Agents in two-sided matching games vary in characteristics that are unobservable in typical data on matching markets. We investigate the identification of the distribution of these unobserved characteristics using data on who matches with whom. The distribution of match-specific unobservables cannot be fully recovered without information on unmatched agents, but the distribution of a combination of unobservables, which we call unobserved complementarities, can be identified. Using data on unmatched agents restores identification. We estimate the contribution of observables and unobservables to match production in the context of venture capital investments in biotechnology firms.