. ISBN 0-262-13433-0, \$30.00 (cloth).

This monograph develops a search theory of wage dispersion, which is the term for unequal compensation of workers who have identical productive attributes. The theory is based on the model of equilibrium search developed by Kenneth Burdett and Dale Mortensen (“Wage Differentials, Employer Size, and Unemployment,” *International Economic Review*, Vol. 39, No. 2, 1998). This model is a seminal contribution to labor market theory and has led to numerous theoretical as well as empirical developments. The monograph provides an overview of developments stemming from the model as well as an assessment of its progress in explaining elements of the distribution of earnings.

The monograph began as a record of the Zeuthen Lectures presented by the author, Dale Mortensen, in November 2000 at the University of Copenhagen. In addition to theoretical implications of equilibrium search, the monograph incorporates empirical results derived from extensive Danish matched data on firm and worker wage rates as well as results using U.S. and French data.

Mortensen begins in Chapter 1 by reviewing the evidence on wage dispersion. Large average wage differences related to firm size and industry have been extensively studied in the literature. Mortensen analyzes these results to identify elements of wage dispersion that do not arise from worker differences. He then discusses the ability of previous theories of equilibrium search (without on-the-job search) and bilateral bargaining to explain the presence of wage dispersion.

In Chapter 2, Mortensen systematically presents the equilibrium search model developed by Burdett and himself. In this model, workers can search for jobs both when they are unemployed and while they are employed. Workers quit a job whenever they are offered a higher

wage rate at another job. Employers contact a limited number of unemployed and employed workers and offer (post) a wage that does not depend on the worker's current status or wage. The outcome of the wage posting game cannot be a uniform wage across all firms, because if such a pattern prevailed, a firm could offer a slightly higher wage, gaining a lower vacancy rate by breaking ties with the other firms. Greater offer acceptance and retention rates compensate for higher wages paid, so all firms generate the same profits despite paying unequal wages. As a result, equilibrium is characterized by wage dispersion for identical workers.

Unfortunately, the distribution of wage rates generated by this basic model differs substantially from observed distributions of wage rates. Specifically, the model generates a single-tailed distribution with a monotonically increasing density of wage rates, whereas empirical distributions are roughly characterized by a two-tailed lognormal distribution. In Chapter 3, Mortensen reviews evidence on the distribution of wages and wage offers derived from Danish wage data by B. J. Christensen, R. Lentz, D. T. Mortensen, G. R. Neumann, and A. Werwatz ("On the Job Search and the Wage Distribution," Northwestern University Working Paper, 2001). In recognition of the inconsistency in the wage density function predicted by the basic Burdett-Mortensen model, Mortensen considers exogenous productive heterogeneity for firms together with increasing costs of recruitment. Under those assumptions, more productive firms will offer higher wages. With exogenous productive heterogeneity, wage and wage offer density curves exhibit the general two-tailed unimodal shape of observed distributions. Mortensen also shows that the productive heterogeneity can be generated endogenously.

The Burdett-Mortensen model carries a number of implications for worker transitions among labor market states and between jobs. In Chapter 4, after showing that the lower wages observed in the Danish data set are inconsistent with the Burdett-Mortensen model with firm productive heterogeneity, the author extends that model. Specifically, to elaborate the search behavior of workers in seeking better-paying jobs, he considers bilateral Nash bargaining as an alternative to monopsonistic wage posting. With Nash bilateral bargaining, the wage rate at a new job will depend on a worker's current wage, making it possible to infer the distribution of workers among firms and the distribution of firms by productivity.

An important element of the distribution of earnings is the wage-tenure relation. The human capital literature derives this relation from worker investments in on-the-job training, but the possibility of worker quits and the effects of wages on effort can also influence it. In contrast, the wage stays the same as long as a worker remains at a firm in the Burdett-Mortensen model. In Chapter 5, Mortensen considers extensions to explain wage-tenure relations. One possibility is that a firm makes counter-offers when an employee is offered a better wage. Wages could then differ within a firm. However, the possibility of counter-offers generates incentives for workers to seek outside offers. An alternative related to two-part wage structures specifies a contract in which the worker is paid a low wage for a probationary period and is then paid the value of the worker's marginal product at the firm (Margaret Stevens, "Wage-Tenure Contracts in a Frictional Labour Market: Firms' Strategies for Recruitment and Retention," *Review of Economic Studies*, Vol. 71, No. 2, 2004). Mortensen also considers conditions derived by Burdett and Melvyn Coles ("Equilibrium Wage-Tenure Contracts," *Econometrica*, Vol. 71, No. 5, 2003) for the optimal wage tenure contract, in which the wage rises along a set path toward a wage limit.

In the Burdett-Mortensen model, the labor market allocates more workers to firms that have greater productivity. More productive firms are able to hire workers away from less productive firms, thereby moving the economy toward efficiency by increasing aggregate production. Search frictions prevent the elimination of the least productive and lowest-paying firms.

Mortensen's book serves as a status report on the progress of the Burdett-Mortensen model in explaining major labor market phenomena. The author provides a frank assessment of the model by comparing the predictions with empirical results and analyzing inconsistencies. The monograph is closely reasoned and sometimes technical but should be accessible to readers familiar with journal results on job search theory.

Although the Burdett-Mortensen model can be extended to explain many labor market phenomena, current versions do not incorporate heterogeneous labor. The model relies on *ex ante* homogeneous labor because this assumption simplifies the relations among the distributions of wage offers, reservation wages, and accepted wages, making it possible to derive analytic results. This assumption rules out hu-

man capital investments and assignment of workers to jobs as in the Roy model, in which worker choice of occupation on the basis of income maximization generates self-selection phenomena (A.D. Roy, "Some Thoughts on the Distribution of Earnings," *Oxford Economic Papers*, Vol. 3, 1951). Mortensen partially bases the assumption of worker homogeneity on Danish data showing that one group of workers (managers) have a greater variance of wages than all workers taken together. He argues that if the Roy model were valid, each occupational group would have less dispersion than the full sample (pp. 50–52). However, Mortensen only considers a special limiting case of the Roy model in which there is perfect correlation in abilities among different occupations. In the general case, with less than perfect correlation in abilities, dispersion in the logarithm of wages can be greater in the highest-paying occupation than in the full sample. Also, worker heterogeneity in a general Roy model would yield substantial occupational overlap in wages, as shown in the Danish data.

Human capital investments, stochastic processes, dual labor markets, and assignment provide explanations for distributional phenomena. Equilibrium search models deserve serious consideration along with these current theories. Random components of wages for identical workers, a major contributor to earnings inequality, are better explained by the Burdett-Mortensen equilibrium search model than by these other models. It would be desirable to incorporate heterogeneous labor into the model in order to investigate how search displaces or modifies existing theories of income distribution. Nevertheless, this monograph stands on its own as a significant contribution to the theory of inequality, wage dispersion, and the distribution of earnings.

Michael Sattinger

Professor of Economics  
University at Albany,  
State University of New York

*Markets and Diversity.* By Sherwin Rosen. Cambridge, Mass.: Harvard University Press, 2004. 359 pp. ISBN 0-674-01075-2, \$59.95 (cloth).

Sherwin Rosen was one of the preeminent labor theorists of his generation. At the time of his death in March 2001, he was the President of

the Society of Labor Economists and President-Elect of the American Economic Association. For this volume, he had already selected, from well over 100 articles he had published, 12 papers that he felt represented his best works on topics related to heterogeneous labor markets, and he had written a draft of the introduction. The latter, which was also to be his Presidential address to the American Economic Association, was checked for accuracy (citations and the like) after his death by his long-term colleague and sometime coauthor, Ed Lazear. Labor economists throughout the world owe a great debt of gratitude to Harvard University Press and Lazear for seeing the volume through to completion.

The papers in this volume make clear how extraordinary the contributions to labor market theory were that Rosen made during his career. They also illustrate that Rosen was a theorist who was interested both in explaining empirical phenomena and in helping empirical economists to understand the meaning of empirical relationships that they had estimated.<sup>1</sup>

For example, the first paper in *Markets and Diversity* is Rosen's 1974 *Journal of Political Economy* article, "Hedonic Prices and Implicit Markets." Prior to this paper, economists seeking to estimate whether compensating wage differentials existed for an unfavorable job characteristic (risk of injury, say) would regress an individual's wage rate on his or her personal characteristics and the unfavorable job characteristic and then interpret a positive coefficient for the unfavorable job characteristic as indicating the presence of compensating differentials. Through careful modeling of a market in which workers had heterogeneous preferences and firms had heterogeneous technologies of production, Rosen demonstrated that the relationship that was being estimated was the equilibrium market relationship between wages and the unfavorable job characteristic and that this conveyed little information about either the preferences of workers to avoid unfavorable job characteristics or the willingness of employers

<sup>1</sup>Many of the wonderful papers of Rosen's that are not included in this volume are equally important ones to labor economists and further illustrate his interest in connecting labor market theory and empirical analysis. One famous early paper that quickly comes to mind is his work with Ned Nadiri on interrelated factor demand that was published in the September 1969 *American Economic Review*.