Markets with Search Friction And the DMP Model

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Nobel Lecture...Dec 8, 2010

"It is important to understand the dependence of the marginal efficiency of a given stock of capital on changes in expectation, because it is chiefly this dependence which renders the marginal efficiency of capital subject to the somewhat violent fluctuations which are the explanation of the Trade Cycle."

Keynes (1936), The General Theory, Chapter 12.

Outline

- Introduction
- The Flows Approach
- Two sided Search Equilibrium
- The Bench Mark DMP Model
- The Great Recession

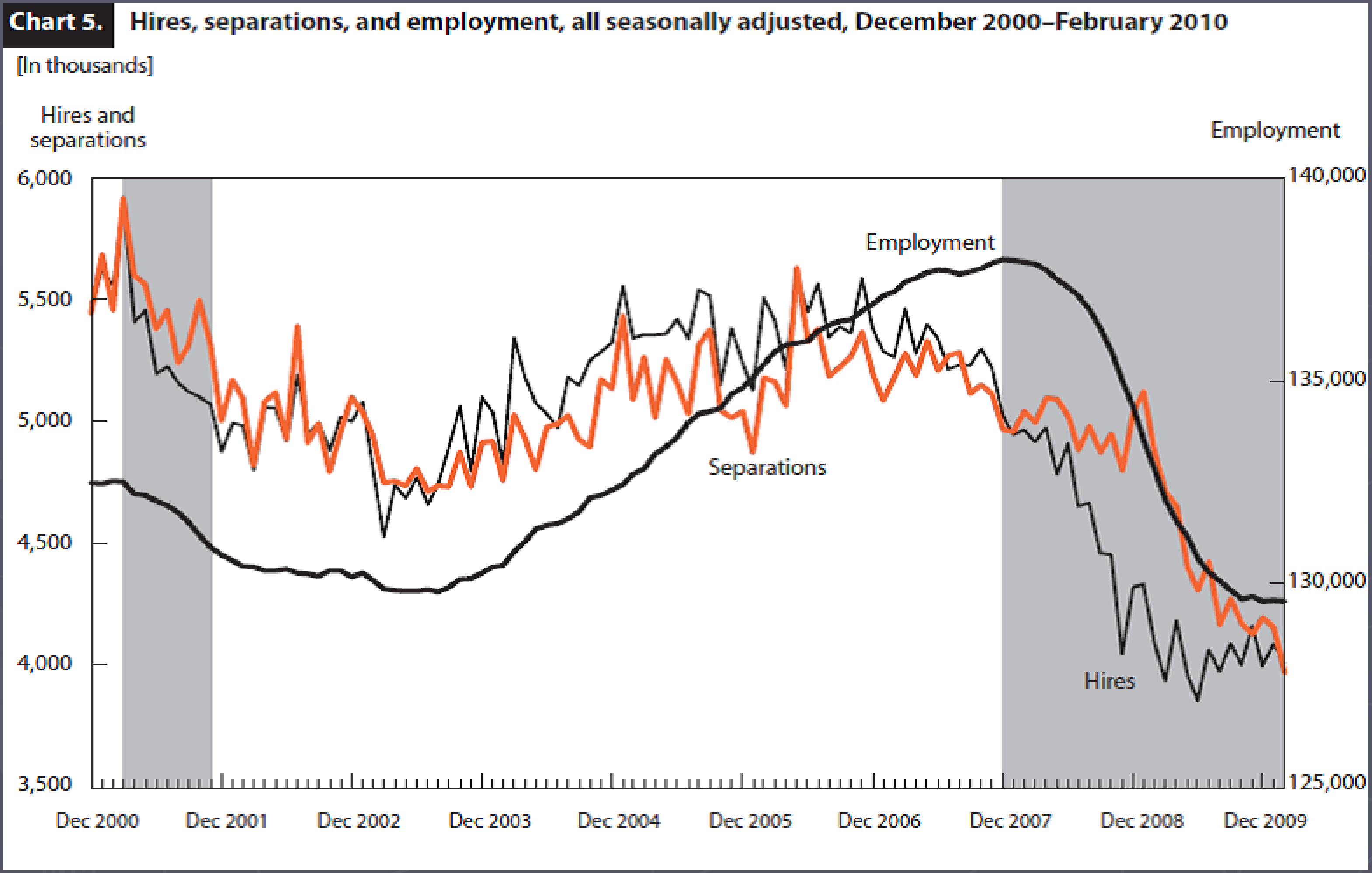
Introduction

- What are search frictions? What role do they play in the operations of markets.
- Examples: Buying our apartment and selling our house. Investment in time and effort are required now in return for future benefits.
- Lesson: An acceptable house, partner or job is one that offers an expected stream of benefits that has a value in excess of the option to search for an even better one.

The Flows Approach

- From the viewpoint of the classical "supply and demand" approach to markets, unemployment arises only when wages are "too high."
- But in fact, large flows of workers are finding (losing) jobs…in both 'good' and 'bad' times.
- Unemployment (employment) is a stock that tends toward a level that balances inflows and outflows.

Figure 1: Labor Market Flows



Source: JOLTS data, www.bls.gov

Toward Search Equilibrium

- Mortensen (1970), "A Theory of Wage and Employment Dynamics" in E.S. Phelps et.al., *Microeconomic Foundations of Employment and Inflation Theory*
- Diamond (1971), “A Model of Price Adjustment,” *Journal of Economic Theory*
- Mortensen (1978), "Specific Capital and Labor turnover," *The Bell Journal of Economics*
- Diamond and Maskin (1979), "An Equilibrium Analysis of Search and Breach of Contract I, *The Bell Journal*
- Pissarides (1979), “Job Matching with Employment Agencies and Random Search,” *Economic Journal*

The DMP Model

- Diamond (1982), "Wage Determination and Efficiency in Search Equilibrium," *Review of Economic Studies*
- Mortensen (1982), "The Matching Process as a Non-cooperative/bargaining Game," in J.J. Mccall, ed., *The Economics of Information and Uncertainty*
- Pissarides (1985). "Short-Run Equilibrium Dynamics of Unemployment, Vacancies and Real Wages," *American Economic Review*
- Mortensen and Pissarides (1994), "Job Creation and Job Destruction in the Theory of Unemployment," *Review of Economic Studies*

Figure 2: The Matching Function and the Beveridge Curve

FIGURE 6. MONTHLY U.S. MATCHING FUNCTION, 1951–2003

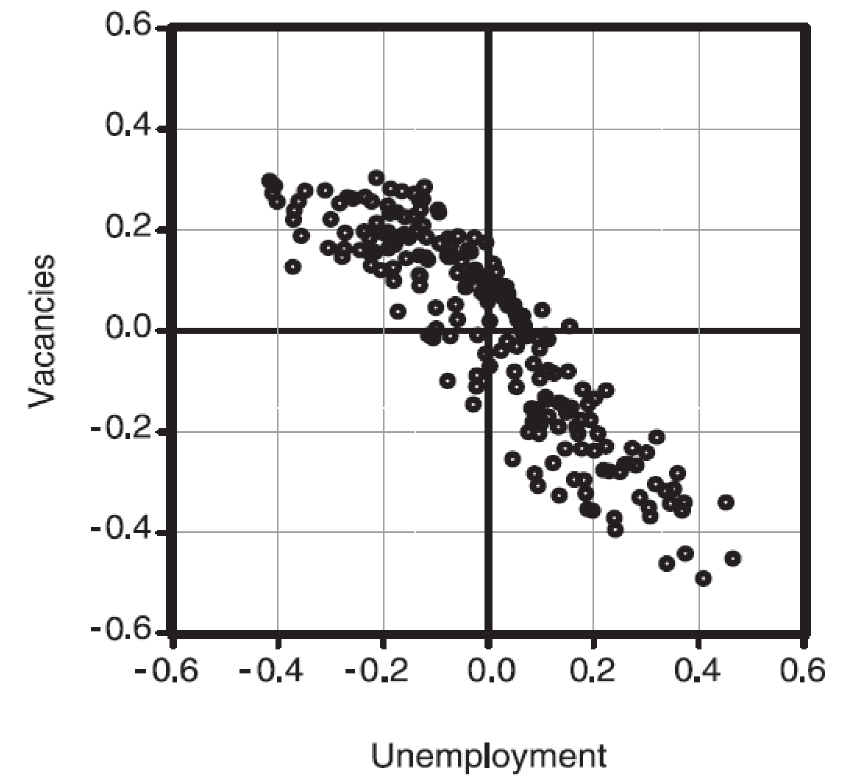


FIGURE 4. QUARTERLY U.S. BEVERIDGE CURVE, 1951–2003

Source: Shimer (2005).

Labor Market Equilibrium

- The ‘free entry’ condition: Jobs are created up to the point where the marginal vacancy has zero value. Implies that fewer vacancies are created per unemployed worker when the wages promised workers are higher.
- The bargaining outcome equation: Workers and employers share the surplus value of a match. Implies that wage demands are higher when the ratio of vacancies to unemployment is higher.
- As search equilibrium is a vacancy/unemployment and a wage promise pair that balances these two forces.

Figure 3: The BMP Model

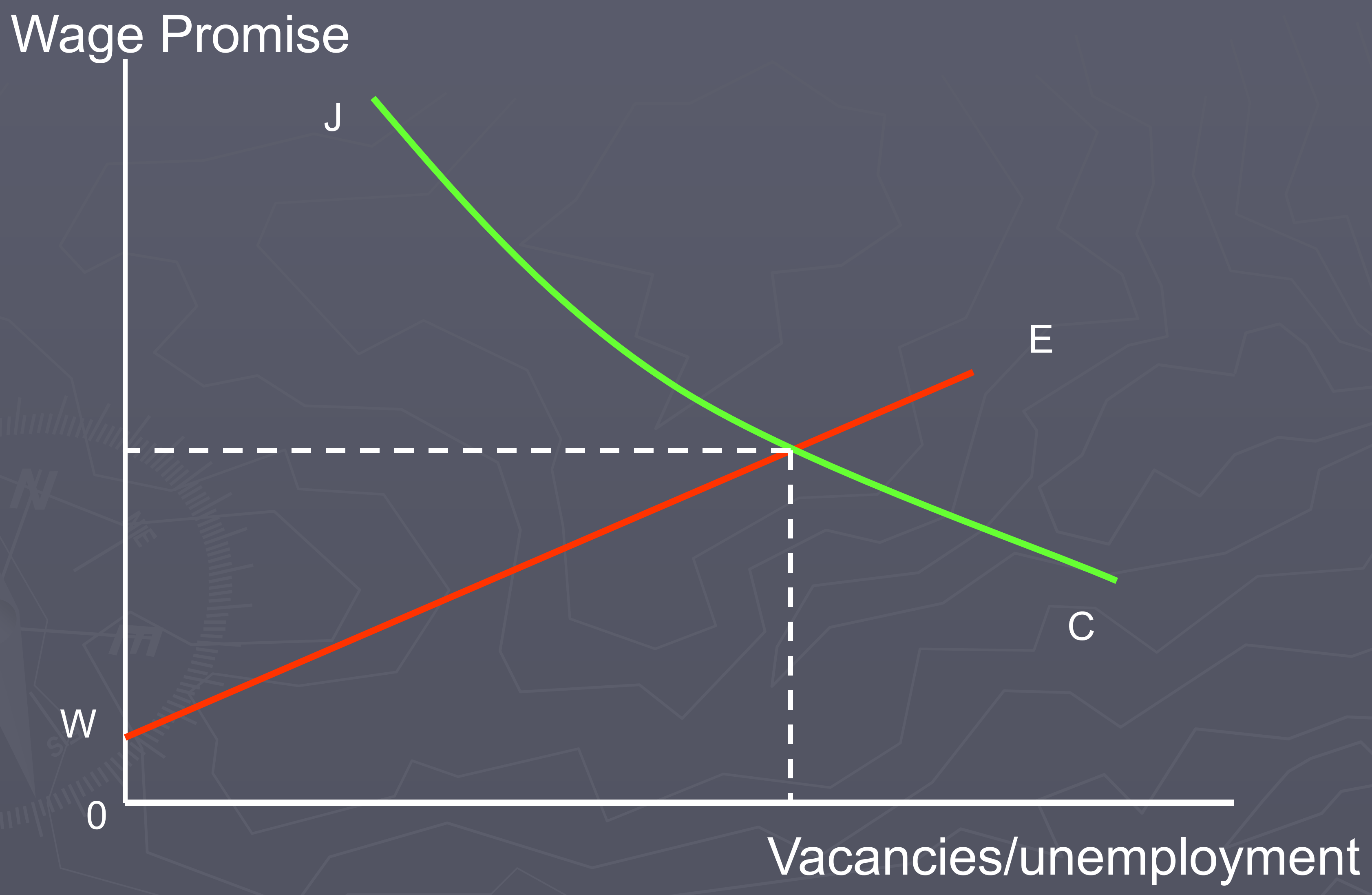


Figure 4: The Great Recession
A Negative Expectations Shock

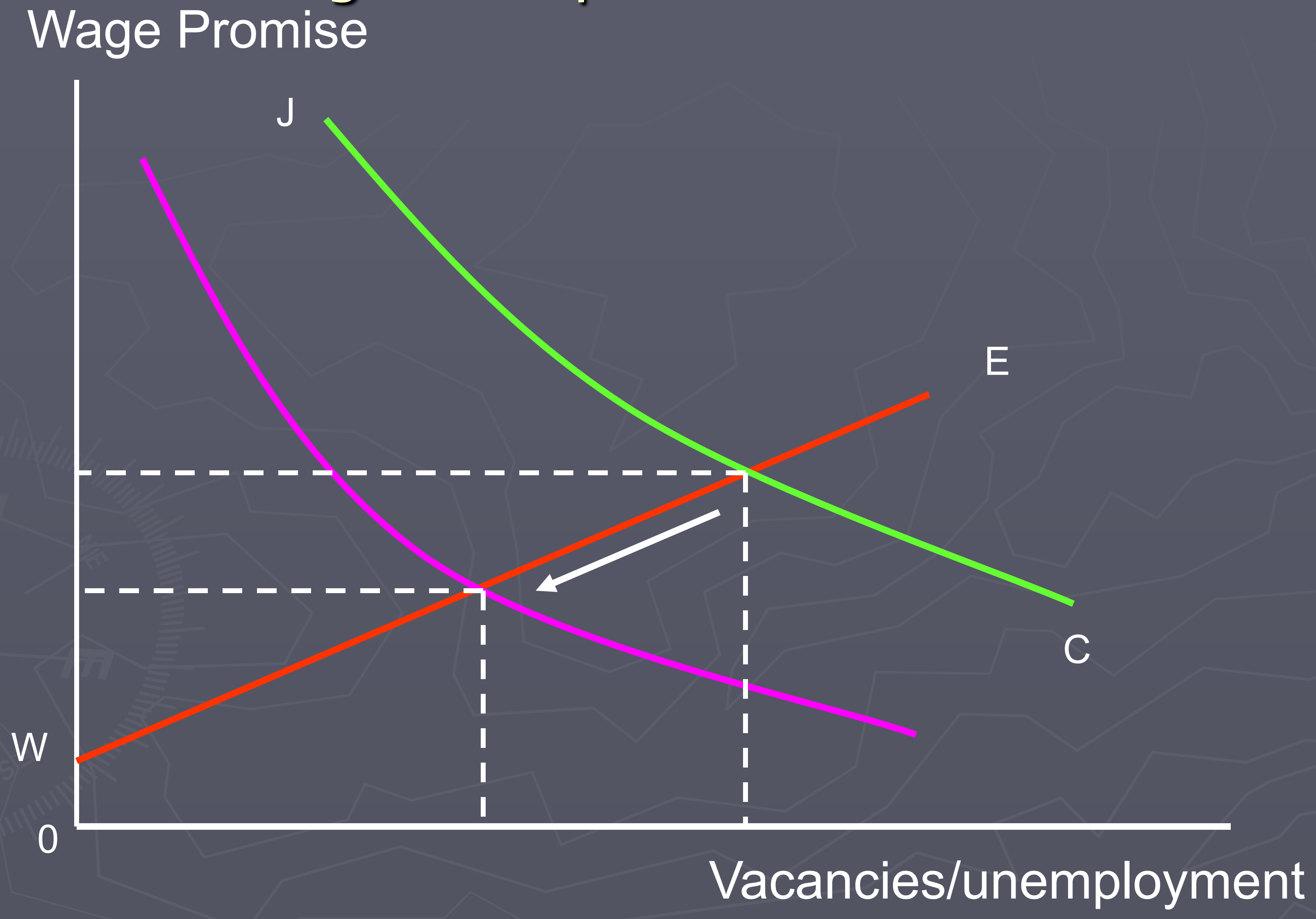
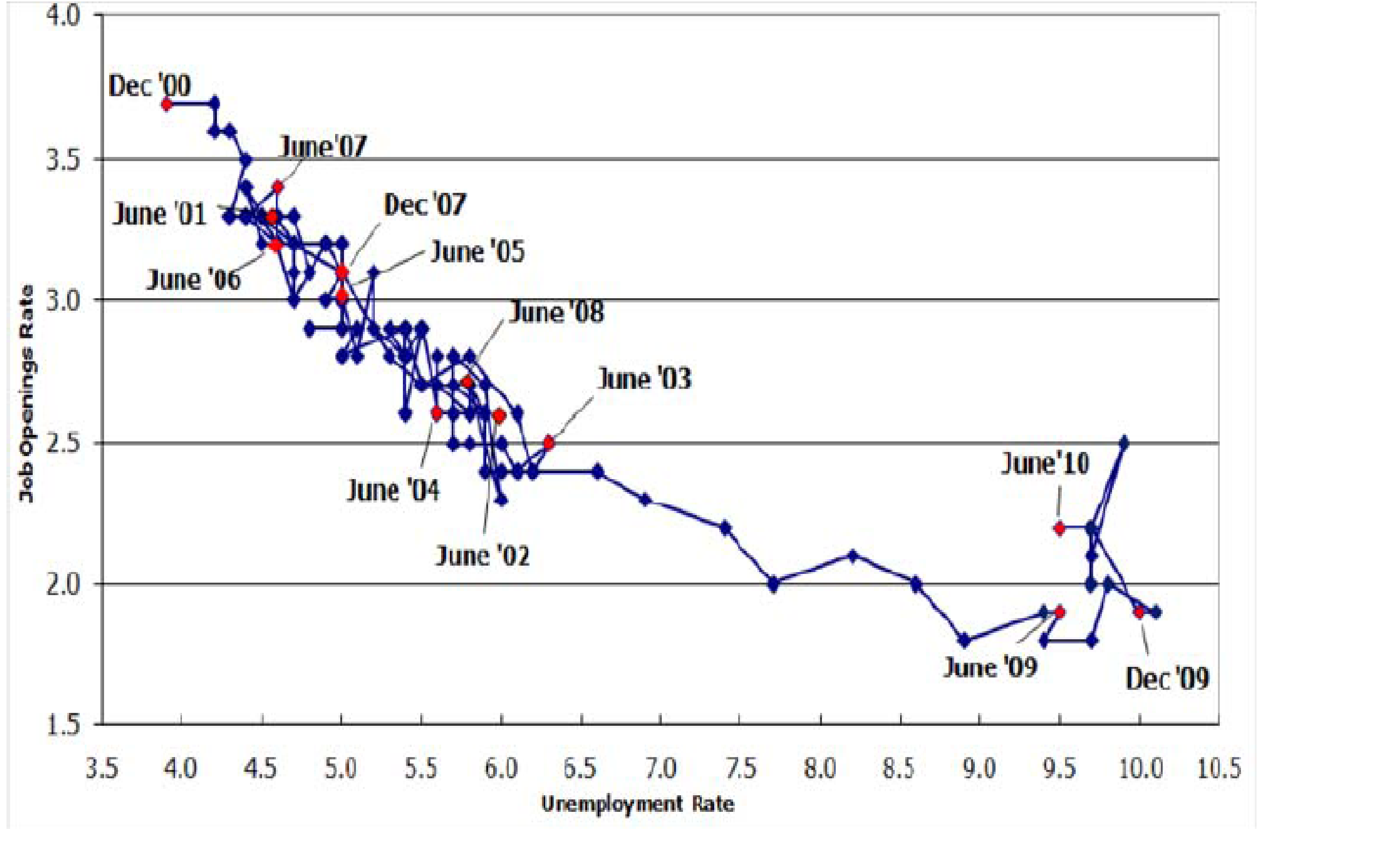


Figure 5: The Great Recession
US Beveridge Curve Dec 2000-June 2010

Source: US Bureau of Labor Statistics

Vacancy rate



Unemployment rate