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Discussion

Francesco Bianchi opened the discussion by asking whether the type of reference dependence in the model could be interpreted as an explanation for why firms might prefer to fire workers during recessions rather than renegotiate wages with everyone. He also noted that, during his prepared remarks, Giuseppe Moscarini suggested that an employee's reference point might depend on the wages received by other workers, rather than the wage he expects to receive.

Ran Spiegler explained that in the literature on reference dependence, the three usual candidates for the reference point of an individual employee are: (1) the wage he sees other workers receiving, (2) the wage he has previously received, or (3) the wage he expects to receive. The authors chose the last option, partly because they were inspired by recent research, and partly because of the Markovian equilibrium that option implies. He nevertheless speculated that the first option should not be difficult to implement. Together with the assumption that wage contracts are not all synchronized across time, so that at each date there are some employees whose wages cannot be renegotiated by the employer, a cross-sectional reference point has the potential to generate large effects. Such an approach would also suggest a role for unions, insofar as unions are helpful for coordinating wage cuts. In terms of the dynamics of unemployment, Spiegler went on to explain that adverse changes in productivity will generate inflows into the pool of unemployed workers. While the authors were unable to analytically characterize the invariant distribution of unemployment in the model, he indicated that a numerical characterization is both possible and would be interesting to check.

Paul Beaudry suggested that the effects of wage cuts on morale might

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depend on the performance of the firm. In his view, morale is more likely to be adversely affected if an employer tries to cut an employee's wages when the firm is performing well as opposed to when it is performing poorly. Spiegler argued that in reality, that situation would likely feature an agency problem: if firm performance is not easily observable, it may be difficult for the employer to convince the employee that the firm is not performing well, unless he reduces his own wage. If the employer is unwilling to do that, he may find it optimal simply to fire the worker. Beaudry replied that it is easy for employees to determine whether the firm is having difficulties, and even if not, the agency problem suggested by Spiegler should still be built into the model.

Robert Hall argued for an alternative response to Beaudry based on the assumption of "credible bargaining," as articulated in Hall and Milgrom (2008). On this view, once an employee-employer match is formed, a threat to walk away, destroying the surplus and permanently terminating the bargain, is not credible. Hall explained that the feedback from aggregate conditions to the wage is weakened if credible bargaining is employed, and suggested that Beaudry's example does not pose a problem because it relies on precisely this type of feedback. Beaudry replied the model of this paper features inefficient separations, which are not present in Hall and Milgrom (2008); the results of that paper may not directly apply.

Citing work such as Grossman and Hart (1986) and Hart and Moore (1990), Kfir Eliaz argued that substantial progress has been made since Barro's (1977) critique on the role of incomplete contracts and phenomena such as the "hold-up problem." In particular, he pointed out that inefficient separations can be present even with efficient bargaining if contracts are incomplete, and emphasized that such incompleteness is a crucial feature of their model. He also argued, based on evidence documented by Genesove and Mayer (2001), that reference points may only sluggishly adjust to new information. Reference points may therefore only be minimally affected by changes in aggregate economic conditions or firm performance, as suggested by Beaudry. Finally, he defended the assumption that a worker's reference point depends on his own wage expectations by pointing to experimental research by Abeler et al. (2011). Beaudry was not convinced that contract incompleteness was enough to explain his idea that reference points could depend on firm performance.

Jonathan Parker expressed the view that bilateral efficient bargaining is often overstated, especially since experimental research on simple games such as the "ultimatum game" robustly find evidence of inefficiencies. Varadarajan Chari argued that those studies actually raise problems with the notion of subgame perfection. He therefore highlighted a tension in using such research to support the authors' bargaining assumptions, because it also undercuts the plausibility of the equilibrium concept they employ.

Spiegler responded by arguing that the appropriateness of subgame perfection depends on the game. He explained that the consensus view regarding the apparent violations of subgame perfection presented by simple games such as the "ultimatum game" is that these violations are due to preferences, and not due to agents' inability to perform backward induction. He argued that their modeling choices were actually fairly conservative: workers respond to wage offers in a completely rational way, but they shirk if the offered wage is below their reference point. He also pointed out—partly in response to comments made by Hall and Moscarini during their prepared remarks—that shirking is possible along the equilibrium path, but it should only occur in the presence of wage cuts. In the model, the distribution $G(\gamma)$ is what controls the probability of shirking. If $\Pr(\gamma_t \leq b)$ is high according to this distribution, the model predicts that layoffs should occur rather than wage cuts (and shirking).

Finally, Moscarini asked whether inefficient separations matter because employers anticipate that they will occur with a high probability, and therefore may face reduced incentives to create jobs. Based on work by Shimer (2005, 2012), he argued that hiring is more important than firing for explaining business-cycle variations in employment, and therefore that inefficient separations should only matter through their effects on hiring incentives. Spiegler agreed that Moscarini's suggestion about expected future separations is an interesting one. He added that in order to generate an effect on hiring, it may be necessary to add the additional assumption that the marginal value of posting an additional vacancy is low from the employers' perspective.

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