



THE OHIO STATE UNIVERSITY

Replicating Anomalies

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Most anomalies fail to replicate

Based on the working paper

“Replicating Anomalies”

with

Prof. Kewei Hou, Ohio State University

Prof. Chen Xue, University of Cincinnati



Replicate 447 published anomalies,
controlling for microcaps via NYSE
breakpoints and value-weights

- 286 (64%) with $t < 1.96$; 380 (85%)
with $t < 3$ from 1967/01 to 2014/12
- 293 (66%) with $t < 1.96$; 387 (86.6%)
with $t < 3$ in the original samples



Coy (4/6/2017, Bloomberg): “Investors Always Think They’re Getting Ripped Off. Here’s Why They’re Right”

“Researchers have more knobs to twist in search of a prized ‘anomaly...’ They can vary the period, the set of securities under consideration, or even the statistical method.”



Harvey, Liu, and Zhu (2016)

- Publication biases: Hard to publish a nonresult; difficult to publish replication studies in finance and economics

Harvey (2017)

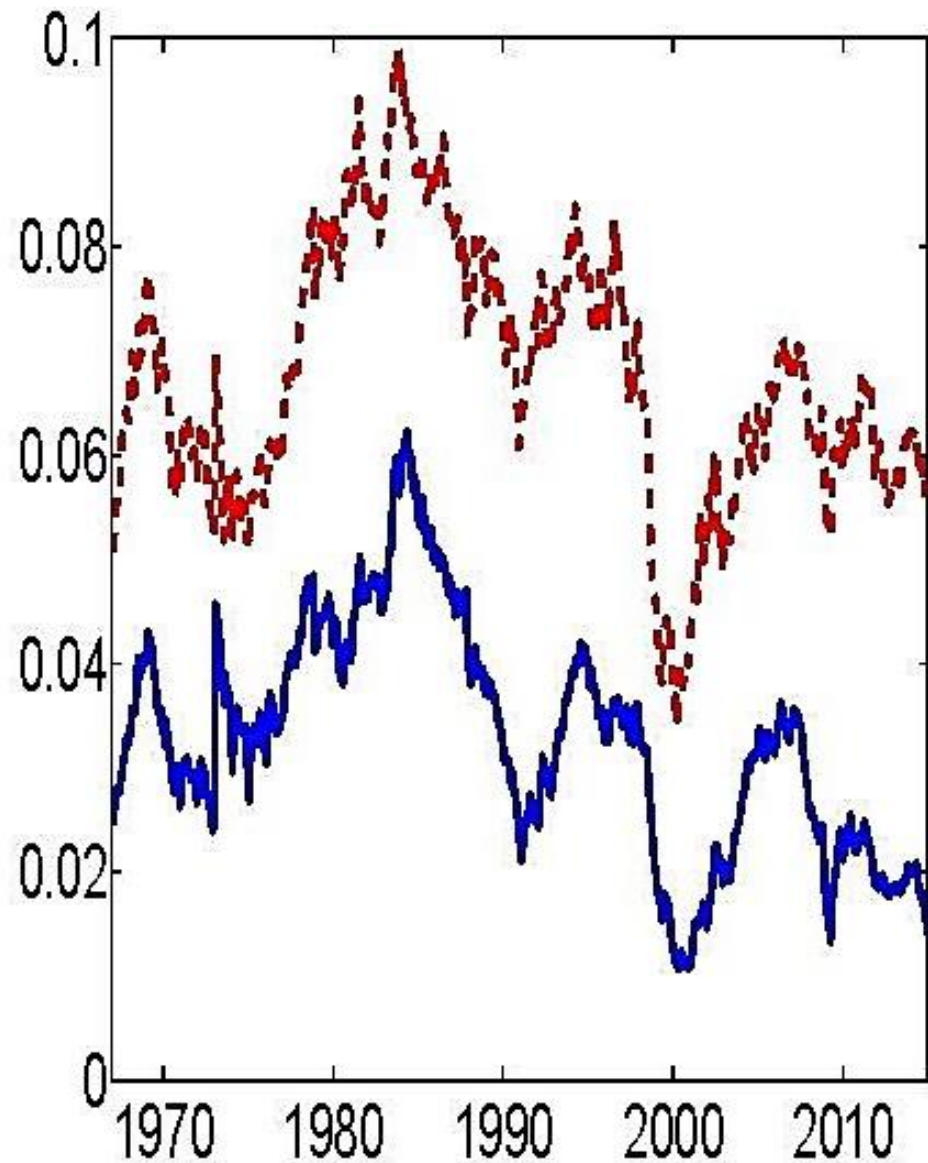
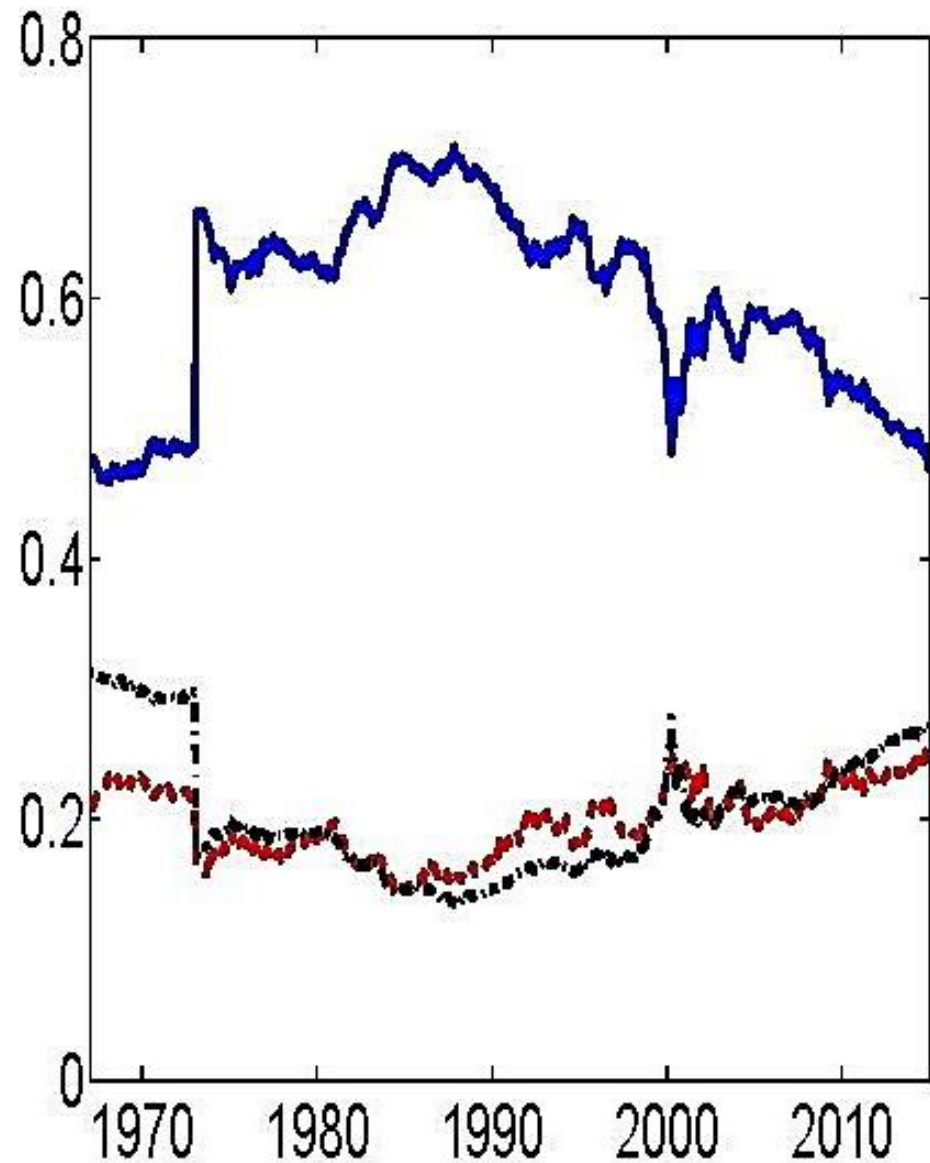
- **P-hacking** – selecting sample criteria and test specifications until insignificant results become significant



Ioannidis (2005): Studies are more likely false with **smaller samples**; **smaller effects**; many but **fewer theoretically predicted relations**; **greater flexibility** in design, variable definitions, and specifications; **greater financial interest and bias**; and **more independent teams** involved



Why Value-weights?
Plentiful, but tiny microcaps





Hamermesh (2007)

- Reproduction: To redo something in exactly the same way
- Replication: **Different sample and perhaps similar but not identical model**
- Economics not an experimental field

Articles in the May 2017 issue of *American Economic Review* all adopt the same definition



Category	Number
Momentum	57
Value-versus-growth	68
Investment	38
Profitability	79
Intangibles	103
Trading frictions	102
CRSP-Compustat sample, no financials	



64% with $t < 1.96$, 85% with $t < 3$

	#	%
Momentum	20	35%
Value-versus-growth	37	54%
Investment	11	29%
Profitability	46	58%
Intangibles	77	75%
Trading frictions	95	93%



66% with $t < 1.96$, 86.6% with $t < 3$

	#	%
Momentum	24	42%
Value-versus-growth	44	65%
Investment	13	34%
Profitability	38	48%
Intangibles	81	79%
Trading frictions	93	91%



40% with $t < 1.96$, 54% with $t < 3$

	#	%
Momentum	9	16%
Value-versus-growth	14	21%
Investment	1	3%
Profitability	36	46%
Intangibles	59	57%
Trading frictions	62	61%

* 42% inflation rate on average absolute returns



Sue6 .19 1.13 Chan et al. 1996
(1.65)

Sr -.2 -.61 Lakonishok et al. 1994
(-1.08)

Ta -.23 -1.11 Richardson et al. 2005
(-1.63)

Gind .02 -.71 Gompers et al. 2003
(.06) (-2.73)



lvff1	-.51	-1.06	Ang et al. 2006
	(-1.62)	(-3.1)	
Acq	-.07		Francis et al. 2005
	(-.36)		
Ami1	.28		Amihud 2002
	(1.31)		
β^{net}_1	.14		Acharya-Pedersen 2005
	(.41)		



R^6 .82 1.1 Jegadeesh-Titman 1993
(3.49) (3.61)

Bm .59 Rosenberg et al. 1985
(2.84)

I/A -.46 -1.73 Cooper et al. 2005
(-2.92) (-8.45)

Roe1 .69 Hou et al. 2015
(3.07)



Most anomalies fail to replicate

Capital markets are more efficient than previously recognized