Proposal: Applied Causality

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I am interested in finding the causal effect that probationary periods have on firms' hiring and firing practices of new workers. A probationary period is a common condition in employment contracts that is regulated by a country's job security legislation. In its most prevalent form, the employment contract specifies the length of the probationary period. Within this period, firing costs are non-existent or lower than those that apply to workers whose tenure exceeds the probationary period length. Consequently, probationary periods manipulate the firing cost schedules that employers face for every employee. Economic intuition suggests that firing costs introduce important distortions to labor markets. On one hand, allowing firms to fire without penalties allows them to make riskier hires, but can leave dismissed workers without severance in precarious situations. On the other hand, imposing prohibitive firing costs on firms can improve worker welfare by reducing the probability of dismissal, but can also leave fewer people with the opportunity of ever being employed. Given the potential economic implications of these distortions, it is crucially important to understand how probationary periods affect the labor market.

I plan to answer this question in the Brazilian context for two reasons. First, I have access to incredibly comprehensive labor market data from Brazil. RAIS is a matched employer-employee database covering the universe of the formal labor from 1995 to 2014. The panel contains variables such as hiring/separation date, hiring type, separation cause, tenure, wage, education, and occupation, among others. Although probationary period length is not observed, collective bargaining agreements stipulating such conditions are accessible through the Ministry of Labor. These conditions can be matched to firms in RAIS according to the industry-region covered by the collective bargaining agreement. Second, the institutional setting contains credible sources of identifying variation. Job security legislation in Brazil is such that the firing cost schedule has discontinuities in both levels and slope at the end of a probationary period. Moreover, reforms in 2001 exogenously varied the magnitude of these discontinuities. Hence, economic theory predicts that the distribution of layoffs by tenure will exhibit "bunching" at the end of the probationary period.

Exploiting the observed bunching caused by probationary periods, I intend to estimate the structural parameters of my model. In the model, firms learn about match quality over time through Bayesian updating. Firms then solve a dynamic optimization problem where their choice variable is whether to keep the current match (retain the worker) or draw a new match (fire the worker and hire another one). Considering the empirical setting in question, firms maximize the present discounted value of profits through match termination decisions facing a non-linear firing cost contract and uncertainty about match quality. As a result, bunching at the firing cost discontinuity captures firms' willingness to trade off match quality learned through signaling and uncertain match quality from the pool of workers. Most importantly, I intend to use approximate posterior inference to estimate the model, as well as posterior predictive checks to revise it.