Intellectual Property as an Intellectual Barrier: An Examination of Patents as Knowledge-Based Barriers to Entry

Entrepreneurship, Innovation & Antitrust Cohort

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Outline

Background and Motivation

- Patents grant a temporary monopoly to an innovator. There are two primary barriers to entry that originate from patents: legal barrier and knowledge barrier.
- There has been extensive research surrounding the obstacles that the legal restrictions of a patent place on newly formed companies. Less so when in comes to the knowledge required to compete in a high-patent industry.

Research Question

Do patents impose a knowledge-based barrier to entry?

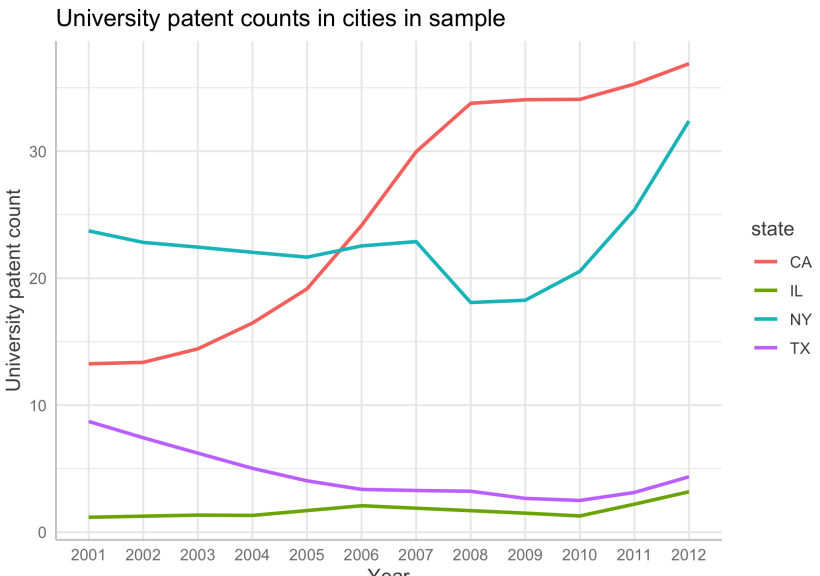
Data: Sources

Sources:

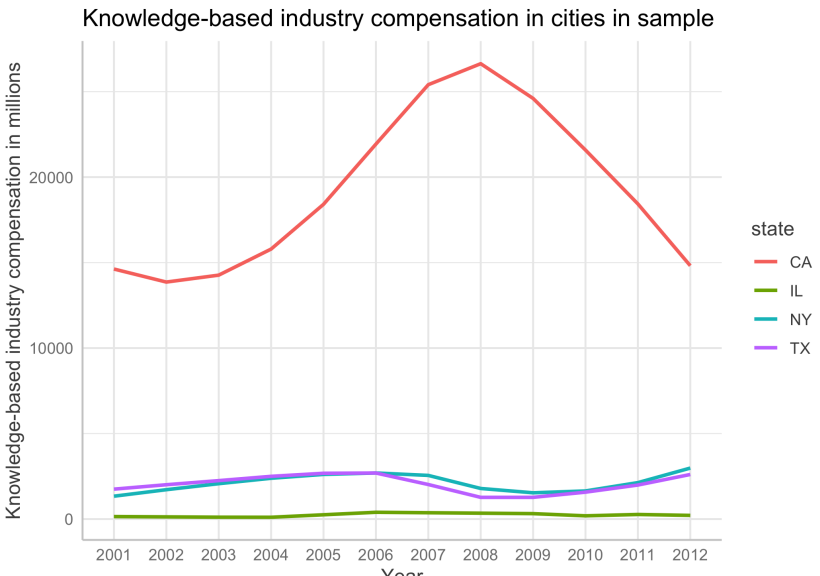
- United States Patent and Trademark Office (panel data on the number of patents attributable to each university in the United States)
- Bureau of Economic Analysis (city x industry-level compensation data)
- Homeland Infrastructure Foundation-Level Data (cities in which universities fall)
- Knowledge-based industries list from E. Wayne Clendenning & Associates (2000)

We end up with a merged panel dataset of observations at the city x year level with variables for the number of patents attributable to universities (*UnivPatents*) and total compensation across knowledge-based industries (*KBIComp*).

Data: Exploration



Data: Exploration



Model and Results

$$KBIComp_{it} = \beta_1 UnivPatents_{it} + CityFixedEffects + YearFixedEffects + u_{it} \quad (1)$$

$$KBIComp_{it} = \beta_1 ln(UnivPatents_{it}) + CityFixedEffects + YearFixedEffects + u_{it} \quad (2)$$

	KBIComp	
	(1)	(2)
UnivPatents	45.120***	
	(7.396)	
ln(UnivPatents)		328.887*
		(128.364)
R^2	0.354	0.088
Num. obs.	92	92

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table: Regression results for equations (1) and (2), conditional on city and year fixed effects. *KBIComp* is given in millions of dollars.

Model and Results

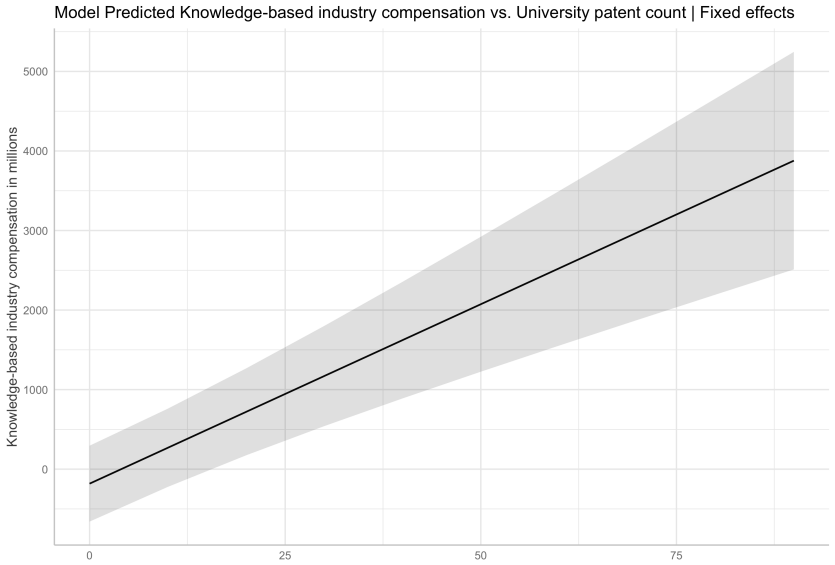


Figure: Equation (1)

Model and Results

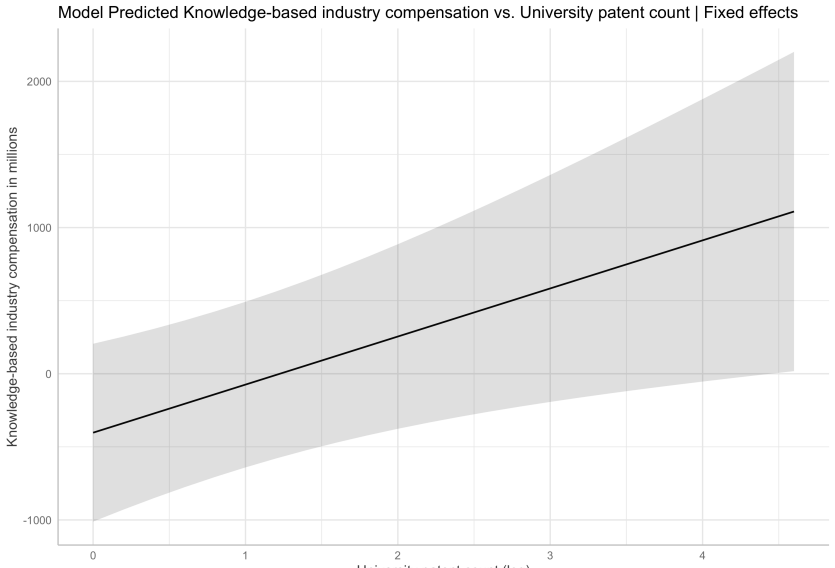


Figure: Equation (2)

Discussion and Limitations

- Clear that there is a significant positive correlation between university patents and compensations in knowledge based industries.
- Data limitations.
- Less than ideal variables.

Conclusions and Final Thoughts

- Positive correlation between the two variables.
- Due to the limitations in data availability and model design, our current conclusion is still naive.

Thank you!