A Kick or a Start?

Gender Disparity Evidence of Winning a Kickstarter on Future Funding

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Motivation

- Funding plays a key role for entrepreneurial success
  - Challenges faced by new entrepreneurs in securing credit access (Aghion et al., 2014)
- Issue of gender disparity in entrepreneurship
  - Gender-based inequalities for securing funding (Minniti, 2009)
- Online funding platforms have several advantages for entrepreneurs
  - Reduced entry barriers (Ordanini et al., 2011), increased exposure (Belleflamme et al., 2014), and lower risk of debt (Block et al., 2018)

Crowdfunding as a growing platform

- Online crowdfunding is emerging as an alternative method for fundraising (Barnett, 2015)
- Kickstarter, IndieGoGo, GoFundMe, and StartEngine raised over $17.2 billion in North America in 2020 (Tech Report, 2023)
- Reasons why Kickstarter campaigns fail or succeed in the short term (Mollick, 2014)
  - Understanding the long term impact of crowdfunding still missing

In this paper

- I quantify how important an initial Kickstarter campaign is for entrepreneurs' future outcomes
- To do this, I:
  1. Estimate the effect of winning the first Kickstarter campaign on entrepreneurs' total dollars raised
  2. Provide evidence of gender disparity in receiving funding in a subset of the sample
- Using regression discontinuity design, this study provides causal estimates of how useful crowdfunding is for new entrepreneurs

Paper Contributes to Three Literatures

1. Factors that influence entrepreneurial success
   - Aghion et al. (2014); Gompers et al. (2010); Astebro et al. (2014); Hervé and Schwienbacher (2018)
   - Closely related to Ullah and Zhou (2020); Gafni et al. (2021); Wang et al. (2023)
2. Crowdfunding as an alternative method in Entrepreneurial Finance
   - Schwienbacher and Larralde (2012); Kuppuswamy and Bayus (2017); Svidronova et al. (2021); Cumming et al. (2020)
3. Gender disparity within entrepreneurship
   - Under representation of women: Guzman and Kacperczyk (2019); Markussen and Røed (2017); McGrath et al. (2022)
   - Hisrich and Brush (1984); Jianakoplos and Bernasek (1998); Thébaud and Charles (2018); Ding et al. (2006); Ridgeway and Correll (2004)

What is Kickstarter?

- Online crowdfunding platform that enables entrepreneurs and creatives to raise funds for their products and service
- To launch a campaign,
  - entrepreneurs create a project page
  - Set goal, rewards and deadline
  - Set duration of the campaign
- Operates on the “all-or-nothing” framework
  - Provides some level of protection to backers
  - Incentivizes entrepreneurs to set realistic goals and promote campaigns
- Model creates a sense of urgency among backers

Data Sources: Primary Sources

This study primarily uses two publicly available databases:

1. Kickstarter Web Scraped Database (Web Robots)
   - This forms our main analysis data
   - Data from Apr 2014 - Sept 2022
   - Outcomes: Total dollars raised, success rate
   - Controls: Campaign Duration, US based Kickstarter
   - Outliers of over and under $100,000

2. Complete Kickstarter Database from ICPSR
   - Publicly available data from 2009-2020
   - I used the dataset to calculate probabilities for campaigns in the main database being entrepreneurs' first campaign
   - Model covariates: Category, Year of Launch, Total Goal, Total Pledged, Total Backers

Variable Definitions

- I create a entrepreneur level cross-sectional data from Apr 2014 - Sept 2022
  - Entrepreneurs are identified by User IDs
  - Future Campaign outcomes are aggregated to User ID level

- *Total Raised*: Summing dollar raised for entrepreneurs after the first Kickstarter
- *Success Rate*: Counting total successful campaigns by total campaigns ran
  - Only successful, failed and cancelled Campaigns are included in total campaigns ran
- *Gender*: Gender is mapped using a first name algorithm

Defining the running variable

- For the model, a running variable called dollars to goal is defined

Definition

Dollars to Goal: The difference between the total dollars pledged and the total goal set in the entrepreneur's first campaign

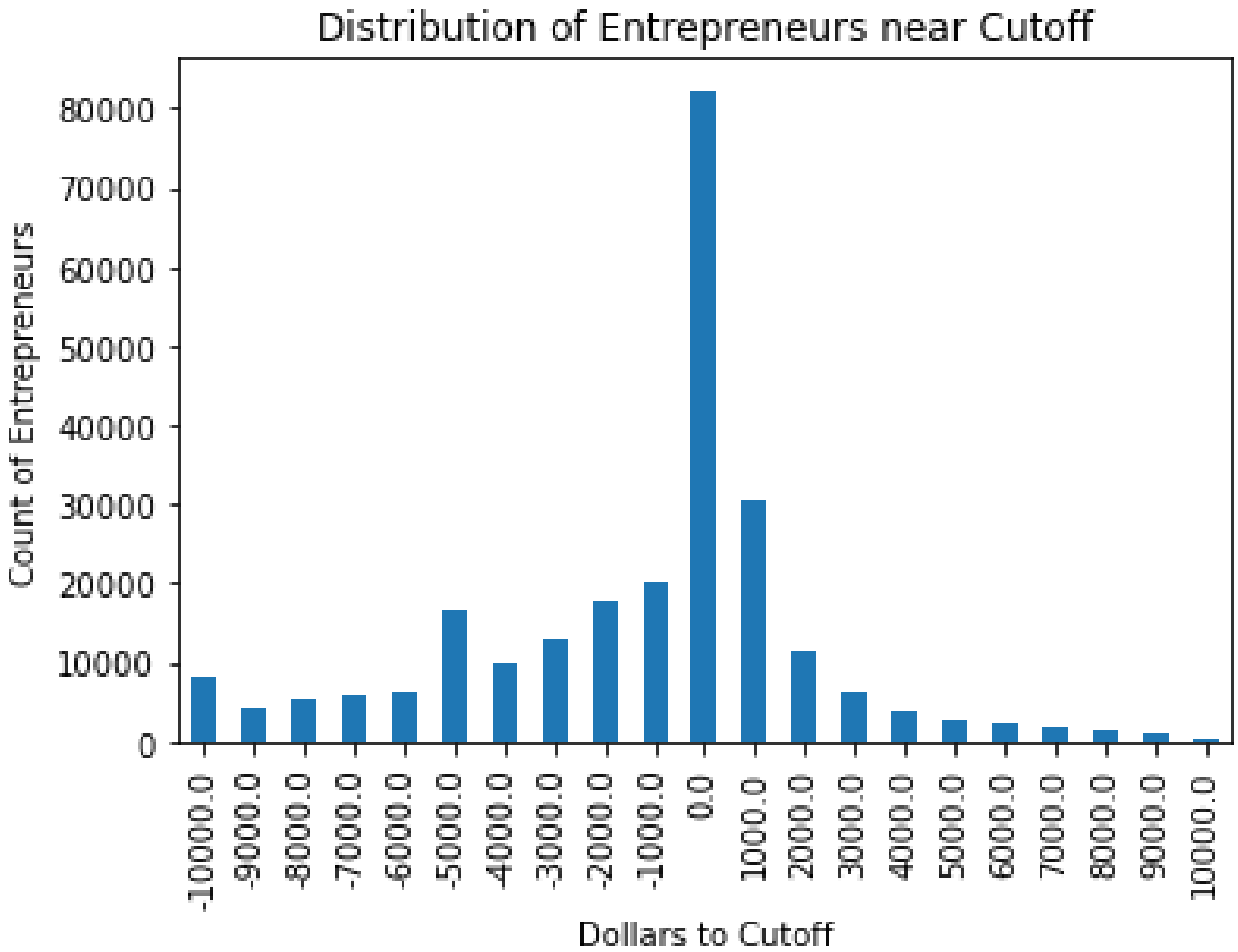
- This creates a sharp discontinuity at zero as all campaigns that meet their goals receive funding
- Creators cannot game the system and fund themselves as it is against Kickstarter's Terms of Service
  - Approximately 1% of the sample get their campaigns suspended

Summary Statistics on Estimation Sample

Gender	US based	Dollars To Cutoff (in $)	Goal	Amount Pledged	Backers	Obs.
Panel A: Failed First Kickstarter						
Andy	0.73	-13,643.02	14,802.13	1,159.11	13.48	1,879
Female	0.74	-11,685.68	12,636.12	950.44	11.92	31,479
Male	0.73	-14,781.22	15,698.49	917.27	11.87	89,921
Firms	0.7	-15,568.53	17,295.21	1,726.68	19.92	50,465
Panel B: Completed First Kickstarter						
Andy	0.69	3,728.57	8,183.02	11,911.58	143.52	1,755
Female	0.71	2,144.59	7,689.7	9,834.29	110.3	30,655
Male	0.74	3,387.9	8,599.19	11,987.09	142.14	51,532
Firms	0.66	6,335.68	12,406.96	18,742.63	204.75	48,642

Note: Values are averages rounded to two decimal places

Distribution of Campaigns



- The density plot shows potential bunching near the cutoff
- Robustness for this potential bunching

Natural Experiment in Kickstarter

- Kickstarter and it's "all-or-nothing" framework of funding
  - dollars remaining to reach the goal induces a discontinuity in the relationship between successful entrepreneurs and their future outcomes
- Entrepreneurs that fail and succeed by the few dollars are similar in all aspects except the treatment
- Can compare outcomes for these groups if
  - Continuity in observable attributes
  - Projects that do not succeed do not receive funding

Covariate Balance Table

	Control			Treated				
Variables	N	Mean	Std. Dev.	N	Mean	Std. Dev.	RD Effect	Robust p-val
US	188,370	0.69	0.42	145,101	0.62	0.41	0.22	0.83
Company	188,370	0.25	0.42	145,101	0.29	0.41	0.19	0.85
Male	188,370	0.45	0.47	145,101	0.31	0.43	-0.18	0.86
Female	188,370	0.16	0.35	145,101	0.19	0.36	0.37	0.71
Camp Dur.	188,370	34.28	69.23	145,101	28.44	11.95	0.71	0.48

- Table shows the statistics of the covariates for entrepreneurs' first Kickstarter
- Camp. Dur. is defined as the total duration from launch date to deadline
- The RD reflects individuals $500 on either side of the treatment variable to calculate the RD-Effect and P-values

All Entrepreneurs

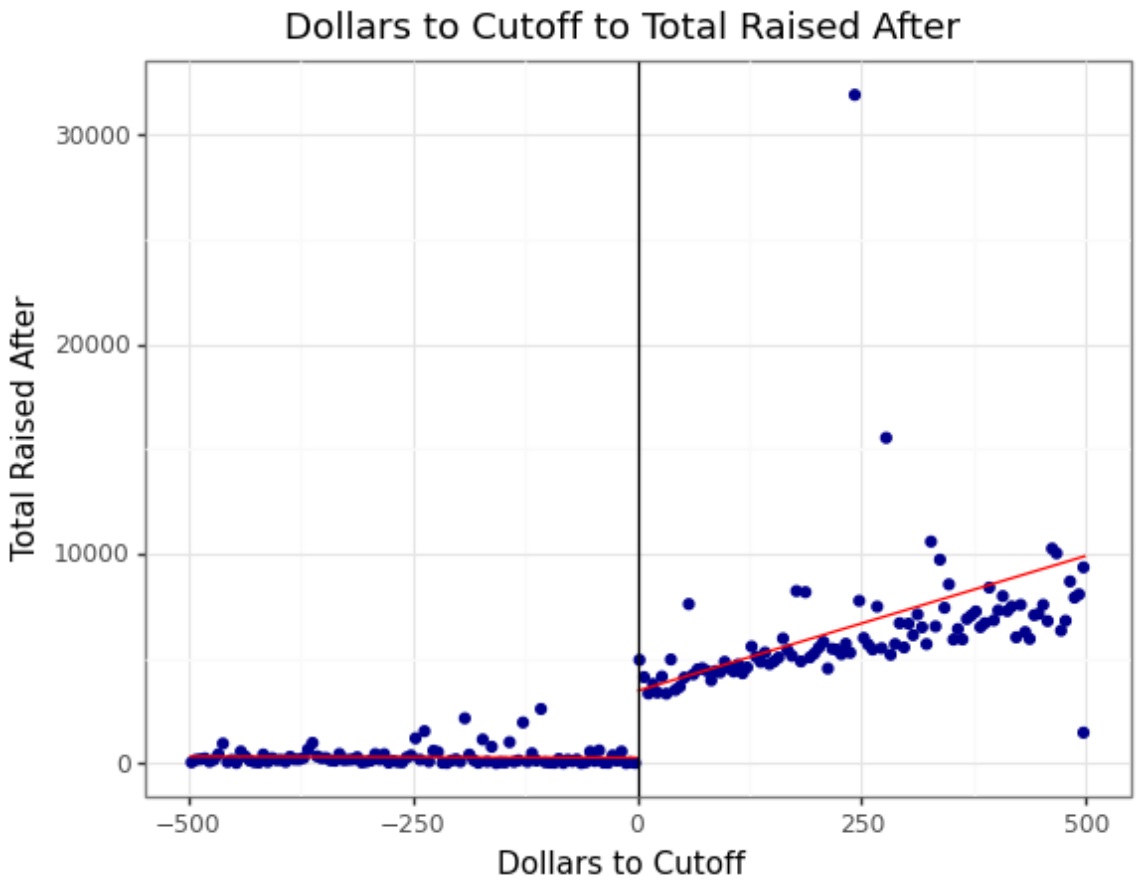


Figure: RD plot with Bandwidth of $500. Data only between the bandwidth is binned in 100 bins on left and right of the cutoff. All values above 0 are treated i.e. won the first Kickstarter campaign.

Regression Discontinuity Estimates

Table: Dollar Difference Discontinuity and Corresponding Dollars Raised After For All Entrepreneurs

Regression Specification	Function of Dollar Difference	Kernel	Additional Controls	Discontinuity Estimated Raised After
(1) Regression in Figure Prior	Linear	Epanechnikov	No	$3,185.34***
(2)	Linear	Triangle	No	$3,141.22***
(3)	Quadratic	Epanechnikov	No	$2,899.43***
(4)	Linear	Epanechnikov	Yes	$3,078.46***
(5)(IK BW: $102)	Linear	Epanechnikov	No	$2,889.01***
(6)(CCT BW: $2,155)	Linear	Epanechnikov	No	$3,996.42***

Notes: Additional controls include US based Kickstarters or not, and campaign duration. *, **, and ***: statistical significance at the 10%, 5%, and 1% levels, respectively. The RD reflects individuals $500 on either side of the treatment variable to calculate the RD-Effect and P-values unless otherwise stated.

Dollar Raised After Estimates for Gender

Table: Dollar Difference Discontinuity and Corresponding Dollars Raised After by Gender

Functional Form	Kernel	Controls	Males	Females	t-values
Linear	Epanechnikov	No	$3,066.24***	$2,756.56***	0.92
Linear	Triangle	No	$2,987.03***	$2,701.07***	0.86
Quadratic	Epanechnikov	No	$2,622.26***	$2,456.98 ***	0.41
Linear	Epanechnikov	Yes	$2,919.48***	$2,656.33***	0.78
BW $102	Epanechnikov	No	$2,215.61***	$2,247.85***	-0.12
CCT $2,155	Epanechnikov	No	$4,018.73***	$2,961.39***	3.04***

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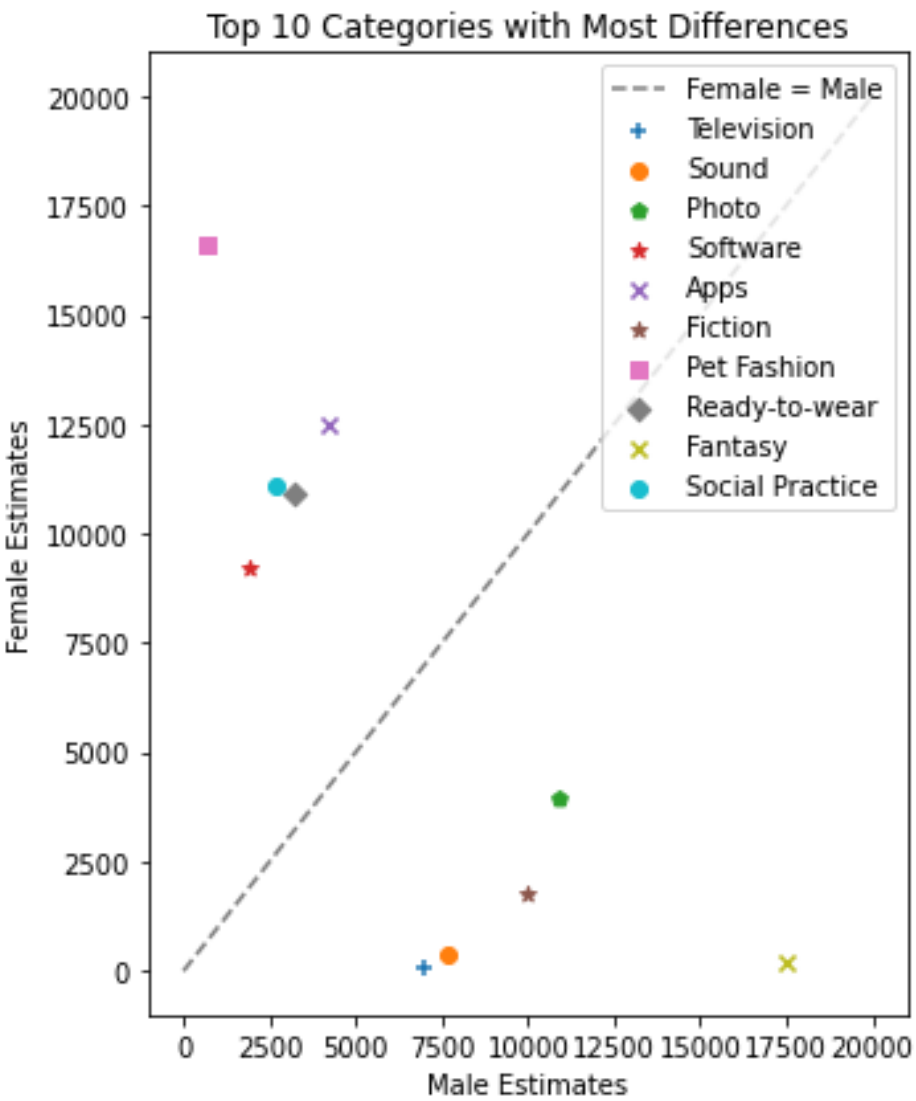
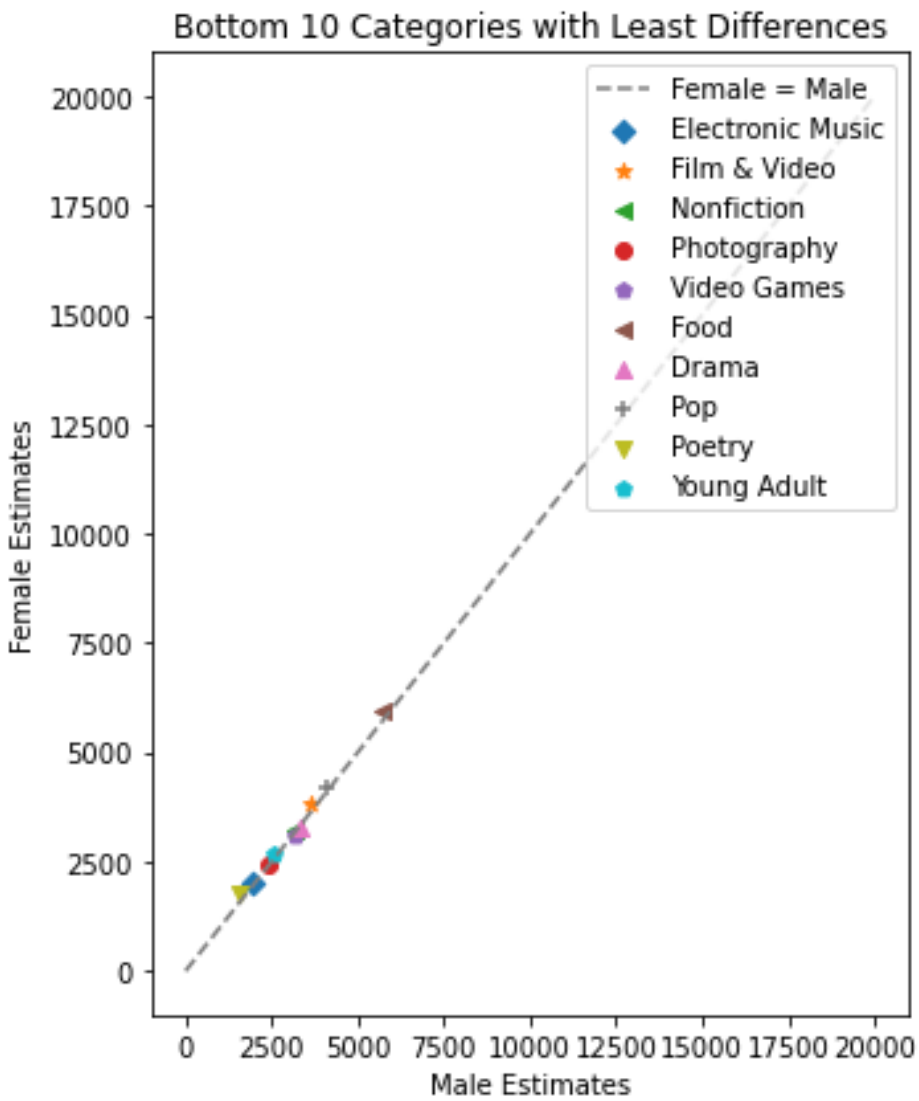
Top and Bottom 10 Categories in Differences





Success Rate Estimates for Gender

Table: Dollar Difference Discontinuity and Corresponding Success Rates by Gender

Functional Form	Kernel	Controls	Males	Females	t-values
Linear	Epanechnikov	No	78.1%***	78.03%***	0.06
Linear	Triangle	No	76.5%***	76.6%***	-0.15
Quadratic	Epanechnikov	No	70.3%***	71.4%***	-0.72
Linear	Epanechnikov	Yes	78.2%***	78.1%***	0.08
BW $102	Epanechnikov	No	60.1%***	61.6%***	-0.68
CCT $2,155	Epanechnikov	No	82.1%***	82.0%***	0.07

Notes: Additional controls include US based Kickstarters or not, and campaign duration. *, **, and ***: statistical significance at the 10%, 5%, and 1% levels, respectively. The RD reflects individuals $500 on either side of the treatment variable to calculate the RD-Effect and P-values unless otherwise stated.

Key Robustness

- Robustness for cutoff and bandwidth ▸ A
  - Results remain robust through choice of bandwidth and cutoff
- Investigated the concern of bunching near the threshold ▸ B
  - Used a donut-hole RD to remove Kickstarters $200 near the threshold
- Probability of actually being entrepreneur's first Kickstarter campaign ▸ C
  - Employed a Light GBM model to predict probabilities for treatment
  - Results remain robust with improved identification

Conclusion

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- Winning the first Kickstarter has significant benefits for "new entrepreneurs":
  - Total dollars raised after the first Kickstarter campaigns are approximately $3,000 more
  - Males receive approximately $1,000 more than female counterparts that successfully complete their first Kickstarter
  - Differences among gender exist only in a subset of sample
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  - Estimated using regression discontinuity design
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  - Total dollars raised after the first Kickstarter campaigns are approximately $3,000 more
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  - Differences among gender exist only in a subset of sample
  - Results demonstrate empirically the effectiveness of crowdfunding platforms for entrepreneurs ability of persistence after success
- Some limitations of the approach:
  - Gender identification algorithm provides expected gender only using first names which might be different than real-world
  - Limited generalizability for entrepreneurs that might be significantly away from threshold

The End

Questions? Comments?

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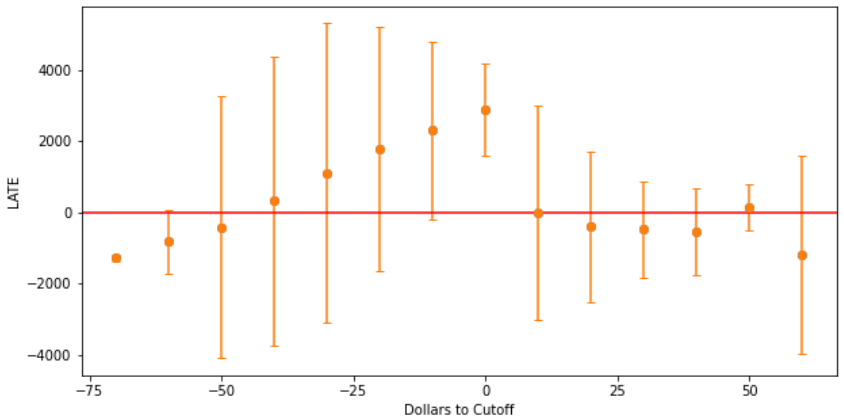
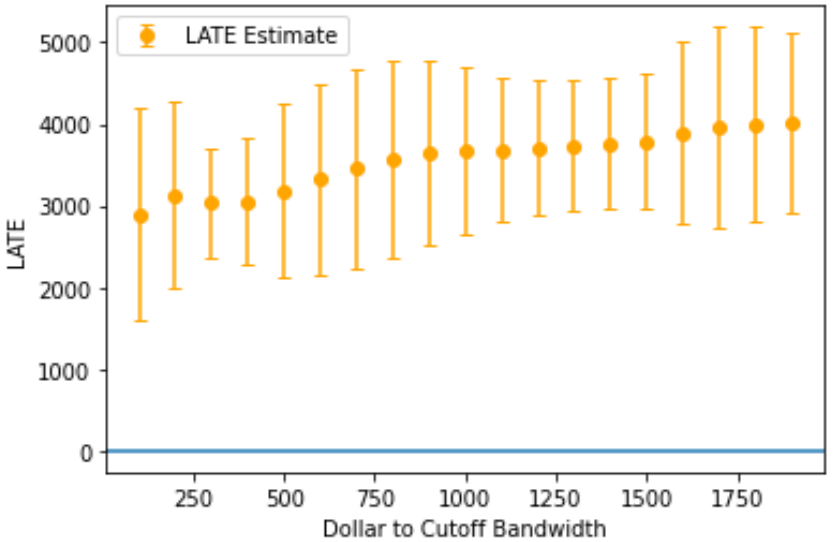
Bandwidth and Cutoff

Cutoff Sensitivity



Bandwidth Sensitivity



- Estimates for RD are robust to different thresholds
- LATE estimates are all positive and statistically significant for different bandwidths Back

Probability of Treatment as Weights

Back

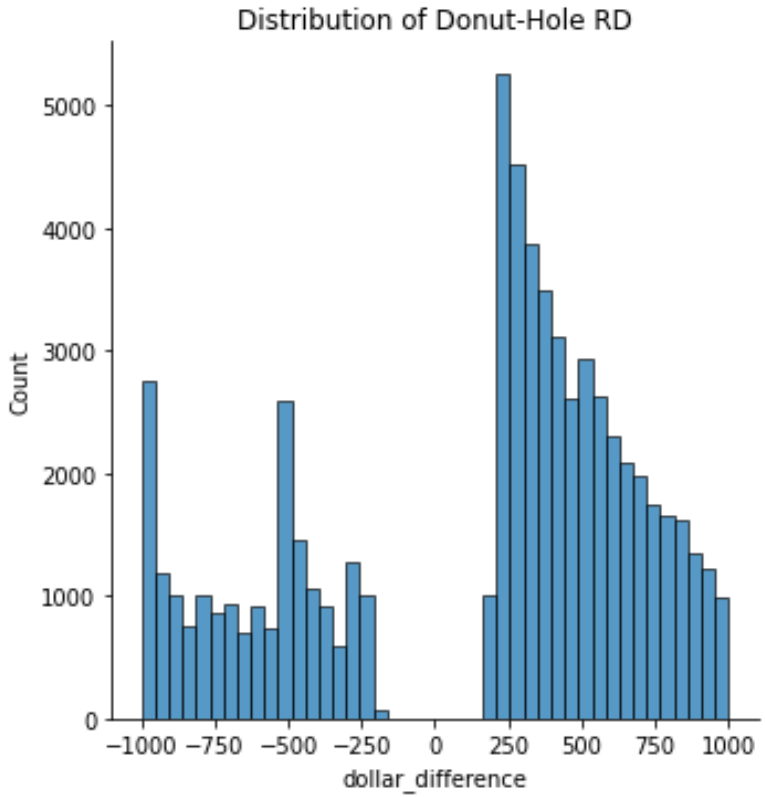
Regression Specification	Function of Dollar Difference	Kernel	Additional Controls	Discontinuity Estimated Raised After
(1) Regression in Main Figure	Linear	Epanechnikov	No	$3,165.55***
(2)	Linear	Triangle	No	$3,118.51***
(3)	Quadratic	Epanechnikov	No	$2,860.19***
(4)	Linear	Epanechnikov	Yes	$3,055.996***
(5)(IK BW: $102)	Linear	Epanechnikov	No	$2,857.97***
(6)(CCT BW: $2,155)	Linear	Epanechnikov	No	$4,008.89***

Notes: Additional controls include US based Kickstarters or not, and campaign duration. *, **, and ***: statistical significance at the 10%, 5%, and 1% levels, respectively. The RD reflects individuals $500 on either side of the treatment variable to calculate the RD-Effect and P-values unless otherwise stated.

Concern of Bunching near Threshold

Back

- Overestimation concern due to bunching near the threshold



- The density of the data when conducting a donut hole RD within a \$1,000 bandwidth and dropping all observations between -\$200 and \$200.

Concern of Bunching near Threshold

Back

Regression Specification	Function of Dollar Difference	Kernel	Additional Controls	Discontinuity Estimated Raised After
(1)	Linear	Triangle	No	$6,015.40***
(2)	Quadratic	Epanechnikov	No	$8,351.25**
(3)	Linear	Epanechnikov	Yes	$5,932.03***
(4)(CCT BW: $622.53)	Linear	Epanechnikov	No	$6,830.54***

Notes: Additional controls include US based campaigns or not, and campaign duration. *, **, and ***: statistical significance at the 10%, 5%, and 1% levels, respectively. All RDs are done with $1,000 bandwidths unless otherwise stated