



Effectiveness of Copyright Enforcement Policies

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Motivation

- Fundamentally, we are interested in understating how copyrights and IP policy
 - Affects firm profitability
 - Affects end users consumption
 - Innovation and Creativity
- With digitization of content, the copyright policy enforcement has weakened (particularly in western countries).
 - How should we recalibrate our policies (if at all) and how?
 - What sort of enforcement make sense? (how effective are they?)



Trade-off

- ▶ When infringement is easy and widespread, then
 - ▶ We hypothesize that producers will lose money
 - ▶ Consumer will benefit (at least in the short run) due to cheaper and widespread availability of content.
- ▶ But, if producers and artists take a big hit on revenues,
 - ▶ They will start producing less and of less quality. Creative output will decline.
 - ▶ The platforms that facilitate piracy will hurt consumers in ways that they may not understand (malware, collecting and selling their personal data and so on).



Evidence

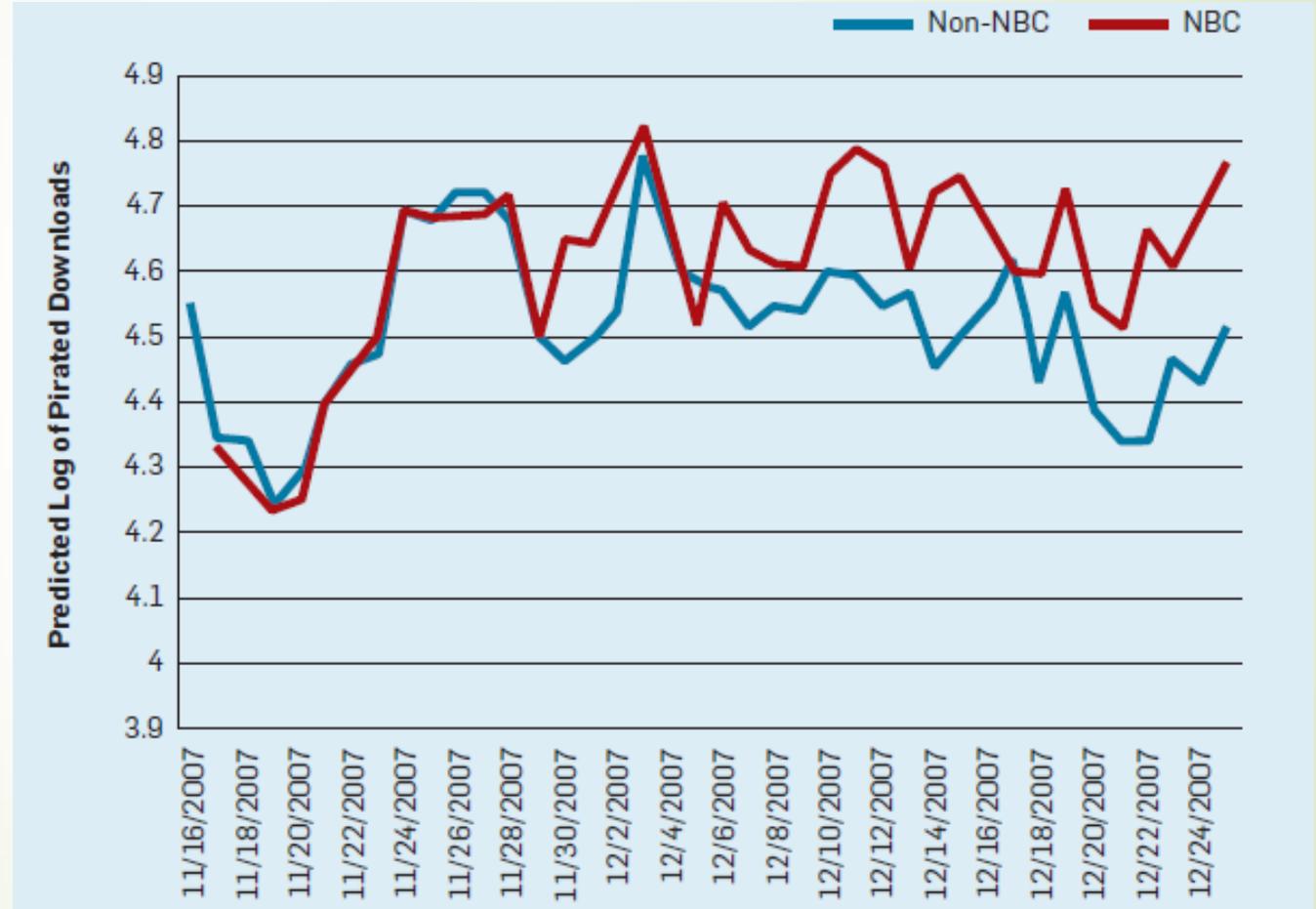
- ▶ Empirically, causally connecting infringement to these outcomes is hard.
- ▶ There is a long literature now and except a few studies, most studies show some deleterious effects of piracy on firm revenues.



What can we do if we believe
infringement is hurting the industry?

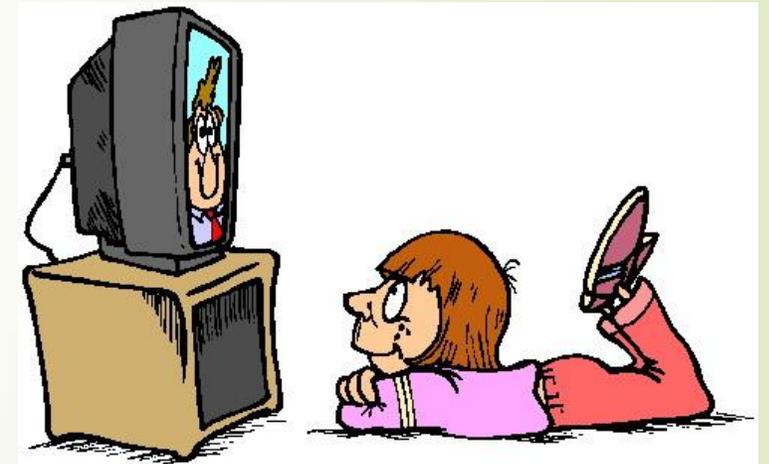
Firms need to play their part

- Firms need to make content available on new channels sooner
- Example: NBC had a contractual dispute with Apple iTunes and removed all the content leading to sharp increase in piracy.
- Reduce delay in international availability



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We also need enforcement...





Many players can play a role in the value chain....

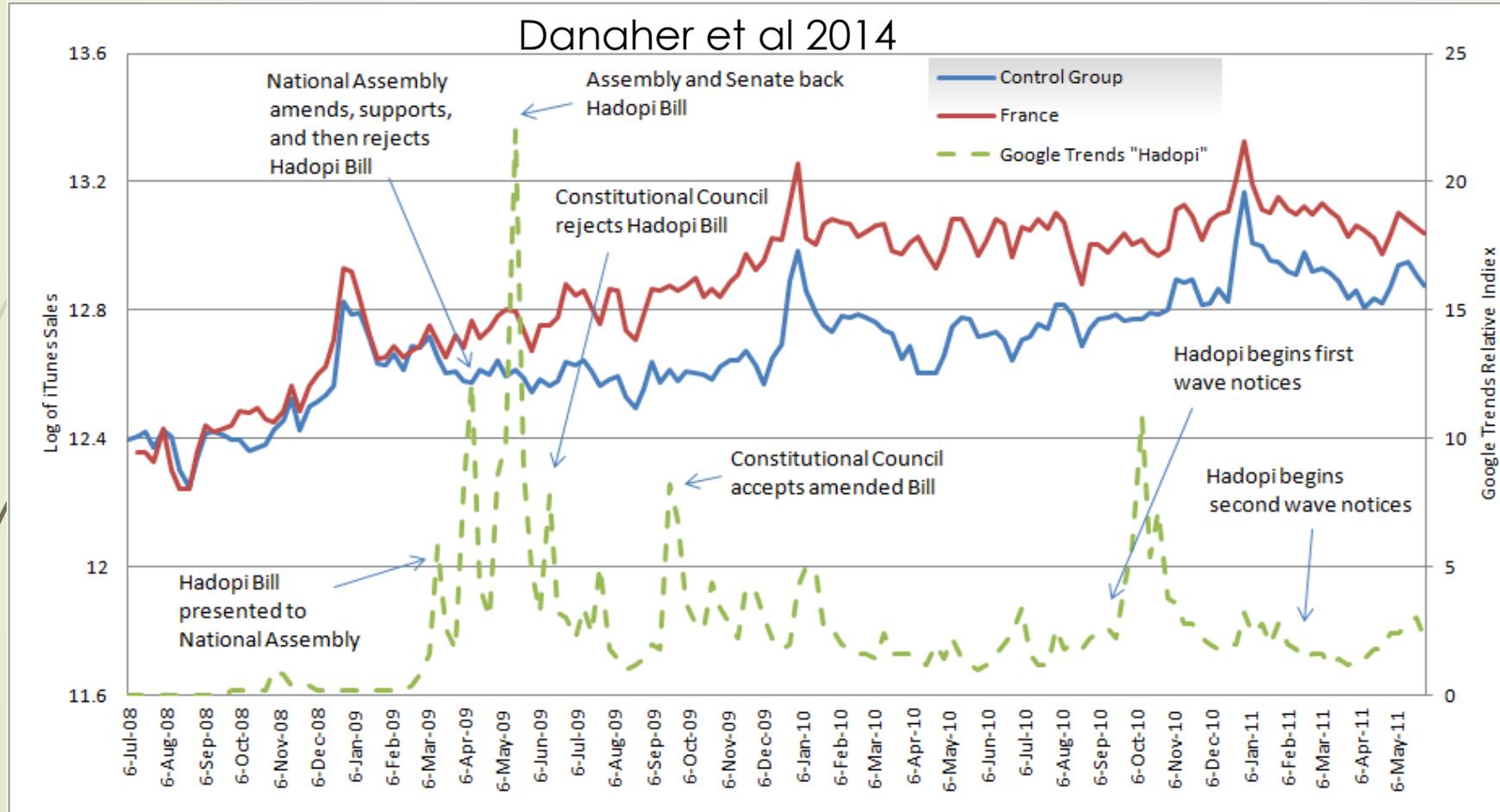
- A tricky issue.
 - Content creators cannot stop piracy by themselves.
- Who should play an active role?
 - Web site blocking? (how effectiveness?).
 - Going after end users?
 - ISPs?
 - Search Engines?
 - Merchants?



Demand side enforcement

- ▶ Affect the demand for infringement by sharing user behavior
 - ▶ Awareness
 - ▶ Warning and notice

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Similar results
IRED (Intellectual
Property Rights
Directive) in Sweden

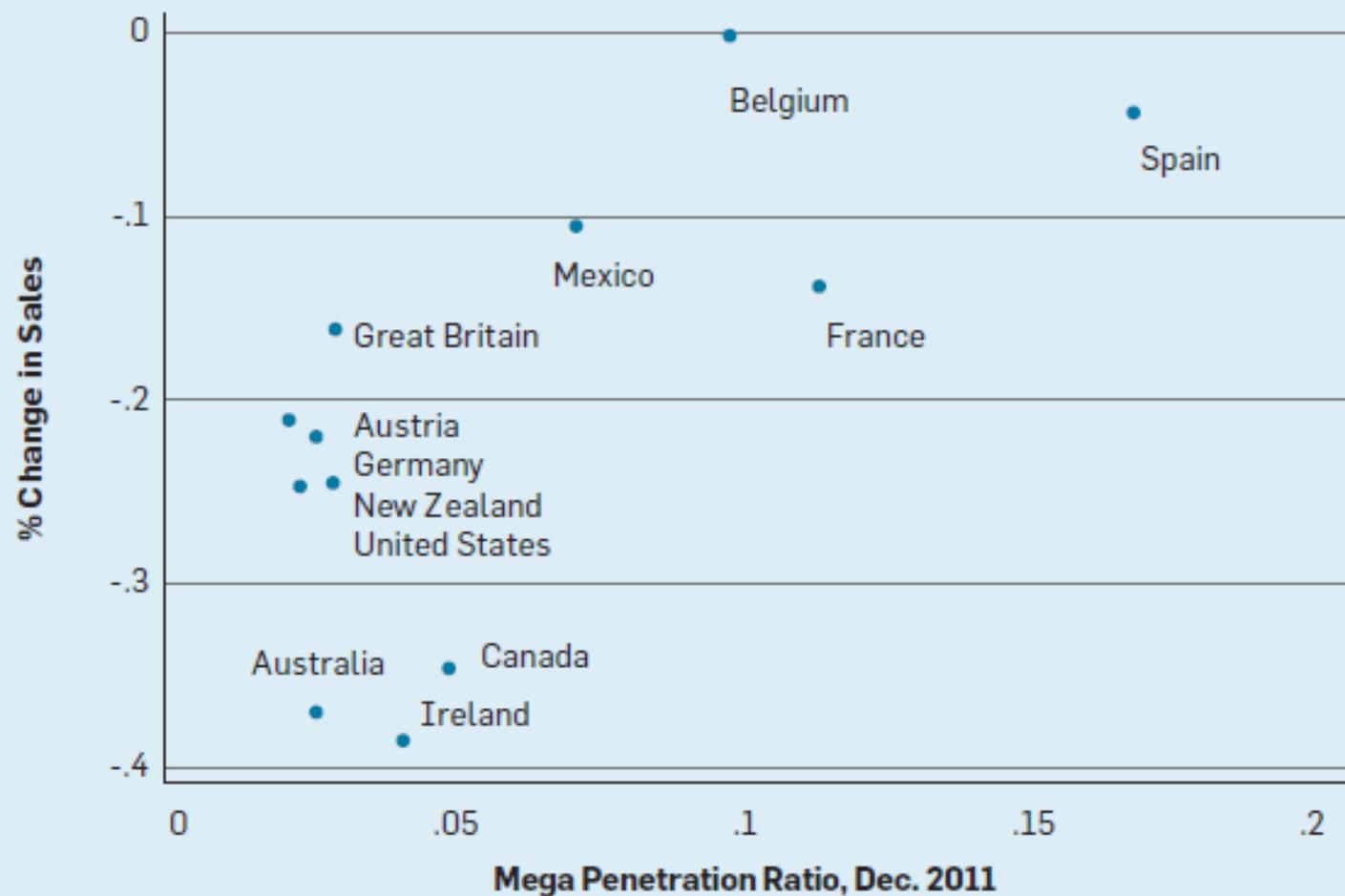


Demand Side Cooperation

- ▶ Content Industry has been working with ISPs to implement Copyright Alert System
 - ▶ Effectiveness is unclear.
 - ▶ Working on a larger randomized study to examine this issue in detail.

Supply Side Enforcement Blocking: Megaupload

► (Danaher and Smith 2015).



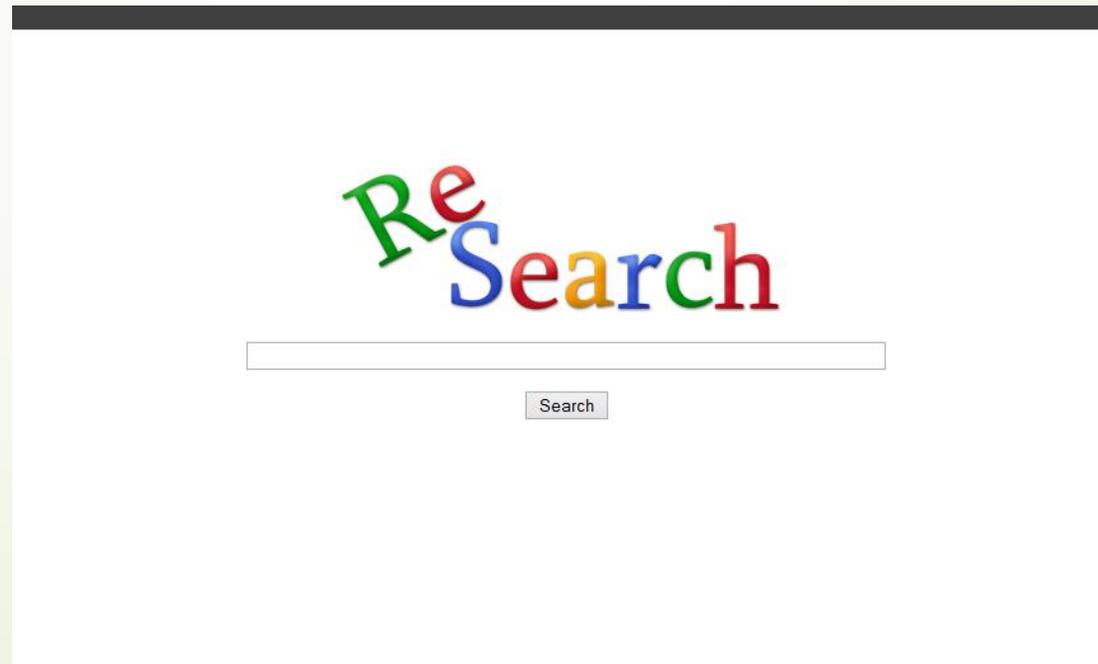
Blocking User Access to Sites

- UK site blocking (Danaher et al 2015).

Consumer Segment	Pre-block Visits/User to Blocked Sites	Causal Increase in Visits to Legal Sites
0	0	0.0%
1	1.0	2.2%
2	2.0	4.4%
3	3.0	6.5%
4	4.0	8.7%
5	5.4	11.7%
6	8.2	17.5%
7	13.2	26.8%
8	23.8	42.4%
9	66.4	14.8%

Search Engines and visibility of infringing links

- ▶ How effective is search engine manipulating infringing links? (Sivan, Smith and Telang 2016)



Search Results Manipulations

	n	# Legal option	% Legal option	Average price (conditional on legal copy)
Condition 1: No manipulation	60	48	80.0%	\$9.80
Condition 2: Legal manipulation	71	67	94.4%	\$9.89
Condition 3: Infringing manipulation	65	37	56.9%	\$9.93



Copyright and Content supply

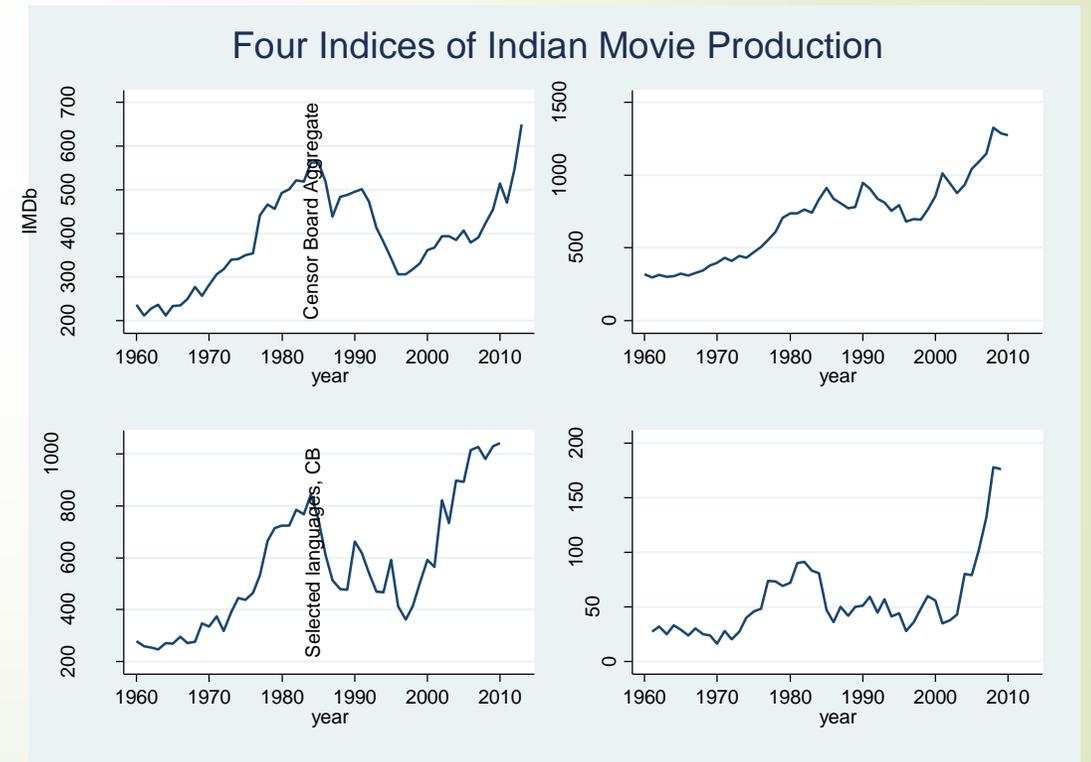
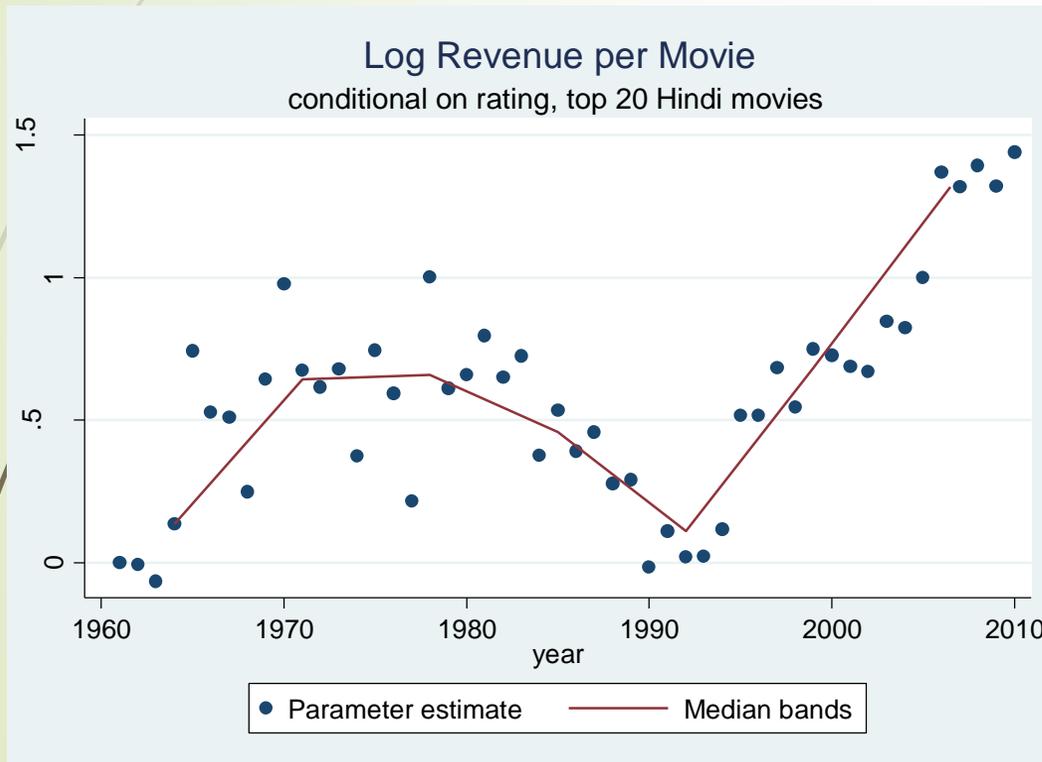
- ▶ How does copyright protection affect incentives to create?
 - ▶ One would intuitively think that higher protection will create better incentives for creation and generate more content (quality adjusted)
- ▶ Empirically even more challenging than previous questions.
- ▶ Digitization brought cost reductions too making it hard to untangle cost and copyrights on content creation.



Content Supply

- ▶ Need to look at a period (markets) when cost were not declining but piracy was rampant. Need to look at movie industry where investments are significantly larger than music industry.
- ▶ We look at the VCR entry in developing country (especially India) in early 80's
 - ▶ First VCR and then Cable spawned large scale piracy in India.
 - ▶ Did it make a difference?

VCR, Infringement and Movie Production in India





In conclusion...

- ▶ There is no silver bullet.
- ▶ Many different strategies need to be implemented together to see an impact.
- ▶ How to fight infringement effectively or the long term effects of various policies is still an evolving question.
- ▶ To make informed policies we need significantly more evidence.



Thank You...

- ▶ Feel free to reach out at rtelang@andrew.cmu.edu