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Job displacement risk and severance pay

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ABSTRACT

This paper is a quantitative, equilibrium study of the insurance role of severance pay when workers face displacement risk and markets are incomplete. A key feature of our model is that, in line with an established empirical literature, job displacement entails a persistent fall in earnings upon re-employment due to the loss of tenure. The model is solved numerically and calibrated to the US economy. In contrast to previous studies that have analyzed severance payments in the absence of persistent earning losses, we find that the welfare gains from the insurance against job displacement afforded by severance pay are sizable.

1. Introduction

Employment contracts often contain explicit severance-pay provisions.[1] Many countries also mandate minimum levels of severance pay and other forms of employment protection. Both privately contracted and legislated severance pay provisions are commonly increasing, approximately linear, functions of job tenure (see, e.g., OECD, 2013; Parsons, 2013). The existence of these measures is difficult to understand in the context of standard, complete-markets models in which workers maximize expected labor income and wages are perfectly flexible. As observed by Lazear (1990), employment protection measures have no useful role in such a setting. This has lead some authors (e.g., Pissarides, 2001) to conclude that the debate about employment protection has been mostly conducted within a framework that is not appropriate for a proper evaluation of its role.

There is robust evidence documenting both the failure of complete risk sharing[2] and the substantial costs associated with job loss.[3] For example, Couch and Placzek (2010) estimate earnings reductions for workers affected by mass layoffs of more than 30% in the post-displacement year and as much as 15% six years later. The extent and persistence of displacement losses has prompted calls (e.g., LaLonde, 2007) for the introduction of long-term insurance for displaced workers by means of earnings supplements upon re-employment. Yet, loss-based, earnings-replacement insurance is subject to moral hazard issues due to its

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[1] Parsons (2013) reports that 36% of US workers in firms with more than 100 employees and 16% in smaller businesses, were covered by severance-payment clauses over the period 1980–2001. For the UK, the 1990 *Workplace Industrial Relations Survey* reveals that 51% of union companies bargained over the size of (non-statutory) severance pay for non-manual workers and 42% for manual workers (see Millward, 1992).

[2] See, e.g., Attanasio and Davis (1996) and Hayashi et al. (1996).

[3] Examples include Jacobson et al. (1993), Farber (2005), Couch and Placzek (2010) and Davis and von Wachter (2011).

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conditionality on wages being lower in the new job. In fact, the lack of, even public, provision of earnings-replacement insurance suggests that these kinds of issues are even more relevant than in the case of unemployment insurance.

These considerations suggest that a candidate explanation for the existence of severance pay is as a means of (imperfectly) insuring displaced workers against labor market risk and, in particular, against the persistence of earnings losses upon re-employment.

The objective of this paper is to provide a quantitative, equilibrium framework to assess the role of severance pay as an insurance device. The crucial features of our analysis that distinguish it from existing contributions are: a detailed modeling of the sources of labor market risk and imperfect insurance. In particular, in addition to labor market search frictions, we allow workers' productivity and job duration to be functions of both age and on-the-job tenure. Namely, job displacement risk has two components: the—temporary—loss of earnings associated with transition through unemployment and the—persistent—loss of earnings upon re-employment due to the loss of tenure. To isolate the pure insurance role of severance pay, we assume, following Lazear (1990) and most of the matching literature, that wages are flexible (full bonding). Given the significance that life-cycle factors—namely, asset accumulation and the positive correlation between age and job-tenure—play for agents' ability to insure against job-loss, we cast our analysis in a life-cycle setting.

A calibrated version of our model implies the following results. First, the average welfare gains of realistic severance pay schemes are positive and quantitatively important, ranging between 0.5 and 1 percentage points. Second, a large fraction of these gains stem from the fact that severance pay provide insurance against the—persistent—loss of tenure associated with job displacement. In fact, in line with the findings in Alvarez and Veracierto (2001), severance pay would actually *reduce* average welfare in the absence of tenure effects on wages, as the insurance gains would be more than offset by the fall in precautionary savings and the equilibrium capital stock. Finally, the model can explain why severance pay is generally an increasing function of on-the-job tenure. Keeping constant the average severance transfer, the average welfare gains are between 15% and 20% higher if the transfer is (linearly) increasing in tenure. A tenure-independent transfer over-insures workers with low tenure.

The paper is related to a large literature that can be divided into two main strands. The first strand studies the role of employment protection measures in environments with risk-neutral agents. Its main result (Lazear, 1990) is that, if wage bargaining is efficient, employment protection is non-neutral only if it entails a *tax* component that is lost to the firm–worker pair. This "firing tax" is always welfare-reducing and has ambiguous, and model-specific, employment effects.[4] Conversely, severance pay—the pure transfer component of employment protection measures[5]—is neutral unless efficient wage bargaining is constrained. If downward-rigid wages in ongoing matches result in inefficient separations, severance pay reduces job destruction and increases job creation and efficiency as long as entry-wage flexibility allows workers to pre-pay for future transfers (Saint-Paul, 1995; Fella, 2000, 2012). Entry-wage rigidity constrains such pre-payment and implies that severance pay reduces job creation and, possibly, employment and efficiency (Garibaldi and Violante, 2005).

This paper is closer to the second, and more recent, strand of the literature that develops microfoundations for the (potential) relevance of legislated employment protection measures based on risk-averse workers and incomplete markets. Fella and Tyson (2013) build an incomplete-market version of Mortensen and Pissarides (1994) and use it to characterize the privately optimal size of severance pay and show that Lazear's (1990) neutrality result (approximately) holds despite asset market incompleteness. Alvarez and Veracierto (2001) were the first to study the welfare effects of severance payments in an incomplete market setting. Our findings are complementary to theirs. Differently from us, they assume that a unique wage applies to all jobs and, therefore, that job destruction is inefficiently high in the absence of severance pay. As pointed out by Ljungqvist (2002), it is this assumption of wage rigidity, rather than market incompleteness, that accounts for the large welfare gains they find. Indeed, Alvarez and Veracierto (2001) find that the pure insurance benefit of severance pay is negligible and even *negative* in their environment, given the short duration of a typical unemployment spell and the absence of tenure effect on wages, which implies that the earnings of displaced workers fully recover upon re-employment.

Rogerson and Schindler (2002) is the first quantitative equilibrium study of the welfare costs of the risk of persistent earnings losses. They evaluate the welfare costs of a one-off, mid-career, permanent earnings loss in an incomplete-market setting, but with no unemployment. They find that the welfare cost of a permanent 30% earnings loss at age 45 is around half a percentage point of permanent consumption. Since the shock is one-off, permanent and common to all workers it can be perfectly insured by a common, one-off transfer equal to about four years of wages. Unlike them, the combination of returns to tenure and positive job loss hazard in each period implies heterogeneity of displacement costs in our environment. We find that the welfare gains from severance pay are significantly larger in our set up, despite the fact that our parameterization implies more conservative and non-permanent displacement costs, and that we restrict attention to a (linear) severance-pay schedule in line with observed measures.

Krebs (2007) evaluates the welfare gains from eliminating the *cyclical variation* in idiosyncratic job displacement risk, while we study the welfare gains from using severance pay to provide insurance against the average job displacement risk.

[4] Firing taxes depress employment in environments with employment lotteries (Hopenhayn and Rogerson, 1993), and in matching models if they increase workers' threat point in new matches. The latter is the case only if firms, counter-factually, incur the firing tax even if an encounter with an unemployed worker is not turned into an employment relationship, as in Millard and Mortensen (1997) (see Ljungqvist, 2002 and reference therein for a comprehensive discussion).

[5] Garibaldi and Violante (2005) and Fella (2007) argue that firing taxes are unlikely to be quantitatively important.