Dynamic Analysis of Intellectual Property: Theory, Evidence and Policy
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Intellectual property rights always intervene in markets that already enjoy other mechanisms for regulating access and capturing returns on innovation. This observation complicates the conventional assumption that more IP always reduces the size of the public domain and less IP always expands it. Withdrawing IP makes no difference in the size of the public domain if the market responds by migrating to non-IP substitutes. Withdrawing IP can even enhance entry barriers and reduce the size of the public domain if certain firms have lower-cost access to non-IP substitutes than others. That perverse case is not only plausible but typical. In general, weaker IP tends to advantage more integrated firms that have lower costs of adopting non-IP substitutes; conversely, stronger IP protects less integrated firms that have higher costs of adopting non-IP substitutes. Restricting IP restricts the feasible range of organizational forms, resulting in hierarchical environments dominated by integrated firms that maintain complementary innovation, financing and commercialization capacities or bureaucratic environments dependent on tax-based and philanthropic transfers. Expanding IP expands the feasible range of organizational forms, enabling entrepreneurial environments populated by specialized R&D-intensive firms that rely on contract to procure the financing and commercialization inputs required to reach market. These relationships between intellectual property, firm organization and market structure provide the basis for a novel reconstruction of U.S. patent history that identifies tendencies in the organizational structure of U.S. technology markets under weaker and stronger patent regimes. Consistent with theoretical expectations, weak patent regimes tend to drive innovation toward transactionally poor environments dominated by hierarchical and bureaucratic entities while strong patent regimes tend to support transactionally rich environments consisting of bureaucratic entities, large integrated corporations and smaller R&D-specialized firms. Political-economic behavior is also consistent with these patterns: outside of pharmaceuticals, integrated large firms tend to support relaxed patent rights while smaller R&D-specialized firms and their financial backers tend to support stronger rights.