

# KILLER ACQUISITIONS

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## KILLER ACQUISITIONS

### ▶ **Central idea:**

- ▶ Market incumbents have incentives to acquire and “kill” innovative targets
- ▶ Preempt the “gale of creative destruction” to protect existing profits

### ▶ **Empirical evidence:**

- ▶ Setting: acquisition and drug development
- ▶ Evidence: test for existence and pervasiveness of “killer acquisitions”

## DO “KILLER ACQUISITIONS” EXIST? FTC AGAINST MALLINCKRODT (QUESTCOR)



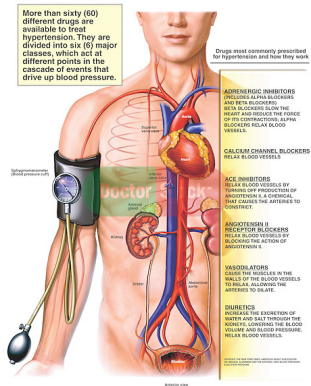
- ▶ “Questcor has extinguished a nascent competitive threat to its monopoly.”
- ▶ “By acquiring Synacthen, Questcor harmed competition by preventing another bidder from trying to develop the drug ... to challenge Questcor’s monopoly over ACTH drugs.”

## THEORETICAL PREDICTIONS AND EMPIRICAL TESTS

- ▶ Test #1: Existence
  - ▶ Termination more likely when incumbent and target products overlap
- ▶ Test #2: Current Competition
  - ▶ ... more likely when products overlap and there is little competition
- ▶ Test #3: Patent Protection (Future Competition)
  - ▶ ... more likely when products overlap and patent further from expiry

## EMPIRICAL SPECIFICATION

- ▶ Dependent variables
  - ▶ Pharmaprojects: development, termination, and neutral events
  - ▶ FDA trial phase progression
- ▶ Measuring overlap



- ▶ **1 Therapeutic class:** Hypertension
- ▶ **6 Mechanisms of Action**
  - ▶ Adrenergic Inhibitors
  - ▶ Calcium Channel Blockers
  - ▶ ACE Inhibitors
  - ▶ Angiotensin II Receptor Blockers
  - ▶ Vasodilators
  - ▶ Diuretics

## RESULTS: EFFECT OF PRODUCT OVERLAP

	Development Event = 1					
	(1) Originated before 2011	(2)	(3) Originated before 2000	(4)	(5) Single-Project Companies	(6)
I(Acquired) × I(Post) × Overlap	-0.019*** (-2.894)	-0.013* (-1.747)	-0.030*** (-3.508)	-0.017* (-1.791)	-0.128** (-2.392)	-0.177*** (-2.688)
I(Acquired) × I(Post)	-0.017*** (-5.239)	-0.013*** (-3.684)	-0.013*** (-3.050)	-0.016*** (-3.471)	-0.041* (-1.747)	-0.036 (-1.376)
I(Acquired) × Overlap	-0.001 (-0.178)		-0.000 (-0.061)		0.040 (0.931)	
I(Acquired)	-0.002 (-0.720)		-0.003 (-0.955)		0.008 (0.501)	
Observations	311,501	311,501	127,910	127,910	17,780	17,780
R-squared	0.018	0.243	0.009	0.237	0.028	0.166
Project FE	No	Yes	No	Yes	No	Yes
Age FE	Yes	Yes	Yes	Yes	Yes	Yes
Vintage FE	Yes	No	Yes	No	Yes	No

► Takeaway: “Killer acquisitions” occur if products overlap.

## RESULTS: EFFECT OF COMPETITION

- **Competition:** the number of drugs in the same therapeutic class & MOA

	Continuation Event = 1			
	(1) Low Competition	(2)	(3) High Competition	(4)
I(Acquired) × I(Post) × Overlap	-0.021*** (-3.156)	-0.018** (-2.288)	-0.002 (-0.118)	0.027 (1.254)
I(Acquired) × I(Post)	-0.016*** (-5.349)	-0.013*** (-3.557)	-0.023* (-1.826)	-0.014 (-0.892)
Competition Measure		Existing Product		
Project FE	No	Yes	No	Yes
Age FE	Yes	Yes	Yes	Yes
Originating Year FE	Yes	No	Yes	No

- Takeaway: “Killer acquisitions” are more likely in less competitive markets.

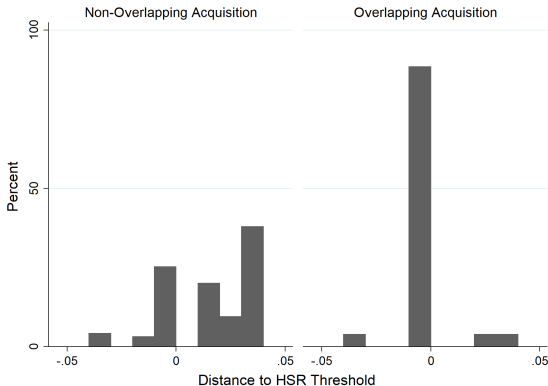
## ADDITIONAL RESULTS

- ▶ Lack of development is due to **real termination**.
  - ▶ Acquired projects are quickly terminated rather than just delayed.
  
- ▶ Lack of development is **not** due to **optimal project selection**.
  - ▶ Discontinuation results are unchanged for single-drug targets.
  
- ▶ Killer acquisitions are **not acquires**.
  - ▶ Most employees leave and those that stay are less productive.
  
- ▶ Killer acquisitions are **not technology acquisitions**.
  - ▶ Acquirers don't use technology and don't develop molecularly similar drugs.



## EVASION OF ANTITRUST SCRUTINY

- ▶ 7% of all acquisitions are killer acquisitions (50 per year)



- ▶ Killing innovation out of sight
  - ▶ Drug launch rate 10% below/above threshold: 1.79% vs 9.09%

## CONCLUDING REMARKS

- ▶ What this paper says
  - ▶ Incumbents acquire entrepreneurial targets and terminate innovation
  - ▶ Particularly when products overlap and there is little competition
- ▶ What this paper does **not** say
  - ▶ We do not suggest that all acquisitions are “killer acquisitions”
  - ▶ Killer acquisitions are necessarily welfare-reducing
    - ▶ Comprehensive welfare analysis is difficult
- ▶ More wide-ranging implications
  - ▶ Antitrust policy
  - ▶ Startup exit
  - ▶ Creative destruction