Internet Appendix to:
Dissecting Conglomerate Valuations

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This Internet Appendix provides details on the estimation and shows robustness to alternative estimates of qs.

IA.I. Estimation Details

As in the paper, let W denote the matrix of I conglomerates by K classes that contains the fundamentals of a cross-section of conglomerates, and v the vector of conglomerate market values. We estimate divisional qs, q^{C}, using median regressions:

$$\tilde{v} = \tilde{W} \cdot q^{\mathrm{C}}, \tag{1}$$

where $\tilde{v}(i) = v(i)/\sum_k W(i,k)$ and $\tilde{W}(i,k) = W(i,k)/\sum_k W(i,k)$ are valuation multiples and class weights of the conglomerates.

In the remainder of this section, we provide a short review of quantile regressions and use Monte Carlo simulations to show that divisional qs can be robustly estimated from median regressions rather than OLS if conglomerate valuation ratios are positively skewed.

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A. Quantile Regressions

Our goal is to fit the median of the target variable y_i conditional on the explanatory variables X_i. When estimating Equation (1), y_i corresponds to the valuation ratio of conglomerate i, $\tilde{v}(i)$, and X_i is the ith row of the weight matrix $\tilde{W}$. The median, or 50th percentile, of y_i is defined from its inverse probability distribution function

$$P^{50}(y_i) = \inf\{y : Prob(y_i < y) \geq 0.50\}. \tag{2}$$

We can express the median as the solution to an optimization problem

$$P^{50}(y_i) = \arg\inf_u \mathbb{E}|y_i - u|, \tag{3}$$

which is particularly convenient for handling conditioning information sets such as the explanatory variables.[1] We follow the seminal quantile regression specification of Koenker and Bassett (1978), and assume that the median of y_i conditional on X_i is a linear function of the explanatory variables. This implies

$$P^{50}\left(y_i \middle| X_i\right) = \arg\inf_u \mathbb{E}\left(|y_i - u| \middle| X_i\right) = \gamma_0 + \gamma_1 X_i. \tag{4}$$

The assumed linear relation is reminiscent of standard OLS specifications. However, median regressions model the conditional median of y_i, rather than its mean, as a linear function of X_i.

B. Monte Carlo Simulations

We use Monte Carlo simulations to show that qs of division classes can be robustly estimated using median regressions rather than OLS regressions if conglomerate valuation ratios are positively skewed (e.g., Berger and Ofek, 1995). Specifically, we simulate fundamentals (i.e., sales) across $K = 5$ classes for $I = 500$ conglomerates. Half of the conglomerates operate in two classes, a third in three classes, and a sixth in four classes,

[1] Equation (3) is a special case of the general quantile regression representation, where the *quantile loss function* for quantile τ is given by $\rho_\tau(x) = x\left(\tau - \mathbb{I}_{(x<0)}\right)$ and the optimization problem is $P^\tau(y_i) = \arg\inf_u \mathbb{E}[\rho_\tau(y_i - u)]$.

approximately in line with the empirical distribution of industries.[2] Fundamentals W are drawn from a lognormal distribution that is based on a Gaussian distribution with unit mean and a standard deviation of 0.8.[3]

The valuation ratios of conglomerates, $\tilde{v}$, are calculated as in Equation (1), where the class valuations are given by $q^{\mathrm{C}} = [0.5\ 1.0\ 1.5\ 2.0\ 2.5]'$. These class valuations approximately reflect standalone qs of the 10 Fama-French industries, whose averages range from 0.43 to 3.21. Conglomerates are then exposed to multiplicative valuation shocks that have a median of one and are drawn from either a Gaussian distribution that is truncated at zero or a lognormal distribution. These shocks reflect the significant empirical variation in excess values documented, for example, by Lamont and Polk (2001), who report cross-sectional standard deviations of excess values between 0.36 and 0.63. Correspondingly, we consider 0.3 and 0.6 as standard deviations for our shocks.

Table IA.I shows averages and standard deviations of the differences between estimated and actual class valuations, $\hat{q}^{\mathrm{C}} - q^{\mathrm{C}}$, across 100,000 simulations. In the last column, it also reports excess value measures computed as in Berger and Ofek (1995). Panels A and B correspond to multiplicative shocks with standard deviations of 0.3 and 0.6, respectively.

When conglomerate valuation ratios are normally distributed, and therefore non-skewed, both median regressions and OLS regressions yield unbiased estimates of class valuations. Specifically, $\hat{q}^{\mathrm{C}} - q^{\mathrm{C}} = 0$ across all columns for both median and OLS regressions. The cross-simulation averages of the median excess value are zero, but those of its mean are negative (-0.05 in Panel A and -0.18 in Panel B). This is because the use of the logarithm in the excess value calculation directly aims to eliminate the effects of positive skewness. With a normally distributed shock, that is, without positive

[2] In our sample, when industries are based on four-digit SIC codes, 53% of conglomerate-year observations are of firms operating in two industries, 28% in three industries, and 19% in four or more industries.

[3] The standard deviation of 0.8 implies that, on average, conglomerates are well diversified and not dominated by a single division. The average Herfindahl index across conglomerates is about 0.5. It ranges from 0.35 for four-division firms to 0.6 for two-division firms, closely matching the empirical moments we obtain in untabulated analysis.

skewness, Jensen's inequality implies a downward-biased measure of excess value.

Several observations about the cross-simulation standard deviations, shown in parentheses, are noteworthy. First, they are increasing across the five classes. This is simply an artifact of having increasing valuation ratios across the classes, and a multiplicative valuation shock. Second, as expected with normally distributed residuals, OLS is more efficient than median regressions. Lastly, the standard deviations of class valuations are noticeably higher than those of excess values. This is not surprising given that the same data are used to obtain one estimate of excess value but five estimates of class valuation multiples. The finer granularity comes at a cost of reduced efficiency.

The OLS-based inferences change dramatically when valuation ratios are positively skewed. With lognormal shocks, OLS yields strongly upward-biased estimates of class valuations. In Panel A these estimates range from 0.02 to 0.11, representing about 4% of the true valuation multiple. The drawbacks of OLS regressions become even more pronounced in Panel B, where we assume a higher cross-sectional variation of 0.6 in excess values. In this case, the bias reaches 20%.

Since valuation ratios are known to be positively skewed, our simulation evidence strongly suggests that OLS should not be used to obtain class q^{c}s. In contrast, estimates from median regressions are unbiased and, like excess values, remain robust to different distributional assumptions. Overall, the simulations show that qs of classes can be estimated well using quantile regressions on the median, the approach we follow throughout the paper.

IA.II. Robustness

In this section, we show robustness of our main results to more granular industry classifications, conditioning q estimation on firms' cash holdings, and controlling for accruals and working capital in the estimation of qs. We confirm robustness of the results in the last set of columns of Tables IV to VII as well as specifications (4) and (8) of Table VIII. The increased demand on data availability of more granular industry classifications and qs estimated conditional on firms' cash holdings makes the estimation across intra-conglomerate covariance structure (Tables VI and VII.B) infeasible.

A. Alternative Industry Classifications

In the paper, divisional qs are estimated at the Fama-French 10 industry level. Tables IA.II to IA.V reexamine our key findings using qs estimated at the more granular level of 17, 30, or 49 Fama-French industries. Our results remain robust to these variations.

B. Conditioning on Firms' Cash Holdings

Theories of corporate diversification and internal capital markets, such as Matvos and Seru (2014), predict that cash is an important conditioning variable for investment. We consider two ways of taking the role of cash into account. First, we estimate industry qs separately for conglomerates with low and high cash holdings. Tables IA.VI to IA.IX show that our main results are robust to using either estimate, and that they generate coefficients that are statistically not different. Second, in Table IA.X we instead include cash as a control in the investment-q sensitivity regressions. The results suggest that cash plays an important role in the investment policy, particularly so for conglomerate divisions. However, the inclusion of this variable has little impact on our main conclusions about the role of divisional qs.

C. Accounting for Accruals and Working Capital

Valuation multiples and equity returns depend on accruals and net working capital, which could be different across standalone firms and conglomerate divisions. For example, conglomerates might have more internal agency problems and hence lower quality of discretionary accruals than standalone firms (e.g., Demirkan, Radhakrishnan, and Urcan, 2012). As a result, their qs might be affected differently by accruals than those of standalone firms. To consider this possibility, we show that our main results are unaffected when we control for the possibly confounding effects of working capital and accruals in the estimation of divisional and standalone qs.

Specifically, prior to the estimation of Equation (1), we adjust market values to be orthogonal to either accruals, working capital, or non-cash working capital. We then use the adjusted market values in all subsequent estimation.

Tables IA.XI to IA.XV reexamine the key results of the paper using the modified q estimates. Across all tables and all alternative estimates of qs, our results are robust to these changes. Overall, this evidence suggests that controlling for accruals or working capital does not affect our estimates of sensitivity to economic and credit shocks or the internal capital allocation.

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Table IA.I
Monte Carlo Simulation: OLS vs. Median Regressions

This table compares estimates of divisional qs generated from OLS and median regressions using simulated data. The data come from 100,000 simulations of a cross-section of 500 conglomerates, of which 50% operate in two divisions, 33% operate in three divisions, and the remaining 17% operate in four divisions. Each division's sales are drawn from the exponential of a normal distribution with a unit mean and a standard deviation of 0.8. The conglomerate divisions are sorted into five classes, where class valuation ratios are given by $q^{C} = [0.5\ 1.0\ 1.5\ 2.0\ 2.5]'$, and exposed to a multiplicative valuation shock. The shock has a median of one, and is drawn from either a Gaussian distribution that is truncated at zero or a lognormal distribution. The first five numeric columns report the average and standard deviation (in parentheses) of the difference between the estimated and the actual class valuations, $\hat{q}^{C} - q^{C}$. Column 6 reports excess value measures computed as in Berger and Ofek (1995). Panels A and B correspond to a cross-sectional variation in excess values of 0.3 and 0.6, respectively.

Class q^{C} of the class	I 0.5	II 1.0	III 1.5	IV 2.0	V 2.5	Berger-Ofek excess value
A. Low variation in excess values ($\sigma = 0.30$)						
Normal distribution						
Median regression	-0.00	-0.00	0.00	0.00	0.00	-0.00
	(0.05)	(0.07)	(0.08)	(0.10)	(0.11)	(0.02)
OLS regression	-0.00	0.00	0.00	-0.00	0.00	-0.05
	(0.05)	(0.06)	(0.07)	(0.08)	(0.09)	(0.02)
Log-normal distribution						
Median regression	0.00	0.00	0.00	0.00	0.00	0.00
	(0.05)	(0.07)	(0.08)	(0.10)	(0.11)	(0.02)
OLS regression	0.02	0.05	0.07	0.09	0.11	0.00
	(0.05)	(0.06)	(0.07)	(0.09)	(0.10)	(0.01)
B. High variation in excess values ($\sigma = 0.60$)						
Normal distribution						
Median regression	0.00	-0.00	0.00	0.00	-0.00	-0.00
	(0.10)	(0.12)	(0.15)	(0.17)	(0.20)	(0.03)
OLS Regression	0.00	-0.00	-0.00	0.00	-0.00	-0.18
	(0.08)	(0.09)	(0.11)	(0.13)	(0.15)	(0.03)
Log-normal distribution						
Median regression	0.00	0.00	0.00	0.00	0.00	-0.00
	(0.11)	(0.14)	(0.16)	(0.19)	(0.22)	(0.03)
OLS regression	0.10	0.20	0.30	0.39	0.49	-0.00
	(0.13)	(0.16)	(0.18)	(0.21)	(0.24)	(0.03)

Table IA.II
Robustness to Alternative Industry Definitions:
Economic Determinants of Standalone and Divisional qs

This table repeats the analysis in the last two columns of Table IV in the paper using qs estimated for 10 (as in the main text), 17, 30, and 49 Fama-French industries.

	Difference between divisional and standalone qs							
	10 industries		17 industries		30 industries		49 industries	
	Slope	R^2	Slope	R^2	Slope	R^2	Slope	R^2
A. Economic variables								
Market return	-1.39	0.06	-1.19	0.05	-0.97	0.05	-0.98	0.05
	[-4.96]		[-5.00]		[-3.00]		[-4.06]	
Industry return	-1.41	0.13	-1.10	0.08	-1.09	0.08	-0.94	0.06
	[-6.61]		[-5.27]		[-7.80]		[-8.31]	
$-\Delta$Dividend yield	-0.37	0.03	-0.40	0.03	-0.31	0.04	-0.21	0.03
	[-3.74]		[-4.42]		[-2.49]		[-2.17]	
$-\Delta$Industry dividend yield	-0.21	0.02	-0.16	0.02	-0.12	0.03	-0.08	0.06
	[-2.55]		[-2.32]		[-2.20]		[-1.33]	
$-\Delta$VIX	-0.04	0.03	-0.04	0.04	-0.03	0.04	-0.02	0.04
	[-5.16]		[-3.88]		[-3.89]		[-3.64]	
ΔIndustrial production	-3.01	0.03	-3.01	0.03	-2.11	0.02	-1.55	0.02
	[-2.92]		[-2.53]		[-3.38]		[-2.19]	
ΔTFP	-0.12	0.04	-0.10	0.04	-0.10	0.04	-0.09	0.03
	[-7.30]		[-3.69]		[-3.93]		[-5.19]	
ΔOutput	-0.04	0.02	-0.05	0.02	-0.03	0.01	-0.03	0.02
	[-2.68]		[-2.94]		[-3.10]		[-2.66]	
ΔExpansion indicator	-0.49	0.04	-0.46	0.04	-0.39	0.03	-0.25	0.02
	[-3.59]		[-2.71]		[-2.93]		[-2.92]	
B. First principal component of economic variables								
Full-sample variables	-0.11	0.05	-0.10	0.05	-0.08	0.03	-0.06	0.05
	[-5.82]		[-4.45]		[-8.02]		[-2.82]	
All variables, PC average	-0.11	0.06	-0.10	0.05	-0.08	0.03	-0.06	0.06
	[-6.16]		[-4.57]		[-8.16]		[-2.83]	

Table IA.III
Robustness to Alternative Industry Definitions:
Financing Conditions and Standalone vs Divisional qs

This table repeats the analysis in the last two columns of Table V in the paper using qs estimated for 10 (as in the main text), 17, 30, and 49 Fama-French industries.

	Difference between divisional and standalone qs							
	10 industries		17 industries		30 industries		49 industries	
	Slope	R^2	Slope	R^2	Slope	R^2	Slope	R^2
A. Credit shock variables								
$-\Delta$TED spread	-0.35	0.02	-0.35	0.02	-0.30	0.03	-0.43	0.03
	[-2.42]		[-2.62]		[-2.27]		[-3.41]	
$-\Delta$Default spread	-0.30	0.05	-0.27	0.04	-0.17	0.03	-0.17	0.04
	[-2.89]		[-2.69]		[-2.59]		[-2.61]	
$-\Delta$Credit rating	-0.27	0.01	-0.13	0.03	-0.23	0.04	-0.11	0.03
	[-2.44]		[-1.22]		[-2.35]		[-1.66]	
$-\Delta$Credit spread	-0.29	0.17	-0.39	0.16	-0.41	0.19	-1.07	0.28
	[-2.09]		[-2.51]		[-1.69]		[-1.73]	
ΔDistance to default	-0.19	0.11	-0.15	0.06	-0.11	0.06	-0.11	0.06
	[-6.98]		[-4.99]		[-5.67]		[-5.30]	
$-\Delta$CDS	-0.33	0.11	-0.23	0.09	-0.14	0.06	-0.09	0.06
	[-2.62]		[-3.31]		[-2.65]		[-2.25]	
B. First principal component of credit shock variables								
Full-sample variables	-0.26	0.10	-0.21	0.07	-0.14	0.05	-0.14	0.06
	[-5.35]		[-4.00]		[-3.80]		[-3.98]	
All variables, PC average	-0.24	0.09	-0.19	0.07	-0.16	0.04	-0.14	0.05
	[-5.73]		[-4.46]		[-7.12]		[-4.31]	

Table IA.IV
Robustness to Alternative Industry Definitions:
Sensitivity of *q*s to Financing and Other Economic Conditions

This table repeats the analysis in the last three columns of Table VII.A in the paper using qs estimated for 10 (as in the main text), 17, 30, and 49 Fama-French industries.

	Difference between divisional and standalone qs											
	10 industries			17 industries			30 industries			49 industries		
	Econ	Credit	R^2	Econ	Credit	R^2	Econ	Credit	R^2	Econ	Credit	R^2
Full-sample variables	-0.02	-0.24	0.11	-0.04	-0.16	0.08	-0.03	-0.12	0.06	-0.01	-0.14	0.09
	[-0.65]	[-3.87]		[-2.12]	[-2.91]		[-2.50]	[-3.49]		[-0.32]	[-3.84]	
All variables, PC average	-0.03	-0.21	0.11	-0.04	-0.15	0.08	-0.04	-0.11	0.05	-0.01	-0.12	0.08
	[-0.97]	[-3.77]		[-2.31]	[-3.28]		[-3.21]	[-3.42]		[-0.47]	[-3.63]	

Table IA.V
Robustness to Alternative Industry Definitions:
The q-sensitivity of Investment of Standalone Firms and Conglomerate Divisions

This table repeats the analysis in specifications (4) and (8) of Table VIII in the paper using qs estimated for 10 (as in the main text), 17, 30, and 49 Fama-French industries.

	10 industries		17 industries		30 industries		49 industries	
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Standalone q	0.022	0.015	0.021	0.016	0.020	0.014	0.021	0.014
	[5.94]	[5.34]	[6.17]	[5.66]	[6.18]	[5.65]	[6.10]	[5.90]
Divisional q	0.004	0.004	0.006	-0.002	0.015	0.012	0.005	0.006
	[0.95]	[0.96]	[0.98]	[-0.58]	[3.00]	[2.71]	[2.13]	[2.66]
C	-0.001	-0.007	-0.009	-0.020	0.004	-0.003	0.002	-0.005
	[-0.58]	[-1.14]	[-1.71]	[-3.03]	[1.62]	[-0.46]	[0.61]	[-0.87]
Standalone $q \times C$	-0.007	0.000	-0.005	-0.001	-0.005	0.001	-0.006	0.001
	[-1.49]	[0.10]	[-1.33]	[-0.24]	[-1.22]	[0.32]	[-1.60]	[0.28]
Divisional $q \times C$	0.023	0.011	0.032	0.028	0.016	0.005	0.020	0.007
	[4.82]	[6.91]	[9.86]	[5.41]	[3.64]	[2.14]	[4.49]	[3.52]
CFS	-0.041	-0.058	-0.042	-0.058	-0.041	-0.059	-0.041	-0.058
	[-2.67]	[-3.61]	[-2.86]	[-3.49]	[-2.86]	[-3.65]	[-2.84]	[-3.63]
$CFS \times C$	-0.062	-0.010	-0.061	-0.011	-0.061	-0.010	-0.060	-0.009
	[-3.50]	[-0.68]	[-3.69]	[-0.99]	[-4.01]	[-0.78]	[-3.35]	[-0.74]
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes		Yes		Yes		Yes	
Division fixed effect		Yes		Yes		Yes		Yes
R-squared	0.40	0.72	0.40	0.72	0.40	0.72	0.40	0.72
Number of observations	116,813	110,120	116,813	110,120	116,805	110,112	116,256	109,561

Table IA.VI
Robustness to Conditioning on Firm Cash Holdings: Economic Determinants of Standalone and Divisional qs

This table repeats the analysis in the last two columns of Table IV in the paper using qs estimated separately for firms with high and low cash-to-assets ratios. In particular, standalone firms (conglomerates) are split cross-sectionally into high and low groups based on the median cash holdings of standalone firms (conglomerates). The last two columns show results for the difference between the two groups.

	Difference between divisional and standalone qs of firms with					
	High cash		Low cash		High-low cash	
	Slope	R^2	Slope	R^2	Slope	R^2
A. Economic variables						
Market return	-1.47	0.06	-1.59	0.08	-0.11	0.01
	[-4.17]		[-4.33]		[-0.29]	
Industry return	-1.17	0.09	-1.15	0.08	0.01	0.01
	[-6.06]		[-6.89]		[0.05]	
$-\Delta$Dividend yield	-0.46	0.04	-0.37	0.03	0.09	0.02
	[-2.77]		[-2.66]		[0.44]	
$-\Delta$Industry dividend yield	-0.06	0.01	-0.30	0.03	-0.24	0.02
	[-0.79]		[-1.72]		[-1.08]	
$-\Delta$VIX	-0.04	0.05	-0.05	0.04	-0.01	0.03
	[-2.49]		[-6.65]		[-0.57]	
ΔIndustrial production	-3.32	0.02	-2.81	0.02	0.51	0.01
	[-3.74]		[-3.29]		[0.48]	
ΔTFP	-0.12	0.03	-0.11	0.04	0.01	0.02
	[-4.73]		[-3.22]		[0.17]	
ΔOutput	-0.05	0.02	-0.05	0.02	0.00	0.00
	[-3.47]		[-3.67]		[0.10]	
ΔExpansion indicator	-0.58	0.04	-0.47	0.05	0.11	0.03
	[-2.96]		[-2.26]		[0.34]	
B. First principal component of economic variables						
Full-sample variables	-0.11	0.04	-0.10	0.04	0.01	0.01
	[-5.55]		[-4.71]		[0.33]	
All variables, PC average	-0.11	0.05	-0.11	0.05	0.01	0.01
	[-5.49]		[-4.94]		[0.22]	

Table IA.VII
Robustness to Conditioning on Firm Cash Holdings:
Financing Conditions and Standalone vs Divisional qs

This table repeats the analysis in the last two columns of Table V in the paper using qs estimated separately for firms with high and low cash-to-assets ratios. In particular, standalone firms (conglomerates) are split cross-sectionally into high and low groups based on the median cash holdings of standalone firms (conglomerates). The last two columns show results for the difference between the two groups.

	Difference between divisional and standalone qs of firms with					
	High cash		Low cash		High-low cash	
	Slope	R^2	Slope	R^2	Slope	R^2
A. Credit shock variables						
$-\Delta$TED spread	-0.40	0.02	-0.40	0.06	0.00	0.04
	[-3.04]		[-1.14]		[0.01]	
$-\Delta$Default spread	-0.27	0.03	-0.29	0.03	-0.02	0.01
	[-2.80]		[-3.68]		[-0.22]	
$-\Delta$Credit rating	0.03	0.02	-0.60	0.03	-0.63	0.03
	[0.19]		[-3.76]		[-2.75]	
$-\Delta$Credit spread	-0.20	0.11	-0.19	0.15	0.01	0.09
	[-2.85]		[-2.13]		[0.06]	
ΔDistance to default	-0.16	0.07	-0.18	0.08	-0.03	0.02
	[-4.29]		[-6.02]		[-0.62]	
$-\Delta$CDS	-0.29	0.09	-0.22	0.07	0.06	0.03
	[-3.26]		[-2.52]		[1.03]	
B. First principal component of credit shock variables						
Full-sample variables	-0.21	0.07	-0.25	0.07	-0.04	0.02
	[-3.70]		[-5.80]		[-0.55]	
All variables, PC average	-0.19	0.06	-0.24	0.08	-0.04	0.02
	[-4.03]		[-5.01]		[-0.80]	

Table IA.VIII
Robustness to Conditioning on Firm Cash Holdings:
Sensitivity of *q*s to Financing and Other Economic Conditions

This table repeats the analysis in the last three columns of Table VII.A in the paper using qs estimated separately for firms with high and low cash-to-assets ratios. In particular, standalone firms (conglomerates) are split cross-sectionally into high and low groups based on the median cash holdings of standalone firms (conglomerates). The last two columns show results for the difference between the two groups.

	Difference between divisional and standalone qs of firms with								
	High cash			Low cash			High-low cash		
	Econ	Credit	R^2	Econ	Credit	R^2	Econ	Credit	R^2
Full-sample variables	-0.05	-0.15	0.08	-0.01	-0.23	0.08	0.04	-0.09	0.03
	[-2.00]	[-1.86]		[-0.53]	[-4.68]		[1.04]	[-0.88]	
All variables, PC average	-0.07	-0.11	0.08	-0.02	-0.22	0.09	0.05	-0.10	0.03
	[-2.63]	[-1.73]		[-0.73]	[-3.79]		[1.49]	[-1.27]	

Table IA.IX
Robustness to Conditioning on Firm Cash Holdings:
The q-sensitivity of Investment of Standalone Firms and Conglomerate Divisions

This table repeats the analysis in specifications (4) and (8) of Table VIII in the paper using qs estimated separately for firms with high and low cash-to-assets ratios. In particular, standalone firms (conglomerates) are split cross-sectionally into high and low groups based on the median cash holdings of standalone firms (conglomerates).

	qs estimated using firms with			
	High cash		Low cash	
Variable	(1)	(2)	(3)	(4)
Standalone q	0.021	0.015	0.021	0.016
	[5.86]	[5.28]	[6.29]	[5.29]
Divisional q	0.001	0.005	0.004	-0.007
	[0.31]	[2.46]	[0.85]	[-1.48]
C	0.004	-0.003	0.004	-0.006
	[2.04]	[-0.37]	[1.28]	[-1.25]
Standalone $q \times C$	-0.005	0.002	-0.005	0.001
	[-1.26]	[0.47]	[-1.17]	[0.21]
Divisional $q \times C$	0.016	0.005	0.015	0.009
	[4.85]	[2.17]	[3.51]	[5.54]
CFS	-0.041	-0.059	-0.041	-0.058
	[-2.67]	[-3.62]	[-2.83]	[-3.50]
$CFS \times C$	-0.061	-0.009	-0.061	-0.011
	[-3.81]	[-0.66]	[-3.90]	[-0.82]
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes		Yes	
Division fixed effect		Yes		Yes
R-squared	0.397	0.722	0.397	0.722
Number of observations	116,813	110,120	115,176	108,498

Table IA.X
Robustness to Controlling for Firm Cash Holdings:
The q-sensitivity of Investment of Standalone Firms and Conglomerate Divisions

This table repeats the analysis in Table VIII in the paper but adds controls for cash-to-assets ratios and their interaction with the conglomerate indicator to all specifications.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Standalone q	0.022		0.022	0.021	0.015		0.015	0.015
	[6.21]		[6.07]	[5.80]	[5.24]		[5.14]	[5.22]
Divisional q		0.013	0.003	0.003		0.010	0.003	0.004
		[3.62]	[1.24]	[0.93]		[3.76]	[0.75]	[0.87]
C	0.006	-0.011	-0.008	-0.005	-0.002	-0.010	-0.010	-0.009
	[3.41]	[-4.51]	[-4.04]	[-2.15]	[-0.35]	[-1.62]	[-1.43]	[-1.32]
Standalone $q \times C$	-0.003		-0.009	-0.007	0.001		-0.001	0.000
	[-1.11]		[-2.02]	[-1.50]	[0.52]		[-0.23]	[0.01]
Divisional $q \times C$		0.013	0.021	0.024		0.010	0.011	0.011
		[4.04]	[3.92]	[4.94]		[2.12]	[4.33]	[5.79]
CFS				-0.039				-0.056
				[-2.59]				[-3.48]
$CFS \times C$				-0.061				-0.013
				[-3.38]				[-0.87]
Cash	0.024	0.035	0.024	0.017	0.088	0.094	0.088	0.084
	[1.22]	[2.32]	[1.18]	[1.24]	[14.43]	[12.45]	[14.07]	[12.03]
Cash $\times$ C	0.078	0.065	0.076	0.065	0.059	0.057	0.059	0.059
	[8.05]	[1.92]	[2.34]	[3.86]	[2.74]	[2.65]	[3.25]	[3.62]
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes				
Division fixed effect					Yes	Yes	Yes	Yes
R-squared	0.392	0.387	0.392	0.397	0.721	0.719	0.721	0.722
Number of observations	115,176	115,176	115,176	115,176	108,498	108,498	108,498	108,498

Table IA.XI
Robustness to Accruals and Working Capital Controls:
Economic Determinants of Standalone and Divisional *q*s

This table repeats the analysis in the last two columns of Table IV in the paper using qs estimated after controlling for accruals (Acc.), working capital (WC), and non-cash working capital (NCWC). For comparison, the base case using the qs from the paper is also reported.

	Difference between divisional and standalone qs							
	Base case		Acc. control		WC control		NCWC control	
	Slope	R^2	Slope	R^2	Slope	R^2	Slope	R^2
A. Economic variables								
Market return	-1.39	0.06	-1.57	0.07	-1.42	0.06	-1.46	0.07
	[-4.96]		[-6.67]		[-5.58]		[-5.23]	
Industry return	-1.41	0.13	-1.39	0.12	-1.41	0.13	-1.52	0.14
	[-6.61]		[-9.76]		[-7.19]		[-5.57]	
$-\Delta$Dividend yield	-0.37	0.03	-0.24	0.03	-0.41	0.04	-0.37	0.03
	[-3.74]		[-1.57]		[-3.41]		[-3.46]	
$-\Delta$Industry dividend yield	-0.21	0.02	-0.12	0.01	-0.17	0.03	-0.20	0.02
	[-2.55]		[-1.43]		[-2.13]		[-2.96]	
$-\Delta$VIX	-0.04	0.03	-0.04	0.04	-0.04	0.03	-0.04	0.04
	[-5.16]		[-4.21]		[-5.56]		[-4.88]	
ΔIndustrial production	-3.01	0.03	-2.35	0.03	-2.84	0.03	-3.44	0.02
	[-2.92]		[-2.22]		[-2.60]		[-4.42]	
ΔTFP	-0.12	0.04	-0.12	0.03	-0.11	0.03	-0.13	0.04
	[-7.30]		[-6.76]		[-6.43]		[-6.71]	
ΔOutput	-0.04	0.02	-0.03	0.02	-0.04	0.02	-0.05	0.02
	[-2.68]		[-2.06]		[-2.33]		[-3.50]	
ΔExpansion indicator	-0.49	0.04	-0.46	0.03	-0.43	0.04	-0.51	0.04
	[-3.59]		[-3.79]		[-2.66]		[-4.03]	
B. First principal component of economic variables								
Full-sample variables	-0.11	0.05	-0.09	0.04	-0.10	0.05	-0.11	0.05
	[-5.82]		[-5.18]		[-5.41]		[-6.71]	
All variables, PC average	-0.11	0.06	-0.10	0.05	-0.10	0.05	-0.12	0.06
	[-6.16]		[-5.44]		[-6.03]		[-7.07]	

Table IA.XII
Robustness to Accruals and Working Capital Controls:
Financing Conditions and Standalone vs Divisional qs

This table repeats the analysis in the last two columns of Table V in the paper using qs estimated after controlling for accruals (Acc.), working capital (WC), and non-cash working capital (NCWC). For comparison, the base case using the qs from the paper is also reported.

	Difference between divisional and standalone qs							
	Base case		Acc. control		WC control		NCWC control	
	Slope	R^2	Slope	R^2	Slope	R^2	Slope	R^2
A. Credit shock variables								
$-\Delta$TED spread	-0.35	0.02	-0.48	0.02	-0.34	0.02	-0.33	0.02
	[-2.42]		[-4.95]		[-1.91]		[-2.26]	
$-\Delta$Default spread	-0.30	0.05	-0.28	0.05	-0.34	0.05	-0.35	0.05
	[-2.89]		[-2.68]		[-3.57]		[-4.30]	
$-\Delta$Credit rating	-0.27	0.01	-0.05	0.02	-0.25	0.01	-0.38	0.02
	[-2.44]		[-0.36]		[-1.86]		[-2.61]	
$-\Delta$Credit spread	-0.29	0.17	-0.32	0.17	-0.25	0.16	-0.31	0.17
	[-2.09]		[-2.50]		[-2.31]		[-2.10]	
ΔDistance to default	-0.19	0.11	-0.19	0.10	-0.19	0.10	-0.20	0.11
	[-6.98]		[-8.56]		[-7.24]		[-7.69]	
$-\Delta$CDS	-0.33	0.11	-0.30	0.10	-0.34	0.11	-0.33	0.11
	[-2.62]		[-2.44]		[-2.80]		[-2.52]	
B. First principal component of credit shock variables								
Full-sample variables	-0.26	0.10	-0.25	0.09	-0.27	0.10	-0.28	0.11
	[-5.35]		[-5.22]		[-6.09]		[-6.26]	
All variables, PC average	-0.24	0.09	-0.23	0.09	-0.24	0.09	-0.26	0.10
	[-5.73]		[-5.62]		[-6.26]		[-6.43]	

Table IA.XIII
Robustness to Accruals and Working Capital Controls: Financing Conditions and the Role of Coinsurance

This table repeats the analysis in the last two columns of Table VI in the paper using qs estimated after controlling for accruals (Acc.), working capital (WC), and non-cash working capital (NCWC). For comparison, the base case using the qs from the paper is also reported.

	Difference in qs of divisions with high and low coinsurance potential							
	Base case		Acc. control		WC control		NCWC control	
	Slope	R^2	Slope	R^2	Slope	R^2	Slope	R^2
A. Credit shock variables								
$-\Delta$TED spread	-0.64	0.03	-0.71	0.04	-0.66	0.03	-0.70	0.03
	[-2.50]		[-3.25]		[-2.83]		[-2.88]	
$-\Delta$Default spread	-0.25	0.04	-0.19	0.03	-0.22	0.03	-0.25	0.04
	[-1.76]		[-1.48]		[-1.63]		[-1.91]	
$-\Delta$Credit rating	-0.95	0.04	-0.73	0.04	-0.86	0.04	-0.87	0.04
	[-3.64]		[-3.25]		[-3.45]		[-3.36]	
$-\Delta$Credit spread	-0.24	0.11	-0.32	0.15	-0.25	0.10	-0.26	0.11
	[-2.68]		[-2.54]		[-2.68]		[-3.05]	
ΔDistance to default	-0.18	0.07	-0.18	0.07	-0.15	0.05	-0.17	0.06
	[-3.27]		[-4.00]		[-3.32]		[-3.48]	
$-\Delta$CDS	-0.34	0.09	-0.31	0.07	-0.30	0.07	-0.34	0.09
	[-2.91]		[-3.36]		[-2.80]		[-3.10]	
B. First principal component of credit shock variables								
Full-sample variables	-0.22	0.08	-0.21	0.06	-0.19	0.06	-0.21	0.07
	[-2.56]		[-3.01]		[-2.44]		[-2.69]	
All variables, PC average	-0.22	0.08	-0.22	0.06	-0.19	0.06	-0.21	0.07
	[-2.63]		[-3.29]		[-2.60]		[-2.79]	

Table IA.XIV
Robustness to Accruals and Working Capital Controls:
Sensitivity of *q*s to Financing and Other Economic Conditions

This table repeats the analysis in the last three columns of Table VII in the paper using *q*s estimated after controlling for accruals (Acc.), working capital (WC), and non-cash working capital (NCWC). For comparison, the base case using the *q*s from the paper is also reported.

	Base case			Acc. control			WC control			NCWC control		
	Econ	Credit	R^2	Econ	Credit	R^2	Econ	Credit	R^2	Econ	Credit	R^2
A. Difference between divisional and standalone *q*s												
Full-sample variables	-0.02	-0.24	0.11	0.00	-0.26	0.10	0.00	-0.27	0.11	-0.01	-0.27	0.12
	[-0.65]	[-3.87]		[0.18]	[-4.42]		[0.05]	[-4.51]		[-0.47]	[-4.41]	
All variables, PC average	-0.03	-0.21	0.11	-0.01	-0.23	0.10	-0.01	-0.23	0.10	-0.02	-0.23	0.11
	[-0.97]	[-3.77]		[-0.23]	[-4.43]		[-0.38]	[-4.35]		[-0.88]	[-4.20]	
B. Differences between *q*s of divisions with high and low coinsurance potential												
Full-sample variables	-0.02	-0.19	0.09	-0.03	-0.17	0.06	-0.02	-0.16	0.07	-0.04	-0.16	0.08
	[-0.68]	[-2.46]		[-1.38]	[-2.19]		[-0.84]	[-2.11]		[-1.15]	[-2.18]	
All variables, PC average	-0.02	-0.19	0.10	-0.02	-0.19	0.07	-0.02	-0.17	0.08	-0.03	-0.17	0.09
	[-0.56]	[-2.30]		[-0.93]	[-2.52]		[-0.50]	[-2.17]		[-0.82]	[-2.11]	

Table IA.XV
Robustness to Accruals and Working Capital Controls:
The q-sensitivity of Investment of Standalone Firms and Conglomerate Divisions

This table repeats the analysis in specifications (4) and (8) of Table VIII in the paper using qs estimated after controlling for accruals (Acc.), working capital (WC), and non-cash working capital (NCWC). For comparison, the base case using the qs from the paper is also reported.

	Base case		Acc. control		WC control		NCWC control	
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Standalone q	0.022	0.015	0.021	0.015	0.022	0.015	0.022	0.015
	[5.94]	[5.34]	[5.98]	[5.58]	[5.97]	[5.53]	[5.94]	[5.49]
Divisional q	0.004	0.004	0.007	0.008	0.005	0.005	0.004	0.005
	[0.95]	[0.96]	[1.26]	[2.54]	[0.96]	[1.38]	[0.96]	[1.46]
C	-0.001	-0.007	0.000	-0.008	0.000	-0.007	-0.001	-0.007
	[-0.58]	[-1.14]	[0.01]	[-1.17]	[0.05]	[-1.00]	[-0.35]	[-1.09]
Standalone $q \times C$	-0.007	0.000	-0.006	0.000	-0.006	0.000	-0.007	0.000
	[-1.49]	[0.10]	[-1.41]	[0.05]	[-1.48]	[0.12]	[-1.48]	[0.10]
Divisional $q \times C$	0.023	0.011	0.021	0.011	0.023	0.011	0.023	0.011
	[4.82]	[6.91]	[4.58]	[4.67]	[4.97]	[4.53]	[5.02]	[4.74]
CFS	-0.041	-0.058	-0.041	-0.058	-0.041	-0.058	-0.041	-0.058
	[-2.67]	[-3.61]	[-2.66]	[-3.48]	[-2.68]	[-3.56]	[-2.68]	[-3.57]
$CFS \times C$	-0.062	-0.010	-0.062	-0.010	-0.062	-0.010	-0.062	-0.010
	[-3.50]	[-0.68]	[-3.35]	[-0.65]	[-3.30]	[-0.63]	[-3.26]	[-0.64]
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes		Yes		Yes		Yes	
Division fixed effect		Yes		Yes		Yes		Yes
R-squared	0.40	0.72	0.40	0.72	0.40	0.72	0.40	0.72
Number of observations	116,813	110,120	116,813	110,120	116,813	110,120	116,813	110,120