Matching Workers

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How does the value of the firm depend on the value of its workers? When one considers firms that have little physical capital - such as IT firms, software development firms, investment banks and the like - the neoclassical model does not seem to provide a reasonable answer. The firm has some value that is not manifest in physical capital. Rather, 'organization capital' may be a more relevant concept in this context. One aspect of the latter form of capital is the formation of teams and this is the issue taken up in the current paper. We ask how workers affect each other in production and how this interaction affects firm value. The current paper thus offers an exploration of "organizational rent." The paper studies the value of firms and their hiring and firing decisions in an environment where the productivity of the workers depends on how well they match with their co-workers and the firm acts as a coordinating device. This role of the firm is what generates value.

The paper derives optimal hiring and worker replacement policies and characterizes the resulting equilibrium in terms of employment and the distribution of firm values. A key result is the derivation of an optimal worker replacement strategy, based on a productivity threshold that is defined relative to the other workers. The derivation is non-trivial and underlines the importance of worker complementarities in productivity. Thus the model is not equivalent to one with shocks to individual workers or to job-worker pairings.

This replacement strategy (interacted with other worker separation and with firm exit) generates rich turnover dynamics. The resulting firm values distribution are found to be - using illustrative simulations - non-normal, with negative skewness and negative excess kurtosis. This shape reflects the fact that, as firms mature, there is a process of forming good teams on the one hand and the effects of negative separation and exit shocks on the other hand.