We study the role of firm heterogeneity and imperfect competition for global production networks and the gains from trade. We develop a quantifiable trade model with two-sided firm heterogeneity, matching frictions, and oligopolistic competition upstream. More productive buyers endogenously match with more suppliers, thereby inducing tougher competition among them to enjoy lower input costs and superior performance. Customs data confirms that downstream French and Chilean firms import higher values and quantities at lower prices as upstream Chinese markets become more competitive over time, with stronger responses by larger firms. Moreover, suppliers charge more diversified buyers lower markups. Counterfactual analysis indicates that entry upstream benefits highproductivity buyers, while trade liberalization and lower matching costs favor mid-productivity buyers. Welfare gains are sizable for each shock, greater under package reforms, and significantly reduced with fixed markups or networks. Global production networks thus mediate bigger effects and cross-border spillovers from industrial and trade policies.