

Supplementary Material for
Do Firms Purposefully Change Capital Structure?
Evidence from an Investment-Opportunity Shock to Drug Firms

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Supplementary Table A.1
Market Leverage of Drug Firms after the BPCIA

Table A.1 presents the coefficient estimates from OLS regressions. All firm level data are from the COMPUSTAT industrial database. Market leverage (MLEV) is the ratio of total debt to the market value of assets. The sample includes firms from the nondurable goods manufacturing segments (NAICS codes 3111--3262) over the periods 2007--2012 (column 1) and 2005--2007 and 2010--2012 (column 2). DRUG is a dummy variable that takes a value of 1 for firms in the NAICS group 3254 (Pharmaceutical and Medicine Manufacturing – Bureau of Labor Statistics – U.S. Department of Labor), and 0 otherwise. POST_BPCIA is a dummy variable that takes a value of 1 for the years 2010--2012, and 0 otherwise. Control variables include q , TANG, LSIZE, RATING, RD, OPERCF, EVOL. Refer to the Appendix in the main paper for detailed variable definitions. Standard errors reported in parentheses are clustered at the NAICS-group level. ***, ** and * indicate statistical significance at the 1%, 5%, and 10% (2-tail) test levels, respectively.

Dependent variables:	MLEV 1	MLEV 2
DRUG × POST_BPCIA	-0.027** (0.011)	-0.026*** (0.008)
DRUG	Yes	Yes
POST_BPCIA	Yes	Yes
Control variables	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes
No. of obs.	2,373	2,382
R^2	0.158	0.149

Supplementary Table A.2

Debt Structure of Dug Firms without Biological Drugs and Biological Firms after the BPCIA

Table A.2 presents the coefficient estimates from OLS regressions. All firm level data are from the COMPUSTAT industrial database. The sample includes firms from the nondurable goods manufacturing segments (NAICS codes 3111--3262) over the period 2007--2012. Drug firms without biological drugs (NOBIO) are those in the NAICS group 3254 (excluding biological firms, NAICS code 325414). Biological firms (BIO) are those with NAICS code 325414. POST_BPCIA is a dummy variable that takes a value of 1 for the years 2010--2012, and 0 otherwise. Control variables include q , TANG, LSIZE, RATING, RD, OPERCF, EVOL. Refer to the Appendix in the main paper for detailed variable definitions. Standard errors reported in parentheses are clustered at the NAICS-group level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% (2-tail) test levels, respectively.

Dependent variables:	LEV 1	UDEBT 2	DEBT3 3	DEBT5 4	CDEBT 5	CLEV 6
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<i>Panel A. Drug Without Biological</i>						
NOBIO × POST_BPCIA	-0.019** (0.008)	0.086*** (0.028)	0.033** (0.015)	0.021** (0.010)	-0.075*** (0.005)	-0.022*** (0.002)
NOBIO	Yes	Yes	Yes	Yes	Yes	Yes
POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,211	1,807	1,766	1,766	1,970	2,210
R^2	0.207	0.154	0.252	0.280	0.212	0.156
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<i>Panel B. Biological</i>						
BIO × POST_BPCIA	-0.055*** (0.006)	0.287*** (0.054)	0.152*** (0.022)	0.041*** (0.013)	-0.148*** (0.006)	-0.053*** (0.002)
BIO	Yes	Yes	Yes	Yes	Yes	Yes
POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	1,947	1,639	1,605	1,580	1,782	1,946
R^2	0.136	0.156	0.216	0.270	0.291	0.195

Supplementary Table A.3

Debt Structure of Drug Firms after the BPCIA: Additional Controls for Financial Constraints

Table A.3 presents the coefficient estimates from OLS regressions. All firm level data are from the COMPUSTAT industrial database. The sample includes firms from the nondurable goods manufacturing segments (NAICS codes 3111--3262) over the period 2007--2012. DRUG is a dummy variable that takes a value of 1 for firms in the NAICS group 3254 (Pharmaceutical and Medicine Manufacturing – Bureau of Labor Statistics – U.S. Department of Labor), and 0 otherwise. POST_BPCIA is a dummy variable that takes a value of 1 for the years 2010--2012, and 0 otherwise. Dividend Payer (DIVP) is an indicator for firms that pay dividends or repurchases their stocks. LAGE is the natural logarithm of the years since the firm's IPO date or since the firm's stock price is available in COMPUSTAT (if the IPO date is missing). Credit Ratings (CRATING) is a numerical variable ranging from 0 (unrated debt) to 23 (AAA debt). Control variables include q , TANG, LSIZE, RATING, RD, OPERCF, EVOL. Refer to the Appendix in the main paper for detailed variable definitions. Standard errors reported in parentheses are clustered at the NAICS-group level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% (2-tail) test levels, respectively.

Dependent variables:	LEV 1	UDEBT 2	DEBT3 3	DEBT5 4	CDEBT 5	CLEV 6
DRUG × POST_BPCIA	-0.033*** (0.009)	0.143*** (0.023)	0.074** (0.031)	0.049** (0.022)	-0.072*** (0.012)	-0.026*** (0.002)
DRUG	-0.052** (0.022)	0.041*** (0.012)	0.009 (0.024)	-0.016 (0.018)	0.206*** (0.022)	0.052*** (0.005)
POST_BPCIA	-0.077* (0.035)	0.257** (0.092)	0.086 (0.116)	0.061 (0.121)	-0.084** (0.033)	-0.006 (0.007)
Financial constraints proxies:						
DIVP	-0.064*** (0.016)	0.010 (0.037)	0.007 (0.052)	0.019 (0.034)	-0.045 (0.037)	-0.019 (0.013)
LAGE	-0.023 (0.015)	0.085** (0.032)	0.047* (0.023)	0.023 (0.014)	0.025* (0.014)	0.013* (0.007)
CRATING	0.006** (0.002)	0.006* (0.003)	-0.007* (0.004)	-0.010** (0.003)	-0.007 (0.005)	-0.002 (0.001)
DIVP × POST_BPCIA	0.007 (0.026)	0.045 (0.030)	0.026 (0.054)	0.015 (0.042)	0.019 (0.024)	0.011 (0.009)
LAGE × POST_BPCIA	-0.004 (0.009)	-0.027 (0.020)	-0.021 (0.020)	-0.014 (0.015)	-0.012 (0.008)	-0.009 (0.005)
CRATING × POST_BPCIA	-0.001 (0.001)	0.008*** (0.002)	0.003 (0.005)	-0.004 (0.003)	-0.001 (0.001)	0.000 (<0.001)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,371	1,922	1,885	1,854	2,093	2,370
R^2	0.157	0.193	0.219	0.271	0.262	0.173

Supplementary Table A.4

Debt Structure of Drug Firms after the BPCIA: Using Alternative Proxies for Collateral and Asset Redeployability

Table A.4 presents the coefficient estimates from OLS regressions. All firm level data are from the COMPUSTAT industrial database. The sample includes firms from the nondurable goods manufacturing segments (NAICS 3111--3262) over the period 2007--2012. DRUG is a dummy variable that takes a value of 1 for firms in the NAICS group 3254 (Pharmaceutical and Medicine Manufacturing – Bureau of Labor Statistics – U.S. Department of Labor), and 0 otherwise. POST_BPCIA is a dummy variable that takes a value of 1 for the years 2010--2012, and 0 otherwise. Total Tangibility (TTANG) is the ratio of the sum of PP&E, receivables, inventory, and cash to assets (Berger, Ofek, and Swary, 1996). Value-Weighted Redeployability (VWR), Correlation-Adjusted Redeployability (CAR), and Equally-Weighted Redeployability (EWR) are three measures of collateral redeployability from Kim and Kung (2017). Control variables include q , TANG, LSIZE, RATING, RD, OPERCF, EVOL. Refer to The Appendix in the main paper for detailed variable definitions. Standard errors reported in parentheses are clustered at the NAICS-group level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% (2-tail) test levels, respectively.

Dependent variables:	LEV 1	UDEBT 2	DEBT3 3	DEBT5 4	CDEBT 5	CLEV 6
<i>Panel A. Total Tangibility</i>						
DRUG × POST_BPCIA	-0.028*** (0.006)	0.153*** (0.025)	0.076*** (0.024)	0.051** (0.023)	-0.097*** (0.005)	-0.031*** (0.002)
DRUG	-0.047** (0.021)	0.055** (0.017)	0.013 (0.016)	-0.023* (0.012)	0.225*** (0.008)	0.055*** (0.002)
POST_BPCIA	-0.175*** (0.047)	0.029 (0.074)	-0.079 (0.085)	-0.008 (0.085)	-0.146** (0.060)	-0.052** (0.023)
TTANG	-0.298** (0.103)	0.092 (0.056)	0.084 (0.170)	-0.081 (0.148)	0.012 (0.046)	-0.018 (0.014)
TTANG × POST_BPCIA	0.157*** (0.039)	0.152* (0.077)	0.121 (0.097)	-0.004 (0.125)	0.112* (0.056)	0.048** (0.020)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,336	1,917	1,880	1,851	2,088	2,365
R^2	0.108	0.134	0.218	0.285	0.243	0.157

Supplementary Table A.4 (continued)

Dependent variables:	LEV 1	UDEBT 2	DEBT3 3	DEBT5 4	CDEBT 5	CLEV 6
<i>Panel B. Value-Weight Redeployability</i>						
DRUG × POST_BPCIA	-0.040*** (0.007)	0.160*** (0.025)	0.071*** (0.021)	0.040** (0.018)	-0.086*** (0.004)	-0.030*** (0.001)
DRUG	-0.037 (0.026)	0.046** (0.020)	0.013 (0.020)	-0.027 (0.015)	0.223*** (0.009)	0.054*** (0.003)
POST_BPCIA	-0.145*** (0.045)	0.065 (0.124)	-0.116 (0.098)	-0.142 (0.128)	-0.059** (0.023)	-0.025*** (0.008)
VWR	-0.416 (0.270)	0.273 (0.359)	0.003 (0.244)	-0.091 (0.211)	0.056 (0.093)	0.014 (0.038)
VWR × POST_BPCIA	0.193* (0.096)	0.151 (0.245)	0.329 (0.230)	0.416 (0.267)	-0.065 (0.082)	0.007 (0.024)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,369	1,920	1,882	1,853	2,091	2,368
R ²	0.100	0.136	0.215	0.287	0.234	0.154
<i>Panel C. Correlation-Adj. Redeployability</i>						
DRUG × POST_BPCIA	-0.044*** (0.008)	0.163*** (0.027)	0.074*** (0.022)	0.042** (0.019)	-0.086*** (0.005)	-0.029*** (0.001)
DRUG	-0.034 (0.028)	0.044* (0.021)	0.010 (0.021)	-0.029 (0.017)	0.223*** (0.010)	0.054*** (0.003)
POST_BPCIA	-0.157*** (0.043)	0.104 (0.133)	-0.068 (0.097)	-0.121 (0.125)	-0.054** (0.024)	-0.023** (0.008)
CAR	-0.817 (0.521)	0.495 (0.700)	0.137 (0.468)	-0.009 (0.398)	0.091 (0.168)	0.018 (0.066)
CAR × POST_BPCIA	0.465** (0.203)	0.037 (0.546)	0.341 (0.386)	0.659 (0.470)	-0.153 (0.177)	0.001 (0.055)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,369	1,920	1,882	1,853	2,091	2,368
R ²	0.100	0.134	0.215	0.289	0.234	0.154

Supplementary Table A.4 (continued)

Dependent variables:	LEV 1	UDEBT 2	DEBT3 3	DEBT5 4	CDEBT 5	CLEV 6
<i>Panel D. Equally-Weight Redeployability</i>						
DRUG × POST_BPCIA	-0.037*** (0.007)	0.162*** (0.024)	0.077*** (0.021)	0.043** (0.019)	-0.087*** (0.004)	-0.029*** (0.002)
DRUG	-0.044* (0.024)	0.049** (0.020)	0.011 (0.018)	-0.022 (0.013)	0.224*** (0.008)	0.055*** (0.002)
POST_BPCIA	-0.158** (0.053)	0.054 (0.132)	-0.103 (0.109)	-0.142 (0.127)	-0.053* (0.025)	-0.025** (0.008)
EWR	-0.552 (0.363)	0.456 (0.446)	0.115 (0.334)	-0.078 (0.297)	0.075 (0.127)	0.020 (0.052)
EWR × POST_BPCIA	0.262* (0.129)	0.194 (0.303)	0.319 (0.313)	0.441 (0.302)	-0.094 (0.113)	0.006 (0.033)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,369	1,920	1,882	1,853	2,091	2,368
R^2	0.101	0.137	0.215	0.287	0.234	0.154

Supplementary Table A.5

Debt Structure of Drug Firms after the BPCIA: Using Altman's Z-score and Distance to-Default as Proxies for Financial Distress

Table A.5 presents the coefficient estimates from OLS regressions. All firm level data are from the COMPUSTAT industrial database. The sample includes firms from the nondurable goods manufacturing segments (NAICS codes 3111--3262) over the period 2007--2012. DRUG is a dummy variable that takes a value of 1 for firms in the NAICS group 3254 (Pharmaceutical and Medicine Manufacturing – Bureau of Labor Statistics – U.S. Department of Labor), and 0 otherwise. POST_BPCIA is a dummy variable that takes a value of 1 for the years 2010--2012, and 0 otherwise. ZSCORE is Altman's Z-score (Altman (1968)). Distance-to-Default (DTD) is Merton's (1974) distance-to-default. Control variables include q , TANG, LSIZE, RATING, RD, OPERCF, EVOL. Refer to The Appendix in the main paper for detailed variable definitions. Standard errors reported in parentheses are clustered at the NAICS-group level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% (2-tail) test levels, respectively.

Dependent variables:	LEV 1	UDEBT 2	DEBT3 3	DEBT5 4	CDEBT 5	CLEV 6
<i>Panel A. Altman's Z-Score</i>						
DRUG × POST_BPCIA	-0.026** (0.011)	0.146*** (0.026)	0.066** (0.022)	0.037** (0.016)	-0.073*** (0.007)	-0.031*** (0.003)
DRUG	-0.025 (0.015)	0.022 (0.013)	-0.012 (0.013)	0.037*** (0.011)	0.208*** (0.017)	0.067*** (0.005)
POST_BPCIA	-0.101** (0.044)	0.119 (0.103)	-0.022 (0.089)	0.012 (0.086)	-0.109** (0.038)	-0.045** (0.019)
ZSCORE	-0.007*** (0.001)	0.001*** (<0.001)	0.004** (0.001)	0.001 (0.001)	-0.003* (0.001)	-0.001* (0.001)
ZSCORE × POST_BPCIA	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.001** (<0.001)	0.001*** (<0.001)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,080	1,904	1,866	1,836	2,075	2,185
R^2	0.304	0.155	0.260	0.292	0.267	0.275

Supplementary Table A.5 (continued)

Dependent variables:	LEV 1	UDEBT 2	DEBT3 3	DEBT5 4	CDEBT 5	CLEV 6
<i>Panel B. Distance-to-Default</i>						
DRUG × POST_BPCIA	-0.036*** (0.009)	0.146*** (0.029)	0.076*** (0.023)	0.042** (0.018)	-0.086*** (0.006)	-0.029*** (0.002)
DRUG	-0.030 (0.024)	0.036** (0.016)	-0.012 (0.018)	-0.036** (0.013)	0.213*** (0.018)	0.053*** (0.004)
POST_BPCIA	-0.075 (0.045)	0.119 (0.100)	0.001 (0.079)	0.039 (0.074)	-0.083** (0.029)	-0.021* (0.010)
DTD	-0.009 (0.005)	0.022*** (0.007)	0.010** (0.004)	- 0.012*** (0.003)	-0.011 (0.008)	-0.004 (0.002)
DTD × POST_BPCIA	-0.004 (0.003)	0.002 (0.006)	0.005 (0.003)	0.006 (0.004)	0.002 (0.003)	0.001 (0.001)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,340	1,910	1,857	1,819	2,066	2,343
R^2	0.110	0.162	0.235	0.296	0.254	0.163

Supplementary Table A.6

Debt Structure of Drug Firms after the BPCIA: Controlling for Changes in Past Valuation and Performance

Table A.6 presents the coefficient estimates from OLS regressions. All firm level data are from the COMPUSTAT industrial database. The sample includes firms from the nondurable goods manufacturing segments (NAICS codes 3111–3262) over the period 2007–2012. DRUG is a dummy variable that takes a value of 1 for firms in the NAICS group 3254 (Pharmaceutical and Medicine Manufacturing – Bureau of Labor Statistics – U.S. Department of Labor), and 0 otherwise. POST_BPCIA is a dummy variable that takes a value of 1 for the years 2010–2012, and 0 otherwise. Control variables include q , TANG, LSIZE, RATING, RD, OPERCF, EVOL. Refer to The Appendix in the main paper for detailed variable definitions. Standard errors reported in parentheses are clustered at the NAICS-group level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% (2-tail) test levels, respectively.

Dependent variables:						
	Leverage 1	Unsecured Debt 2	Debt Maturing in ≤ 3 Years 3	Debt Maturing in ≤ 5 Years 4	Convertible Debt 5	Convertible Leverage 6
DRUG × POST_BPCIA	-0.055*** (0.007)	0.139*** (0.029)	0.072*** (0.021)	0.040** (0.017)	-0.084*** (0.007)	-0.031*** (0.002)
DRUG	-0.010 (0.024)	0.012 (0.015)	-0.015 (0.019)	-0.026 (0.014)	0.213*** (0.021)	0.057*** (0.004)
POST_BPCIA	-0.087 (0.050)	0.145 (0.111)	-0.017 (0.090)	-0.002 (0.080)	-0.104** (0.039)	-0.028* (0.014)
Proxies for changes in past valuation & performance (each variable is the lagged change):						
Q	-0.001 (0.005)	-0.001 (0.007)	-0.007 (0.005)	0.008*** (0.002)	-0.011 (0.009)	-0.002 (0.002)
SIZE	-0.089* (0.046)	-0.017 (0.038)	-0.064** (0.027)	-0.088** (0.031)	0.030 (0.019)	-0.007* (0.004)
OPERCF	0.121*** (0.029)	0.102** (0.035)	0.064* (0.032)	0.041 (0.038)	-0.040** (0.015)	0.009** (0.004)
$q \times \text{POST_BPCIA}$	-0.005 (0.003)	-0.033 (0.019)	-0.015 (0.016)	0.009 (0.014)	0.010 (0.007)	0.004** (0.002)
SIZE × POST_BPCIA	0.029 (0.017)	0.048 (0.046)	-0.032 (0.036)	0.005 (0.038)	-0.048* (0.025)	-0.018* (0.009)
OPERCF × POST_BPCIA	-0.203*** (0.050)	-0.198 (0.145)	0.007 (0.035)	-0.030 (0.032)	0.144 (0.019)	-0.043*** (0.010)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Control variables × POST_BPCIA	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	2,278	1,842	1,819	1,782	2,012	2,277
R^2	0.113	0.157	0.232	0.290	0.247	0.162