Internet Appendix for "Corporate Cash Shortfalls and Financing Decisions"

Rongbing Huang and Jay R. Ritter*

June 15, 2020

In this Internet Appendix, Figure IA-1 shows the likelihoods of immediate cash depletion with zero external financing for the subgroups of firms sorted by net issue size, net equity issue size, and net debt issue size, respectively, as a percentage of beginning-of-year assets. Figure IA-1A reports the likelihood of cash depletion on the basis of Cash ex post. The figure shows that a larger issue in t is associated with a higher likelihood of running out of cash in t, with this relation being much stronger for net debt issues than for net equity issues, undercutting the importance of pure cash stockpiling and leverage rebalancing motives.

Figure IA-1B shows the likelihood of cash depletion on the basis of Cash _{ex ante}. There is a positive relation between the issue size and the likelihood of cash depletion in Figure IA-1B, although the relation is weaker than in Figure IA-1A. For firms with a net issue size greater than 5% of assets, the cash depletion likelihoods on the basis of Cash _{ex ante} are lower than those on the basis of Cash _{ex post} for both debt and equity issues.

Figure IA-1 shows that the issue size is positively related to the likelihood of immediate cash depletion without external financing. To further understand this finding, Panels A and B of

^{*} Huang is from the Coles College of Business, Kennesaw State University, Kennesaw, GA 30144. Huang can be reached at rhuang 1@kennesaw.edu. Ritter is from the Warrington College of Business Administration, University of Florida, Gainesville, FL 32611. Ritter can be reached at jay.ritter@warrington.ufl.edu. We thank an anonymous referee, Harry DeAngelo, David Denis (editor), Ning Gao (our FMA discussant), Xiao Huang, David McLean, René Stulz (our AFA discussant), Zhaoguo Zhan, and the participants at the University of Arkansas, the Law, Accounting, and Business Workshop of the University of California, Berkeley, the University of Central Florida, Harbin Institute of Technology, Hong Kong University of Science & Technology, Koc University, the University of Oregon, Penn State, the University of Sussex, Tsinghua PBC, Zhongnan University of Economics and Law, the 2015 FMA Annual Meeting, the 2016 University of Ottawa's Telfer Accounting and Finance Conference, the 2019 University of Alberta's Frontiers in Finance Conference, and the 2020 AFA Annual Meeting for useful comments.

Table IA-1 in this Internet Appendix report the means and medians of the cash flow components for the subgroups of firms sorted by net equity issue size and net debt issue size, respectively, as a percent of beginning-of-year assets. Firms with a larger $\Delta E_t \div Assets_{t-1}$ generally have larger investments. For firms with $\Delta E_t \div Assets_{t-1} \geqslant 0.05$, the mean ICF_t $\div Assets_{t-1}$ is only 0.3%. Thus, part of the issue proceeds for this subgroup of firms is used to make up for the low profitability. Interestingly, this subgroup of firms not only has the largest cash need, but also has the largest increase in cash holdings in the same year. So a higher likelihood of cash depletion without the equity issuance is not incompatible with an increase in cash holdings when firms do issue equity. If equity issuers did not issue equity, they would run out of cash. When equity issuers issue equity, they could raise more equity capital than what they need immediately, keeping some cash to finance future cash needs. Firms with a larger $\Delta D_t \div Assets_{t-1}$ have larger Investments_t $\div Assets_{t-1}$, although ICF_t $\div Assets_{t-1}$ is quite flat across the debt issue size groups.

Panel D of Table 3 in the paper reports the mean cash and cash flow components sorted by financing and cash depletion. In this Internet Appendix, Table IA-2 reports the medians. The major patterns on the medians are qualitatively similar to those on the means.

To exclude employee-initiated equity issues from our sample, our paper requires that net equity issue to be $\geq 5\%$ of the book value of assets and $\geq 3\%$ of the market value of equity. A net debt issue is similarly defined. In this Internet Appendix, Tables IA-3 reports the results requiring net issue to be $\geq 5\%$ of assets, without imposing a $\geq 3\%$ of market equity screen. As expected, the economic effects of Tobin's Q on net equity issuance are larger in Tables IA-3 when only requiring net issue size to be $\geq 5\%$ of assets than in Tables 6 and 7 in our paper when requiring net issue size to be $\geq 5\%$ of assets and $\geq 3\%$ of market equity. Although the economic effects of Tobin's Q on the likelihoods of debt and equity issuance are materially different

between Table 6 and regression (1) of Table IA-3, the economic effects of other variables are not materially different.

The results in Table IA-4 suggest that adjusting towards the median leverage of firms in the same industry is not an important motive for the decision to raise external capital. External financing often results in further deviations from target leverage. Many firms issue debt even when their book leverage is above the industry median, and many firms issue equity even when their leverage is below the industry median. Measures of immediate and near-future cash needs continue to be the most important explanatory variables in the multinomial logit regressions for the decision to raise external capital. Furthermore, the multinomial logit regressions for the choice between debt and equity financings show that how persistent cash needs are (as measured by, for example, the internal cash flow, Tobin's Q, and R&D intensity) is highly powerful in explaining the choice between debt and equity financings. When both lagged leverage and the deviation from the industry median leverage are included as independent variables, the economic effect of lagged leverage on the likelihood of equity issuance is negative, partially offsetting the positive economic effect of the leverage surplus measure.

Table IA-5 uses Compustat quarterly data to examine the relation between cash depletion and external financing, with immediate being defined as the current quarter rather than the current year. The results using the quarterly data are qualitatively similar to the results using the annual data. Cash needs in the current quarter have a stronger relation with net debt or equity issuance than cash needs over the next four quarters. The relation between net debt issuance and the current quarter cash needs based on *actual* revenue and spending is especially strong, providing further support for our finding in the paper that net debt issuance, including drawdowns of revolving credit lines, is overwhelmingly motivated by immediate cash needs.

In Panel B of Table 8, the cash depletion dummy variables are correlated with the cash flow components. Table IA-6 reports the multinomial logit regression results by excluding the cash depletion dummy variables from the independent variables. Excluding these dummy variables strengthens the relations between the cash flow components and net debt or net equity issuance, as expected.

Investment spending reported on the statement of cash flows includes capital expenditures, cash acquisition spending, and other investment spending. In Table IA-7, a firm-year with large acquisition spending is defined as one in which cash spending on acquisitions is at least 5% of the book value of assets and 3% of the market value of equity at the beginning of the year. Panel A reports the sample distribution by the type of financing and the presence of large acquisition spending. In 10.6% of the firm-years in our sample, there is large acquisition spending. The ratio is higher conditional on external financing, especially debt financing. Panel B reports the means and medians of acquisition and non-acquisition spending. In the firm-years with net debt issuance, for example, the means of non-acquisition spending and acquisition spending are, respectively, 15.5% and 7.5%, suggesting that although acquisition spending is important, it is a less important use of the debt issuance proceeds than non-acquisition spending.

The results in Panels C-E of Table IA-7 after excluding the firm-years with large acquisition spending from the sample are similar to the corresponding results reported in the paper without excluding the firm-years with large acquisition spending, suggesting that the firm-years with large acquisition spending do not drive the success of our ex post measure of cash needs. The results in Panel F of Table IA-7 suggest that both acquisition spending and non-acquisition spending are strongly associated with external financing.

Table IA-8 shows the correlation matrix of the sources of cash, changes in cash and non-cash assets, and net cash flows. Net debt or equity proceeds are positively correlated with the growth of non-cash assets in the issuance year and future cash needs. Net equity proceeds have the strongest correlation with the change in cash. Net debt proceeds have the strongest correlation with the change in non-cash assets.

McLean (2011) uses R&D, industry cash flow volatility, and a dividend paying dummy variable as proxies for precautionary savings. Table IA-9 shows that these variables also capture expected levels of future cash needs, not just uncertainty about future cash needs. In particular, net equity issuers that have intensive R&D, are in industries with high cash flow volatility, and do not pay dividends prior to the issuance year have large average cash needs in the two postissuance years.

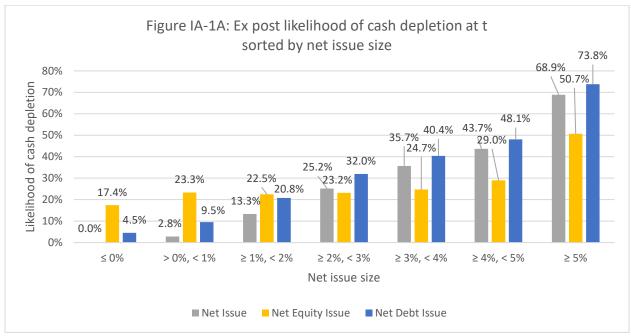
Table IA-10 reports the OLS regression results for the determination of the net issue size. Regressions (1) and (2) are estimated for the subsample of net equity issuers, and the regressions (3) and (4) are estimated for the subsample of net debt issuers. Tobin's Q is the most important independent variable in all of the four regressions, suggesting that firms with growth opportunities raise more net equity or net debt capital. It should be noted, however, that since both the dependent variables and Tobin's Q have assets at t-1 in the denominator, the positive coefficients on Tobin's Q are partly mechanical. Firms with a higher cash ratio at the beginning of the year raise more capital in the year, perhaps because a higher cash ratio is needed for firms with large investment. The stock return in t-1 is positively related to the issue size, but the stock return in t+1 to t+3 is negatively related to the issue size. Net sales and firm age are negatively related to the issue size. R&D intensity is positively related to the net equity issue size in regressions (1) and (2), and negatively related to the net debt issue size in regressions (3) and (4).

Firms that invest more raise more capital, as expected. Less profitable firms are associated with a smaller net equity issue size and a larger net debt issue size than profitable firms.

Similar to Table 11 in the paper, Table IA-11 examines cross-sectional differences in the fraction of net proceeds going to cash reserves. However, Table IA-11 further controls for firm characteristics and market conditions, in addition to the interactions between these variables and financing sources. We continue to find that proxies for future cash needs and uncertainties are positively related to the fraction of net proceeds going to cash reserves.

Figure IA-1. Likelihood of immediate cash depletion sorted by net issue size

In Figure IA-1A, a firm is defined as running out of cash at the end of fiscal year t if Cash $_{ex\ post}$ ≤ 0 , where Cash $_{ex\ post}$ = Cash_t $-\Delta D_t$ $-\Delta E_t$ = Cash_{t-1} + NCF_t. In Figure IA-1B, a firm is defined as running out of cash at the end of fiscal year t if Cash $_{ex\ ante}$ ≤ 0 , where Cash $_{ex\ ante}$ = Cash_{t-1} + NCF_{t-1}. Net issue size, net equity issue size, and net debt issue size are defined as $(\Delta E_t + \Delta D_t)$ \div Assets_{t-1}, $\Delta E_t \div$ Assets_{t-1}, and $\Delta D_t \div$ Assets_{t-1}, respectively. See Appendix I of the paper for detailed variable definitions.



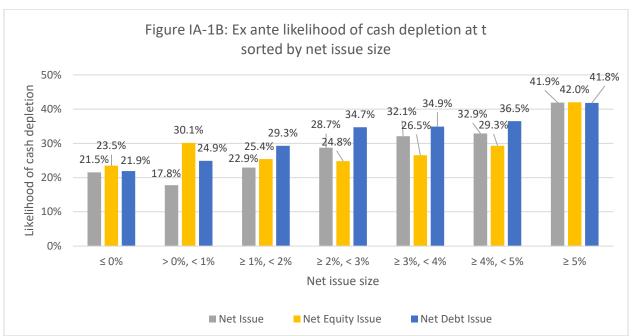


Table IA-1. Mean and median cash flows (%) for firms sorted by ΔD_t and ΔE_t

This table reports the means and medians (in parentheses) of the cash flow items for the subsamples sorted by the net equity issue size (Panel A) and the net debt issue size (Panel B). ΔD_t is the change in interest-bearing debt and ΔE_t is the change in equity from the statements of cash flow. Assets_{t-1} denotes the book value of assets at the end of fiscal year t-1. See Appendix I and Table 1 of the paper for detailed variable definitions.

Panel A. Mean and median cash flows (%) for firms sorted by ΔE_t÷Assets_{t-1}

				$\Delta E_t \div Assets_t$	-1		
VARIABLES	≤0%	(0%, 1%)	[1%, 2%)	[2%, 3%)	[3%, 4%)	[4%, 5%)	≥5%
$\Delta D_t \div Assets_{t-1}$	1.8	2.4	3.5	3.8	3.8	3.8	4.3
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
$\Delta E_t \div Assets_{t-1}$	-1.9	0.3	1.4	2.5	3.5	4.5	33.6
	(-0.1)	(0.2)	(1.4)	(2.4)	(3.4)	(4.5)	(19.4)
$ICF_t \div Assets_{t-1}$	10.7	9.5	10.5	10.8	11.2	10.3	0.3
	(10.6)	(10.3)	(12.5)	(12.6)	(12.6)	(11.7)	(8.0)
$Investments_t \div Assets_{t-1}$	8.4	9.7	11.7	13.0	12.8	12.7	20.5
	(6.0)	(6.7)	(8.4)	(9.2)	(9.2)	(9.4)	(11.7)
Cash Dividends _t \div Assets _{t-1}	1.4	1.1	0.9	0.8	0.7	0.7	0.5
	(0.5)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
$\Delta NWC_t \div Assets_{t-1}$	0.9	1.5	2.9	3.8	5.4	5.3	16.6
	(0.9)	(1.6)	(2.9)	(3.6)	(4.1)	(3.7)	(8.9)
Δ Non-Cash NWC _t ÷Assets _{t-1}	0.9	1.7	2.5	2.4	2.7	2.3	3.2
	(0.6)	(1.1)	(1.7)	(1.6)	(1.7)	(1.6)	(2.2)
$\Delta Cash_t \div Assets_{t-1}$	0.0	-0.3	0.5	1.6	2.6	3.0	13.5
	(0.0)	(0.0)	(0.3)	(0.7)	(0.8)	(0.9)	(3.9)

Panel B. Mean and median cash flows (%) for firms sorted by ∆Dt÷Assetst-1

				$\Delta D_t \div Assets_t$	-1		
VARIABLES	≤0%	(0%, 1%)	[1%, 2%)	[2%, 3%)	[3%, 4%)	[4%, 5%)	≥5%
$\Delta D_t \div Assets_{t-1}$	-3.6	0.5	1.5	2.5	3.5	4.5	19.3
	(-1.4)	(0.4)	(1.5)	(2.5)	(3.5)	(4.5)	(12.4)
$\Delta E_t \div Assets_{t-1}$	4.0	1.5	1.7	1.3	1.3	1.4	3.3
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)
$ICF_t \div Assets_{t-1}$	8.9	9.6	9.4	9.7	9.5	9.1	9.3
	(10.3)	(10.6)	(10.3)	(10.5)	(10.3)	(10.4)	(11.1)
$Investments_t \div Assets_{t-1}$	6.5	8.4	9.1	9.9	10.4	11.2	22.9
	(4.8)	(6.9)	(7.6)	(8.4)	(9.1)	(9.6)	(16.3)
Cash Dividends _t \div Assets _{t-1}	1.1	1.4	1.3	1.3	1.3	1.2	1.0
	(0.0)	(0.7)	(0.7)	(0.7)	(0.7)	(0.5)	(0.0)
$\Delta NWC_t \div Assets_{t-1}$	1.9	1.8	2.1	2.3	2.6	2.8	7.6
	(0.8)	(1.5)	(1.6)	(1.9)	(2.1)	(2.3)	(4.6)
Δ Non-Cash NWC _t ÷Assets _{t-1}	0.2	1.4	1.6	2.1	2.4	2.5	5.1
	(0.3)	(1.0)	(1.2)	(1.4)	(1.8)	(1.8)	(3.3)
$\Delta Cash_t \div Assets_{t-1}$	1.8	0.5	0.5	0.1	0.1	0.3	2.3
	(0.2)	(0.1)	(0.0)	(0.0)	(0.0)	(0.1)	(0.2)

Table IA-2. Median cash and cash flow components (%) sorted by financing and cash depletion

This table reports the median cash and cash flow components (%) for firms that also have cash flow data in t+1 and t+2 sorted by financing and cash depletion. Cash $_{ex\ post}$ =Cash_t +NCF_t, and Cash $_{ex\ ante}$ =Cash_{t-1} +NCF_{t-1}. ICF denotes the internal cash flow, and NCF denotes the net cash flow. See Appendix I and Table 1 for detailed variable definitions.

	Debt	issue	Equity	Equity issue		Debt issue		issue
	Cash	Cash ex post		Cash ex post		ex ante	Cash	ex ante
	>0	≤0	>0	≤0	>0	≤ 0	>0	≤ 0
Cash _{t-1} ÷Assets _{t-1}	13.4	3.6	23.1	5.5	8.0	2.7	21.0	4.3
$\Delta Cash_t \div Assets_{t-1}$	3.2	0.0	9.8	1.7	0.1	0.4	6.7	2.6
$ICF_{t-1} \div Assets_{t-1}$	11.0	10.2	5.4	6.8	11.3	9.3	7.3	4.7
$ICF_{t} \div Assets_{t-1}$	12.1	11.0	8.4	8.3	12.1	10.2	9.4	6.9
$ICF_{t+1} \div Assets_{t-1}$	12.8	12.2	8.7	9.5	13.1	11.2	9.9	7.9
$ICF_{t+2} \div Assets_{t-1}$	13.4	12.8	8.5	9.6	13.7	11.8	9.7	8.4
$NCF_{t-1} \div Assets_{t-1}$	-0.6	-4.3	-6.9	-12.1	1.5	-12.6	-1.3	-21.0
$NCF_{t} \div Assets_{t-1}$	-4.2	-15.7	-3.2	-28.9	-12.1	-13.7	-14.7	-20.1
$NCF_{t+1} \div Assets_{t-1}$	-2.6	-2.8	-10.6	-15.8	-1.6	-4.5	-12.5	-14.4
$NCF_{t+2} \div Assets_{t-1}$	-0.6	-1.1	-9.3	-11.1	-0.4	-2.1	-9.3	-11.5

Table IA-3. Multinomial logit for the issuance and choice of securities (Definitions of debt and equity issues not including the 3% of market equity requirement)

This table reports the multinomial logit regression results for the decision to issue only debt, only equity, both debt and equity, or neither debt nor equity (the base case). A firm is defined to have a pure equity issue if $\Delta E_t \div Assets_{t-1} \geqslant 0.05$ and $\Delta D_t \div Assets_{t-1} < 0.05$. A firm is defined to have a pure debt issue if $\Delta D_t \div Assets_{t-1} \geqslant 0.05$ and $\Delta E_t \div Assets_{t-1} < 0.05$. A firm is defined to have dual issues of debt and equity if $\Delta E_t \div Assets_{t-1} \geqslant 0.05$ and $\Delta D_t \div Assets_{t-1} \geqslant 0.05$. Immediate Depletion equals one if $Cash_{t-1} + NCF_t \leqslant 0$, and equals zero otherwise. Near Depletion equals one if $Cash_{t-1} + NCF_t + NCF_{t+1} \leqslant 0$, and equals zero otherwise. Medium Depletion equals one if $Cash_{t-1} + NCF_t > 0$, $Cash_{t-1} + NCF_t + NCF_{t+1} > 0$, and $Cash_{t-1} + NCF_t + NCF_{t+2} \leqslant 0$, and equals zero otherwise. Similarly, the cash depletion dummy variables measured ex ante are defined by replacing NCF_t , NCF_{t+1} , and NCF_{t+2} with NCF_{t-1} . This table reports the economic effects and the z-statistics (in italic) of the coefficients using robust standard errors corrected for heteroskedasticity and clustering at the firm level. The industry and year dummy variables and the intercept are among the independent variables, but their economic effects and z-statistics are not reported. See Appendix I, Table 1, and Table 6 for detailed variable definitions and economic effect calculations.

	Pure	debt	Du	ıal	Pure e	quity	Debt	Equity
	iss	sue	iss	ue	iss	ue	issue	issue
	Econ.	<i>z</i> -	Econ.	z-	Econ.	z-	Econ.	Econ.
VARIABLES	eff.	stat.	eff.	stat.	eff.	stat.	eff.	eff.
Regression (1): N = 109,535, P	seudo R	$^{2} = 33.4$	4%					_
Immediate Depletion	52.1	136.0	12.3	57.6	5.5	76.0	64.4	17.8
Near Depletion	5.9	35.7	5.7	21.4	4.8	33.3	11.6	10.5
Medium Depletion	2.2	13.1	3.6	9.9	1.9	13.1	5.8	5.5
Tobin's Q _{t-1}	1.2	12.9	1.2	22.5	4.2	30.2	2.4	5.4
Return _{t-1}	0.6	6.0	0.8	12.1	1.5	10.1	1.4	2.3
Return _{t+1, t+3}	1.2	-0.3	-0.7	-4.5	-2.2	-7.8	0.5	-2.9
Term Spread _{t-1} (%)	-0.3	-0.0	0.5	1.7	-0.1	0.1	0.2	0.4
Default Spread _{t-1} (%)	-1.3	0.9	1.2	4.7	3.1	6.6	-0.1	4.3
$Ln(Sales)_{t-1}$	4.4	6.5	-0.7	-5.9	-5.2	-19.0	3.7	-5.9
$Ln(Age)_t$	-0.7	-8.2	-1.1	-12.1	-1.8	-11.7	-1.8	-2.9
Leverage _{t-1}	-1.7	-2.0	0.9	9.7	2.0	11.6	-0.8	2.9
$R\&D_{t-1}$	-2.2	-1.9	0.9	10.0	3.2	18.7	-1.3	4.1
Industry Volatility _{t-1}	0.3	3.3	0.6	4.8	1.5	6.6	0.9	2.1
Dividend Payer _{t-1}	0.1	-5.0	-0.7	-8.0	-2.8	-13.4	-0.6	-3.5
D ' (2) N 124 050 D	1 D	2 10	1.07					
Regression (2): N = 124,058, P				226	2.7	20.7	12.0	7.4
Immediate Depletion ex ante	10.2	40.9		33.6	3.7	29.7	13.9	7.4
Near Depletion ex ante	4.9	15.7		16.3	3.7	18.3	7.5	6.3
Medium Depletion ex ante	2.0	5.3		6.0	2.5	9.1	3.2	3.7
Tobin's Q _{t-1}	1.7	8.9		22.5	4.4	30.3	3.2	5.9
Return _{t-1}	5.0	16.2		17.3	2.4	15.7	6.2	3.6
Return _{t+1, t+3}	-2.0	-8.0		-7.8	-2.8	-10.9	-3.7	-4.5
Term Spread _{t-1} (%)	-0.3	-0.2		2.1	-0.1	0.1	0.3	0.5
Default Spread _{t-1} (%)	-0.7	0.4		3.6	2.9	6.3	0.2	3.8
Ln(Sales) _{t-1}	2.1	1.0		-13.5	-5.4	-24.2	0.7	-6.8
Ln(Age) _t	-2.9	-14.2		-14.1	-2.0	-12.9	-4.3	-3.4
Leverage _{t-1}	2.2	11.1		19.0	2.3	17.9	3.6	3.7
$R\&D_{t-1}$	-5.6	-9.6		7.8	3.2	18.8	-4.9	3.9
Industry Volatility _{t-1}	-1.9	-3.7		-0.5	1.4	4.3	-2.0	1.3
Dividend Payer _{t-1}	0.4	-1.6	-0.6	-6.2	-2.9	-13.0	-0.2	-3.5

Table IA-4. Leverage deviations and likelihoods of net debt and equity issuances

Panel A reports likelihoods (in percent) of net debt and equity issuances in year t sorted by Leverage Surplus_{t-1}, defined as the firm's book leverage – the median book leverage of all firms in the same industry as the firm at the end of year t-1 (using Fama and French's 17 industry classification). For each group sorted by net debt and equity issuance in year t, Panel B shows the distribution of Leverage Surplus at the end of each year from t-1 to t+3. Panel C reports the multinomial logit regression results for the decision to issue only debt, only equity, both debt and equity, or neither debt nor equity (the base case), using *actual* net cash flows (NCFs). Panel D reports the multinomial logit regression results for the decision to issue only debt (the base case), only equity, or both debt and equity, using the subsample of net issuers that would otherwise face immediate cash depletion (i.e., Cash ex post ≤0). Panels C and D of this table include Leverage Surplus_{t-1} as an additional independent variable but are otherwise the same as Tables 6 and 9 of the paper, respectively.

Panel A. Leverage surplus and likelihoods of net debt and equity issuances

Leverage	No	Pure debt	Dual	Pure equity	Debt	Equity
Surplus _{t-1} Quartile	issue	issue	issues	issue	issue	issue
1 (low)	76.9	13.2	1.7	8.2	14.9	9.9
2	70.9	19.8	2.2	7.1	22.0	9.3
3	68.7	21.3	2.8	7.2	24.1	10.0
4 (high)	66.8	20.0	3.9	9.3	23.9	13.2

Panel B. Leverage surplus dynamics around issuance years

Year	Leverage surplus	No	Pure debt	Dual	Pure equity	Debt	Equity
1 cai	Leverage surplus	issue	issue	issues	issue	issue	issue
t-1	<-2.5%	47.4%	38.8%	32.9%	44.3%	38.1%	41.5%
t-1	\geq -2.5%, \leq 2.5%	9.5%	11.2%	8.8%	7.7%	10.9%	7.9%
t-1	>2.5%	43.1%	50.0%	58.4%	48.1%	51.0%	50.6%
t	<-2.5%	49.7%	25.9%	26.9%	55.7%	26.0%	48.6%
t	\geq -2.5%, \leq 2.5%	9.4%	11.4%	8.9%	7.5%	11.1%	7.9%
t	>2.5%	40.9%	62.7%	64.1%	36.8%	62.9%	43.6%
t+1	<-2.5%	49.3%	28.0%	28.5%	54.3%	28.1%	47.9%
t+1	\geq -2.5%, \leq 2.5%	9.6%	11.0%	8.3%	7.2%	10.7%	7.4%
t+1	>2.5%	41.2%	61.0%	63.2%	38.6%	61.2%	44.6%
t+2	<-2.5%	48.3%	29.9%	29.0%	52.4%	29.8%	46.6%
t+2	\geq -2.5%, \leq 2.5%	9.3%	9.6%	7.9%	7.5%	9.4%	7.6%
t+2	>2.5%	42.5%	60.5%	63.1%	40.2%	60.9%	45.8%
t+3	<-2.5%	47.5%	30.8%	29.6%	50.8%	30.7%	45.7%
t+3	\geq -2.5%, \leq 2.5%	8.9%	9.8%	7.3%	7.3%	9.5%	7.3%
t+3	>2.5%	43.5%	59.4%	63.2%	41.9%	59.8%	47.1%

Panel C. Multinomial logit for the decision to issue debt or equity

	Pure	debt	Dι	ıal	Pure e	quity	Debt	Equity
	iss	sue	issı	ıes	issı	ıe	issue	issue
	Econ.	z-	Econ.	<i>z</i> -	Econ.	<i>z</i> -	Econ.	Econ.
VARIABLES	eff.	stat.	eff.	stat.	eff.	stat.	eff.	eff.
Regression: $N = 109,535, 1$	Pseudo 1	$R^2 = 32$	2.8%					
Immediate Depletion	51.8	135.3	11.7	46.3	6.9	75.5	63.5	18.6
Near Depletion	5.4	35.4	5.9	18.1	5.2	34.5	11.3	11.1
Medium Depletion	1.7	12.4	3.8	8.6	2.3	14.1	5.5	6.1
Tobin's Q _{t-1}	-2.5	-6.1	0.0	-0.7	1.9	8.3	-2.5	1.9
Return _{t-1}	0.4	2.9	0.6	2.8	1.2	5.6	1.0	1.8
Return _{t+1, t+3}	1.0	-0.6	-0.7	-4.3	-2.1	-7.6	0.3	-2.8
Term Spread _{t-1} (%)	-0.3	0.1	0.5	1.9	0.0	0.2	0.2	0.5
Default Spread _{t-1} (%)	-1.2	0.6	1.0	3.9	2.9	6.1	-0.2	3.9
$Ln(Sales)_{t-1}$	4.1	5.4	-0.9	-7.2	-5.2	-20.8	3.2	-6.1
$Ln(Age)_t$	-0.9	-8.7	-1.0	-12.0	-1.8	-12.0	-1.9	-2.8
Leverage _{t-1}	1.5	0.9	-0.6	-0.4	0.9	0.8	0.9	0.3
$R\&D_{t-1}$	-1.8	-0.9	0.8	9.3	3.0	20.2	-1.0	3.8
Industry Volatility _{t-1}	0.5	3.5	0.6	4.7	1.4	6.3	1.1	2.0
Dividend Payer _{t-1}	-0.1	-4.6	-0.5	-6.3	-2.5	-12.0	-0.6	-3.0
Leverage Surplus _{t-1}	-3.0	-1.0	1.6	1.7	1.2	0.9	-1.4	2.8

Panel D. Multinomial logit for the debt vs. equity choice, conditional on financing and immediate cash depletion

	Dual	issue	Pure equ	ity issue	Equity issue
VARIABLES	Econ. eff.	z-stat.	Econ. eff.	z-stat.	Econ. eff.
Regression: $N = 23,947$,	Pseudo $R^2 = 1$	16.7%			
Cash _{t-1}	3.6	6.7	0.3	2.2	3.9
ICF _{t-1}	-5.2	-11.6	-8.4	-13.9	-13.6
Tobin's Q _{t-1}	0.2	3.1	7.4	10.6	7.6
Return _{t-1}	4.2	9.9	3.8	8.8	8.0
Return _{t+1, t+3}	-2.5	-5.1	-2.8	-5.7	-5.3
Term Spread _{t-1} (%)	2.5	2.5	1.1	1.5	3.6
Default Spread _{t-1} (%)	1.5	1.6	2.6	2.1	4.1
Ln(Sales) _{t-1}	-1.5	-5.5	-7.8	-12.0	-9.3
Ln(Age) _t	-3.8	-8.9	-2.5	-6.5	-6.3
Leverage _{t-1}	-2.5	-0.9	-4.1	-1.2	-6.6
$R\&D_{t-1}$	0.8	2.5	3.4	5.4	4.2
Industry Volatility _{t-1}	1.1	2.0	1.6	2.5	2.7
Dividend Payer _{t-1}	-1.1	-2.9	-2.1	-3.9	-3.2
Leverage Surplus _{t-1}	6.6	2.1	4.3	1.6	10.9

Table IA-5. Multinomial logit for the issuance and choice of securities (quarterly data from 1984-2013)

This table reports the multinomial logit regression results for the decision to issue only debt, only equity, both debt and equity, or neither debt nor equity (the base case) in a quarter. A firm is defined to have a pure equity issue in quarter q if $(\Delta E_q \div Assets_{t-1} \ge 0.05 \text{ and } \Delta E_q \div ME_{t-1} \ge 0.03)$ and $(\Delta D_q \div Assets_{t-1} < 0.05 \text{ or } \Delta D_q \div ME_{t-1} < 0.03)$. A firm is defined to have a pure debt issue in quarter q if $(\Delta E_q \div Assets_{t-1} < 0.05 \text{ or } \Delta E_q \div ME_{t-1} < 0.03)$ and $(\Delta D_q \div Assets_{t-1} \ge 0.05 \text{ and } \Delta D_q \div ME_{t-1} < 0.03)$ ${\geqslant}0.03).~A~firm~is~defined~to~have~dual~issues~of~debt~and~equity~if~(\Delta E_q \div Assets_{t\text{-}1} {\geqslant} 0.05~and$ $\Delta E_q \div ME_{t\text{-}1} \geqslant 0.03) \text{ and } (\Delta D_q \div Assets_{t\text{-}1} \geqslant 0.05 \text{ and } \Delta D_q \div ME_{t\text{-}1} \geqslant 0.03). \text{ Assets}_{t\text{-}1} \text{ and } ME_{t\text{-}1} \geqslant 0.03)$ denote the book value of assets and the market value of equity, respectively, at the beginning of the corresponding fiscal year. The Compustat quarterly database reports year-to-date amounts of equity issuance and repurchase (items SSTKY and PRSTKCY, respectively) on cash flow statements. We use cash flow statement data to obtain the net equity issue amount in quarter q (ΔE_0) . However, the net debt issue amount is not well populated in the quarterly database, so we use the end of quarter debt (DLTTQ+DLCQ) on the balance sheet and compute the net debt issue for quarter q (ΔD_q) as the change in debt from the beginning to the end of quarter q. Because investment expenditures and other cash use items are not well populated in the quarterly database, we compute the net cash flow for quarter q (NCF_q) as $\Delta Cash_q$ - ΔE_q - ΔD_q , where $\Delta Cash_q$ is the change in cash (item CHEQ) from the end of the previous quarter to the end of quarter q on the balance sheet. Immediate Depletion equals one if $Cash_{q-1} + NCF_q \leq 0$, and equals zero otherwise. Near Depletion equals one if the firm is predicted to have a positive cash balance in quarter q (i.e., Cash_{q-1}+NCF_q>0) but is predicted to run out of cash in quarters q+1 through $q+4 \; (i.e., \, Cash_{q-1} + NCF_q + NCF_{q+1} \leqslant 0, \, Cash_{q-1} + NCF_q + NCF_{q+1} + NCF_{q+2} \leqslant 0, \, Cash_{q-1} + NCF_q + NCF_{q+1} \leqslant 0, \, Cash_{q-1} + NCF_q \leqslant 0,$ $+NCF_{q+1} + NCF_{q+2} + NCF_{q+3} \le 0$, or $Cash_{q-1} + NCF_q + NCF_{q+1} + NCF_{q+2} + NCF_{q+3} + NCF_{q+4} \le 0$), and equals zero otherwise. Medium Depletion equals one if the firm is predicted to have a positive cash balance in quarters q through q+4 but is predicted to run out of cash in q+5 through q+8, and equals zero otherwise. The cash depletion dummy variables measured ex ante are similarly defined, but instead of using the actual NCFs, the average of NCFs in q-1 through q-4 is used as the predicted NCF for each quarter of q through q+8. This table reports the economic effects and the z-statistics (in italic) of the coefficients using robust standard errors corrected for heteroskedasticity and clustering at the firm level. The industry and year dummy variables and the intercept are among the independent variables, but their economic effects and z-statistics are not reported. See Appendix I, Table 1, and Table 6 for detailed variable definitions and economic effect calculations.

	Pure	debt	Dι	ıal	Pure	equity	Debt	Equity
	iss	ue	iss	ue	iss	sue	issue	issue
	Econ.	<i>z</i> -	Econ.	<i>z</i> -	Econ.	z-	Econ.	Econ.
VARIABLES	eff.	stat.	eff.	stat.	eff.	stat.	eff.	eff.
Regression (1): $N = 222,032, P$	seudo R	$^2 = 29.0$	0%					
Immediate Depletion	45.8	112.0	3.0	24.8	4.5	48.3	48.8	7.5
Near Depletion	5.6	30.4	0.9	9.4	3.1	30.9	6.5	4.0
Medium Depletion	2.3	9.1	0.4	3.2	1.7	11.8	2.7	2.1
Tobin's Q _{t-1}	-0.9	-4.5	0.0	0.6	0.4	5.5	-0.9	0.4
Return _{t-1}	1.0	9.7	0.1	8.7	0.3	8.7	1.1	0.4
Return _{t+1, t+3}	-0.1	-1.7	-0.2	-3.2	-0.7	-6.3	-0.3	-0.9
Term Spread _{t-1} (%)	-0.3	-0.6	0.1	1.3	0.1	0.3	-0.2	0.2
Default Spread _{t-1} (%)	0.0	0.7	0.4	3.9	0.9	4.4	0.4	1.3
$Ln(Sales)_{t-1}$	0.2	-1.3	-0.2	-6.2	-1.9	-19.4	0.0	-2.1
Ln(Age) _t	-1.0	-6.4	-0.2	-6.7	-0.8	-9.9	-1.2	-1.0
Leverage _{t-1}	-0.5	-1.9	0.1	2.1	0.8	11.1	-0.4	0.9
$R\&D_{t-1}$	-0.5	-1.5	0.0	1.9	0.7	13.4	-0.5	0.7
Industry Volatility _{t-1}	0.9	4.1	0.0	0.9	0.7	6.6	0.9	0.7
Dividend Payer _{t-1}	-0.9	-5.5	0.0	-2.3	-1.0	-10.9	-0.9	-1.0
Regression (2): $N = 264,918, P$								
Immediate Depletion ex ante	8.4	41.8		13.0	2.8	27.2	8.8	3.2
Near Depletion ex ante	4.5	26.1	0.3	9.8	2.1	22.5	4.8	2.4
Medium Depletion ex ante	1.4	5.4		2.8	1.1	8.4	1.5	1.2
Tobin's Q _{t-1}	-1.9	-9.2	0.0	-0.8	0.5	7.9	-1.9	0.5
Return _{t-1}	1.7	12.1		7.0	0.4	8.8	1.8	0.5
Return _{t+1, t+3}	-1.1	-6.8	-0.3	-5.5	-0.9	-8.1	-1.4	-1.2
Term Spread _{t-1} (%)	-0.3	-0.7	0.1	0.8	-0.1	-0.6	-0.2	0.0
Default Spread _{t-1} (%)	-0.2	-0.3	0.2	2.3	0.6	3.4	0.0	0.8
$Ln(Sales)_{t-1}$	-0.6	-4.1	-0.3	-9.5	-2.3	-23.8	-0.9	-2.6
Ln(Age)t	-1.9	-11.0	-0.3	-9.3	-0.9	-11.2	-2.2	-1.2
Leverage _{t-1}	2.4	15.2	0.2	10.8	1.1	18.2	2.6	1.3
$R\&D_{t-1}$	-3.5	-11.0	0.0	-1.3	0.9	14.2	-3.5	0.9
Industry Volatility _{t-1}	-0.9	-3.0	-0.1	-1.9	0.5	4.3	-1.0	0.4
Dividend Payer _{t-1}	-0.9	-4.8	0.0	-1.8	-1.1	-11.6	-0.9	-1.1

Table IA-6. Cash flow components and multinomial logit for the issuance and choice of securities, excluding the cash depletion dummy variables

This table reports the multinomial logit regression results for the relations between the cash flow components and the decision to issue only debt, only equity, both debt and equity, or neither debt nor equity (the base case). This table reports the economic effects and the z-statistics (in italic) of the coefficients using robust standard errors corrected for heteroskedasticity and clustering at the firm level. The industry and year dummy variables and the intercept are among the independent variables, but their economic effects and z-statistics are not reported. The regressions in this table do not include the cash depletion dummy variables as independent variables, but the regressions in Panel B of Table 8 do. See Appendix I, Table 1, and Table 6 for detailed variable definitions and economic effect calculations.

	Pure	debt	Dυ	al	Pure e		Debt	Equity
_	iss	ue	iss	ue	issı	ue	issue	issue
	Econ.	z-	Econ.	z-	Econ.	<i>z</i> -	Econ.	Econ.
VARIABLES	eff.	stat.	eff.	stat.	eff.	stat.	eff.	eff.
Regression (1): $N = 109,456, F$								
$Cash_{t-1} \div Assets_{t-1}$	-22.3	-40.7	-2.2	-29.9	-1.9	-24.1	-24.5	-4.1
$ICF_t \div Assets_{t-1}$	-31.1	-53.4	-4.3	-46.3	-4.9	-33.3	-35.4	-9.2
$Investments_t \div Assets_{t-1}$	45.0	70.4	5.4	71.4	7.6	47.3	50.4	13.0
Δ Non-Cash NWC _t ÷Assets _{t-1}	24.9	61.5	2.8	52.2	3.8	37.2	27.7	6.6
Cash Dividends _t ÷Assets _{t-1}	8.4	19.3	0.4	6.4	-0.6	2.9	8.8	-0.2
$ICF_{t+1} \div Assets_{t-1}$	0.2	-1.4	-0.3	-3.4	-1.8	-6.6	-0.1	-2.1
$Investments_{t+1} \div Assets_{t-1}$	0.7	6.9	0.5	11.3	3.2	21.1	1.2	3.7
Δ Non-Cash NWC _{t+1} ÷Assets _{t-1}	0.6	5.3	0.4	7.8	1.7	11.6	1.0	2.1
Cash Dividends _{t+1} ÷Assets _{t-1}	-2.8	-3.3	0.5	1.6	1.5	4.1	-2.3	2.0
$ICF_{t+2} \div Assets_{t-1}$	1.1	2.0	0.0	0.2	-0.6	-1.7	1.1	-0.6
Investments _{t+2} ÷Assets _{t-1}	-0.2	2.2	0.4	7.6	1.6	10.9	0.2	2.0
ΔNon-Cash NWC _{t+2} ÷Assets _{t-1}	-0.4	0.3	0.2	3.6	0.8	5.0	-0.2	1.0
Cash Dividends _{t+2} ÷Assets _{t-1}	-2.0	-3.2	0.3	1.0	0.8	1.8	-1.7	1.1
Tobin's Q _{t-1}	-6.7	-15.3	-1.5	-14.6	1.6	-0.2	-8.2	0.1
Return _{t-1}	-0.9	-0.5	0.4	3.0	1.0	2.7	-0.5	1.4
Return _{t+1, t+3}	0.7	-2.2	-0.7	-4.4	-2.5	-8.2	0.0	-3.2
Term Spread _{t-1} (%)	0.4	1.3	0.5	2.3	-0.1	0.2	0.9	0.4
Default Spread _{t-1} (%)	-1.1	0.7	0.8	3.3	2.8	6.0	-0.3	3.6
Ln(Sales) _{t-1}	2.7	3.5	0.1	-0.4	-5.0	-18.5	2.8	-4.9
Ln(Age) _t	-0.3	-5.2	-0.6	-8.0	-1.5	-8.8	-0.9	-2.1
Leverage _{t-1}	1.1	10.4	1.1	17.0	2.9	19.6	2.2	4.0
R&D _{t-1}	-1.2	0.3	0.6	5.9	2.6	13.9	-0.6	3.2
Industry Volatility _{t-1}	0.5	3.9	0.7	5.5	1.5	6.7	1.2	2.2
Dividend Payer _{t-1}	0.4	-3.2	-0.6	-6.3	-2.7	-11.3	-0.2	-3.3
Regression (2): N = 124,058, F	seudo R	$^{2} = 11.79$	%					
$Cash_{t-1}$ ÷ $Assets_{t-1}$	-13.8	-30.3	-1.1	-13.2	-0.9	-12.6	-14.9	-2.0
$ICF_{t-1} \div Assets_{t-1}$	-1.4	-7.3	-2.2	-23.4	-4.4	-28.0	-3.6	-6.6
$Investments_{t-1} \div Assets_{t-1}$	7.3	30.0	1.8	27.1	1.6	18.5	9.1	3.4
Δ Non-Cash NWC _{t-1} ÷Assets _{t-1}	2.4	10.7	0.9	13.4	1.6	16.1	3.3	2.5
Cash Dividends _{t-1} ÷Assets _{t-1}	-1.4	-4.9	-0.1	-1.2	-1.3	-3.9	-1.5	-1.4
Tobin's Q _{t-1}	-0.6	-0.3	0.1	2.3	2.1	13.1	-0.5	2.2
Return _{t-1}	3.9	10.7	1.1	6.5	2.3	10.5	5.0	3.4
Return _{t+1, t+3}	-2.4	-8.5	-1.5	-7.0	-2.7	-10.4	-3.9	-4.2
Term Spread _{t-1} (%)	-0.4	-0.3	0.6	2.4	-0.2	-0.1	0.2	0.4
Default Spread _{t-1} (%)	-0.3	0.6	0.7	2.9	2.8	6.1	0.4	3.5
Ln(Sales) _{t-1}	-1.0	-6.4	-1.0	-10.0	-4.4	-19.9	-2.0	-5.4
$Ln(Age)_t$	-2.7	-13.3	-1.3	-13.5	-2.0	-13.0	-4.0	-3.3
Leverage _{t-1}	1.1	6.1	1.2	15.3	2.1	14.8	2.3	3.3
R&D _{t-1}	-1.2	-1.2	0.3	4.4	2.3	14.8	-0.9	2.6
Industry Volatility _{t-1}	-0.4	-0.4	0.1	0.8	0.9	3.4	-0.3	1.0
Dividend Payer _{t-1}	1.2	1.9	-0.3	-2.3	-1.8	-6.3	0.9	-2.1

Table IA-7. Acquisition spending, cash needs, and the decision to issue debt or equity

Panel A reports the sample distribution by financing and large acquisition spending. Panel B reports the means and medians (in parentheses) of acquisition and non-acquisition spending. Panels C-F report the multinomial logit regression results on the decision to issue only debt, only equity, both debt and equity, or neither debt nor equity (the base case). Panels C-E report the results after excluding firm-years with large acquisition spending. Panel F reports the results after separating acquisition and non-acquisition spending. Large acquisition spending in year t is defined as a year in which $AQC_t \div Assets_{t-1} \ge 0.05$ and $AQC_t \div ME_{t-1} \ge 0.03$, where AQC is the Compustat item for acquisition spending. Acquire_Inv_t and Non-Acquire_Inv_t denote acquisition and non-acquisition spending in year t, respectively, divided by Assets_{t-1}. The industry and year dummy variables and the intercept are among the independent variables in the regressions, but their economic effects and z-statistics are not reported. See Appendix I, Table 1, and Table 6 for detailed variable definitions and economic effect calculations.

Panel A. Sample distribution by financing and large acquisition spending

	With large a spend	-	Without large spend	-
	N	%	N	%
All firm-years	13,204	10.6	110,854	89.4
No external financing	4,872	5.5	82,980	94.5
Pure debt issue	5,866	25.4	17,188	74.6
Dual issues	1,249	38.2	2,021	61.8
Pure equity issue	1,217	12.3	8,665	87.7

Panel B. Means and medians of acquisition and non-acquisition spending (%) sorted by financing

	No	Pure debt	Dual	Pure equity	Debt	Equity	
VARIABLES	Issue	issue	issues	issue	issue	issue	All
Investments _t ÷Assets _{t-1}	6.5	20.5	40.8	14.3	23.0	20.9	10.7
	(5.4)	(15.3)	(31.6)	(8.4)	(16.4)	(11.8)	(6.8)
Non-Acquire_Inv _t ÷Assets _{t-1}	5.6	14.1	25.4	11.5	15.5	15.0	8.1
	(4.7)	(9.8)	(17.8)	(6.6)	(10.3)	(8.2)	(5.5)
Acquire_Inv _t ÷Assets _{t-1}	1.0	6.4	15.4	2.8	7.5	5.9	2.5
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)

Panel C. Cash depletion and financing, excluding firm years with large acquisition spending

~ <u>p~~~~</u>	Pure	Pure debt		ıal	Pure equity		Debt	Equity
	iss	issue		issues		issue		issue
	Econ.	<i>z</i> -	Econ.	<i>z</i> -	Econ.	z-	Econ.	Econ.
VARIABLES	eff.	stat.	eff.	stat.	eff.	stat.	eff.	eff.
Regression (1): $N = 91,60$	8, Pseud	$o R^2 =$	33.1%					
Immediate Depletion	50.8	118.2	9.7	46.3	6.8	67.4	60.5	16.5
Near Depletion	6.3	31.7	4.6	19.3	5.4	31.2	10.9	10.0
Medium Depletion	2.4	11.3	2.7	8.6	2.3	12.5	5.1	5.0
Tobin's Q _{t-1}	1.3	11.3	1.0	21.0	4.4	28.8	2.3	5.4
Return _{t-1}	0.9	5.8	0.4	9.0	1.4	8.5	1.3	1.8
Return _{t+1, t+3}	0.9	0.3	-0.5	-3.4	-2.0	-6.4	0.4	-2.5
Term Spread _{t-1} (%)	0.0	0.5	0.3	1.3	0.2	0.7	0.3	0.5
Default Spread _{t-1} (%)	-0.9	1.0	0.8	3.8	3.5	7.0	-0.1	4.3
$Ln(Sales)_{t-1}$	3.4	4.3	-0.7	-7.3	-5.0	-17.5	2.7	-5.7
$Ln(Age)_t$	-1.3	-8.9	-0.9	-10.2	-1.7	-10.4	-2.2	-2.6
Leverage _{t-1}	-0.6	1.5	0.7	10.9	1.9	11.7	0.1	2.6
$R\&D_{t-1}$	-1.2	0.5	0.6	10.7	3.2	18.2	-0.6	3.8
Industry Volatility _{t-1}	0.2	2.3	0.5	4.3	1.6	6.2	0.7	2.1
Dividend Payer _{t-1}	0.1	-4.1	-0.6	-6.5	-3.1	-13.1	-0.5	-3.7

Panel D. The nature of cash depletion and financing, excluding firm years with large acquisition spending

Pure debt Dual Pure equity Debt Equity issue issue issue issues issue Econ. Econ. *z.*-Econ. z-Econ. Econ. *Z*.-**VARIABLES** eff. eff. eff. eff. eff. stat. stat. stat. Regression (2): N = 91,608, Pseudo $R^2 = 32.4\%$ Immediate Depletion ×Loss_t 38.3 67.5 14.3 *34.9* 9.6 49.1 23.9 52.6 Immediate Depletion $\times (1-Loss_t)$ 49.9 112.3 9.7 34.6 5.0 57.2 14.7 59.6 **Near Depletion** 5.9 31.2 4.7 15.7 5.9 33.0 10.6 10.6 Medium Depletion 2.0 10.5 2.8 7.4 2.8 13.7 4.8 5.6 Tobin's Q_{t-1} -2.4 -6.1 -0.1 -1.7 1.7 6.5 -2.5 1.6 Return_{t-1} 0.6 3.1 0.3 3.4 3.6 0.9 1.4 1.1 Return_{t+1, t+3} 0.7 -0.3 -0.5 -3.2-1.8 *-6.1* 0.2 -2.3 Term Spread_{t-1} (%) 0.1 0.6 0.3 1.4 0.3 0.8 0.4 0.6 Default Spread_{t-1} (%) -0.9 0.7 0.6 3.2 3.3 6.5 -0.3 3.9 2.5 -0.8 -7.9 -4.5 -17.5 1.7 -5.3 Ln(Sales)_{t-1} 2.4 $Ln(Age)_t$ -1.4 -9.3 -0.8 -9.8 -1.8 -10.9 -2.2 -2.6 -0.2 0.8 13.1 2.0 13.3 2.8 Leverage_{t-1} 3.2 0.6 $R&D_{t-1}$ -0.5 2.1 0.6 10.9 3.0 19.7 0.1 3.6 Industry Volatility_{t-1} 2.6 0.5 3.9 2.0 0.4 1.5 6.0 0.9 Dividend Payer_{t-1} 0.0 -3.6 -0.3 -4.6 -2.7 -11.6 -0.3 -3.0

Panel E. Cash flow components and financing, excluding firm years with large acquisition

spending

	Pure de	ebt	Dua	1	Pure eq	uity	Debt	Equity
	issue	2	issue	S	issue	2	issue	issue
	Econ.	z-	Econ.	z-	Econ.	z-	Econ.	Econ.
VARIABLES	eff.	stat.	eff.	stat.	eff.	stat.	eff.	eff.
Regression (3): $N = 91,536$, Pse	eudo $R^2 = 3$	36.7%						
Immediate Depletion	32.6	58.6	3.3	22.4	6.0	32.8	35.9	9.3
Near Depletion	4.1	17.0	2.4	10.3	1.3	10.6	6.5	3.7
Medium Depletion	1.2	5.9	1.9	5.4	0.4	4.4	3.1	2.3
$Cash_{t-1} \div Assets_{t-1}$	-1.8	-5.3	-0.7	-6.4	-0.4	-4.1	-2.5	-1.1
$ICF_t \div Assets_{t-1}$	-10.3	-23.2	-2.1	-22.6	-2.9	-17.6	-12.4	-5.0
$Investments_t \div Assets_{t-1}$	16.5	35.2	2.1	36.3	4.4	26.2	18.6	6.5
Δ Non-Cash NWC _t ÷Assets _{t-1}	9.3	30.1	1.3	25.2	2.0	20.5	10.6	3.3
Cash Dividends _t ÷Assets _{t-1}	3.7	10.9	0.5	4.4	-0.9	0.4	4.2	-0.4
$ICF_{t+1} \div Assets_{t-1}$	1.1	1.6	-0.2	-1.8	-1.0	-3.1	0.9	-1.2
Investments _{t+1} \div Assets _{t-1}	-0.7	0.9	0.3	6.4	2.2	12.7	-0.4	2.5
Δ Non-Cash NWC _{t+1} ÷Assets _{t-1}	-0.3	0.8	0.2	3.9	1.1	6.8	-0.1	1.3
Cash Dividends _{t+1} ÷Assets _{t-1}	-1.9	-2.7	0.2	0.7	0.9	2.2	-1.7	1.1
$ICF_{t+2} \div Assets_{t-1}$	1.3	3.0	0.0	0.6	-0.7	-1.7	1.3	-0.7
Investments _{t+2} ÷Assets _{t-1}	-0.4	0.7	0.2	5.3	1.5	9.5	-0.2	1.7
Δ Non-Cash NWC _{t+2} ÷Assets _{t-1}	-0.7	-1.6	0.2	2.6	0.7	4.0	-0.5	0.9
Cash Dividends _{t+2} ÷Assets _{t-1}	-1.0	-1.7	0.2	1.3	0.6	1.5	-0.8	0.8
Tobin's Q _{t-1}	-5.3	-13.9	-0.9	-12.1	1.5	-0.0	-6.2	0.6
Return _{t-1}	-0.6	-0.3	0.3	2.5	0.9	2.1	-0.3	1.2
Return _{t+1, t+3}	0.9	-0.1	-0.4	-3.0	-2.1	-6.5	0.5	-2.5
Term Spread _{t-1} (%)	0.4	1.3	0.3	1.5	0.2	0.8	0.7	0.5
Default Spread _{t-1} (%)	-0.9	0.7	0.5	2.6	3.1	6.2	-0.4	3.6
Ln(Sales) _{t-1}	2.8	4.3	0.0	-1.1	-4.4	-14.5	2.8	-4.4
$Ln(Age)_t$	-0.6	-5.5	-0.4	-6.3	-1.4	-8.0	-1.0	-1.8
Leverage _{t-1}	1.0	9.1	0.8	14.7	2.7	17.5	1.8	3.5
$R\&D_{t-1}$	-1.3	-0.9	0.3	4.8	2.6	13.3	-1.0	2.9
Industry Volatility _{t-1}	0.2	2.4	0.5	4.6	1.5	6.1	0.7	2.0
Dividend Payer _{t-1}	0.3	-3.4	-0.6	-6.3	-2.7	-10.7	-0.3	-3.3

Panel F. Cash flow components and financing, separating acquisition and non-acquisition

spending

spending	Pure d	ebt	Dua	1	Pure eq	uity	Debt	Equity
	issue	e	issue	es	issu	e	issue	issue
	Econ.	<i>z</i> -	Econ.	z-	Econ.	<i>z</i> -	Econ.	Econ.
VARIABLES	eff.	stat.	eff.	stat.	eff.	stat.	eff.	eff.
Regression (4): $N = 109,456, P$	seudo R ² =	: 38.9%						
Immediate Depletion	32.0	63.8	3.5	26.4	5.1	34.4	35.5	8.6
Near Depletion	3.9	<i>17.9</i>	2.6	11.1	0.7	9.5	6.5	3.3
Medium Depletion	0.9	6.2	2.1	5.6	0.2	3.9	3.0	2.3
$Cash_{t-1} \div Assets_{t-1}$	-2.9	-8.5	-0.9	-8.6	-0.4	-5.6	-3.8	-1.3
$ICF_t \div Assets_{t-1}$	-10.6	-26.5	-2.8	-28.2	-2.7	-19.9	-13.4	-5.5
Non-Acquire_Inv _t ÷Assets _{t-1}	16.9	41.5	2.6	43.0	3.3	28.1	19.5	5.9
Acquire_Inv _t ÷Assets _{t-1}	14.3	40.0	2.3	46.5	3.8	27.9	16.6	6.1
Δ Non-Cash NWC _t ÷Assets _{t-1}	10.0	33.8	1.7	31.3	1.9	22.9	11.7	3.6
Cash Dividends _t ÷Assets _{t-1}	4.2	12.1	0.2	3.5	-0.9	0.5	4.4	-0.7
$ICF_{t+1} \div Assets_{t-1}$	1.3	1.6	-0.3	-1.9	-1.4	-4.4	1.0	-1.7
Non-Acquire_Inv _{t+1} ÷Assets _{t-1}	-0.9	1.2	0.4	7.1	2.5	13.1	-0.5	2.9
$Acquire_Inv_{t+1} \div Assets_{t-1}$	-0.5	0.1	0.2	3.7	1.2	8.6	-0.3	1.4
Δ Non-Cash NWC _{t+1} ÷Assets _{t-1}	-0.6	0.5	0.3	4.9	1.3	8.2	-0.3	1.6
Cash Dividends _{t+1} ÷Assets _{t-1}	-2.2	-3.0	0.6	2.0	1.2	3.5	-1.6	1.8
$ICF_{t+2} \div Assets_{t-1}$	1.2	2.9	-0.1	0.5	-0.5	-1.1	1.1	-0.6
Non-Acquire_Inv _{t-1} ÷Assets _{t-1}	-0.6	0.7	0.4	5.9	1.5	8.7	-0.2	1.9
$Acquire_Inv_{t-1} \div Assets_{t-1}$	-0.2	0.6	0.2	3.1	0.6	5.0	0.0	0.8
Δ Non-Cash NWC _{t+2} ÷Assets _{t-1}	-0.6	-0.8	0.2	3.3	0.7	4.5	-0.4	0.9
Cash Dividends _{t+2} ÷Assets _{t-1}	-1.4	-2.3	0.3	1.6	0.8	2.3	-1.1	1.1
Tobin's Q _{t-1}	-5.1	-14.7	-1.2	-13.7	1.5	-0.5	-6.3	0.3
Return _{t-1}	-0.9	-0.8	0.4	3.1	1.0	2.7	-0.5	1.4
Return _{t+1, t+3}	1.1	-0.7	-0.6	-4.0	-2.4	-7.9	0.5	-3.0
Term Spread _{t-1} (%)	0.1	0.8	0.5	2.1	-0.1	0.3	0.6	0.4
Default Spread _{t-1} (%)	-1.2	0.7	0.8	3.4	2.7	5.9	-0.4	3.5
$Ln(Sales)_{t-1}$	3.2	5.1	0.1	0.2	-4.7	-16.5	3.3	-4.6
$Ln(Age)_t$	-0.1	-4.3	-0.6	-7.3	-1.4	-8.5	-0.7	-2.0
Leverage _{t-1}	0.6	9.5	1.1	17.2	2.7	19.1	1.7	3.8
$R\&D_{t-1}$	-1.6	-0.9	0.5	5.7	2.5	14.3	-1.1	3.0
Industry Volatility _{t-1}	0.1	2.9	0.6	5.1	1.4	6.3	0.7	2.0
Dividend Payer _{t-1}	0.3	-3.9	-0.7	-6.8	-2.6	-11.2	-0.4	-3.3

Table IA-8. The correlation matrix of the sources of cash, changes in cash and non-cash assets, and net cash flows

This table reports the correlation matrix of the sources of cash, changes in cash and non-cash assets, and net cash flows (NCFs) for the subsample of equity issues, the subsample of debt issues, and the full sample, respectively. See Appendix I and Table 1 for detailed variable definitions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Equity issue (N=11,424)							
(1) $\Delta E_t \div Assets_{t-1}$	1.000						
(2) $\Delta D_t \div Assets_{t-1}$	0.032	1.000					
(3) $ICF_t \div Assets_{t-1}$	-0.330	-0.001	1.000				
(4) $\Delta Cash_t \div Assets_{t-1}$	0.678	0.073	0.034	1.000			
(5) Δ Non-Cash _t ÷Assets _{t-1}	0.257	0.512	0.303	0.120	1.000		
(6) $NCF_{t+1} \div Assets_{t-1}$	-0.457	-0.156	0.313	-0.273	-0.176	1.000	
(7) $NCF_{t+2} \div Assets_{t-1}$	-0.367	-0.114	0.286	-0.205	-0.107	0.469	1.000
Debt issue (N=23,139)							
(1) $\Delta E_t \div Assets_{t-1}$	1.000						
(2) $\Delta D_t \div Assets_{t-1}$	0.279	1.000					
(3) $ICF_t \div Assets_{t-1}$	-0.212	-0.029	1.000				
(4) $\Delta Cash_t \div Assets_{t-1}$	0.384	0.337	0.014	1.000			
(5) Δ Non-Cash _t ÷Assets _{t-1}	0.354	0.629	0.266	0.056	1.000		
(6) $NCF_{t+1} \div Assets_{t-1}$	-0.346	-0.264	0.116	-0.238	-0.217	1.000	
(7) $NCF_{t+2} \div Assets_{t-1}$	-0.289	-0.178	0.111	-0.157	-0.150	0.378	1.000
Full sample (N=109,535)							
(1) $\Delta E_t \div Assets_{t-1}$	1.000						
(2) $\Delta D_t \div Assets_{t-1}$	0.032	1.000					
(3) $ICF_t \div Assets_{t-1}$	-0.304	-0.005	1.000				
(4) $\Delta Cash_t \div Assets_{t-1}$	0.536	0.110	0.118	1.000			
(5) Δ Non-Cash _t ÷Assets _{t-1}	0.257	0.532	0.245	0.087	1.000		
(6) $NCF_{t+1} \div Assets_{t-1}$	-0.399	-0.164	0.234	-0.190	-0.197	1.000	
(7) $NCF_{t+2} \div Assets_{t-1}$	-0.324	-0.100	0.204	-0.135	-0.128	0.349	1.000

Table IA-9. Mean net cash flows (%) sorted by financing and firm characteristics

This table reports the mean change in non-cash assets and the mean net cash flows (NCFs) from year t-1 and t+2, as a percent of the book value of assets at the end of t-1, sorted by net financing in t and three firm characteristics measured at t-1. See Appendix I and Table 1 for detailed variable definitions.

	R&D _{t-1}			Ind	ustry V	olatili'	Dividend payer _{t-1}		
	Zero	Low	High	1	2	3	4	No	Yes
Debt issue									
Δ Non-Cash _t ÷Assets _{t-1}	32.5	27.0	28.6	28.1	30.5	32.0	32.4	34.1	26.3
$NCF_{t-1} \div Assets_{t-1}$	-6.0	-2.8	-11.0	-4.1	-5.8	-7.0	-8.8	-9.1	-2.6
$NCF_t \div Assets_{t-1}$	-20.0	-16.3	-23.8	-16.7	-19.2	-21.5	-23.4	-24.1	-14.7
$NCF_{t+1} \div Assets_{t-1}$	-10.2	-4.2	-12.8	-6.0	-8.9	-11.1	-12.3	-13.3	-4.4
$NCF_{t+2} \div Assets_{t-1}$	-9.3	-3.3	-12.1	-5.1	-7.6	-10.8	-11.4	-12.5	-3.5
Equity issue									
Δ Non-Cash _t ÷Assets _{t-1}	37.5	26.7	20.5	32.7	31.9	27.6	25.9	28.2	31.9
$NCF_{t-1} \div Assets_{t-1}$	-10.6	-7.9	-24.6	-8.3	-12.4	-16.8	-21.9	-18.5	-5.1
$NCF_{t} \div Assets_{t-1}$	-22.9	-17.2	-31.3	-18.8	-22.0	-26.1	-31.2	-27.7	-16.3
$NCF_{t+1} \div Assets_{t-1}$	-22.0	-13.9	-32.6	-16.1	-20.8	-26.5	-31.8	-28.4	-11.6
$NCF_{t+2} \div Assets_{t-1}$	-20.9	-13.3	-33.1	-14.8	-19.4	-26.0	-32.9	-28.3	-9.9

Table IA-10. Determination of the net issue size

This table reports the OLS regression results for the net issue size. Regressions (1) and (2) use the net equity issue sample, and Regressions (3) and (4) use the net debt issue sample. The dependent variable of Regressions (1) and (2) is $\Delta E_t \times 100 \div Assets_{t-1}$. The dependent variable of Regressions (3) and (4) is $\Delta D_t \times 100 \div Assets_{t-1}$. A firm is defined to have a net equity issue in year t if $\Delta E_t \div Assets_{t-1} \ge 0.05$ and $\Delta E_t \div ME_{t-1} \ge 0.03$. A firm is defined to have a net debt issue in year t if $\Delta D_t \div Assets_{t-1} \ge 0.05$ and $\Delta D_t \div ME_{t-1} \ge 0.03$. Assets_{t-1} and $\Delta E_t \div ME_{t-1} \ge 0.05$ and $\Delta E_t \div ME_{t-1} \ge 0.05$. Assets_{t-1} and ME_{t-1} denote the book value of assets and the market value of equity, respectively, at the end of fiscal year t-1. Returns are measured as decimals (e.g., a 20% return is measured as 0.20) and spreads are measured as annual percentages. See Appendix I for other variable definitions. N denotes the number of firm-year observations. T-statistics are calculated using robust standard errors corrected for heteroskedasticity and clustering at the company level. ***, **, and * indicates significance at the 1%, 5%, and 10% level.

	Net equ	ancing san	Net de	bt fina	ncing samp	ole		
	(1)	•	(2)		(3)		(4)	
Variables	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
LnAssets _{t-1}	-2.4***	-7.7	-2.8***	-8.8	0.8***	4.3	0.5**	2.6
$Cash_{t-1} \div Assets_{t-1}$	10.5***	5.6	11.9***	6.1	13.3***	10.1	16.1***	11.9
Tobin's Q _{t-1}	7.3***	33.4	7.1***	31.6	5.2***	32.9	5.1***	31.0
Return _{t-1}	1.6***	5.1	1.8***	5.4	1.5***	7.3	1.4***	6.6
Return _{t+1, t+3}	-0.6***	-4.4	-0.6***	-4.2	-0.2***	-2.9	-0.2***	-3.1
Term Spread _{t-1} (%)	-0.1	-0.1	-0.1	-0.2	-0.4	-1.6	-0.4	-1.6
Default Spread _{t-1} (%)	6.5***	4.6	6.2***	4.4	0.8	1.2	0.8	1.2
Ln(Sales) _{t-1}	-1.1***	-3.8	-0.5	-1.5	-1.9***	-9.7	-1.7***	-8.4
$Ln(Age)_t$	-2.0***	-5.5	-1.7***	-4.8	-1.0***	-6.7	-0.7***	-4.4
Leverage _{t-1}	-1.1	-1.0	-2.1*	-1.9	-0.5	-0.8	0.5	0.7
$R\&D_{t-1}$	23.1***	8.1	19.7***	6.8	-12.2***	-5.3	-10.0***	-4.2
Industry Volatility _{t-1}	-4.2*	-1.7	-4.4*	-1.8	-3.3***	-2.7	-3.3***	-2.7
Dividend Payer _{t-1}	0.5	0.8	-0.3	-0.5	-1.4***	-5.3	-1.2***	-3.7
$ICF_{t-1} \div Assets_{t-1}$			-9.1***	-4.5			3.8***	2.7
$Investments_{t-1} \div Assets_{t-1}$			8.7***	4.1			10.8***	7.8
ΔNon-Cash NWC _{t-1} ÷Assets _{t-1}			8.7***	3.2			2.1	1.2
Cash Dividends _{t-1} ÷Assets _{t-1}			36.5	1.5			-9.4	-1.0
Constant	20.6***	7.6	19.5***	7.1	15.6***	15.2	13.4***	13.1
Industry Dummies	Yes		Yes		Yes		Yes	
Year Dummies	Yes		Yes		Yes		Yes	
N	13,152		13,152		26,324		26,324	
Adjusted R ²	41.0%		41.2%		19.6%		20.1%	

Table IA-11. Cross-sectional differences in the fraction of net proceeds going to cash reserves, additional controls

This table examines cross-sectional differences in the fraction of net proceeds going to cash reserves. The dependent variable is $100 \times \Delta Cash_t \div Assets_{t-1}$. OLS regressions are estimated. The regressions are similar to those in Table 11 of the paper but include additional control variables. Regression (1) is estimated for the sample of firm years with a net equity issue, and Regression (2) is estimated for the sample of firm years with a net debt issue. Returns are measured as decimals (e.g., a 20% return is measured as 0.20) and spreads are measured as annual percentages. See the paper for other variable definitions. N denotes the number of firm-year observations. T-statistics are calculated using robust standard errors corrected for heteroskedasticity and clustering at the company level. ***, **, and * indicates significance at the 1%, 5%, and 10% level. See Appendix I and Table 1 for detailed variable definitions.

(1) Net equity issu	ie sample	(2) Net debt issue sample				
Variables	Coeff.	t-stat.	Variables	Coeff.	t-stat.	
$\Delta E_t \div Assets_{t-1}$	16.1***		$\Delta E_t \div Assets_{t-1}$	30.0***	18.9	
$\Delta D_t \div Assets_{t-1}$	9.1***	6.2	$\Delta D_t \div Assets_{t-1}$	-7.0	-1.2	
$ICF_t \div Assets_{t-1}$	35.3***	28.9	$ICF_{t} \div Assets_{t-1}$	10.8***	9.4	
$\Delta E_t \div Assets_{t-1} \times Ln(Assets)_{t-1}$	4.0***	3.9	$\Delta D_t \div Assets_{t-1} \times Ln(Assets)_{t-1}$	6.6***	5.2	
$\Delta E_t \div Assets_{t-1}$			$\Delta D_t \div Assets_{t-1}$			
\times Cash _{t-1} \div Assets _{t-1}	15.8***	3.1	$\times Cash_{t-1} \div Assets_{t-1}$	23.5**	2.2	
$\Delta E_t \div Assets_{t-1} \times Tobin's Q_{t-1}$	2.7***	4.6	ΔD_t ÷Assets _{t-1} ×Tobin's Q_{t-1}	0.3	0.2	
$\Delta E_t \div Assets_{t-1} \times Return_{t-1}$	1.9*	1.8	$\Delta D_t \div Assets_{t-1} \times Return_{t-1}$	2.2	1.2	
$\Delta E_t \div Assets_{t-1} \times Return_{t+1, t+3}$	1.6	1.5	$\Delta D_t \div Assets_{t-1} \times Return_{t+1, t+3}$	-1.1	-1.1	
$\Delta E_t \div Assets_{t-1}$			$\Delta D_t \div Assets_{t-1}$			
\times Term Spread _{t-1} (%)	-1.0	-1.2	×Term Spread _{t-1} (%)	3.2***	3.3	
$\Delta E_t \div Assets_{t-1}$			$\Delta D_t \div Assets_{t-1}$			
\times Default Spread _{t-1} (%)	8.4***	3.9	×Default Spread _{t-1} (%)	10.9***	4.4	
$\Delta E_t \div Assets_{t-1} \times Ln(Sales)_{t-1}$	-0.3	-0.5	$\Delta D_t \div Assets_{t-1} \times Ln(Sales)_{t-1}$	-2.2*	-1.8	
$\Delta E_t \div Assets_{t-1} \times Ln(Age)_t$	-0.3	-0.2	$\Delta D_t \div Assets_{t-1} \times Ln(Age)_t$	-1.4	-1.0	
$\Delta E_t \div Assets_{t-1} \times Leverage_{t-1}$	-17.1***	-4.5	$\Delta D_t \div Assets_{t-1} \times Leverage_{t-1}$	-31.1***	-6.2	
$\Delta E_t \div Assets_{t-1} \times R \& D_{t-1}$	39.6***	6.1	$\Delta D_t \div Assets_{t-1} \times R \& D_{t-1}$	166.5***	6.4	
$\Delta E_t \div Assets_{t-1}$			$\Delta D_t \div Assets_{t-1}$			
×Industry Volatility _{t-1}	35.6***	5.6	\times Industry Volatility _{t-1}	8.9	1.1	
$\Delta E_t \div Assets_{t-1}$			$\Delta D_t \div Assets_{t-1}$			
×Dividend Payer _{t-1}	-47.2***	-7.1	×Dividend Payer _{t-1}	-23.1***	-8.7	
$Ln(Assets)_{t-1}$	-3.0***	-9.9	Ln(Assets) _{t-1}	-1.0***		
$Cash_{t-1} \div Assets_{t-1}$	-10.3***		$Cash_{t-1} \div Assets_{t-1}$	-18.5***	-7.9	
Tobin's Q _{t-1}	-1.0***	-3.5	Tobin's Q _{t-1}	0.9**	2.5	
Return _{t-1}	-0.5**	-2.1	Return _{t-1}	-0.3	-0.9	
Return _{t+1, t+3}	-0.2	-1.0	Return _{t+1, t+3}	0.1	1.4	
Term Spread _{t-1} (%)	0.6***	2.8	Term Spread _{t-1} (%)	-0.2	-1.2	
Default Spread _{t-1} (%)	-1.3***	-2.7	Default Spread _{t-1} (%)	0.1	0.2	
Ln(Sales) _{t-1}	2.3***	8.7	Ln(Sales) _{t-1}	0.9***	3.6	
$Ln(Age)_t$	0.8**	2.2	$Ln(Age)_t$	0.2	0.8	
Leverage _{t-1}	-2.2*	-1.9	Leverage _{t-1}	6.3***	6.6	
$R\&D_{t-1}$	-8.1***	-2.6	$R\&D_{t-1}$	-5.0	-1.1	
Industry Volatility _{t-1}	2.5	1.5	Industry Volatility _{t-1}	0.9	0.6	
Dividend Payer _{t-1}	2.8***	3.3	Dividend Payer _{t-1}	2.9***	7.5	
Constant	1.6	1.0	Constant	-6.8***	-6.4	
N	13,152		N	26,324		
Adjusted R ²	57.5%		Adjusted R ²	26.5%		