# Non-compete Covenants: Knowledge Spillovers, Hold-ups, and Economic Growth through Innovation

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## 1 Introduction

There is a large literature considering the optimal enforcement of non-competes (for an excellent survey, see Marx & Fleming 2012). The general consensus that has emerged is that enforcement of non-competes is deleterious to the development of a vibrant labor market and startup culture. In fact, starting with Gilson 1999, many authors have ascribed Sililcon Valley's displacement of former high-tech hub Route 128 to California's blanket refusal to enforce such contracts. This story receives support from a variety of empirical papers, exploiting both time-series and cross-sectional variation (across US states) in the enforcement of non-competes.

One may be tempted to conclude from this body of work that non-compete agreements deter growth (I certainly am). Yet the evidence does not yet fully support this view. Especially in light of evidence from Marx et. al. 2015 that there is brain drain from enforcing states to non-enforcing states, the over-performance of non-enforcing jurisdictions could simply be redistribution of economic activity rather than aggregate economic growth. More broadly, to date there has not been an aggregate welfare analysis using a workhorse general equilibrium macroeconomic model of long-run industry evolution.

There are three main questions that can in principle be answered with a general equilibrium model and not with the kinds of studies that have so far been conducted. First, welfare in an economy where all workers are bound by non-competes can be compared to welfare in an economy where non-competes are not enforced. Next, can we write a general equilibrium model with enforcing and non-enforcing regions which can reproduce the existing empirical evidence (i.e. brain drain causing differential performance). Finally, in reality, workers and jobs are heterogeneous, so that in certain cases non-competes have relatively more pros than cons. In this vein, one can ask the question: to what extent does the market endogenously assign / enforce non-competes to workers whose consequent lack of mobilty is on balance relatively less harmful to the aggregate economy?

The contribution of this paper is to provide a theoretical framework for conducting an analysis of the first question above. I develop a model based on Klette & Kortum 2004 (itself a modification of Hopenhayn 1992), endogenizing knowledge spillovers by way of worker flows. To perform this analysis the model must be rich enough to include the various decisions by employers and employees that can be distorted by the presence of non-competes. These include firm investments in R&D, firm investments in the worker's human capital, and employee's investments in their own human capital.

The model, by necessity, must have many parameters or assumptions (about relationships between the fewer assumed parameters). There is no way around this. I will offer some guidance as to how to obtain empirical discpiline on these parameters. My hope is that the policy prescriptions to emerge from my analysis will depend in a clear way on certain key elasticities, which will suggest a future path for research to uncover these for different industries.

The paper connects three literatures: (1) the work on the contribution of entrants / incumbents to aggregate growth. Haltiwanger et. al. 2015, Akcigit & Kerr 2017, Acemoglu & Cao (sp?) 201x; and (2) the work on spillovers / startups due to employee flows such as Franco & Filson 2006, Klepper & Sleeper, and others; and (3) the more general literature on industry dynamics and the effects on growth of changing rates of entry and reallaction (c.f. Acemoglu, Akcigit et. al. “Investment Reallocation and Growth”, Klette & Kortum itself, and so on).

## 2 Data

Want to match the firm size distribution, the entry rate, the firm growth rate as a function of age and size, and, ideally, rates of workers moving from incumbents to start-ups or competitors. Need to think about this more - really, will need to work out the model to see what kinds of moments can identify the relevant parameters.

## 3 Model

Akcigit & Kerr 2017 ass ume a representative agent and push all heterogeneity into heterogeneity of firms in their economy. Then the representative agent simply holds a portfolio of all firms in the economy. This is not quite microfounded in the sense that the agents should then have an incentive to instruct all of the firms to collude with each other, and hence each firm wouldn't be maximizing its own individual profit. In other words, creative destruction externalities would be internalized. So they have simply abstracted away from firm ownership, but continue to assume that individual firms maximize their own profits.

To be continued...

### 3.1 Preferences and Final Good Technology

#### There is a continuum of households indexed by i ∈ [ 0,1 ] . Each household

## References