

VOX

Research-based policy analysis and commentary from leading economists

The Diamond, Mortensen and Pissarides Nobel: Search and market frictions

Barbara Petrongolo

15 October 2010

The 2010 Nobel Prize in Economics has been awarded to Peter Diamond, Dale Mortensen, and Christopher Pissarides "for their analysis of markets with search frictions". This column explains how their research relates to fundamental economic issues that are both at the core of the wellbeing of society at large and now near the top of many policymakers' agendas.

Various forms of imperfections or "frictions" characterise most real-world transactions. The coexistence of buyers and sellers in a given market, who can in principle agree on a price, may not be sufficient for immediate trade, as both buyers and sellers may need to invest in a costly search process in order to locate matching partners, and eventually need to agree to enter a transaction rather than wait for better trading opportunities. These frictions derive from several sources, including imperfect information about trading partners, heterogeneous demand and supply, slow mobility, coordination failures and other similar factors. The importance these factors in driving market outcomes is a key issue for understanding such diverse markets as those for a job, a house, and a spouse.

The 2010 Nobel Prize in Economics has been awarded to Peter Diamond, Dale Mortensen, and Christopher Pissarides "for their analysis of markets with search frictions". Search theory provides a versatile framework for understanding market outcomes in a variety of situations in which trade is complex. One key lesson is that, with search frictions, markets fail to clear at all points in time – some buyers and/or sellers remain unmatched. Another important implication is that, when access to information is costly and trade opportunities are infrequent, not all traders may trade at the same market price, leading to dispersion in equilibrium prices. Finally, decentralised equilibrium may be inefficient in a search market, if individuals engage in "too much" or "too little" search, and in this case policy intervention may improve on what markets alone would be able to achieve.

Although economists have long been aware of the importance of frictions (see for example Hicks 1932 p.45), these were not brought into formal models until the work of the three Nobel laureates and a few other researchers in the 1970s.

Since then, they have generated an incredibly large and ever growing literature, addressing the role of frictions in many applied scenarios. In the labour market, frictions are used to explain the existence of unemployment and wage inequality. In business cycle models, they are used to explain the amplification of the response of employment to aggregate shocks. In coordination-failures models, they are used to justify the dependence of the strategy of one agent on that of another. In monetary models, they are used to explain the existence of money. In the housing market, they are used to explain residential choices and housing prices fluctuations. In the marriage market, they help explain dating, marriage, fertility, and divorce behaviour.

By far the most common and influential application of search theory has been to the labour market, and it has led to the development of what is now recognised as the leading model of equilibrium unemployment. The key idea is that trade in the labour market is uncoordinated, time-consuming, and costly for both firms and workers. Workers need to spend time and resources to locate suitable job opportunities, and firms need to spend time and resources to locate and screen job applicants. And while the idea that trade in the labour market is complex is widely accepted these days, when search models of unemployment were first developed they implied a clear break with the perfectly competitive view of equilibrium in the labour market, which hinges on frictionless trade.

In a perfectly competitive labour market firms and workers meet costlessly and trade at a single wage, and any excess labour supply would be absorbed instantaneously through a fall in the equilibrium wage. Most economists would argue that the functioning of the labour market is far more complex than this. In particular, the competitive model fails to explain stylised facts like persistent unemployment, the coexistence of unemployed workers and job vacancies within certain markets, wage differentials among otherwise similar workers, and other related phenomena. By introducing realistic frictions, the search approach has developed a unified and elegant framework that allows us to explain key labour market stylised facts and ultimately think about unemployment and wages in a new light.

A direct consequence of frictions is that, as markets typically do not clear, unemployed workers and job vacancies may coexist, even within very narrowly defined labour market segments. In particular, unemployment persists in equilibrium because before all unemployed workers find new jobs, some of the existing jobs break up, providing a new inflow into unemployment. This would predict that, after an adverse economic shock, it takes time to bring back unemployment to the pre-shock level, and thus recovery after a recession may be slow, even once new job opportunities start to arise.

An important implication of job search frictions is that existing jobs produce

“rents”. This means that if an employer and a worker are separated for reasons outside their control, at least one (and often both) of them is worse off. Rents give employers some degree of market power over their employees, meaning that, unlike in the perfectly competitive model, (small) wage cuts would not induce all employees to quit their jobs, simply because better paid jobs elsewhere in the economy are hard to find. As a corollary of this, workers of similar quality may end up being paid different wages if employed in different firms.

Search models have also been used to understand how aggregate shocks are transmitted to the labour market via the response of job creation and job destruction, and drive cyclical fluctuations in unemployment. Job search frictions would predict that the rise in unemployment after an adverse shock will be faster than fall in unemployment following a positive shock. The reason for this asymmetry is that while an adverse shock results in an immediate increase in job separations and thus a jump in unemployment, a positive shock only leads to a gradual fall in unemployment because the hiring process is time-consuming.

The core theoretical work on labour markets with search frictions has been accompanied by a number of contributions focusing on policy analysis and empirical evidence. It has become common practice in the literature to adopt a search framework to analyse the impact of unemployment compensation, hiring and firing costs, minimum wages, and taxes on unemployment and the wage distribution. Empirical work has addressed the implications of search models for individual labour market transitions, aggregate job and worker flows, unemployment dynamics, and the wage distribution.

The work by Peter Diamond, Dale Mortensen and Christopher Pissarides has deeply influenced the view of modern labour markets of both academics and policymakers. As many countries are facing consequences of the most severe recession of the postwar era, this year’s Nobel Prize is an award to research on fundamental economic issues that are both at the core of the wellbeing of society at large and very high on the policy agenda of the moment.

References

Hicks, John (1932), *The Theory of Wages*, London: Macmillan.

This article may be reproduced with appropriate attribution. See Copyright (below).

Topics: [Frontiers of economic research](#), [Labour markets](#)

Tags:

Comments