Internet Appendix to "Target Behavior and Financing: How Conclusive is the Evidence?"*

Table IA.I
Summary Statistics (Actual Data)

Actual data are collected from *Industrial Compustat* and *CRSP* for the years 1971 to 2004. Total assets (*A*) is Compustat item number 6. Book leverage (*D/A*) is defined as total debt divided by total assets. Total debt is equal to total liabilities plus preferred stock minus deferred taxes and convertible debt. Market-to-book ratio (*M/B*) is defined as (market value of equity + total debt) / total assets. Market value of equity is defined as the number of shares outstanding multiplied by closing stock price at the end of the fiscal year. Profitability (*EBITDA/A*) is income before depreciation and amortization divided by book value of assets. Tangibility (*PPE/A*) is the net PPE to assets ratio. *R&D/S* is research and development expenses divided by net sales. Annual cumulative stock return (*StkRtn*) is obtained by compounding monthly stock returns over the fiscal year. Net equity issues (*Nei*) are equal to the change in total equity minus the change in retained earnings. Net debt issues (*Ndi*) are defined as the change in total assets minus the change in total equity. Financing deficit (*y*) equals the sum of net equity issued and net debt issued. Dollar figures are in millions.

	Mean	Median	Standard Deviation
Total assets (*A*)	1,399	86	9,229
Book leverage (*D/A*)	0.444	0.443	0.205
Market-to-book ratio (*M/B*)	1.726	1.220	1.844
Profitability (*EBITDA/A*)	0.095	0.126	0.198
Tangibility (*PPE/A*)	0.319	0.272	0.221
R&D to sales ratio (*R&D/S*)	0.096	0.000	0.554
Annual stock return (*StkRtn*)	0.176	0.061	0.674
Deficit to assets ratio (*y/A*)	0.162	0.049	0.495
Newly retained earnings to assets ratio ($\Delta RE/A$)	-0.004	0.030	0.225
Percentage of firms having positive financing deficit ($y/A > 0$)	68.9%		
Percentage of firms having large positive financing deficit ($y/A > 5\%$)	49.6%		
Percentage of firms having large negative financing deficit ($y/A < -5\%$)	15.7%		
Median percentage of financing deficit financed with debt in positive financing deficit years		75.1%	
Median percentage of financing deficit used for debt reduction in negative financing deficit years		79.7%	
Firm-years	112,035		

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Table IA.II
Target Adjustment Model – A Calibration

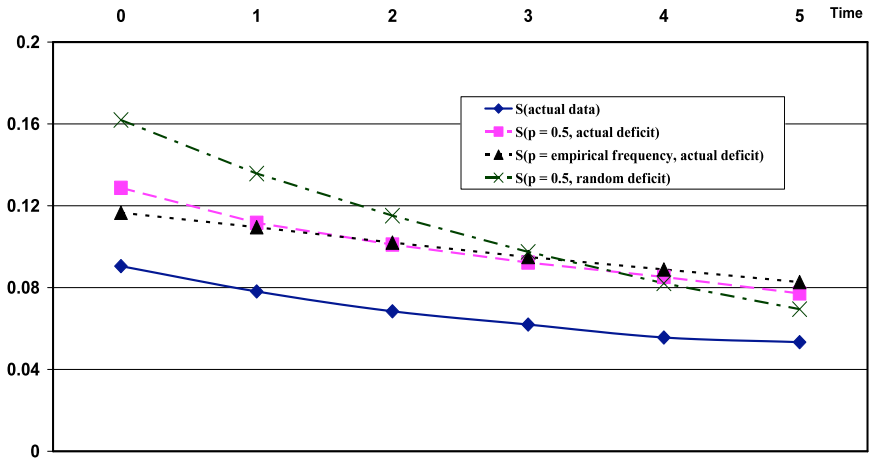
Actual data are collected from *Industrial Compustat* and *CRSP* for the years 1971 to 2004. Simulated samples, S(p = 0.5*, actual deficit*), S(p = 1*, actual deficit*), and S(p=0.5*, random deficit*), are described in Section II. S(p=*Target*(π)*, actual deficit*) comprises samples that contain firms following target behavior with probability π*:* firms issue debt (equity) with probability π if their beginning-of-period debt ratio is below (above) an estimated target and the financing deficit is positive, and repurchase equity (debt) with probability π if their debt ratio is below (above) an estimated target and the financing deficit is negative. The target leverage ratio is estimated as the fitted value from the cross-sectional regression where the leverage ratio is regressed upon firm-specific variables (*M/B*, *EBITDA/A*, *Size*, *PPE/A*, *R&D/S*, *RDD,* and *StkRtn*) and year dummies. Firm-specific variables are lagged one period for the target leverage estimation. The following regression model is estimated for actual data and simulation samples:

$$(D/A)_t = c_0 + (1-\lambda)(D/A)_{t-1} + c_2(M/B)_{t-1} + c_3(EBITDA/A)_{t-1} + c_4 Size_{t-1} + c_5(PPE/A)_{t-1} + c_6(R\&D/S)_{t-1} + c_7 RDD_{t-1} + c_8 StkRtn + \varepsilon_t.$$

The dependent variable is book leverage (*D/A*). Regressions are estimated with firm fixed effects. Only the coefficients on the lagged leverage ratio are reported. For simulated samples, the reported parameter estimates are the average coefficients obtained from 500 replications of the simulation.

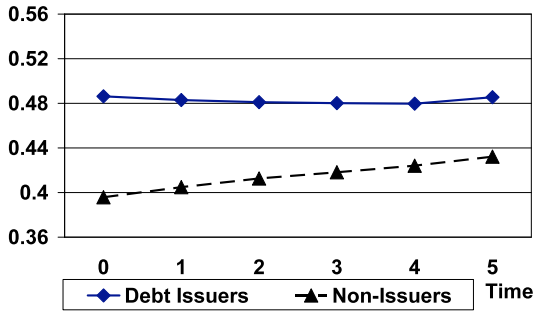
	Length of estimation periods		
	(1) t ∈ [1, 5]	(2) t ∈ [1, 15]	(3) t ∈ [1, 34] (entire sample)
S(*actual data*)	0.266	0.531	0.622
S(p=0.5*, actual deficit*)	0.296	0.606	0.688
S(p=1*, actual deficit*)	0.407	0.604	0.670
S(p = *empirical frequency, actual deficit*)	0.331	0.591	0.670
S(p=0.5*, random deficit*)	0.292	0.603	0.690
S(p=*Target*(1)*, actual deficit*)	0.061	0.306	0.366
S(p=*Target*(0.75)*, actual deficit*)	0.189	0.485	0.562
S(p=*Target*(0.67)*, actual deficit*)	0.224	0.529	0.609
S(p=*Target*(0.65)*, actual deficit*)	0.238	0.547	0.627
S(p=*Target*(0.63)*, actual deficit*)	0.241	0.550	0.631
S(p=*Target*(0.60)*, actual deficit*)	0.253	0.562	0.645
S(p=*Target*(0.55)*, actual deficit*)	0.275	0.586	0.669
S(p=*Target*(0.5)*, actual deficit*)	0.298	0.605	0.688
S(p=*Target*(0.25)*, actual deficit*)	0.397	0.688	0.761
S(p=*Target*(0)*, actual deficit*)	0.503	0.728	0.782

Panel A: Difference in book leverage between debt issuers and non-issuers

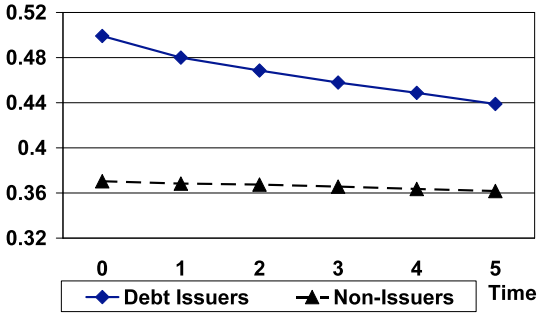


Panel B: Book leverage of debt issuers and non-issuers

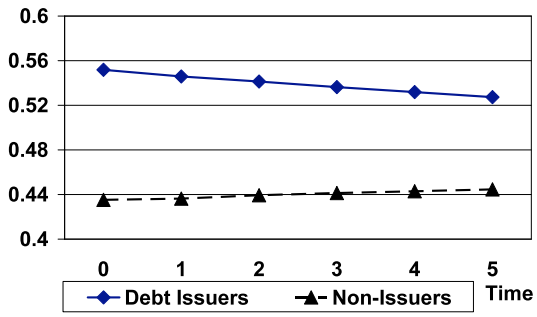
S(*actual data*)



S(*p*=0.5, *actual deficit*)



S(*p*=*empirical frequency, actual deficit*)



S(*p*=0.5, *random deficit*)

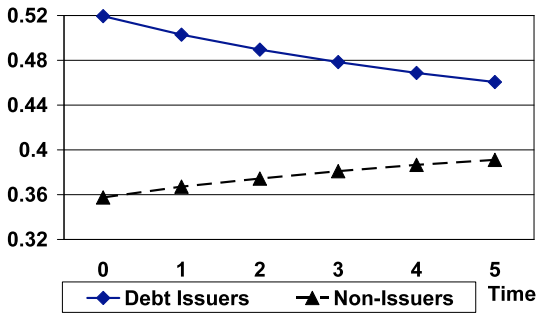
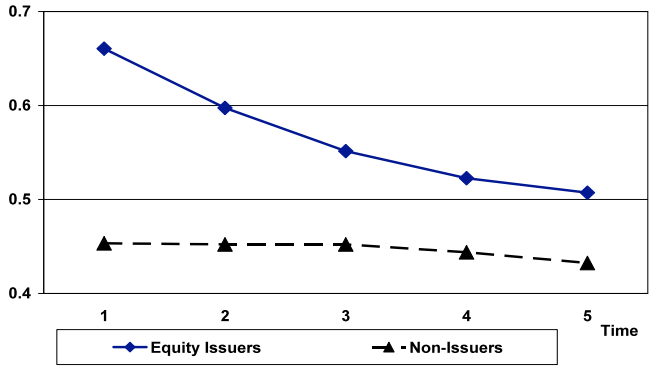
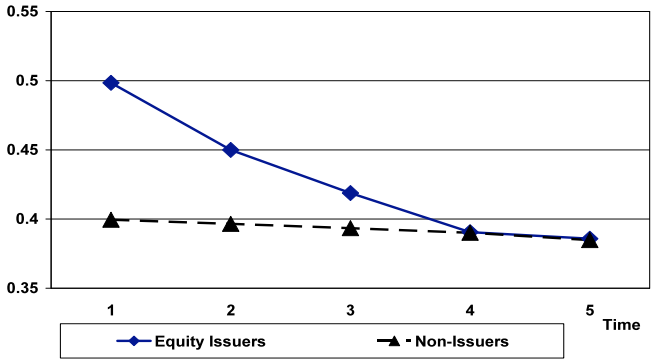


Figure IA.1. Book leverage following large debt issues. Actual data are collected from *Industrial Compustat* and *CRSP* for the years 1971 to 2004. Section II describes how the simulated data are generated. For each data set each year, large debt issuers (non-issuers) are identified if firms' net debt issues divided by total assets is higher (lower) than 5%. Net debt issues are defined as the change in total assets less the change in retained earnings and net equity issues. Both debt issuers and non-issuers are then followed over the next five event years. The average book leverage is computed across event times over the entire sample period for both debt issuers and non-issuers, respectively. Date 0 corresponds to the end of the issue period. Each simulated sample is generated 500 times, and the average leverage ratio in each event year over 500 simulations is presented. Panel A reports the differences in book leverage between debt issuers and non-issuers for actual and simulated data. Panel B presents the book leverage of debt issuers and non-issuers separately.

Panel A: Fraction of date-0 equity issuers (non-issuers) having large subsequent financing deficits



Panel B: Fraction of date 0 equity issuers (non-issuers) making large subsequent *debt* issues



Panel C: Fraction of date 0 equity issuers (non-issuers) making large subsequent *equity* issues

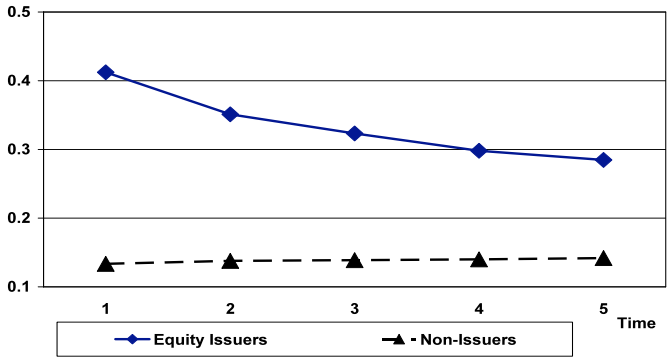


Figure IA.2. Financing deficit and issuance following large equity issues (actual data). Data are collected from *Industrial Compustat* and *CRSP* for the years 1971 to 2004. Each year, large equity issuers (non-issuers) are identified if the amount of net equity issuance divided by total assets is higher (lower) than 5%. Firms are then followed over the next five event years. Financing deficit is equal to the change in total assets minus the newly retained earnings. A deficit is defined to be large if it is greater than 5% of total assets. Panel A tracks the fraction of firms having a large financing deficit at each point in time for date 0 equity issuers and non-issuers. The average is then computed across event times over the entire sample period. Date 1 corresponds to the end of the first year after large equity issuances. Panel B reports the fraction of firms making large debt issues (net debt issued exceeds 5% of total assets) for date 0 equity issuers and non-issuers, respectively. Panel C reports the fraction of firms making large equity issues (net equity issued exceeds 5% of total assets) for date 0 equity issuers and non-issuers.

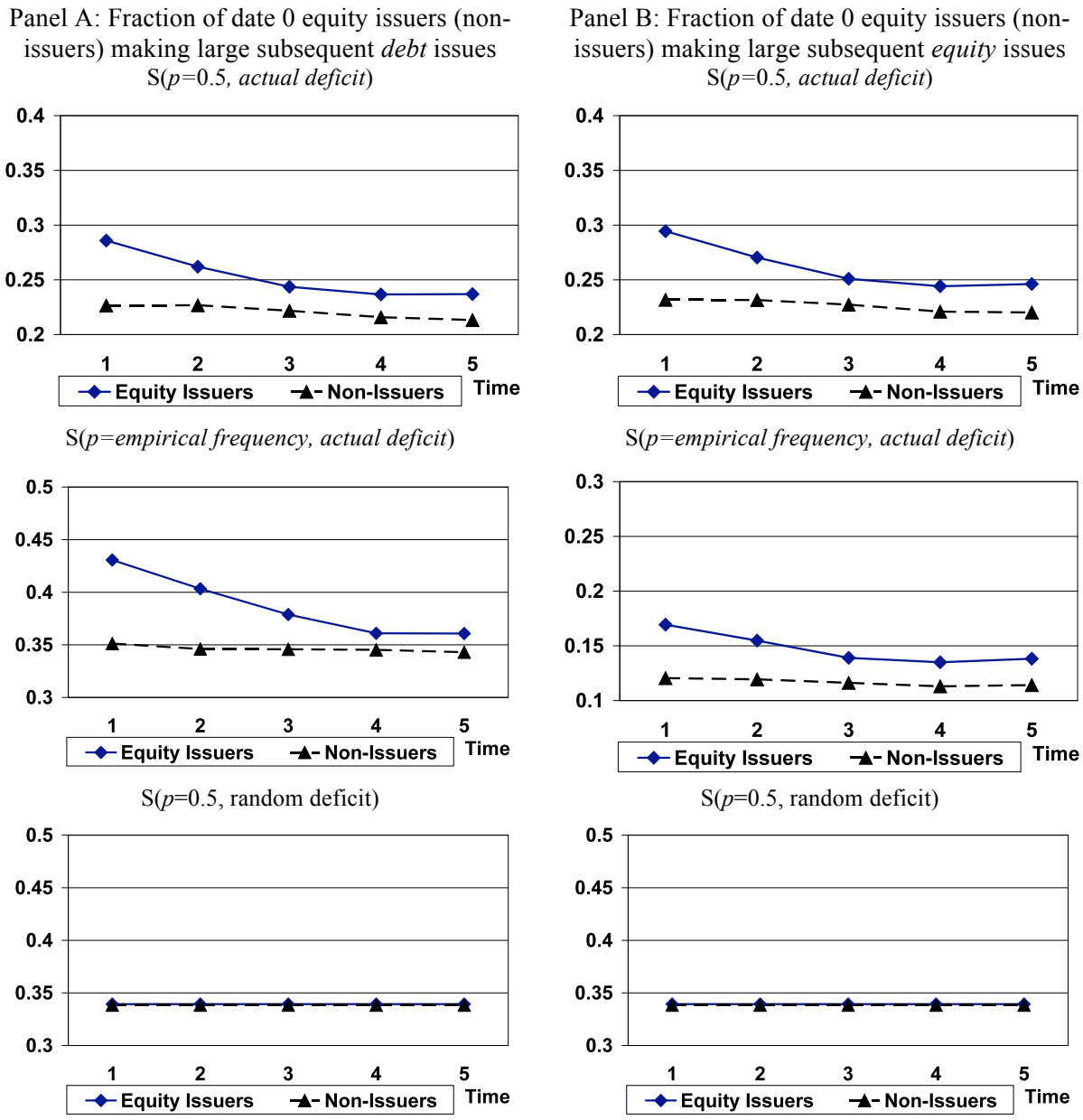


Figure IA.3. Debt and equity issuance following large equity issues (simulation samples). Details of generating simulation samples are described in Section II. For each data set each year, large equity issuers (non-issuers) are identified if the amount of net equity issuance divided by total assets is higher (lower) than 5%. Subsequent debt and equity issuances are tracked at each point in event time. The fraction of firms making large debt/equity issues (net equity issued exceeds 5% of total assets) is then computed across event times over the entire sample period for both date 0 equity issuers and non-issuers, respectively. Date 1 corresponds to the first year-end following the equity issue year. Each simulation sample is generated 500 times, and the reported average fraction in each event year is taken over 500 simulations. Panel A reports the fraction of firms making large debt issues (net debt issued exceeds 5% of total assets) for date 0 equity issuers and non-issuers, respectively. Panel B reports the fraction of firms making large equity issues (net equity issued exceeds 5% of total assets) for date 0 equity issuers and non-issuers.