Incomplete Information and the Timing to Adjust Labor: Evidence from the Lead-Lag Relationship between Temporary Help Employment and Permanent Employment

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Abstract

This paper studies how the information environment affects the timing of a firm's adjustment to labor. A firm only can observe overall demand shocks, but cannot distinguish long-lived shocks from transitory shocks contemporaneously. The precise information on long-lived shocks is revealed in a staggered way. Due to such incomplete information, the firm responds to a long-lived demand shock by first adjusting the level of less efficient but more flexible labor (i.e., temporary workers) while delaying the adjustment (or making only a partial adjustment) to the level of more efficient but less flexible labor (i.e., permanent workers) until the information regarding the nature of the shock is revealed. We apply this insight to the examination of a firm's information environment, defined by the volatilities of both transitory and long-lived shocks, to explain the length of the lag between the firm's adjustments to permanent and temporary employment. Intuitively, the greater the volatility of transitory shocks relative to that of long-lived shocks; the longer the delay in a firm's adjustment to permanent labor because it is more difficult for the firm to identify long-lived shocks from noisy transitory shocks.

Our empirical analysis adopts a filtering approach to distinguish long-lived demand shocks of business cycle frequencies from transitory demand shocks of high frequencies for each industry nationwide. However, because industry-level time series data on the use of temporary workers is not available, we exploit the cross-city variations in the lag between temporary and permanent employment growths as well as the cross-city variation in demand volatilities due to industry mix. We find that the volatility of transitory demand shocks has a positive effect on the lag, while that of long-lived demand shocks has a negative effect. This not only sheds light on how different information environment affects firms' timing to make costly labor adjustments, but also helps us understand an underlying mechanism behind the role of THS employment growth as a leading business cycle indicator.

Key words: incomplete information, demand volatility, adjustment cost, temporary help employment
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