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Industry Firm Dynamics and Financing Conditions

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Industry Firm Dynamics and Financing Conditions[1]

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This paper analyzes how changes in financing conditions affect industry dynamics. We show that industry leaders, defined as firms with the largest market share in a given industry, perform better than industry followers during periods of tight financing conditions. When financing conditions are tight, industry leaders outperform industry followers and experience higher abnormal returns, gain market share, invest more, raise more long-term debt, and have higher profitability rates. These effects are primarily concentrated in industries in which the disparity between leaders and followers, as measured by market capitalization, is large. Given these heterogeneous intra-industry effects, our results indicate that tight financing conditions widen inequality between industry leaders and followers, particularly when pre-existing industry inequality is large.

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Introduction

How does the availability of external finance affect industry structure and competitive landscape? When financing conditions are tight, not all firms are affected equally. While the largest firms in the industry might be able to weather shocks to financing conditions, smaller firms are less likely to do so successfully. A direct implication is that tight financing conditions serve to exacerbate disparities between firms, with the larger firms in the industry benefiting at the expense of the smaller ones.

In this paper we examine the differential impact of financing conditions on industry "leaders", as opposed to industry "followers". Using a measure that captures changes in the financing conditions firms face, we compare industry leaders to industry followers over the period of 1973–2019 along a host of economic outcomes.

Our results indicate that industry leaders perform better than industry followers during periods of tight financing conditions. When financing conditions are tight, industry leaders outperform the industry followers and experience higher abnormal returns, gain market share, invest more, raise more long-term debt, and have higher profitability rates. These effects are primarily concentrated in industries in which the disparity between leaders and followers, as measured by market capitalization, is large. Given these heterogeneous intra-industry effects, we show that tight financing conditions widen inequality between leaders and followers, particularly when the pre-existing market capitalization ratio between the industry leader and followers is large.

Concretely, we use the 4-digit NAICS classification to define an industry and the firm with largest market capitalization is classified as the industry leader. Using this definition, we analyze the differences between industry leaders and all other firms in the industry (followers). To measure the dominance of an industry leader, we use the ratio of the market capitalizations of the industry leader and the median firm (in market capitalization). We call this dominance measure $LGap$ and analyze how the effects of financing conditions vary with $LGap$ measure. That is, we test whether

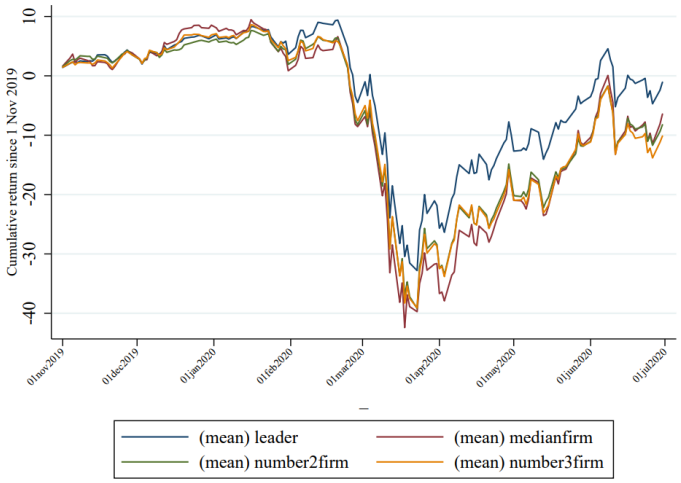
the differential effect of tight financing conditions depends on the gap between the industry leader and the median firm in the industry.

Our measure of leader dominance captures inequality within the industry by comparing the largest firm to the median one. Importantly, this inequality measure is different from measures of industry concentration such as the Herfindahl Hirschman Index (HHI); Industries can be highly concentrated, and yet still have a relatively equal composition, without the presence of a dominant industry leader.[2]

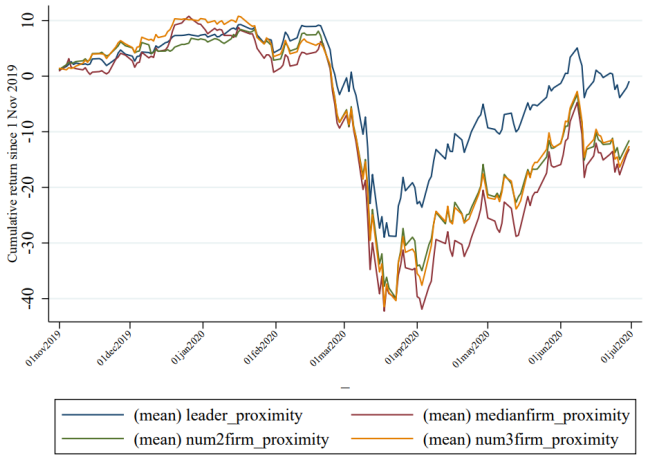
By way of motivation, Figure 1 compares the average cumulative returns (CAR) of industry leaders to CAR of the industry followers throughout the Covid-19 crisis. The figure plots the CAR between November 2019 and July 2020. To construct the figure, industry leaders were defined based on market capitalizations as of twelve months prior to time specified in the Figure. For example, the leader of industry *j* during March 2020 was defined based on the market capitalization of firms in the same industry *j*, but during March 2019. As can be seen in Panel A, prior to the onset of the crisis, the CAR of industry leaders and followers track closely and are near zero. However, during the crisis there is a sharp divergence, with leaders outperforming followers. Panel B focuses on firms in industries which require high proximity and hence were particularly affected by the crisis. Focusing on industries which were hard hit during the Covid crisis reveals an even starker divergence between leaders and followers, with a difference in their average CAR reaching about 10% by July 2020.

[2] As an example, consider an industry with three firms of equal in size firms. Concentration is high with an HHI value of 3,267 (where the rule of thumb is that anything above 2,500 is concentrated), but the leader dominance variable is low and equal to one.

Figure 1: Cumulative Return Since Nov., 1st 2019



Panel A: Leader vs. the Second, Third and Median Firms in Market Capitalization



Panel B: Leader vs. the Second, Third and Median Firms in Market Capitalization in High Proximity Industries

To measure the financial conditions of the market, we use the Gilchrist and Zakrajsek (AER, 2012) measure which captures the corporate bond spread while netting out duration mismatches (henceforth, GZ). As the GZ measure captures the spread in corporate bonds, a higher level of the variable indicates tighter financial conditions in which financing through debt is more expensive for firms.

We begin our main analysis by analyzing the connection between changes in the GZ measure and firms' abnormal equity returns. We show that tightening financial conditions are associated with a smaller decline in industry leader's contemporaneous abnormal equity returns, as compared to the abnormal equity returns if industry followers. Further, we show that this effect is more pronounced when our measure of $LGap$ is large — i.e., the differential return between leaders and followers during periods of tightening financial conditions is higher when the leader is more dominant.

We show that the industry leaders' relative position improves, as compared to the followers, for the host real outcomes we study. For the majority of our analyses, the improvement in outcomes is more pronounced when the ratio of the industry leader's market capitalization and the median firm's market capitalization ($LGap$) is large. For example, during periods when financing conditions are tight, the sales of industry leader firms grow relatively more than sales of follower firms over the year following the deterioration in financial conditions. An additional quarter of tight financing conditions increases the industry leader's relative year on year sales growth by 49%. This implies that being an industry leader mitigates the overall negative effects of the adverse financing conditions, and widens the sales gap between the industry leader and the followers.

Similarly, tightening financing conditions are associated with higher relative annual growth in other firm-level outcomes such as employment, investment, and profitability. As in the example with sales growth, the effects stronger, widening the gap between the industry leader and the followers, when the $LGap$ is large. Consistent with a financing channel, we also find that leaders raise more long-term debt than followers during periods of tight financing conditions.

We continue by analyzing how tight financing conditions affect the dynamics of intra-industry inequality—i.e., how the gap between the leader and followers evolves due to changes in the financing conditions. To do so, we run various regressions that relate annual changes in the leader gap and the tightness of financial conditions during the relevant year. For robustness, we vary the definition of the leader gap in the various specifications and find similar results.

We find that periods of tight financing conditions are associated with subsequent growth in the gap between the leader and the followers for all specifications. In other words, while both market capitalizations decline, the distance between the market capitalization of the industry leader and the median firm grows. Further, this effect of tight financing conditions is concentrated when the beginning of period gap between leaders and followers is large. Thus, tight financing conditions amplify inequality in the firm size distribution; particularly so when the inequality between the industry leader and following firms is high to begin with. Put differently, in the presence of tight financing conditions, inequality begets inequality.

Finally, the results show that when financing conditions are not tight, the $LGap$ measure reverts to the mean. Higher levels of $LGap$ measure associated with subsequent negative growth in the $LGap$ of the following period when the financial conditions are not tight.

Results

We begin our analysis by examining the connection between tight financing conditions (TFC) and the monthly abnormal stock returns of industry leaders, as compared to other firms in the same industry, i.e., followers.

For each industry j, we define the leader in month t to be the firm with the largest market capitalization among all firms in industry j at a given time, which we vary for robustness. To define an industry j, we use the NAICS 4-digit classification codes.

To estimate whether there is a differential effect of TFC on the abnormal equity returns of industry leaders, as opposed to industry followers, we run various specification of the following regression:

$$AbReturns_{(i,j,t)} = c + \beta_0 \mathbb{1}\left(Leader_{(i,j,t-x)}\right) + \beta_1\left(Leader_{(i,j,t-x)} \times \Delta \mathrm{GZ_t}\right) + \beta_2 \Delta GZ_t + \gamma_{i,j,t} + \varepsilon_{i,j,y} \quad (1)$$

where the abnormal returns variable ($AbReturns$) is the spread between the monthly return of firm i in industry j in year t, and the corresponding CRSP value weighted average return in month t. The variable $\mathbb{1}(Leader_{i,j,t-x})$ is an indicator function, which takes on the value of 1 if firm i is the leader in industry j in month $t-3$ (or $t-12$), and zero otherwise. The ΔGZ variable captures the change in the monthly value of the GZ measure, where a positive value is associated with an increase in the tightness of the financial conditions. The ΔGZ variable is standardized over our sample period, 1973–2019, resulting in a measure with mean zero and standard a devation equal to one. γ is a vector of industry-by-year fixed affects and $\varepsilon_{i,j,y}$ is an error term. Standard errors are double clustered at the firm and year level.

Table 1 presents the results for Regression 1 when industry leaders are defined using the market capitalization from three months before in Columns 1-3 and twelve months before in Columns 4-6. The t-statistics of the estimates are reported in square brackets beneath the point estimate. Focusing first on Column 1, there is a negative connection between the change in the ΔGZ measure and contemporaneous abnormal returns, where a standard deviation increase in the ΔGZ measure reduces abnormal returns by 0.21 percent. The interaction term between ΔGZ and the industry leader indicator variable is positive and statistically significant at the 1 percent level. This result implies that a tightening of financial conditions is associated with a smaller decline in the abnormal returns of industry leaders, as compared to those of the industry followers. A one standard deviation increase in ΔGZ measure is associated with an average excess return of -2.05 percent for leaders and a -6.57 percent return for followers.[3]

[3] The coefficient on the non-interacted industry leader indicator variable is negative. This implies that all else equal, when financing conditions are unchanged, industry leaders have lower abnormal returns than followers, implying a reversion to the mean of market capitalization.

Table 1: Abnormal Returns

	(1) Leader in t-3	(2) Leader & LGap in t-3	(3) Leader & LGap in t-3	(4) Leader in t-12	(5) Leader & LGap in t-12	(6) Leader & LGap in t-12
n4 $Leader_{i,j,t-3 \text{ or } -12}$	-0.21*	-0.31*	-0.30*	-0.28**	-0.42**	-0.39**
	[-1.80]	[-1.86]	[-1.92]	[-2.56]	[-2.67]	[-2.62]
n4 $Leader_{i,j,t-x} \times \Delta GZ_t$	4.73***	5.43***	5.43***	4.23***	4.97***	4.97***
	[3.93]	[5.09]	[5.08]	[3.83]	[5.01]	[5.03]
n4 $Leader_{i,j,t-x} \times \Delta GZ_t \times LGap_{j,t-x}$		2.61***	2.61***		2.89***	2.89***
		[4.19]	[4.17]		[4.99]	[5.01]
ΔGZ_t	-6.57***	-6.36***	-6.36***	-6.42***	-6.26***	-6.26***
	[-4.75]	[-5.08]	[-5.08]	[-4.78]	[-4.99]	[-4.99]
$LGap_{j,t-3 \text{ or } -12}$		2.87***	2.87***		0.06	0.06
		[3.63]	[3.63]		[0.08]	[0.08]
n4 $Leader_{i,j,t-x} \times LGap_{j,t-x}$		-0.20	-0.19		-0.28*	-0.25
		[-1.25]	[-1.12]		[-1.77]	[-1.54]
$\Delta GZ_t \times LGap_{j,t-x}$		-0.99	-0.99		-1.36*	-1.36*
		[-1.43]	[-1.43]		[-1.98]	[-1.98]
Market $cap._{i,t-3}$			-0.00			
			[-0.07]			
Market $cap._{i,t-12}$						-0.00
						[-0.19]
# observations	1,772,416	1,772,409	1,772,409	1,645,410	1,645,377	1,645,377
# clusters (permno)	14,687	14,687	14,687	13,778	13,777	13,777
# clusters (year)	47	47	47	46	46	46
R^2	0.02	0.02	0.02	0.02	0.02	0.02
Sample mean of dep.var.	0.20	0.20	0.20	0.30	0.30	0.30
# industries		.	227	.	.	227
Min # of firms in industry		5	5	5	5	5
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y

Column 2 adds a triple interaction between the industry leader indicator variable, $\mathbb{1}(Leader_{i,j,t-x})$, the change in the tightness of financial conditions variable, ΔGZ, and the Leader Gap variable, $LGap$. As with the identity of the leader firm, the $LGap$ variable is measured at $t-3$ months in Columns 2-3 and at $t-12$ in Columns 5-6. The coefficient on this triple interaction term is positive and statistically significant at the 1% level in all specifications. The statistical significance of the coefficient implies that the differential effect of TFC on industry leaders and followers depends on the gap (ratio) of the market capitalizations of the industry leader and the median firm in the same industry. As the gap increases, the differential effect on the abnormal returns becomes more pronounced, where industry leaders have higher abnormal returns as compared to industry followers.

Put differently, when financial conditions tighten, the abnormal returns of industry leaders, as compared to their followers, increase with the dominance of the industry leader. Indeed, the coefficients in Column 2 imply that when the leader gap is greater than 0.29, a standard deviation

increase in the GZ measure is associated with an increase in the contemporaneous abnormal returns of the industry leader, but a decrease in abnormal returns of the contemporaneous followers. As we define an industry leader as having the largest market capitalization, the $LGap$ is always larger than one, and therefore the industry leader's abnormal returns increase with a decline in the financial conditions (an increase in the ΔGZ measure). In Column 3, we add controls for firms' market capitalization as of month $t-3$ and find that our results do not change qualitatively or quantitively, implying that the ratio, and not the level, is the main driver of our results.

Columns 4-6 repeat the analysis conducted in Columns 1-3, but define the industry leader using market capitalization from twelve months, rather than three months, before the relevant month t. The results are robust to this change. As there is a large amount of persistence in being an industry leader, we find the estimates in Column 3 and Column 6 to strengthen our claim that the results are being driven by being the largest firm in the industry and not by the level of market capitalization.

We proceed by analyzing the differential effects of a tightening in financial conditions on industry leaders, as compared to followers, for a host of additional real outcomes, including: sales, number of employees, investment, earnings before earnings before interest, taxes, depreciation and amortization (EBITDA), and long-term debt. As these variables are measured only on an annual basis, we augment the specification in Regression 1 and run variants of the following regression:

$$Outcome_{(i,j,t)} = c + \beta_0 \mathbb{1}\left(Leader_{(i,j,t-x)}\right) + \beta_1\left(Leader_{(i,j,t-x)} \times GZpct_{\mathrm{t-1\to t}}\right) + \beta_2 GZpct_{\mathrm{t-1\to t}} + \gamma_{i,j,t} + \varepsilon_{i,j,t} \quad (2)$$

where the dependent variable, $Outcome_{i,j,t}$ is the log of the ratio between the current year and x years ahead, e.g., log $(sales_{t+x}/sales_t)$ of firm i in industry j (if $x = 0$ the dependent variable is simply the log of the relevant outcome, e.g., $\log(sales_t)$). As the specification in Regression 2 is annual, we cannot use the ΔGZ measure defined in Regression 1, which is measured on a monthly basis. Thus, we create a new variable that captures the annual change in the tightness of financial conditions: $GZpct_{\mathrm{t-1\to t}}$. The variable $GZpct_{\mathrm{t-1\to t}}$ varies between zero and one and is equal to the percentage of months for which the GZ measure has been above zero, which is the mean of the GZ measure.

We examine the contemporaneous, one-year, and two-year connection between the growth (log change) in the outcome variable and financial conditions (i.e., $x = 0, 1, 2$). As in the specification in Regression 1, $Leader_{(i,j,t-1)}$ is an indicator variable which takes on the value of 1 if firm i is the leader in industry j in year $t-1$ (has the largest market capitalization in the industry), and zero otherwise. All regressions control for lagged firm market capitalization, alleviating concerns that our results are driven by the market capitalization level, and not the ratio. $\gamma_{i,j,t}$ is a vector of industry-by-year fixed effects, and $\varepsilon_{i,j,t}$ is the error term.[4] As in the previous regressions, standard errors are double clustered by firm and by year and we include year by industry fixed effects.

Commented [MOU1]: Do results hold with firm fixed effects?

Table 2 contains the result of the specification in Regression 2 when the economic variable used for the dependent variable is annual sales. Columns 1-2 report the results when the dependent variable is the log of the contemporaneous sales during year t, i.e., $x = 0$. The interaction term between $GZPct_{t-1\to t}$ and the Leader indicator variable in Column 1 and Column 2 is positive and statistically significant at the 5% and 1% level, respectively. Thus, during periods when there is a tightening of financing conditions, the sales of industry leaders grow relatively more than sales of follower firms. The magnitude of the coefficient on the interaction term in Column 1 implies that an additional month of tight financing conditions is associated with a relative increase in sales growth of 18.25 percent for industry leaders, as compared to follower firms in the same industry.

Commented [MOU2]: Graph of sales when GZ is high

[4] The interaction between $GZpct_{t-1\to t}$ and the Leader indicator variable is identified, but the non-interacted $GZpct_{t-1\to t}$ variable is not identified and subsumed by the timed fixed effects included in the regression. Therefore, in the specification of Regression 2 we cannot estimate the effect of the GZ measure separately, only the relative effect on industry leaders.

Table 2: Sales

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $\text{Leader}_{i,j,t-1}$	-0.61	-1.09	-0.95	-1.17	-0.91*	-0.80	-4.11
	[-1.05]	[-1.16]	[-1.61]	[-1.52]	[-1.73]	[-0.89]	[-1.65]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>0_t$	2.19**	4.44***	1.97**	3.14***	1.13	1.51	10.05***
	[2.57]	[3.35]	[2.15]	[2.75]	[1.27]	[1.47]	[3.39]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>0_t$ × $\text{LGap}_{j,t-1}$		5.28**		2.88*		0.88	11.00**
		[2.50]		[1.94]		[0.55]	[2.67]
$\text{LGap}_{j,t-1}$		16.89*		-8.75		-10.15	-13.52
		[1.84]		[-1.04]		[-1.62]	[-0.68]
n4 $\text{Leader}_{i,j,t-1}$ × $\text{LGap}_{j,t-1}$		-1.32		-0.64		0.17	-2.95
		[-0.90]		[-0.49]		[0.10]	[-0.71]
% $\text{GZ}>0_t$ × $\text{LGap}_{j,t-1}$		-2.68		7.25		9.08	30.50
		[-0.20]		[0.98]		[1.37]	[1.28]
Market cap.$_{i,t-1}$	-0.02***	-0.03***	-0.02***	-0.03***	-0.02**	-0.02***	-0.10***
	[-2.84]	[-3.35]	[-2.95]	[-3.66]	[-2.61]	[-2.81]	[-4.37]
# observations	139,256	139,252	128,009	128,005	115,684	115,680	115,566
# clusters (permno)	13,462	13,462	12,301	12,301	10,968	10,967	10,923
# clusters (year)	46	46	45	45	44	44	44
R^2	0.08	0.08	0.08	0.08	0.08	0.08	0.11
Sample mean of dep.var.	7.23	7.23	5.15	5.15	4.11	4.11	17.64
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>\mathbf{1}_t$	3.63***	5.67***	3.43***	3.84**	1.81	1.35	10.12***
	[3.91]	[4.89]	[2.81]	[2.58]	[1.45]	[1.03]	[3.95]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>\mathbf{1}_t$ × $\text{LGap}_{j,t-1}$		5.66***		1.48		-1.25	5.35*
		[3.54]		[1.07]		[-0.70]	[1.73]
# observations	139,256	139,252	128,009	128,005	115,684	115,680	115,566
# clusters (permno)	13,462	13,462	12,301	12,301	10,968	10,967	10,923
# clusters (year)	46	46	45	45	44	44	44
R^2	0.08	0.08	0.08	0.08	0.08	0.08	0.11
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

Column 2 of the table adds a triple interaction between the industry leader indicator, the $GZpct_{t-1\to t}$ measure, and the $LGap$ variable. As before, we measure the $LGap$ variable as the ratio of the market capitalization of the industry leader and the median market capitalization of the industry, measured twelve months prior. The positive coefficient on the triple interaction implies that the relative increase in the sales of industry leaders, as compared to follower firms, during periods of tight financing conditions is larger when the leader gap is large. When the industry leader's market capitalization is twice the market capitalization of the median firm in the industry, an additional month of tight financing conditions implies a relative increase in the leader's sales growth of 7.75 percent.

Columns 3-4 repeat the analyses in Columns 1-2, but examine the log ratio between current sales, and sales in year $t+1$.[5] We find that the coefficient on the interaction term between the industry leader variable and the $GZpct_{t-1\to t}$ variable is positive and statistically significant both in Column 3, and in Column 4, where the magnitudes are similar, though smaller, to those of Column 1 and Column 2, respectively. These results imply that an increase in the tightness of financing conditions is associated with an increase in the sales growth of industry leaders, as compared to followers, during the year following the change in the financial conditions. Tight financing conditions in year t appear to have a persistent differential effect on industry leaders, as compared to followers, regarding the increase in firm sales in the following years. Column 4 shows that the coefficient on the triple interaction is also positive and statistically significant at the 10% level. This result implies that the effect of tight financing conditions on the sales growth of an industry leader, as compared to followers, in year $t+1$ are more pronounced when the gap (market capitalization ratio) is large. The interaction coefficients in columns 3 and 4 are smaller than the analogous coefficients in columns 1 and 2, implying that the connection between tight financing conditions and differential sales growth of industry leaders versus followers declines over time.

Columns 5-6 are analogous to Columns 4-6, but examine the log of the sales growth ratio two years ahead (i.e., $x=2$). As can be seen, the point estimates of the interaction coefficients are still positive, but lose their statistical significance. This result implies that while there is an effect of financing conditions on sales growth, it is not a persistent effect and there is an attenuation within a year.

Column 7 analyzes the connection between tight financing conditions in year t, and the overall growth in sales over the three-year period between the beginning of year t and the end of year $t+2$.[6] The coefficients on the double and triple interaction terms are positive and statistically significant at the 1% and 5% significance level (respectively). This result implies that tight financing conditions are associated with a cumulative differential effect in the sales growth of industry leaders, as compared to followers, and particularly so when the leader gap is large.

[5] The $GZpct_{t-1\to t}$ variable in this specification is unchanged and measures the tightness of financing conditions during year t.
[6] I.e., the dependent variable is log $(sales_{t+3}/sales_t)$.

Table 3 repeats the analysis specified in Regression 2, but uses investment as the financial variable of the dependent variable. Column 1 of Table 3, which provides results on contemporaneous investment growth (i.e., $x = 0$), shows that the coefficient on the interaction between the Leader indicator variable and $GZPct_{t-1\to t}$ is positive, but not statistically significant. Column 2 shows that the coefficient on the triple interaction between the industry leader dummy variable, $GZPct_{t-1\to t}$, and the $LGap$ variable is positive and statistically significant, as well as the coefficient on the double interaction between the change in financing conditions, $GZpct_{t-1\to t}$, and the industry leader dummy variable. Thus, during periods of tight financing conditions, industry leaders increase their investment relative to followers, and particularly so when the $LGap$ is large.

Table 3: Investment

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $\text{Leader}_{i,j,t-1}$	2.39*	1.56	0.11	-0.82	-0.66	-0.16	-2.35
	[1.74]	[0.94]	[0.09]	[-0.63]	[-0.60]	[-0.12]	[-0.74]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>0_t$	3.62	5.97**	4.00*	5.43**	2.34	1.96	14.87***
	[1.60]	[2.14]	[1.76]	[2.14]	[1.55]	[1.18]	[3.09]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>0_t$ × $\text{LGap}_{j,t-1}$		5.58*		3.50*		-1.00	11.92**
		[1.88]		[1.84]		[-0.42]	[2.18]
$\text{LGap}_{j,t-1}$		28.01***		-5.45		-10.73	-4.78
		[4.54]		[-0.48]		[-1.35]	[-0.36]
n4 $\text{Leader}_{i,j,t-1}$ × $\text{LGap}_{j,t-1}$		-2.05		-2.18		1.11	-4.74
		[-0.96]		[-1.21]		[0.48]	[-1.04]
% $\text{GZ}>0_t$ × $\text{LGap}_{j,t-1}$		-38.48**		7.62		9.39	-12.01
		[-2.58]		[0.68]		[1.07]	[-0.50]
$\text{Market cap.}_{i,t-1}$	-0.01*	-0.02**	-0.00	-0.00	-0.01	-0.01	-0.07***
	[-1.95]	[-2.36]	[-0.24]	[-0.23]	[-0.87]	[-0.80]	[-2.83]
# observations	138,005	138,001	126,613	126,609	114,665	114,661	114,584
# clusters (permno)	13,467	13,467	12,255	12,255	10,952	10,951	10,947
# clusters (year)	46	46	45	45	44	44	44
R^2	0.10	0.10	0.10	0.10	0.10	0.10	0.14
Sample mean of dep.var.	3.32	3.32	0.76	0.76	1.16	1.16	8.52
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>\mathbf{1}_t$	7.81**	10.42***	7.11**	7.93**	-0.50	-1.04	16.52***
	[2.12]	[2.92]	[2.21]	[2.34]	[-0.27]	[-0.53]	[3.53]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>\mathbf{1}_t$ × $\text{LGap}_{j,t-1}$		7.52***		2.21		-1.60	8.28*
		[4.49]		[1.54]		[-0.81]	[1.91]
# observations	138,005	138,001	126,613	126,609	114,665	114,661	114,584
# clusters (permno)	13,467	13,467	12,255	12,255	10,952	10,951	10,947
# clusters (year)	46	46	45	45	44	44	44
R^2	0.10	0.10	0.10	0.10	0.10	0.10	0.14
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

Columns 3-4 repeat the analyses for investment growth in year $t+1$. The coefficients on the double and triple interaction terms are both positive and statistically significant at the 5% and 10% significance level (respectively). These results imply the connection between TFC and the differential investment outcomes of industry leaders, as compared to followers, persists in the following year, though columns 5-6 show that this effect does not persist in year $t+2$, as the statistical significance of the coefficient diminishes monotonically over time.

Column 7 of the Table 3 examines the cumulative investment growth of industry leaders, as compared to followers, over the period from year t to the end of year $t+2$. Both the double, and the triple interaction coefficients are positive and statistically significant at the 1% and 5% level (respectively). Therefore, similar to the results on the growth in firm sales reported in Table 1, the differential effect on a firm's growth in investment is affected by the $LGap$ measure: at times of tight financial conditions, the investment of industry leaders increases as the relative market capitalization (as compared to the median firm) grows. The magnitudes of the point estimates in Table 3 are also economically significant: When the industry leader's market capitalization is twice the market capitalization of the median firm in the industry, an additional month of tight financing conditions implies a relative increase in the leader's cumulative investment of 1.22 percent.

We proceed by analyzing the effects of TFC on employment growth and report our results in Table 4. In line with our previous results reported in Table 2 and Table 3, the results reported in Columns 2 of Table 4 show that industry leaders exhibit higher relative employment growth, as compared to followers, during periods of tight financing conditions and even more so when the gap between the market capitalization of the industry leader and the median firm is large. When extending the horizon one-year forwards (Column 4), we find that the effect decays, though still statistically significant at the 10% level and it further diminishes, both economically and statistically, when the horizon is extended to two years (Columns 6).

Table 4: Employment

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $\text{Leader}_{i,j,t-1}$	-0.07	-0.79	0.20	-0.67	0.11	-0.14	-3.49
	[-0.14]	[-0.94]	[0.48]	[-0.92]	[0.21]	[-0.14]	[-1.48]
n4 $\text{Leader}_{i,j,t-1} \times$ % $\text{GZ}>0_t$	1.31	4.23***	0.57	2.16*	-0.51	0.33	7.48**
	[1.53]	[3.43]	[0.61]	[1.74]	[-0.71]	[0.32]	[2.55]
n4 $\text{Leader}_{i,j,t-1} \times$ % $\text{GZ}>0_t \times \text{LGap}_{j,t-1}$		6.91***		3.93***		1.99	13.68***
		[3.43]		[3.18]		[1.20]	[3.39]
$\text{LGap}_{j,t-1}$		-27.85		-3.92		-5.27*	-9.99
		[-0.91]		[-0.55]		[-1.97]	[-0.62]
n4 $\text{Leader}_{i,j,t-1} \times \text{LGap}_{j,t-1}$		-1.92		-2.07		-0.66	-4.89
		[-1.30]		[-1.68]		[-0.38]	[-1.24]
% $\text{GZ}>0_t \times \text{LGap}_{j,t-1}$		44.75		5.12		3.39	27.48
		[1.29]		[0.71]		[0.77]	[1.07]
Market $\text{cap}_{i,t-1}$	-0.01	-0.02***	-0.00	-0.00	-0.00	-0.01	-0.05***
	[-1.60]	[-3.30]	[-0.25]	[-0.53]	[-0.48]	[-0.92]	[-2.90]
# observations	135,720	135,716	124,722	124,718	113,282	113,278	112,636
# clusters (permno)	13,289	13,289	12,102	12,102	10,837	10,836	10,791
# clusters (year)	46	46	45	45	44	44	44
R^2	0.08	0.08	0.08	0.08	0.08	0.08	0.11
Sample mean of dep.var.	5.03	5.03	3.07	3.07	2.60	2.60	12.45
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $\text{Leader}_{i,j,t-1} \times$ % $\text{GZ}>\mathbf{1}_t$	3.42***	5.87***	2.66**	3.25**	-0.71	-0.96	6.71**
	[2.79]	[4.62]	[2.34]	[2.32]	[-0.75]	[-0.73]	[2.32]
n4 $\text{Leader}_{i,j,t-1} \times$ % $\text{GZ}>\mathbf{1}_t \times \text{LGap}_{j,t-1}$		6.82***		1.77		-0.61	5.92*
		[5.67]		[1.28]		[-0.37]	[1.86]
# observations	135,720	135,716	124,722	124,718	113,282	113,278	112,636
# clusters (permno)	13,289	13,289	12,102	12,102	10,837	10,836	10,791
# clusters (year)	46	46	45	45	44	44	44
R^2	0.08	0.08	0.08	0.08	0.08	0.08	0.11
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

Column 7 analyzes the cumulative effect from year t to the end of year $t + 2$ and the results imply that an when the industry leader is twice the size of the median firm, an additional month of tight financing conditions is associated with a 7.48 percent larger increase in employment in leaders relative to followers.

Table 5 examines the effect of a tightening in financial conditions on the growth of long-term debt. The results show that industry leaders issue more long-term debt than followers when financing conditions are tight. The coefficient on the triple interaction term in Column 7 is positive and statistically significant at the 10% level. This implies that the effect of tightening in financial

conditions on the long-term debt growth is more pronounced as the $LGap$ is large. The double and triple interaction coefficients are not statistically significant for a horizon of one year (Column 4), nor for a horizon of two years (Column 6). However, when examining the cumulative log change in long-term debt (Column 7), we find that industry leaders increase their borrowing more than followers over a three-year horizon. Taken together, our results of higher growth in investment and employment of industry leaders might be driven by the increase in long-term debt.

Table 5: Long-Term Debt

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $\text{Leader}_{i,j,t-1}$	1.73	1.40	2.21	0.90	3.67**	5.51*	3.05
	[1.16]	[0.78]	[1.33]	[0.37]	[2.50]	[1.89]	[0.65]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>0_t$	3.87	9.07*	4.51	6.80	2.34	2.83	16.01*
	[1.12]	[1.89]	[1.51]	[1.46]	[0.88]	[0.71]	[1.89]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>0_t$ × $\text{LGap}_{j,t-1}$		12.56*		5.70		1.08	16.08*
		[1.81]		[1.11]		[0.21]	[1.72]
$\text{LGap}_{j,t-1}$		12.34		30.89		-4.80	-0.82
		[0.45]		[1.29]		[-0.38]	[-0.03]
n4 $\text{Leader}_{i,j,t-1}$ × $\text{LGap}_{j,t-1}$		-1.26		-3.13		3.92	-0.26
		[-0.42]		[-1.12]		[0.90]	[-0.04]
% $\text{GZ}>0_t$ × $\text{LGap}_{j,t-1}$		2.58		-37.76		2.54	10.23
		[0.08]		[-1.43]		[0.27]	[0.33]
$\text{Market cap.}_{i,t-1}$	0.01	-0.01	0.02	0.02	0.03	0.01	-0.09*
	[0.27]	[-0.61]	[0.68]	[0.64]	[0.67]	[0.22]	[-1.81]
# observations	108,209	108,205	99,718	99,715	90,660	90,657	86,969
# clusters (permno)	11,852	11,852	10,820	10,820	9,676	9,675	9,323
# clusters (year)	46	46	45	45	44	44	44
R^2	0.07	0.07	0.07	0.07	0.07	0.07	0.10
Sample mean of dep.var.	4.53	4.53	2.25	2.25	1.34	1.34	18.18
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>\mathbf{1}_t$	11.34**	17.77**	9.33*	12.82	1.36	1.53	24.77*
	[2.43]	[2.54]	[1.74]	[1.51]	[0.38]	[0.36]	[1.89]
n4 $\text{Leader}_{i,j,t-1}$ × % $\text{GZ}>\mathbf{1}_t$ × $\text{LGap}_{j,t-1}$		20.00**		10.23		1.86	22.16*
		[2.51]		[0.99]		[0.34]	[1.79]
# observations	108,209	108,205	99,718	99,715	90,660	90,657	86,969
# clusters (permno)	11,852	11,852	10,820	10,820	9,676	9,675	9,323
# clusters (year)	46	46	45	45	44	44	44
R^2	0.07	0.07	0.07	0.07	0.07	0.07	0.10
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

The last real outcome we discuss is earnings before interest, taxes, depreciation, and amortization (EBITDA), reported in Table 6.[7] We find that the EBITDA of industry leaders increases relatively to that of followers (Columns 1, 3, and 5). However, in contrast to our previous results, the effect on EBITDA does not increase with the $LGap$ measure, as the triple interaction term is both marginally statistically significant and economically small in Column 2, and decreases both in magnitude and significance for longer horizons (Column 4 and Column 6). The results in Table 6 are potentially explained by the prior results shown in Table 4, that suggest that industry leaders increase their employment more than followers when the leader gap is large, thereby increasing their labor costs and offsetting the increase in earnings.

[7] Unreported results for capital expenditures, research and development (R&D), income before extraordinary items, net income, and market leverage are in the same vein.

Table 6: EBITDA

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $Leader_{i,j,t-1}$	-0.68	-0.83	-2.20**	-2.50**	-3.45***	-2.45**	-8.23***
	[-0.92]	[-0.93]	[-2.60]	[-2.57]	[-2.99]	[-2.08]	[-3.52]
n4 $Leader_{i,j,t-1}$ × % $GZ{>}0_t$	3.80***	4.79***	3.72**	4.19***	5.69***	5.60**	16.93***
	[2.95]	[4.01]	[2.62]	[3.10]	[2.82]	[2.52]	[5.08]
n4 $Leader_{i,j,t-1}$ × % $GZ{>}0_t$ × $LGap_{j,t-1}$		2.43*		0.97		-0.25	6.65
		[1.71]		[0.69]		[-0.11]	[1.61]
$LGap_{j,t-1}$		-5.91		11.42		-10.03**	26.89*
		[-0.34]		[0.91]		[-2.23]	[1.77]
n4 $Leader_{i,j,t-1}$ × $LGap_{j,t-1}$		-0.47		-0.62		2.10	-1.58
		[-0.32]		[-0.44]		[1.14]	[-0.42]
% $GZ{>}0_t$ × $LGap_{j,t-1}$		-10.60		-12.12		11.85	-26.58
		[-0.56]		[-0.79]		[1.36]	[-1.47]
Market $cap._{i,t-1}$	-0.01	-0.02	-0.01	-0.01	-0.02	-0.02*	-0.07**
	[-1.29]	[-1.32]	[-1.42]	[-1.12]	[-1.57]	[-1.88]	[-2.64]
# observations	125,582	125,578	115,163	115,159	104,538	104,534	99,853
# clusters (permno)	13,258	13,258	12,007	12,007	10,715	10,714	10,540
# clusters (year)	46	46	45	45	44	44	44
R^2	0.08	0.08	0.08	0.08	0.08	0.08	0.12
Sample mean of dep.var.	5.12	5.12	3.88	3.88	3.80	3.79	13.72
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

	(1) year t	(2) year t	(3) year t+1	(4) year t+1	(5) year t+2	(6) year t+2	(7) cumul. to year t+2
n4 $Leader_{i,j,t-1}$ × % $GZ{>}\mathbf{1}_t$	2.48	3.74**	3.81*	4.57**	6.40*	5.92	14.10***
	[1.47]	[2.62]	[1.71]	[2.57]	[1.89]	[1.63]	[3.51]
n4 $Leader_{i,j,t-1}$ × % $GZ{>}\mathbf{1}_t$ × $LGap_{j,t-1}$		3.83***		2.01		-0.89	5.39**
		[4.60]		[1.12]		[-0.31]	[2.15]
# observations	125,582	125,578	115,163	115,159	104,538	104,534	99,853
# clusters (permno)	13,258	13,258	12,007	12,007	10,715	10,714	10,540
# clusters (year)	46	46	45	45	44	44	44
R^2	0.08	0.08	0.08	0.08	0.08	0.08	0.12
Industry(j)-Year(y) FE	Y	Y	Y	Y	Y	Y	Y

Taken together, the results in our various specifications demonstrate the connection between TFC and the relative position of industry leaders, as compared to followers. When financing conditions tighten, industry leaders increase their sales growth, investment, employment, and long-term debt issuance relatively to followers. For most specifications, the effects are more pronounced when the initial gap, as measured by the ratio of the market capitalizations of the leader and the median firm in the industry, increases. Consistent with these findings, periods of TFC are also associated with a contemporaneous rise in leaders' abnormal equity returns, as compared to followers, and

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particularly so when the leader gap is large. Thus, periods of TFC appear to amplify the dominance of industry leaders along a host of margins, with aggregate effects being large and significant over the years following the tightening of financing conditions. For the majority of our analyses, this amplification is larger when the initial gap between the industry leader and the median firm in the industry is large.

Intra-Industry Analysis

We next analyze how TFC affects the gap between industry leaders and industry followers for various measures of an industry leader. To do so, we run the following industry-level regression:

$$\log\left(Outcome_{j,t}/Outcome_{j,-t-x}\right) = c + \beta_1\left(LGap_{j,t-x} \times \Delta GZ_t\right) + \beta_2 LGap_{j,t-x} + \delta_t + \mu_j + \varepsilon_{j,t} \quad (3)$$

where $\log\left(Outcome_{j,t}/Outcome_{j,t-x}\right)$ is the log change in the industry-level Leader Gap measure, either the ratio of the market capitalizations or the leader's market capitalization, in industry j between month $t-x$ and month t, ΔGZ is the difference in the GZ financing conditions index between month $t-x$ and month t, δ_t is a vector of year fixed effects, μ_j is a vector of industry fixed effects and $\varepsilon_{j,t}$ is the error term. Standard errors are clustered at the industry level.

The results for Regression 3 are shown in Table 7. As in the previous sections, the $LGap$ variable is the ratio between the market capitalization of the industry leader (the firm with the largest market capitalization) and the market capitalization of the median firm in the industry. In Column 1 we test how the one-month log ratio changes, i.e., $x = 1$, with changes in financing conditions. We find that the coefficient on the non-interacted lagged $LGap$ measure is negative and statistically significant. This result implies that with no change in financing conditions ($\Delta GZ = 0$), there is a reversion to the mean in the gap between industry leaders and followers. Furthermore, the coefficient on the ΔGZ measure is positive and of larger magnitude – i.e., when financing conditions tighten, the gap between leaders and followers widens. This effect is economically meaningful. Additionally, the coefficient on the interaction term between the $LGap$ variable and

the ΔGZ variable is positive and statistically significant at the 1% level, implying that tightening financing conditions are associated with larger increases in the market capitalization ratio when the initial ratio between the industry leader and the median firm, measured at $t-1$, is larger. Put differently, tightening financing conditions in industries with a large ratio between leaders and followers are associated with greater contemporaneous widening of the leader gap. In industries with a beginning of period $LGap$ of two, a standard deviation increase in the GZ measure is associated with a 7.2 percent increase in the $LGap$ measure, whereas in industries where the leader is thrice the market capitalization of the median firm, the same change in GZ leads to a 7.9 percent change in $LGap$ measure.

Table 7: Intr-Industry Gap

	(1) x = 1m	(2) x = 1m	(3) x = 3m	(4) x = 3m	(5) x = 6m	(6) x = 6m	(7) x = 12m	(8) x = 12m
Δ GZ_t	0.058***	0.058***	0.067***	0.066***	0.063***	0.062***	0.056***	0.055***
	[10.72]	[10.62]	[11.60]	[11.34]	[11.08]	[10.73]	[8.87]	[8.59]
$LGap_{j,t-x}$	-0.021***	-0.020***	-0.056***	-0.053***	-0.102***	-0.095***	-0.185***	-0.169***
	[-4.96]	[-5.23]	[-5.08]	[-5.23]	[-5.17]	[-5.15]	[-5.31]	[-5.20]
Δ $GZ_t \times LGap_{j,t-x}$	0.028***	0.028***	0.024***	0.024***	0.017**	0.017**	0.013	0.014*
	[3.44]	[3.43]	[3.02]	[2.98]	[2.30]	[2.29]	[1.61]	[1.67]
Leader market $cap_{\cdot,j,t-x}$		0.005		-0.004		-0.043		-0.145
		[0.15]		[-0.04]		[-0.24]		[-0.44]
Median firm market $cap_{j,t-x}$		0.003*		0.009*		0.019**		0.035**
		[1.78]		[1.89]		[2.10]		[2.49]
# observations	80,525	80,525	80,312	80,312	79,991	79,991	79,361	79,361
# clusters (Industry)	225	225	225	225	225	225	225	225
R^2	0.01	0.01	0.02	0.02	0.03	0.03	0.05	0.05
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

When expanding the horizon to three months (Column 3 and Column 4) or 6 months (Column 5 and Columns 6), our results do not change quantitively nor is there a loss of statistical significance. When extending the horizon to twelve months prior (Column 7 and Column 8), the coefficient on the interaction of the ΔGZ variable with the industry leader dummy variable has a lower magnitude and a lower statistical significance, while the coefficient on the $LGap$ variable increases in magnitude and maintains its statistical significance. This result implies that the differential effect of tight financing conditions on the industry dynamics diminishes over time, resulting in a reversion to the mean (so long as there is no additional change in the financial conditions).

We continue by examining the connection between financing conditions and the two components of the $LGap$ measure: the leader's market capitalization and the median market capitalization in the industry. To this end, we run the specification in equation (3) using the log change in the leader market capitalization as the dependent variable (rather than the log change in the $LGap$ measure). Our results are shown in Table 8.

Table 8: $\log(MarketCap)$ of industry leaders

	(1) x = 1m	(2) x = 1m	(3) x = 3m	(4) x = 3m	(5) x = 6m	(6) x = 6m	(7) x = 12m	(8) x = 12m
Δ GZ_t	-0.087***	-0.087***	-0.095***	-0.094***	-0.100***	-0.099***	-0.097***	-0.094***
	[-20.24]	[-20.28]	[-20.30]	[-20.32]	[-20.31]	[-20.38]	[-18.49]	[-18.52]
$LGap_{j,t-x}$	-0.005***	-0.002	-0.014***	-0.005	-0.029***	-0.011	-0.059***	-0.024
	[-4.19]	[-1.01]	[-4.55]	[-1.15]	[-4.68]	[-1.23]	[-4.74]	[-1.30]
Δ GZ_t × $LGap_{j,t-x}$	0.013**	0.013**	0.021***	0.022***	0.023***	0.025***	0.022***	0.024***
	[2.28]	[2.35]	[3.71]	[3.97]	[4.03]	[4.48]	[3.57]	[4.04]
Leader market $cap._{j,t-x}$		-0.085***		-0.245***		-0.491***		-0.990***
		[-5.45]		[-5.57]		[-5.40]		[-5.31]
Median firm market $cap_{j,t-x}$		-0.000		-0.001		-0.002		-0.006
		[-0.94]		[-0.95]		[-1.21]		[-1.52]
# observations	80,525	80,525	80,312	80,312	79,991	79,991	79,361	79,361
# clusters (Industry)	225	225	225	225	225	225	225	225
R^2	0.03	0.03	0.05	0.05	0.07	0.08	0.08	0.09
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Column 2, which includes various interaction terms, shows that tightening of financing conditions is associated with an increase in the industry leaders' relative market capitalization. The coefficient on the interaction of the $LGap$ variable with the ΔGZ measure is positive and statistically significant at the 5% level. This implies that the relative increase of the industry leader's market capitalization is larger when the $LGap$ measure is larger, that is, when the ratio between the industry leader's market capitalization and the market capitalization of the median firm is large.

These results are shown graphically in Figure 2 which compares the $LGap$ values, as measured twelve months prior, compared to other used measures such as the 90/10 percentile market capitalization ratio and the 95/50 percentile market capitalization ratio.

Figure 2: Intra-Industry Inequality Measures

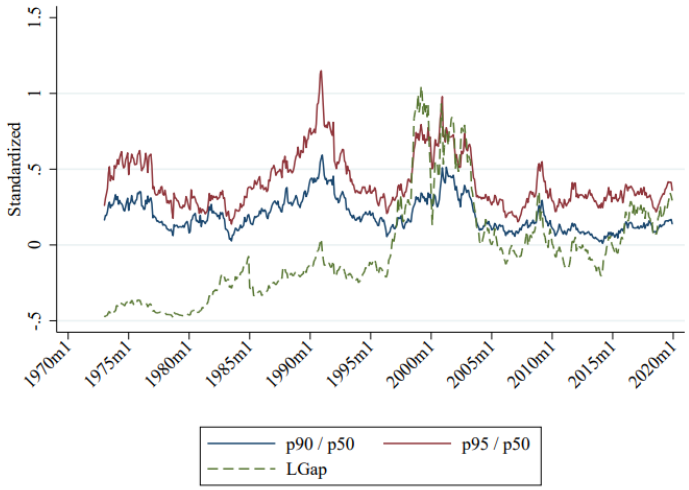
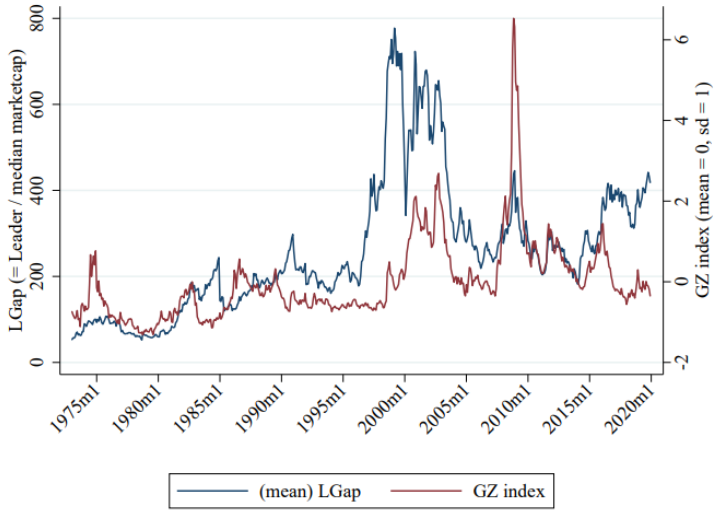


Figure 3 plots the $LGap$ values over time comparing them to the GZ measure. Note that large spikes in the $LGap$ values are associated with widespread market events such as collapse of LTCM in 1998, the burst of the dot-com bubble in 2002, and the 2008 financial crises. In the following section we examine the differential effects of the COVID-19 pandemic, which affected industry dynamics through different channels.

Figure 3: the $LGap$ and GZ Index Over Time



The final specification of Regression 3 that we run is with the log change of the median market capitalization of the industry, the denominator in the $LGap$ variable, as the dependent variable. Our results for this specification are reported in Table 9. The coefficients on the interaction between the ΔGZ measure variable and the $LGap$ variable are negative and statistically significant for horizons shorter than three months (Columns 1-3), but are undisguisable from zero for horizons of six months or longer (Columns 4-8). These results imply that when financing conditions tighten, the median industry market capitalization declines, particularly so in industries where the gap between the leader and followers was large, though this effect diminishes over time.

Table 9: log ($MarketCap$) of the Median Firm

	(1) x = 1m	(2) x = 1m	(3) x = 3m	(4) x = 3m	(5) x = 6m	(6) x = 6m	(7) x = 12m	(8) x = 12m
Δ GZ_t	-0.153***	-0.153***	-0.168***	-0.167***	-0.168***	-0.166***	-0.156***	-0.154***
	[-29.74]	[-29.81]	[-32.47]	[-32.67]	[-34.73]	[-35.28]	[-29.11]	[-29.55]
$LGap_{j,t-x}$	0.017***	0.019***	0.044***	0.049***	0.076***	0.085***	0.133***	0.149***
	[4.58]	[5.69]	[4.55]	[5.62]	[4.53]	[5.44]	[4.56]	[5.52]
Δ GZ_t × $LGap_{j,t-x}$	-0.030***	-0.029***	-0.017**	-0.016**	-0.003	-0.002	0.003	0.004
	[-3.36]	[-3.35]	[-2.05]	[-1.98]	[-0.49]	[-0.36]	[0.41]	[0.57]
Leader market $cap_{-j,t-x}$		-0.078**		-0.210**		-0.387**		-0.733**
		[-2.38]		[-2.33]		[-2.26]		[-2.31]
Median firm market $cap_{j,t-x}$		-0.003*		-0.010*		-0.021**		-0.041**
		[-1.73]		[-1.83]		[-2.05]		[-2.45]
# observations	80,525	80,525	80,312	80,312	79,991	79,991	79,361	79,361
# clusters (Industry)	225	225	225	225	225	225	225	225
R^2	0.04	0.04	0.08	0.08	0.10	0.11	0.11	0.12
Industry FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y

Taken together, Column 2 and Column 3 show that the positive effect that tight financing conditions have on the $LGap$ measure can be explained by the industry leaders having a smaller decrease in their market capitalization after a deterioration in the financial conditions. A smaller decrease will lead to a larger ratio, widening the gap between the industry leader and the median firm, while both market capitalizations decrease as a result of tighter financial conditions.

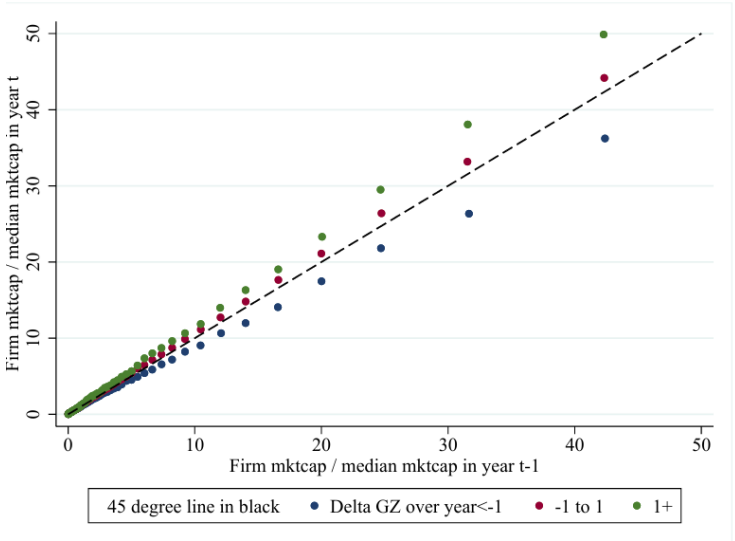
Columns 3-4, Columns 5-6, and Columns 7-8 repeat the analyses in Columns 1-2, while extending the horizon to three, six, and twelve months (respectively). The specifications in Columns 3-8 add as control variables the $t-1$ market capitalization of the leader, and the $t-1$ median market capitalization in the industry. While both the $LGap$ measure and the ΔGZ measure have a persistent effect on industry leaders market capitalization, the differential effect of ΔGZ on industry leaders and followers attenuates over time and becomes indistinguishable from zero as the horizon is extended to twelve months.

Figure 4 plots the transition of the mean $LGap$ measure in period $t-1$ to period t for different levels of the GZ measure. Intuitively, if there is mean reversion, all dots should be beneath the 45-

degree line, as a large ratio in the previous period (x-axis) would predict a lower ratio in the following period (y-axis).

Plotted in blue are the ratio transitions during times of lax financing conditions ($GZ < -1$). As can be seen, all blue dots are beneath the 45-degree line, implying that the ratio decreases from year $t-1$ to t and therefore there is a reversion to the mean. Plotted in red are results for intermediate levels financing conditions ($-1 \leq GZ \leq 1$). All dots are above the 45-degree line, implying that the gap increases from year $t-1$ to year t and that industry leaders gain more market capitalization, as compared to the industry followers when the financial conditions are in an intermediate range. Last, plotted in green, are the results for the market capitalization ratio transition when financing conditions are tight, i.e., then the GZ measure is above 1. The results in green are the starkest, being the farthest from 45-degree line, resulting in the largest divergence between market capitalizations.

Figure 4: $LGap$ Transition

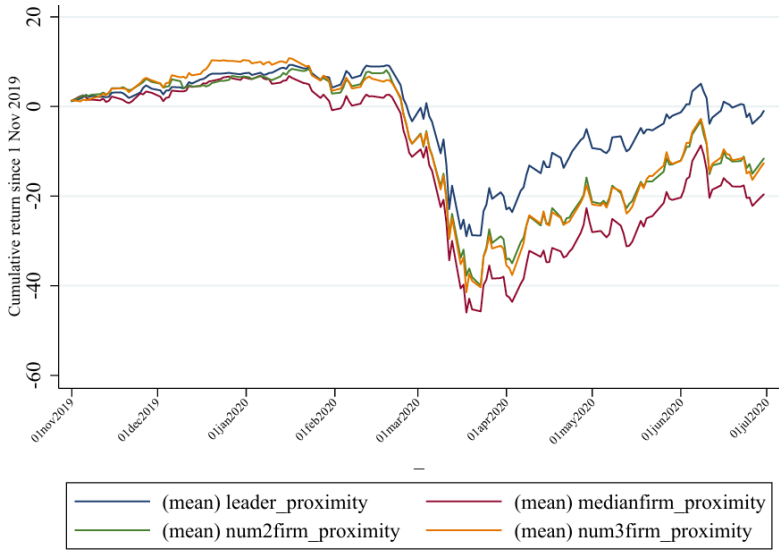


Evidence from the COVID Pandemic

In this section we study how the COVID-19 pandemic affected industry leaders and followers differentially. As can be seen in Figure 3, the GZ measure during the covid pandemic is lower than the levels before the outbreak. To better understand the effect covid-19 had on industry leaders, as compared to followers, we focus our attention to industries for which the pandemic had a larger effect.

To classify industries that were affected by the pandemic more than others we use a proximity measure which measures the degree to which firm activity in an industry, such as sales, involve activities which demand close proximity between humans. The proximity measure classifies industries which require high proximity to conduct business and therefore were more severely affected by the COVID-19 pandemic and the implied social distancing. Figure 5 plots the cumulative abnormal returns of firms in industries with above median proximity, i.e., industries for which the pandemic had a higher impact. The blue line plots the cumulative abnormal returns of industry leaders, showing they are higher than the second and third firms in the industry (the green and yellow lines, respectively), and even more so when compared to the median firm (plotted in red).

Figure 5: High Proximity Industries



Before the outbreak of the pandemic, the abnormal returns were near zero and the gaps between the industry leader and the median firm were negligible. Pursuing the breakout, all firms suffered from negative abnormal returns, though the median firm's abnormal returns were significantly lower, leading to a large gap in the abnormal returns of the firm.

Conclusion

We test how financial conditions affect industry leaders and intra-industry dynamics. For a host of financial real outcomes, we find that when financial conditions are not tight, there is mean reversion and the industry becomes more equal: smaller firms outperform the industry leaders, which are defined as the largest firm in the industry. In contrast, when financial conditions tighten and debt-financing becomes more expensive, industry leaders out-perform their followers and improve their relative position at the expense of industry followers.

Furthermore, we find that our results are more pronounced when the initial gap, as measured by the ratio between the industry leader's market capitalization and the market capitalization of the

median firm. Taken together, we find that adverse financing conditions will increase industry inequality especially when the industry was less equal to begin with.

Our results suggest novel policy implications regarding fiscal and monetary policy during crises, as higher spreads imposed by the market will exacerbate pre-existing inequality.