Corporate Payout Policy and Product Market Competition

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Abstract

This paper investigates whether product market competition affects managers' decision to distribute cash to shareholders. Using a large sample of manufacturing firms, we find that firms in less competitive industries have significantly lower payout ratios than firms in more competitive markets. Further, we find that this negative relation between industry concentration levels and corporate payouts is much stronger among those firms whose overall characteristics make them (a) more likely to have high agency costs of free cash flows and (b) less likely to be the target of predation. In general, our results are consistent with the notion that the disciplinary forces of competition induce managers to payout excess cash and with the idea that corporate payouts are the "outcome" of external factors.

1. Introduction

It has been argued in the economic literature that intense product market competition provides corporate managers with incentives to behave efficiently. One of the main rationales for this argument is that the disciplinary forces of competition rapidly remove incompetent managers from the market. This is an old idea that was even recognized by Adam Smith in the Wealth of Nations, who wrote that "monopoly…is a great enemy to good management." Other examples include Hicks (1935), who acknowledges that "the best of all monopoly profits is a quiet life," and Caves (1980), who comments that economists seem to have a "vague suspicion that competition is the enemy of sloth." Over the past few decades, several theoretical papers have tried to formalize this idea by examining the potential channels through which competition can have an effect on managerial incentives (see, for example, Holmstrom (1982), Hart (1983), Nalebuff and Stiglitz (1983), Scharfstein (1988), Hermalin (1992), Schmidt (1997), Aghion, Dewatripont, and Rey (1999), and Raith (2003)). More recently, Allen and Gale (2000) conclude that competition among firms may be a more effective corporate governance mechanism than either the market for corporate control or monitoring by institutions.

Several recent empirical studies seem to support this idea that competition incentivizes managers to be more efficient and more aligned with shareholders. For example, Graham, Kaplan, and Sibley (1983) find that airlines experienced significant productivity improvements after the deregulation of their industry in 1978. Nickell (1996) documents that total factor productivity growth among a sample of U.K. firms is positively correlated with proxies for competition intensity. Berger and Hannan (1998) find a strong negative relation between cost efficiency and measures of market power in the U.S. banking industry. Griffith (2001) provides evidence that an increase in product market competition leads to increases in productivity,

especially among those firms in which managers are less aligned with shareholders. Guadalupe and Pérez-González (2005) find evidence that the private benefits of managerial control, a measure of the magnitude of the conflict between managers and shareholders, decrease with the intensity of product market competition. Grinstein and Palvia (2006) report that bank managers in less competitive markets are more likely to extract additional rents from shareholders without their consent through executive loans.

In this paper, we investigate whether this link between product market competition and managerial incentives has any implications for corporate payout policy. There are several potential reasons why product market competition and payout policy might be related. Perhaps the most important is the interaction between competition and agency conflicts. For example, it has been established in the literature that agency considerations play a significant role in payout decisions (see, for example, Lie (2000), Grullon and Michaely (2004), and DeAngelo, DeAngelo, and Stulz (2006)). Thus, it is possible that product market competition, through its effect on agency conflicts, may be an important determinant of the decision to pay out excess cash to shareholders

Similar to La Porta, Lopez de Silanes, Shleifer, and Vishny (2000) (henceforth LLSV), we argue that product market competition can potentially have two opposing effects on payout policies. One possibility is that firms pay dividends because competition exerts pressure on managers to distribute cash to their shareholders by increasing the risk and the cost of overinvesting (e.g., higher probability of liquidation, greater transparency). The main idea here is that intense competition can affect corporate payouts in similar ways as a strong legal system by creating conditions that pressure managers to pay out rather than invest in non-profitable investments (the "outcome" model). Alternatively, payout policy can be a substitute for

competition: managers use dividends as a substitute for the external disciplinary factors to establish a good reputation in the capital markets to be able to raise capital on better terms ("substitution" model).

Using the Herfindahl-Hirschman Index (HHI) from the Census of Manufacturers as a proxy for product market competition, we find that firms in more concentrated industries have significantly lower payout ratios than firms in less concentrated industries. These results hold even after controlling for other factors that have been documented to affect corporate payout policy, such as size, profitability, growth opportunities, firm age, leverage, and volatility. Moreover, we find that the effect of concentration levels on corporate payouts is not only statistically significant, but also economically significant. For example, we find that moving from the largest HHI quintile to the smallest HHI quintile increases the average dividend-to-assets ratio by 44% and the average total payout-to-assets ratio by 22%. We find that this effect does not change much even after controlling for firm characteristics, industry effects, and time trends.

Although these results support the predictions of the "outcome" model, it is possible that firms in more concentrated markets pay lower dividends because they need to hoard cash to fend off predatory behavior from competitors, as in Bolton and Scharfstein (1990). To disentangle these two potential explanations (predation and agency), we investigate the effect of being the dominant firm in a particular industry on the relation between product market competition and payout ratios. According to the predation hypothesis, the dominant firm should be less concerned about inducing predatory behavior than non-dominant firms because it has more resources and potentially more market power to fend any predatory attack. Therefore, dominant firms should be less concerned about paying out cash. As a consequence, if the predation

hypothesis is true, then the negative relation between industry concentration levels and payout ratios should be weaker among dominant firms and stronger among non-dominant firms.

In contrast, the outcome agency model predicts that the negative relation between concentration and payouts should be stronger among dominant firms. The reason for this is that dominant firms have characteristics that make them likely candidates to have high agency costs of free cash flows: they tend to be large and mature firms with low investment opportunities that generate substantial and stable cash flows. Thus, if competition reduces agency costs by forcing managers to pay out excess cash rather than invest in non-profitable investments, then we should find that the effect of competition on corporate payouts should be stronger among this type of firms.

Consistent with the implications of the outcome model, our empirical findings indicate that the negative relation between industry concentration levels and corporate payouts is much stronger among dominant firms. That is, among those firms that are more likely to have high agency costs of free cash flows, the ones that face less pressure from the product market distribute less cash to their shareholders. This result is even more surprising because the dominant firms in less competitive market are larger, older, and have more stable earnings than the dominant firms in more competitive markets. Overall, this is an important result because it suggests that the link between product market competition and corporate payout policy documented in this paper is primarily driven by agency considerations, and not by predation risk.

There are significant disagreements in the literature on what the interaction of payout policies and corporate governance is. Using data from several countries with different levels of investor protection, LLSV (2000) test the implications of the outcome and substitution hypotheses. Consistent with the empirical predictions of the "outcome" model, they find that

firms in countries with strong minority shareholder rights tend to pay higher dividends. More recently, Michaely and Roberts (2006) examine dividend policies of private firms with dispersed ownership and low investor protections (e.g., no market for corporate control) to dividend policies of public firms, which have better corporate governance mechanisms such as market for corporate control, more public monitoring and tighter reporting. They find that public firms pay higher dividends and that their dividends are more sensitive to investment opportunities relative to private firms, consistent with the outcome hypothesis.

However, several recent papers argue that firms use dividend payments to reduce agency costs that are caused by poor governance, and that dividends are used as a substitute for good corporate governance. Officer (2006) uses firms with large boards, CEO/Chairman duality, and low ownership by insiders and institutional investors as a proxy for poor governance, and John and Knyazeva (2006) use the Ishii, Gompers, and Metrick (2003) index as a proxy for external governance. Further, Grinstein and Michaely (2005) find that firms with high institutional holding generally pay lower dividends.

Overall, our results complement and extend existing evidence by looking at a novel and perhaps more precise measure of corporate governance (Allen and Gale, 2000). The higher payouts in more competitive industries suggest that intense product market competition appears to have induced management to disgorge cash. These findings are important for several reasons. First, they lend further support the idea that corporate payouts are the outcome of external disciplinary forces. Second, they underscore the importance of agency conflicts in the determination of corporate payout policy. Finally, they provide another example of how product market competition can have a significant effect on corporate financial decisions.

The paper is organized as follows. Section 2 discusses the theoretical arguments linking corporate payout policy to product market competition. Section 3 describes the sample selection procedure, defines the variables, and provides summary statistics. Section 4 investigates the empirical relation between industry concentration levels and corporate payout policy. In Section 5, we investigate whether agency theory can explain the relation between product market competition and corporate payout policy documented in this paper. Section 6 concludes the paper.

2. The Link between Corporate Payout Policy and Product Market Competition

In this section, we discuss several potential channels through which product market competition can affect managers' decision to distribute cash to their shareholders. Building on the work of LLSV, we explain how corporate payouts could be the outcome of intense product market competition or, alternatively, a substitute for competition. Further, we explain how potential predatory behavior in less competitive markets can affect corporate payout policy.

2.1. Outcome Model

Under our version of the "outcome" model, managers in highly competitive markets distribute more cash to their shareholders because they are more likely to be penalized by the disciplinary forces of competition if they mishandle the resources of the firm. This idea is based on the assumption that competition increases the risk and the costs of overinvesting for managers. Theoretically, there are two main arguments that seem to justify this assumption.

The first argument is related to the threat-of-liquidation hypothesis (see, for example, Schmidt (1997) and Aghion, Dewatripont, and Rey (1999)). The main idea here is that if a firm in a highly competitive industry starts investing in negative NPV projects, then it would become less competitive (e.g., raising prices to subsidize the bad projects), and consequently, more likely

to be driven out of the market. Thus, to avoid liquidation and the loss of their jobs, managers in more competitive markets will tend to avoid negative NPV projects, thus making dividends and share repurchases more appealing to them.

The second argument is related to the yardstick competition hypothesis (see, for example, Holmstrom (1982), Nalebuff and Stiglitz (1983) and Shleifer (1985)). Under this hypothesis, product market competition reduces asymmetric information and monitoring costs by generating greater opportunities for outsiders to benchmark the performance of a firm to the performance of its competitors. Therefore, according to this argument, intense competition could make overinvestment riskier and more costly for management by increasing the likelihood that outsiders will identify and replace those managers who are destroying value. Interestingly, recent empirical studies seem to support this idea. For example, DeFond and Park (1999) and Fee and Hadlock (2000) find that CEO turnover is higher in more competitive industries. Further, Kruse and Rennie (2006) finds that poorly performing firms operating in highly competitive markets are more likely to become a takeover target.

Empirically, the "outcome" model has two major implications. First, it predicts a negative relation between industry concentration levels and corporate payouts. Second, it predicts that this negative relation between concentration levels and payouts should be stronger among firms with severe agency problems of free cash flows. The main rationale for the latter prediction is that if competition affects corporate payout policy by increasing the risk and the cost of overinvesting, then its effect on payouts should be stronger among those firms that are more likely to overinvest. We empirically test this implication by examining whether the relation between concentration levels and corporate payouts is stronger among low-growth large mature firms that generate substantial cash flows.

2.2. Substitution Model

Under our version of the "substitution" model, managers in less competitive markets pay dividends and repurchase shares to mitigate the potential agency costs generated by the lack of competitive pressure from the product market. According to recent theoretical arguments, managers may rationally do this to establish a reputation for treating shareholders well so they can raise capital at favorable terms in the future (LLSV) or to maximize the value of their holdings in the firm (Gomes (2000)).

Our version of the "substitution" model is based on the assumption that firms in less competitive markets face higher agency costs associated with free cash flows. One potential reason for this is that these firms have the ability to generate extraordinary rents, which allows managers to have access to more free cash flows (see Shleifer and Vishny (1997)). Another potential reason is that managers in less competitive markets are more likely to overinvest because they are less susceptible to the disciplinary forces of product market competition. For example, since value-destroying managers in less competitive markets have more slack to subsidize negative NPV projects, they are more likely to avoid liquidation than similar managers in more competitive industries. In addition, bad managers in more concentrated industries are less likely to be identified and replaced by outsiders because there are fewer opportunities to benchmark their performance.

In terms of empirical implications, the "substitution" model predicts that corporate payouts should be positively correlated with industry concentration levels because managers use dividends and share repurchases as a substitute for intense competition. However, this model does not provide clear predictions on how the magnitude of potential agency problems should affect the positive relation between concentration levels and corporate payouts. On the one hand,

if managers use corporate payouts to establish a reputation as good managers to raise capital on better terms in the future (LLSV), then the positive relation between concentration levels and payouts should be stronger among high-growth firms that generate low cash flows because these are the firms that are most likely to access the capital markets in the future. On the other hand, if managers use corporate payouts to mitigate the agency costs of free cash flows so they can maximize the value of their holdings in the firm (Gomes (2000)), then we should expect a stronger positive correlation between concentration levels and payouts among firms with severe agency costs of free cash flows. The main rationale for this is that the benefits of reducing potential agency problems are larger among this type of firms.

2.3. Predation Hypothesis

It is possible that product market competition and payout policy may interact for strategic consideration such as predation risk. For example, an implication of Bolton and Scharfstein (1990) is that firms will tend to hoard cash so that they are better able to fend off potential predatory behavior.[1] Since this behavior is unlikely to be effective in competitive markets not only because prices are equal to marginal costs, but also because there is no gain from having n-1 firms instead of n firms in the market, predatory risk is higher in less competitive markets. Thus, the major prediction of the predation hypothesis is that payouts should be lower in more concentrated industries.

Note that the predation hypothesis and the "outcome" model generate similar predictions regarding the relation between product market competition and corporate payouts. However, we try to distinguish these two explanations by examining the effect of being the dominant firm on the relation between competition and corporate payouts. As discussed above, the predation hypothesis predicts that the negative relation between concentration levels and payouts should be

[1] Bolton and Scharfstein (1990) original argument is about debt, but it also holds for dividends (and repurchases).

stronger among the non-dominant firms in an industry. This follows from the idea that predation is less likely to occur against dominant firms because these firms have more resources to fend any predatory attack and they are less likely to pass profitable investment opportunities due to financial constraints (see, for example, Haushalter, Klasa, and Maxwell (2006)).

3. Sample Selection, Variable Definitions, and Descriptive Statistics

3.1. Sample Selection

Our initial sample consists of all the firms operating in any of the industries covered by the Census of Manufacturers (SIC code interval 2011-3990). This census reports the results from a survey held every five years in which all manufacturing firms in the U.S. are asked to provide information on their number of employees, payroll, and total output. Using this information, the U.S. Census calculates several summary statistics, including the Herfindahl-Hirschman index (HHI) that we use in this paper.

Since the HHIs are only reported every five years, we assume that the indexes stay constant until the results from a new survey are available. For example, we use the HHIs reported in 1987 for the observations in years 1987, 1988, 1989, 1990, and 1991. This approach is unlikely to bias our empirical results because the HHI does not experience large changes over time. For example, the probability that an industry in the smallest HHI quintile moves to the largest HHI quintile (or vice versa) over a period of 5 years is virtually zero.

From our initial sample of manufacturing firms, we then select those observations that satisfy the following criteria: (1) the firm appears on the CRSP/Compustat merged files, and (2) the firm has available information on both dividends and share repurchases. This selection process generates a final sample of 54,318 firm-year observations and 2,747 firms over the

period 1972 to 2001. This is a relatively large sample considering that it only contains manufacturing firms.

3.2. Variable Definitions

3.2.1. Proxy for Industry Concentration

Following Aggarwal and Samwick (1999), Allayanis and Ihrig (2001), Campello (2005), MacKay and Phillips (2005), Akdoğu and MacKay (2006), and Haushalter, Klasa, and Maxwell (2006), among others, we use the Herfindahl-Hirschman Index (HHI) from the Census of Manufacturers as a proxy for product market competition. The U.S. Census calculates this index by summing up the squares of the individual market shares for the 50 largest firms in the industry. If the industry has less than 50 firms, then the U.S. Census uses the total number of firms in the industry. Since in most industrial groups the largest 50 firms capture most of the market, this index is a reasonable proxy for the overall level of industry concentration. In this paper, we use four-digit SIC HHIs.

As pointed out by several authors, the concentration measures reported by the Census of Manufacturers are more meaningful than the ones derived from Compustat data because the former measures are constructed using both private and public firms while the latter measures only use public firms.[2] In a recent empirical study, Ali, Klasa, and Yeung (2006) show that this difference between these two measures seems to significantly bias the HHI derived from Compustat data. For example, consistent with the idea that in more concentrated markets there should be fewer and larger firms, these authors find that the HHI reported in the Census of Manufacturers is negatively correlated with the total number of firms in the industry and positively correlated with average firm size. However, they do not find these results when they

[2]Another advantage of using the concentration measures reported by the Census of Manufacturers is that they are less likely to suffer from a selection bias. The reason for this is that firms are required by federal law to respond to the survey supplied by the U.S. Census (Title 13 of the U.S. Code).

use the HHI derived from Compustat data. Surprisingly, they find that industries classified as concentrated using the Compustat HHI tend to be populated by smaller firms. These findings are important because they raise serious concern about the use of Compustat concentration measures as proxy for industry concentration. This is the main reason why we perform our empirical tests using the HHI from the Census of Manufacturers.

3.2.2. Measures of Corporate Payouts

Using data from Compustat, we construct the following six measures of corporate payouts: dividends and total payouts scaled by lagged total sales (item 12), dividends and total payouts scaled by lagged total assets (item 6), and dividends and total payouts scaled by the lagged market value of equity (item 24 times item 199). Dividends (DIV) are equal to the total dollar amount of dividends declared on the common stock of a company during a year (item 21). Total payouts (TPAY) are defined as dividends plus share repurchases (item 115). We construct measures of total payouts because there is evidence that share repurchases have become an important payout method for many firms (see, for example, Grullon and Michaely (2002) and Boudoukh et al (2007)). Finally, to mitigate the effect of outliers, we exclude from our analyses all observations where the payout ratios are greater than one.

3.2.3. Control Variables

Following the literature on corporate payout policy, we control for the following firm characteristics in our empirical analyses:

- Maturity: Our proxies for the level of firm maturity are the market value of equity (MV) and the age of the firm (AGE). MV is defined as the total number of common shares outstanding (Compustat item 25) times the closing stock price at the end of the fiscal year (item 199). AGE is the time (in years) from the firm's CRSP listing date.

- Investment Opportunities: We use the market-to-book ratio (M/B) and the sales growth rate (GS_5YR) as proxies for investment opportunities. M/B is equal to the book value of assets (item 6) plus the market value of equity (MV) minus the book value of equity (item 60) scaled by the book value of assets. GS_5YR is the five-year growth rate in total sales (item 12).
- Risk: Our proxy for risk is the volatility of stock returns (RETVOL). RETVOL is the standard deviation of monthly stock returns over a one-year period.
- Profitability: We use the return on assets (ROA) as a proxy for the level of profitability of the firm. ROA is the operating income before depreciation (item 13) scaled by the book value of assets.
- Leverage: We define leverage (DEBT/ASSETS) as long-term debt (item 9) plus short-term debt (item 44) scaled by the book value of assets.

To mitigate the effect of outliers, M/B, ROA, and GS_5YR are winsorized at the 1% and the 99% of their empirical distribution. Further, since there is evidence that corporate payout policy in the U.S. has significantly changed over the last three decades (see, for example, Fama and French (2001) and Grullon and Michaely (2002)), we also include year dummies in our regressions to control for any time trends. Finally, we include two-digit SIC code dummies to control for industry effects.

Given the well documented fact that large, stable, profitable, old firms with low investment opportunities are more likely to distribute cash to their shareholders than are other types of firms, we expect the coefficients of MV, AGE, and ROA to have a positive sign, and the coefficients of M/B, GS_5YR, and RETVOL to have a negative sign. However, the coefficient

of DEBT/ASSETS could be positive or negative depending on whether firms treat leverage as a substitute for payouts or as a complement to payouts.

3.2.4. Descriptive Statistics

Table 1 reports summary statistics for the firms in our sample. This table shows that the average sample firm has a dividend yield (DIV/MV) equal to 1.41% and a total payout ratio (TPAY/MV) equal to 2.49%. These payout ratios are very similar to the ones reported in Grullon and Michaely (2002). Further, the average firm in our sample is almost 11 years old and it has a market value of equity (MV) of $1.1 billion, a market-to-book ratio (M/B) equal to 2.0, a debt-to-asset ratio (DEBT/ASSETS) equal to 18%, and a return on assets (ROA) of 1.6%. Interestingly, the characteristics of the average firm in our sample are very similar to the characteristics of the average firm in Compustat (not reported in a table). Thus, it seems that our sample is not biased toward a particular type of firm. Finally, Table 1 also shows that that there are large cross-sectional differences in payout ratios and firm characteristics. This large dispersion in both dependent and independent variables should improve the power of our empirical tests to detect any effect of concentration levels on corporate payouts.

4. The Relation Between Industry Concentration Levels and Corporate Payout Policy

In this section, we investigate whether product market competition affects manager's decision to distribute cash to their shareholders. We do this by examining the unconditional and conditional cross-sectional relation between the HHI and corporate payouts.

4.1. Unconditional Relation between Industry Concentration Levels and Payout Ratios

In this sub-section, we examine the unconditional relation between payout ratios and HHI by partitioning the sample into quintiles based on the HHI. The results from this analysis are reported in Table 2. Consistent with the predictions of the "outcome" model and the predation

risk hypothesis, this table shows that firms in the lowest HHI quintile have higher average payout ratios than firms in the highest HHI quintile. Note that the differences in average payout ratios between the lowest and the largest HHI quintiles are statistically different from zero at the 1% level for all our measures of corporate payouts.

One striking feature of the results in Table 2 is that they are economically large. For example, the average dividend-to-assets ratio (DIV/ASSETS) for firms in the lowest HHI quintile is 44% larger than the one for firms in the highest HHI quintile. Moreover, the average total payout-to-assets ratio (TPAY/ASSETS) for firms in the lowest HHI quintile is 22% larger than the one for firms in the highest HHI quintile. In general, these findings are important because they suggest that the negative relation between concentration levels and payout ratios documented in this paper is nontrivial.

4.2. Conditional Relation between Industry Concentration Levels and Payout Ratios

To ensure that the negative relation between industry concentration levels and corporate payout ratios documented in the previous sub-section is not spurious, we control for other factors that have been shown to explain the cross-sectional differences in payout ratios. We do this by regressing scaled measures of dividends and total payouts on the HHI, size (MV), market-to-book ratio (M/B), return on assets (ROA), debt-to-total assets ratio (DEBT/ASSETS) , age of the firm (AGE), five-year growth rate in total sales (GS_5YR), stock return volatility (RETVOL), year dummies, and industry dummies.

Since our measures of corporate payouts are truncated at zero and one, we estimate the regression coefficients using a two-sided Tobit model. Following Petersen (2006), we control for possible cross-sectional dependence in the residuals by adjusting the standard errors for within-firm correlation, and control for any time series dependence by including time dummies.

We do not include firm-fixed effects in our panel data regressions because the HHIs do not change much over time. However, we include two-digit SIC code dummies to control for industry-fixed effects.

Table 3 shows estimates of regressions relating scaled dividends to the HHI and other control variables. Corroborating the empirical findings in the previous sub-section, Table 3 shows that dividend payout ratios are negatively correlated with industry concentration levels even after controlling for firm characteristics and time trends. Note that the coefficient of the HHI is negative and statistically significant in all the specifications. Surprisingly, we find that the conditional effect of the HHI on dividend payout ratios is very similar to the unconditional effect. For example, according to our unconditional analysis (see Table 2), the differences in the average dividends-to-sales ratio, the average dividends-to-assets ratio, and the average dividend yield between the firms in the highest HHI quintile and the firms in the lowest HHI quintile are equal to -0.37%, -0.40%, and -0.27%, respectively. However, these differences are equal to -0.38%, -0.36%, and -0.35%, respectively, when we control for other factors.

As expected, Table 3 shows that dividend payout ratios are positively correlated with MV, AGE, and ROA, and negatively correlated with M/B, GS_5YR, and RETVOL. Moreover, there is evidence that dividends are negatively related to leverage (DEBT/ASSET). In general, these results are consistent with the stylized fact that large, stable, profitable, old firms with low investment opportunities pay more dividends.

Finally, since it is possible that firms may be substituting share repurchases for dividends (see, for example, Grullon and Michaely (2002)), we replicate the previous analyses using total payouts (dividends plus share repurchases) instead of dividends. The results from this analysis are reported in Table 4. Similar to the findings using dividends, this table shows that total

payouts ratios are negatively correlated with the HHI. Overall, the empirical results in this section indicate that firms in more competitive market tend to have higher payout ratios than firms in less competitive market.

5. The Effect of Being the Dominant Firm in an Industry on the Relation between Industry Concentration Levels and Corporate Payout Policy

The results in the previous section suggest that corporate payouts are the outcome of the disciplinary forces of product market competition. However, it is possible that firms in more concentrated markets tend to hoard cash (e.g., pay less dividends) to fend off predatory behavior from competitors. To distinguish between these two explanations, we examine the effect of being the dominant firm in an industry on the relation between product market competition and corporate payout policy.

As discussed earlier, the predation risk hypothesis predicts that the negative relation between the HHI and payout ratios should be weaker among dominant firms and stronger among non-dominant firms. The main intuition behind this argument is that dominant firms in a particular industry should be less concerned about inducing predatory behavior than non-dominant firms because the former firms have more resources and potentially more market power to fend any predatory attack. However, if corporate payouts are the "outcome" of intense product market competition, then we should expect that the effect of competition on payouts should be stronger among those firms that are more likely to have high agency cost of free cash flows. Thus, since dominant firms tend to be large mature firms with low investment opportunities that generate substantial and stable cash flows (as we show below), the "outcome" model predicts that the negative relation between the HHI and payouts should be stronger among this type of firms.

We begin this analysis by classifying as dominant firms those firms that have the largest market value of equity at time t in a four-digit SIC industry. To examine whether the firms classified as dominant firms are the clear leaders in their particular industries, we report the characteristic of dominant and non-dominant firms in Table 5. This table shows that the average dominant firm is an order of magnitude larger than the average non-dominant firm. For example, the average market value of equity of dominant firms is almost 6 times larger than the average market value of equity of non-dominant firms. Further, note that dominant firms tend to be much older, more profitable, less volatile, and have fewer growth options than non-dominant firms.

The results in Table 5 are important because they suggest that non-dominant firms are significantly less likely to survive a predatory attack than dominant firms. Thus, if predation risk is the main reason why firms in more concentrated markets have lower payout ratios, then the relation between the HHI and payouts should be stronger among non-dominant firms. The results in Table 5 are also important because they show that dominant firms are exactly the type of firms that Jensen (1986) considers as the most likely to have high agency cost of free cash flows.[3] Therefore, if the "outcome" model is true, the negative relation between the HHI and payouts documented in the previous section should be stronger among dominant firms. Clearly, by examining the effect of being the dominant firm on the relation between concentration levels and corporate payouts, one could simultaneously test the predictions of the "outcome" model and the predation risk hypothesis.

To investigate whether the relation between the HHI and payout ratios is different between dominant and non-dominant firms, we include in our regressions an interaction term

[3] Jensen (1986) argues that agency costs of free cash flows are likely to be more severe among "firms that have stable business histories and substantial free cash flow (i.e. low growth prospect and high potential for generating cash flows)."

that is equal to the HHI if the firm is a dominant firm, zero otherwise. If the predation risk hypothesis is correct, then the coefficient of the interaction term should be positive. However, if agency considerations are the main drivers behind the relation between concentration levels and corporate payouts, then the coefficient of the interaction term should be negative.

Consistent with the predictions of the "outcome" model, Table 6 shows that the coefficient of the interaction term (HHI x DOMINANT) is negative and statistically significant in all the specifications. This result implies that the negative relation between the HHI and dividend payout ratios is much stronger among dominant firms. Note that the effect of the HHI on dividend payout ratios for dominant firms is much larger than the one for non-dominant firms. Table 7 shows similar results using total payout ratios. Interestingly, there is some evidence in this table that the relation between the HHI and total payout ratios is completely driven by the dominant firms (see columns 2, 4, and 6). In general, the results in this section support the predictions of the "outcome" model. However, they are inconsistent with the implications of the predation risk hypothesis.

6. Conclusion

Our study extends the work of LLSV by arguing that product market competition can be viewed as an additional external disciplinary factor. Based on the idea that competition can exert pressure on managers to distribute cash to their shareholders by increasing the risk and the cost of overinvesting, we argue that corporate payouts could be the result of product market competition or, alternatively, a substitute for competition.

The results in this paper seem to support the idea that corporate payouts are the outcome of the disciplinary forces of product market competition. We find that corporate payouts are negatively correlated with the industry concentration levels even after controlling for potential

confounding effects. Moreover, consistent with the implications of agency theory, we find that the effect of product market competition on payouts is stronger among those firms that are more likely to have high agency costs of free cash flows.

Overall, our results complement the empirical results in LLSV. While they find evidence suggesting that a strong legal system exerts pressure on corporate managers to distribute excess cash to their shareholders, we find that intense product market competition appears to have similar effects. These findings are important because they further suggest that agency problems play an important role on managers' decision to distribute cash to shareholders.

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Table 1
Summary Statistics

This table reports the summary statistics for the sample firms. To be included in the sample, the observation must satisfy the following criteria: the firm's financial data is available on Compustat; the firm operates in an industry covered by the Census of Manufacturers (SIC code interval 2011-3990); the firm has available information on dividends and share repurchases. DIV is the total dollar amount of dividends declared on the common stock. REPO is the expenditure on the purchase of common and preferred stocks. TPAY is the total payout of the firm (DIV plus REPO). SALES are to total sales. MV is the market value of common stock. ASSETS is equal to the total book value of assets. AGE is the time (in years) from the firm's CRSP listing date. M/B is the market-to-book ratio [(book value of assets + market value of equity - book value of equity) / book value of assets]. DEBT/ASSETS is equal to long-term debt plus short-term debt scaled by total assets. HHI is the four-digit SIC Herfindahl-Hirschman Index from the Census of Manufacturers. ROA is the operating income before depreciation scaled by total assets. GS_5YR is the five-year growth rate in total sales. RETVOL is the standard deviation of monthly stock returns. All the payout measures have been truncated at one. M/B, ROA, and GS_5YR have been winsorized at the 1% and the 99% of the empirical distribution. The sample period is from 1972 to 2001.

	Mean	Std. Dev.	5th	Median	95th	N
Payout Measures						
DIV(t) / ASSETS(t-1)	0.99%	2.64%	0	0	4.14%	50,594
DIV(t) / SALES(t-1)	0.86%	2.52%	0	0	3.67%	49,505
DIV(t) / MV(t-1)	1.41%	2.70%	0	0	6.15%	43,865
TPAY(t) /ASSETS(t-1)	1.97%	4.96%	0	0.04%	8.25%	50,552
TPAY(t) / SALES(t-1)	1.87%	5.42%	0	0.07%	7.81%	49,385
TPAY(t) / MV(t-1)	2.49%	5.19%	0	0.34%	9.17%	43,834
Firm Characteristics						
MV	1,140.1	7,604.8	1.9	47.1	3,577.2	47,266
ASSETS	1,122.5	7,488.6	1.6	43.3	3,538.1	54,288
AGE	10.6	13.0	0	6	38	54,318
M/B	2.0	2.0	0.7	1.3	5.7	45,095
DEBT/ASSETS	0.180	0.141	0	0.141	0.528	52,830
HHI	903	720	320	661	2,500	54,318
ROA	0.016	0.389	-0.612	0.116	0.295	54,187
GS_5YR	0.123	0.196	-0.124	0.098	0.448	36,622
RETVOL	0.153	0.101	0.056	0.130	0.324	39,826

Table 2
The Relation between Product Market Competition and Corporate Payout Ratios: Univariate Analysis

This table presents a comparison of average payout ratios across quintiles based on the four-digit SIC Herfindahl-Hirschman Index (HHI) from the Census of Manufacturers. DIV is the total dollar amount of dividends declared on the common stock. REPO is the expenditure on the purchase of common and preferred stocks. TPAY is the total payout of the firm (DIV plus REPO). SALES are to total sales. MV is the market value of common stock. ASSETS is equal to the total book value of assets. All the payout measures have been truncated at one. Superscripts a, b, and c denote significantly different from zero at the 1%, 5%, and 10% level, respectively.

	HHI Quintiles					
	Lowest	2	3	4	Highest	Difference (Highest-Lowest)
DIV(t) / SALES(t-1)	1.15%	0.98%	0.74%	0.66%	0.78%	-0.37% [a]
DIV(t) / MV(t-1)	1.74%	1.55%	1.08%	1.20%	1.47%	-0.27% [a]
DIV(t) / ASSETS(t-1)	1.31%	1.02%	0.85%	0.87%	0.91%	-0.40% [a]
TPAY(t) / SALES(t-1)	2.12%	2.01%	1.75%	1.67%	1.80%	-0.32% [b]
TPAY(t) / MV(t-1)	2.88%	2.73%	2.05%	2.24%	2.56%	-0.32% [b]
TPAY(t) / ASSETS(t-1)	2.29%	2.04%	1.79%	1.87%	1.87%	-0.42% [a]
Average HHI	355.1	491.5	662.5	969.0	2,040.7	1,685.6 [a]

Table 3
The Relation between Product Market Competition and Dividend Payouts

This table reports estimates of regressions relating scaled dividends to the Herfindahl-Hirschman Index and other control variables. DIV is the total dollar amount of dividends declared on the common stock. SALES are to total sales. MV is the market value of common stock. ASSETS is equal to the total book value of assets. HHI is the four-digit SIC Herfindahl-Hirschman Index from the Census of Manufacturers scaled by 10,000. M/B is the market-to-book ratio [(book value of assets + market value of equity - book value of equity) / book value of assets]. ROA is the operating income before depreciation scaled by total assets. DEBT/ASSETS is equal to long-term debt plus short-term debt scaled by total assets. AGE is the time (in years) from the firm's CRSP listing date. GS_5YR is the five-year growth rate in total sales. RETVOL is the standard deviation of monthly stock returns. All the payout measures have been truncated at one. M/B, ROA, and GS_5YR have been winsorized at the 1% and the 99% of the empirical distribution. Since the dependent variables are truncated at zero and one, we estimate the regression coefficients using a two-sided Tobit model. Standard errors adjusted for within-firm correlation are reported in parentheses below coefficient estimates. Superscripts a, b, and c denote significantly different from zero at the 1%, 5%, and 10% level, respectively.

	Dependent Variable					
	DIV(t)/ SALES(t-1)	DIV(t)/ SALES(t-1)	DIV(t)/ MV(t-1)	DIV(t)/ MV (t-1)	DIV(t)/ ASSETS(t-1)	DIV(t)/ ASSETS(t-1)
Intercept	-0.0437[a]	-0.0103[a]	-0.0367[a]	-0.0077[c]	-0.0398[a]	-0.0017
	(0.0043)	(0.0034)	(0.0043)	(0.0043)	(0.0041)	(0.0035)
HHI	-0.0294[a]	-0.0225[a]	-0.0301[a]	-0.0210[b]	-0.0285[a]	-0.0212[a]
	(0.0103)	(0.0084)	(0.0099)	(0.0094)	(0.0100)	(0.0080)
log (MV)	0.0095[a]	0.0053[a]	0.0097[a]	0.0062[a]	0.0091[a]	0.0045[a]
	(0.0007)	(0.0004)	(0.0005)	(0.0004)	(0.0005)	(0.0004)
log (M/B)	-0.0209[a]	-0.0034[b]	-0.0390[a]	-0.0256[a]	-0.0205[a]	-0.0019
	(0.0024)	(0.0016)	(0.0017)	(0.0016)	(0.0016)	(0.0013)
ROA	0.1145[a]	0.0830[a]	0.1218[a]	0.1109[a]	0.1416[a]	0.1047[a]
	(0.0077)	(0.0066)	(0.0079)	(0.0090)	(0.0080)	(0.0072)
DEBT/ASSETS	-0.0311[a]	-0.0209[a]	-0.0278[a]	-0.0204[a]	-0.0383[a]	-0.0287[a]
	(0.0051)	(0.0043)	(0.0040)	(0.0040)	(0.0041)	(0.0033)
log (1+ AGE)	0.0039[a]	0.0029[a]	0.0053[a]	0.0045[a]	0.0044[a]	0.0034[a]
	(0.0006)	(0.0007)	(0.0007)	(0.0008)	(0.0006)	(0.0007)
GS_5YR		-0.0344[a]		-0.0374[a]		-0.0358[a]
		(0.0060)		(0.0048)		(0.0044)
RETVOL		-0.1633[a]		-0.1813[a]		-0.1629[a]
		(0.0165)		(0.0153)		(0.0140)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-Digit SIC Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	42,859	29,895	40,725	29,852	43,639	29,956

Table 4
The Relation between Product Market Competition and Total Payouts

This table reports estimates of regressions relating scaled total payouts to the Herfindahl-Hirschman Index and other control variables. TPAY is the total payout of the firm [the total dollar amount of dividends declared on the common stock plus the expenditure on the purchase of common and preferred stocks]. SALES are to total sales. MV is the market value of common stock. ASSETS is equal to the total book value of assets. HHI is the four-digit SIC Herfindahl-Hirschman Index from the Census of Manufacturers scaled by 10,000. M/B is the market-to-book ratio [(book value of assets + market value of equity - book value of equity) / book value of assets]. ROA is the operating income before depreciation scaled by total assets. DEBT/ASSETS is equal to long-term debt plus short-term debt scaled by total assets. AGE is the time (in years) from the firm's CRSP listing date. GS_5YR is the five-year growth rate in total sales. RETVOL is the standard deviation of monthly stock returns. All the payout measures have been truncated at one. M/B, ROA, and GS_5YR have been winsorized at the 1% and the 99% of the empirical distribution. Since the dependent variables are truncated at zero and one, we estimate the regression coefficients using a two-sided Tobit model. Standard errors adjusted for within-firm correlation are reported in parentheses below coefficient estimates. Superscripts a, b, and c denote significantly different from zero at the 1%, 5%, and 10% level, respectively.

	Dependent Variable					
	TPAY(t)/ SALES(t-1)	TPAY(t)/ SALES(t-1)	TPAY(t)/ MV(t-1)	TPAY(t)/ MV (t-1)	TPAY(t)/ ASSETS(t-1)	TPAY(t)/ ASSETS(t-1)
Intercept	-0.0466[a]	-0.0194[a]	-0.0330[a]	-0.0094[c]	-0.0349[a]	-0.0082[b]
	(0.0043)	(0.0043)	(0.0046)	(0.0052)	(0.0039)	(0.0041)
HHI	-0.0317[a]	-0.0210[b]	-0.0378[a]	-0.0241[b]	-0.0331[a]	-0.0233[b]
	(0.0116)	(0.0110)	(0.0113)	(0.0116)	(0.0109)	(0.0102)
log (MV)	0.0118[a]	0.0071[a]	0.0107[a]	0.0070[a]	0.0101[a]	0.0056[a]
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0004)	(0.0005)
log (M/B)	-0.0159[a]	0.0004	-0.0371[a]	-0.0276[a]	-0.0112[a]	0.0039[b]
	(0.0018)	(0.0021)	(0.0015)	(0.0019)	(0.0015)	(0.0019)
ROA	0.0626[a]	0.0755[a]	0.0707[a]	0.1021[a]	0.0892[a]	0.1126[a]
	(0.0070)	(0.0096)	(0.0061)	(0.0098)	(0.0065)	(0.0107)
DEBT/ASSETS	-0.0514[a]	-0.0444[a]	-0.0290[a]	-0.0255[a]	-0.0516[a]	-0.0459[a]
	(0.0055)	(0.0053)	(0.0047)	(0.0052)	(0.0043)	(0.0042)
log (1+ AGE)	0.0047[a]	0.0037[a]	0.0071[a]	0.0057[a]	0.0049[a]	0.0045[a]
	(0.0007)	(0.0009)	(0.0008)	(0.0010)	(0.0007)	(0.0008)
GS_5YR		-0.0304[a]		-0.0383[a]		-0.0348[a]
		(0.0064)		(0.0052)		(0.0047)
RETVOL		-0.1553[a]		-0.1559[a]		-0.1495[a]
		(0.0128)		(0.0128)		(0.0115)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-Digit SIC Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	42,762	29,865	40,711	29,844	43,613	29,955

Table 5
Firm Characteristics of Dominant and Non-Dominant Firms

This table presents a comparison of average firm characteristics for dominant and non-dominant firms. A dominant firm is defined as the firm with the largest market value of equity in a four-digit SIC industry. MV is the market value of common stock. ASSETS is equal to the total book value of assets. AGE is the time (in years) from the firm's CRSP listing date. M/B is the market-to-book ratio [(book value of assets + market value of equity - book value of equity) / book value of assets]. DEBT/ASSETS is equal to long-term debt plus short-term debt scaled by total assets. ROA is the operating income before depreciation scaled by total assets. GS_5YR is the five-year growth rate in total sales. RETVOL is the standard deviation of monthly stock returns. M/B, ROA, and GS_5YR have been winsorized at the 1% and the 99% of the empirical distribution. Superscripts a, b, and c denote significantly different from zero at the 1%, 5%, and 10% level, respectively.

	Dominant	Non-Dominant	Difference
MV	4,992.6	844.4	4,148.2[a]
ASSETS	4,338.9	980.6	3,358.3[a]
AGE	21.1	11.8	9.3[a]
M/B	1.69	1.89	-0.20 [a]
DEBT/ASSETS	0.1804	0.1792	0.0072
ROA	0.1547	0.0265	0.1282 [a]
GS_5YR	0.1198	0.1260	-0.0062[b]
RETVOL	0.1035	0.1570	-0.0535[a]

Table 6
The Effect of Being the Dominant Firm on the Relation between Product Market Competition and Dividend Payouts

This table examines the effect of being the dominant firm on the relation between the Herfindahl-Hirschman Index and dividend payout ratios. DIV is the total dollar amount of dividends declared on the common stock. SALES are to total sales. MV is the market value of common stock. ASSETS is equal to the total book value of assets. HHI is the four-digit SIC Herfindahl-Hirschman Index from the Census of Manufacturers scaled by 10,000. DOMINANT is a dummy variable equal to one if the firm has the largest market value of equity at time t in a four-digit SIC industry, zero otherwise. M/B is the market-to-book ratio [(book value of assets + market value of equity - book value of equity) / book value of assets]. ROA is the operating income before depreciation scaled by total assets. DEBT/ASSETS is equal to long-term debt plus short-term debt scaled by total assets. AGE is the time (in years) from the firm's CRSP listing date. GS_5YR is the five-year growth rate in total sales. RETVOL is the standard deviation of monthly stock returns. All the payout measures have been truncated at one. M/B, ROA, and GS_5YR have been winsorized at the 1% and the 99% of the empirical distribution. Since the dependent variables are truncated at zero and one, we estimate the regression coefficients using a two-sided Tobit model. Standard errors adjusted for within-firm correlation are reported in parentheses below coefficient estimates. Superscripts a, b, and c denote significantly different from zero at the 1%, 5%, and 10% level, respectively.

	Dependent Variable					
	DIV(t)/ SALES(t-1)	DIV(t)/ SALES(t-1)	DIV(t)/ MV(t-1)	DIV(t)/ MV (t-1)	DIV(t)/ ASSETS(t-1)	DIV(t)/ ASSETS(t-1)
Intercept	-0.0443[a]	-0.0109[a]	-0.0375[a]	-0.0087[b]	-0.0404[a]	-0.0024
	(0.0044)	(0.0035)	(0.0043)	(0.0044)	(0.0041)	(0.0036)
HHI	-0.0233[b]	-0.0173[b]	-0.0232[b]	-0.0142	-0.0218[b]	-0.0154[c]
	(0.0106)	(0.0088)	(0.0105)	(0.0101)	(0.0105)	(0.0086)
HHI x DOMINANT	-0.0469[a]	-0.0338[b]	-0.0514[a]	-0.0465[a]	-0.0510[a]	-0.0385[a]
	(0.0189)	(0.0143)	(0.0187)	(0.0147)	(0.0176)	(0.0126)
DOMINANT	0.0059[b]	0.0038[b]	0.0044[b]	0.0029	0.0066[a]	0.0052[b]
	(0.0025)	(0.0019)	(0.0022)	(0.0019)	(0.0022)	(0.0017)
log (MV)	0.0094[a]	0.0052[a]	0.0097[a]	0.0063[a]	0.0090[a]	0.0045[a]
	(0.0007)	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0004)
log (M/B)	-0.0209[a]	-0.0035[b]	-0.0391[a]	-0.0258[a]	-0.0205[a]	-0.0019
	(0.0024)	(0.0016)	(0.0017)	(0.0016)	(0.0016)	(0.0013)
ROA	0.1144[a]	0.0830[a]	0.1217[a]	0.1108[a]	0.1415[a]	0.1047[a]
	(0.0077)	(0.0066)	(0.0079)	(0.0090)	(0.0080)	(0.0072)
DEBT/ASSETS	-0.0309[a]	-0.0208[a]	-0.0276[a]	-0.0202[a]	-0.0380[a]	-0.0285[a]
	(0.0051)	(0.0042)	(0.0040)	(0.0040)	(0.0041)	(0.0033)
log (1+ AGE)	0.0039[a]	0.0029[a]	0.0053[a]	0.0045[a]	0.0044[a]	0.0034[a]
	(0.0006)	(0.0007)	(0.0007)	(0.0008)	(0.0006)	(0.0007)
GS_5YR		-0.0344[a]		-0.0374[a]		-0.0357[a]
		(0.0060)		(0.0048)		(0.0044)
RETVOL		-0.1633[a]		-0.1813[a]		-0.1624[a]
		(0.0165)		(0.0153)		(0.0140)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-Digit SIC Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	42,859	29,895	40,725	29,852	43,639	29,956

Table 7
The Effect of Being the Dominant Firm on the Relation between Product Market Competition and Total Payouts

This table examines the effect of being the dominant firm on the relation between the Herfindahl-Hirschman Index and total payout ratios. TPAY is the total payout of the firm [the total dollar amount of dividends declared on the common stock plus the expenditure on the purchase of common and preferred stocks]. SALES are to total sales. MV is the market value of common stock. ASSETS is equal to the total book value of assets. HHI is the four-digit SIC Herfindahl-Hirschman Index from the Census of Manufacturers scaled by 10,000. DOMINANT is a dummy variable equal to one if the firm has the largest market value of equity at time t in a four-digit SIC industry, zero otherwise. M/B is the market-to-book ratio [(book value of assets + market value of equity - book value of equity) / book value of assets]. ROA is the operating income before depreciation scaled by total assets. DEBT/ASSETS is equal to long-term debt plus short-term debt scaled by total assets. AGE is the time (in years) from the firm's CRSP listing date. GS_5YR is the five-year growth rate in total sales. RETVOL is the standard deviation of monthly stock returns. All the payout measures have been truncated at one. M/B, ROA, and GS_5YR have been winsorized at the 1% and the 99% of the empirical distribution. Since the dependent variables are truncated at zero and one, we estimate the regression coefficients using a two-sided Tobit model. Standard errors adjusted for within-firm correlation are reported in parentheses below coefficient estimates. Superscripts a, b, and c denote significantly different from zero at the 1%, 5%, and 10% level, respectively.

	Dependent Variable					
	TPAY(t)/ SALES(t-1)	TPAY(t)/ SALES(t-1)	TPAY(t)/ MV(t-1)	TPAY(t)/ MV (t-1)	TPAY(t)/ ASSETS(t-1)	TPAY(t)/ ASSETS(t-1)
Intercept	-0.0476[a]	-0.0207[a]	-0.0340[a]	-0.0107[b]	-0.0360[a]	-0.0095[b]
	(0.0043)	(0.0044)	(0.0046)	(0.0053)	(0.0039)	(0.0041)
HHI	-0.0225[c]	-0.0113	-0.0296[a]	-0.0153	-0.0240[b]	-0.0135
	(0.0121)	(0.0116)	(0.0120)	(0.0125)	(0.0113)	(0.0108)
HHI x DOMINANT	-0.0864[a]	-0.0759[a]	-0.0739[a]	-0.0698[a]	-0.0856[a]	-0.0757[a]
	(0.0232)	(0.0195)	(0.0234)	(0.0196)	(0.0212)	(0.0178)
DOMINANT	0.0093[a]	0.0074[a]	0.0055[b]	0.0041	0.0106[a]	0.0089[a]
	(0.0031)	(0.0027)	(0.0029)	(0.0026)	(0.0028)	(0.0024)
log (MV)	0.0118[a]	0.0071[a]	0.0109[a]	0.0072[a]	0.0100[a]	0.0055[a]
	(0.0006)	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)
log (M/B)	-0.0160[a]	0.0003	-0.0372[a]	-0.0278[a]	-0.0112[a]	0.0038[b]
	(0.0018)	(0.0021)	(0.0015)	(0.0019)	(0.0015)	(0.0019)
ROA	0.0624[a]	0.0753[a]	0.0704[a]	0.1018[a]	0.0891[a]	0.1126[a]
	(0.0070)	(0.0096)	(0.0061)	(0.0098)	(0.0065)	(0.0107)
DEBT/ASSETS	-0.0510[a]	-0.0441[a]	-0.0287[a]	-0.0253[a]	-0.0513[a]	-0.0455[a]
	(0.0055)	(0.0053)	(0.0047)	(0.0052)	(0.0043)	(0.0042)
log (1+ AGE)	0.0046[a]	0.0037[a]	0.0071[a]	0.0057[a]	0.0048[a]	0.0045[a]
	(0.0007)	(0.0009)	(0.0008)	(0.0010)	(0.0007)	(0.0008)
GS_5YR		-0.0304[a]		-0.0384[a]		-0.0346[a]
		(0.0064)		(0.0052)		(0.0047)
RETVOL		-0.1551[a]		-0.1558[a]		-0.1492[a]
		(0.0128)		(0.0128)		(0.0115)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Two-Digit SIC Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	42,762	29,865	40,711	29,844	43,613	29,955