FINANCIAL POLICIES AND HEDGING

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ABSTRACT

While corporate financial policies are commonly benchmarked against industry norms, empirically, some firms consistently deviate to pursue "rogue" policies with either a conservative or an aggressive bias. Using a panel of large U.S. firms between 1975 and 2008, we study the incidence, joint frequency distribution, and valuation effect of rogue financial policies across four policy dimensions: leverage, payout, liquidity, and risk management. Consistent with a hedging effect, we find that conservative (aggressive) financial policies tend to be generally associated with higher (lower) valuations. In addition, we observe a time-variation in the valuation effects. For example, most aggressive policies are associated with even lower valuations as the average level of the policy increases, while conservative liquidity strategies are associated with lower valuation benefits during periods of high economic growth. Finally, our tests of joint rogue policies provide evidence consistent with agency explanations. For example, firms which pursue both conservative leverage and conservative liquidity policies are valued at a discount, even though those that pursue a conservative leverage or a conservative liquidity policy on its own are valued at a premium.

I. Introduction

In a Modigliani and Miller (1958) world, firm financial policies such as debt level, dividend payments, cash balances, and risk management are irrelevant for firm valuation. However more recent theories, for example, in risk management, argue that firms which engage in risk management and have smooth cash flows can add value by reducing their costs of external financing (Froot, Scharfstein, and Stein, 1993). On the other hand, agency theories suggest that risk management is done to benefit managers and not necessarily a firm's shareholders. Firms can hedge not only using a variety of financial and operational risk management tools, but also using various alternative financial policies such as liquidity, payout, and leverage.[1] Recent theoretical work by Gamba and Triantis (2009) examines the role of liquidity and its association to other hedging activities in the overall risk management program of the firm, while recent empirical work by Bates, Kahle, and Stulz (2009) finds that there is a large increase in the average cash held by US firms over the last several decades, especially for firms in industries which experienced a large increase in risk, evidence consistent with a hedging motive for liquidity.[2] Similarly, low levels of debt (Graham, 2000) and low payout can serve a firm's hedging needs by mitigating distress costs (Smith and Stulz, 1985) and by providing for cheaper internally generating cash flows to support strategic investments.

While prior work has examined extensively the value of risk management (See, e.g., Mackay and Moeller, 2007, Graham and Rogers, 2002, and Allayannis and Weston, 2001), little work has been done to empirically examine how related financial policies may add to the risk management value on their own, as well as jointly. In this paper we examine in a unified framework the joint distribution of four financial policies, leverage, payout, liquidity, and risk management, and their impact on firm value.

To operationalize our tests and to allow for comparisons across financial policies, we classify firms' policies in four general groups, conservative, aggressive, mimickers, and other, or not-classified.

[1] See, e.g., Acharya, Almeida, and Campello, 2007, on the use of leverage and liquidity for hedging.
[2] Other related papers which have recently examined corporate liquidity include Denis and Sibilkov, 2010, Haushalter, Klasa, and Maxwell, 2007, Dittmar and Mahrt-Smith, 2007, Kalcheva and Lins, 2007, Faulkender and Wang, 2006, and Pinkowitz, Stulz, and Williamson, 2006.

To arrive at the classifications we exploit the observations that industry factors are important determinants of the various financial policies and that there is a certain amount of clustering at the industry level. However, while many firms tend to mimic industry norms (see e.g., Massa, Rehman, and Vermaelen, 2007, on repurchases), other firms maintain divergent, "rogue" policies with either a conservative or an aggressive bias. Firms also tend to diverge across financial policies, and a given firm may maintain a conservative rogue policy for leverage and payout, while contemporaneously may mimic the industry policy for risk management. We employ an empirical methodology to characterize each year a firm's conservative, aggressive, or mimicking behavior for each of the four financial policies we examine using the residuals from a first-stage financial policy regression at the industry level.[3]

If firms pursue conservative financial policies as a hedge, then we should expect a positive association between conservative policies and firm value. On the other hand, if conservative financial policies are simply reflecting agency costs, then we should expect a negative association between conservative financial policies and firm value. For example, regarding liquidity, a hedging motive behind a conservative liquidity policy would positively impact value by reducing the costs of external financing (Froot, Scharfstein, and Stein, 1993) or by avoiding high costs of financial distress when a firm's risk cannot be completely hedged through derivatives (Gamba and Triantis, 2009). On the other hand, if a conservative liquidity strategy (high cash holdings) reflects entrenched managers hoarding cash (Jensen, 1986) then we should expect a negative impact of such a strategy on firm value. Conversely, if aggressive financial policies (i.e., low cash holdings for liquidity) reflect absence of agency costs, we should expect a positive association between aggressive strategies and firm value; on the other hand, if aggressive

[3] Specifically, we classify a firm as pursuing a conservative financial policy (a conservative "rogue") in a particular year, if the firm has leverage (for capital structure), payout (for payout policy), cash and marketable securities to assets (for liquidity policy), and cash flow volatility (for risk management) (see e.g., Rountree, 2008) consistently in the lowest quartile (highest quartile for liquidity) of the distribution of the respective residuals during the last three years. Conversely, firms which persistently pursue financial policies in the upper quartile (lowest quartile for liquidity) of the residuals distribution for the last three years are characterized as pursuing aggressive financial policies (an aggressive "rogue"). Firms that stay consistently in quartiles 2 and 3 during the last three years are classified as "Mimickers." Firms that do not fall in the above categories are classified as "Other" or "Not Classified".

financial policies reflect absence of a hedging motive, then we should expect a negative association between such strategies and firm value.

Using a panel of large U.S. firms between 1975 and 2008, we examine the following questions: First, how is the array of conservative/aggressive corporate financial policies jointly distributed? Second, what are the valuation implications for firms that pursue conservative versus aggressive rogue financial policies? Is a rogue policy in one financial policy dimension (e.g., leverage) valued differently than a similar rogue policy in another dimension (e.g., payout)? Third, what are the value implications of joint rogue policy interactions (e.g., firms which pursue both a conservative liquidity and a conservative leverage policy)? Do various joint policies complement or impair the associated value implications? Fourth, do the value implications of policies vary over time? If so, what factors explain the time-variation of the premiums/discounts that we observe?

While prior work has directly or indirectly looked at the valuation implications of certain financial policies, it has done so largely on an independent basis. In this paper, instead, we examine the conservative or aggressive nature of these policies in a joint set up. The benefit of doing so is that we can explore the relative importance of pursuing such conservative or aggressive strategies across policies, that is, we can examine which one is valued the most; examine their interrelatedness, for example, examine which strategies are pursued most in combination and document their associated value effect; and explore whether a specific view, conservative or aggressive, permeates a firm in all its financial policies. This is important as we seek to understand why some firms appear underleveraged, or are holding abnormal amounts of cash (e.g., Graham, 2000, Bates, Kahle and Stulz, 2009, and Opler, Pinkowitz, Stulz, and Williamson, 1999).

We find significant evidence that conservative financial policies are generally associated with a valuation premium during 1975-2008, consistent with a hedging motive behind the use of such strategies. The evidence is the strongest for conservative leverage, liquidity and risk management policy.[4] That is, controlling for variables that are known to be associated with firm value, conservative rogue firms across

[4] For payout, we only find significant evidence in a few specifications.

these policies are associated with a higher value, suggesting that the market positively views such conservative financial policies. Our results are consistent with recent evidence in Bates, Kahle, and Stulz (2009) which find that firms doubled their liquidity during 1980-2006, and Mikkelson and Partch (2003) which find that firms with persistently high cash holdings during 1986-1992 outperform a sample of matched firms during 1992-1996. Our results are also consistent with Rountree et al (2008) which find that the market rewards firms with low cash flow volatility, with Graham (2000), whose evidence suggests that many firms appear largely underleveraged, and Lemmon, Roberts, and Zender (2008) which find that leverage ratios have moved towards more moderate levels over time. Our results, however, go beyond these papers in that they establish that to a large extent, the market views financial conservatism across several financial policies in a similar way and that the market positively values it, consistent with a hedging motive behind these policies. Our results further imply that there are several alternative ways for firms to hedge that are valued by the market.

The market not only seems to reward financially conservative firms but also seems to penalize firms with aggressive financial policies, although this is true in the majority of the alternative specifications that we employ during our entire sample period (1975-2008) for risk management and leverage only (and for payout, for about half specifications). Interestingly, in contrast, we find no valuation discount for firms pursuing aggressive liquidity policies (but no premium either). Finally, we find no consistent valuation effect for mimickers regardless of financial policy.

The magnitudes of these premiums (discounts) for conservative (aggressive) policies are also economically significant. Specifically, firms which pursue a conservative liquidity strategy are associated with an 8.8 percent higher Q than similar firms which pursue a mimicking strategy in liquidity (based on a coefficient estimate of 0.088 on the conservative liquidity dummy in our base-case regression). On the other hand, firms which pursue an aggressive capital structure strategy have a 3.8 percent lower Q than similar firms pursuing a mimicking strategy. Regarding the relative valuation impact of each policy, the coefficients from our base-case multivariate tests suggest that firms with a conservative liquidity are associated with the highest premium (8.8 percent vs. 3.7 percent for conservative leverage and 5.3 percent

for conservative risk management). This result is consistent with Gamba and Triantis (2009) who note that in their framework, "liquidity is an important, and in many circumstances the most effective risk management mechanism".

In further sub-period tests we find that conservative financial policies on leverage, liquidity, and risk management are generally associated with a premium during most sub-periods, although in some sub-periods the effect is weaker (for example, conservative leverage and risk management have earned a significant premium largely since the 1980s). On the other hand, aggressive leverage and payout policies are mostly associated with a discount during the last two decades and aggressive risk management during the most recent decade and in the 1970s. In subsequent tests we attempt to explain this variation. We estimate cross-sectional regressions where on the left-hand side we employ the estimated value coefficients on conservative rogue and aggressive rogue firms per financial policy, per year, and on the right hand-side variables that are related to time, the level of the policy and its variability, and the economic growth.

First, we test the hypothesis whether over time the market has become more conservative in that it rewards (penalizes) more conservative (aggressive) policies and find evidence consistent with this hypothesis for aggressive risk management only. Second, we test whether the level of the policy in a given year is associated to the market premium/discount for conservative/aggressive financial policy. Specifically, we examine whether during times when the aggregate level of a policy is high, the market rewards (penalizes) conservative (aggressive) policies more so than when it is low. We find such evidence for aggressive policies for all but payout, but only for liquidity for conservative policies.[5] This suggests that, for example, for leverage, firms' aggressive leverage policies are discounted even more during high debt periods. Third, we examine whether the economic environment and growth is linked with the premiums/discounts we observe; we hypothesize that in high growth periods, the market may be more accepting (less rewarding) of aggressive (conservative) strategies and that the reverse may be true during

[5] The interpretation on liquidity is the opposite, given the opposite definitions on aggressive (low) and conservative (high) liquidity.

economic downturns. We find this to be true only for conservative liquidity policies in that they are less (more) valued during periods of high (low) economic growth. Perhaps not surprisingly, this finding suggests that cash holdings are less valuable when there are plenty of valuable investment opportunities (during high economic growth); interestingly, however, even in such environment, conservative cash holdings are still valued at a premium on average.

Finally, in our last tests, we examine the extent to which these financial policies (conservative vs. aggressive vs. mimicking) are interrelated.[6] For example, do firms that pursue a conservative strategy in leverage also pursue conservative strategies in payout, liquidity, and risk management? We find few firms which pursue conservative (aggressive) policies in three or four policies in any one year, although we find many firms pursuing similar financial policies across two financial policies.[7] Regarding joint-policy distributions, we find that firms which pursue conservative leverage also pursue conservative liquidity policies and firms which pursue aggressive leverage also pursue aggressive payout and aggressive liquidity policies at a frequency significantly higher than what would occur by chance. We find significant evidence consistent with agency explanations in the valuation of such joint policies. For example, firms which pursue both a conservative leverage and a conservative liquidity policy are valued at a discount, even though those that pursue a conservative leverage or a conservative liquidity policy on its own are valued at a premium. On the other hand, reflecting perhaps the low or no agency costs arising from such strategy, firms which pursue both an aggressive leverage and an aggressive liquidity policy are valued at a premium, even though firms pursing an aggressive leverage policy on its own are valued at a discount.

[6] Earlier work on interrelated financial policies include among other, Jalilvand and Harris (1984), Geczy, Minton, and Schrand (1997), Graham and Rogers (2002), Acharya, Almeida, and Campello (2007), and Haushalter, Klasa, and Maxwell (2007).

[7] One example of a firm pursuing similar financial policies is Emerson Electric Company, which in the years between 2002 and 2006 pursued aggressive financial policies relative to its peers in leverage, payout, and liquidity, with leverage levels between 36 and 44 percent, payout levels between 49 and 88 percent of earnings, and liquidity levels between 2 and 8 percent of assets.

We perform several robustness tests to ensure that our results are not based on a specific cut of the data or the use of a particular specification. First, we acknowledge that we had to make several decisions regarding our sample and the way we define conservative rogue, aggressive rogue and mimicking firms; however, our results are qualitatively similar using several alternative industry peer classifications, such as assuming the top half of firms based on assets within a sector instead of the top quartile,[8] or even the entire set of firms within the Fama-French (1997) industries, and define rogues/mimickers based on the last 5 years (instead of the last 3) of systematically being in the top/bottom or middle quartile. [9] Second, we employ a variety of alternative first-stage specifications for each financial policy to make sure that our results are not due to an omitted variable in the first-stage regressions. Third, to control for unobserved heterogeneity we employ a firm-fixed effects model and to control for correlated errors within firms over time we cluster standard errors at the firm level. Finally, to avoid cross-correlations in our sample stemming from the five-year rolling cash flow volatility estimation, we employ a non-overlapping sample, in which we employ cross-sections every 5 years, instead of employing all years. None of these tests alters our result that on average, over the entire sample period between 1975-2008 conservative financial policies are generally associated with a higher valuation and that aggressive financial policies are generally associated with a lower valuation.

Of course, endogeneity is a concern in tests such as ours. It could be that the effect does not run in the direction from financial policy to value as we have implied here but in the opposite one, namely that it is high (low) growth (Q) firms which engage in conservative (aggressive) financial policies and not the other way round. However, for example regarding risk management, one would expect that high-Q firms would be associated with high cash flow volatility (that is, aggressive risk management policies) and not with conservative risk management policies yielding low cash flow volatility. It also seems unlikely that low-Q (low-growth) firms have more volatile cash flow and pursue aggressive risk management

[8] We restrict our sample to the upper quartile of firms in each industry in terms of asset size to create industry peer groups in a more realistic way.

[9] Though ad-hoc, requiring a three-year measure largely ensures that what we capture is not a mere outlier effect that occurs in one year, but a persistent financial policy choice of the firm which sustains for some time.

policies.[10] Hence, we argue that the direction of the effect is more likely the one we have hypothesized. As an additional test we lag financial policies by 3 years and examine whether lagged conservative (aggressive) policies are associated with higher (lower) values and find that they are. It is less likely that Q levels three years later yield a conservative or aggressive preference in financial policies three years earlier (which would mean a consistently high or low financial policy for years -6 to -3).

Our paper contributes to the literature by examining how alternative financial policies can play a role in risk management, and by investigating the market valuation of conservative, aggressive, and mimicking financial policies looking across four alternative financial policies, leverage, payout, liquidity, and risk management, over a long time-period. Earlier theories would predict that financial policies are irrelevant for firm value, yet recent theories, empirical evidence, as well as evidence from CFO surveys, suggests that financial policies do matter for firm value. In this paper we find that the market rewards (penalizes) conservative (aggressive) financial policies with a premium (discount).

The remainder of this paper is organized as follows. Section II describes our sample and methodology. Section III presents our results. Section VI concludes.

II. Sample Description and Methodology

Our sample selection begins with all Compustat firms from 1975 to 2008. We define industries using the Fama-French classification (1997) based on 4 digit SICs. We exclude utilities (SIC codes in 4900s) and financials (SIC codes in 6000s) as regulated entities as well as firms in the MISC and BUSSV industries based on the ambiguity of these industry definitions. To account for realistic benchmarking in financial policies among firms that are peers in a given sector and to focus on the largest firms in the economy, we limit our sample to all U.S. firms in Compustat whose total assets in the previous year exceed the annual 75th total assets percentile by industry and year.[11] To ensure sufficient cross-sectional

[10] See also Rountree et al (2008) for a similar argument.
[11] Sampling only large firms has the additional benefit that our results are not driven by distressed firms with low liquidity, very low or very high debt, low payout, and high volatility.

variation in policies, firm-year observations are included only for those industries that maintain more than 10 firms in the industry in a particular year.

Table 1 panel A, reports summary statistics on the sample characteristics. Our sample firms are relatively large as they belong to the upper quartile of their sectors and have a mean (median) value of assets (ASSETS) of $7.0 ($1.6) billion. Firms are, on average, profitable and growing with a return on assets (ROA) of 16.4 percent and growth in sales of 13.6 percent.

We define four annual financial policy measures: a) leverage, using the ratio of total debt to total book capital as a proxy; b) payout, using a three-year dividend payout as a proxy;[12] c) liquidity, using the ratio of total cash and marketable securities to total assets as a proxy; and d) risk management, using cash flow volatility (the five-year standard deviation of quarterly operating cash flow to assets) as a proxy.[13] In robustness tests we also use alternative definitions for leverage (market leverage) and payouts (which includes share buybacks). Our sample firms have on average 34.8% leverage but there is significant variation in the sample (19.8% at the 25th percentile and 48.1% at the 75th percentile). On average, our sample firms pay about 36% of their earnings as dividends, but as with leverage, there is significant variation in payouts (standard deviation of 60%). For liquidity, on average 10% of our sample firms' assets are in cash and marketable securities. Finally, as discussed earlier, we use cash flow volatility as a proxy for risk management and find that our firms have an average cash flow volatility of 0.018. We measure firm value using the ratio of the market value of equity and book value of debt to total assets used as a proxy for Tobin's Q. As commonly done in previous studies we use the natural log to control for skewness in the variable. On average, our sample firms have a Tobin's Q of 1.18 (log Q of 0.173).[14]

[12] Specifically, to avoid extreme variations from year to year (often as a result of net income), we smooth dividend payouts using the sum of the past three years of dividends divided by the sum of the past three years of net income.

[13] Rountree et al (2008) find that cash flow volatility proxies for more than just risk management activities, compared to actual derivatives usage, employed by most papers in the area (e.g., Allayannis and Weston, 2001, and Graham and Rogers, 2002). Our sample period which begins in 1975 does not allow us to use the latter proxy, as derivatives disclosures did not become mandatory for most firms until 1994 (Statement of Financial Accounting Standards (SFAS) 119). Earlier work by Barton (2001), however, finds that firms that use financial derivatives have low cash-flow volatility.

[14] Using Tobin's Q as a proxy for firm value has been quite common among various literatures in corporate finance (see e.g., Lang and Stulz, 1994 on corporate diversification, Servaes 1991 on corporate takeovers, Doidge, Karolyi,

Our starting date for our cross-sectional tests (1975) reflects several data constraints that we face such as the existence of quarterly data for operating cash flow used to estimate cash flow volatility and the requirement that firms fall in the upper (lower) financial policy quartile for three years in a row for classification.

Panel B provides some detail on the number of industries and the number of firms within each industry over the sample period. Some industries, such as RTAIL and ENRGY, have a long time-series of valid years (34) while others, such as MINES or BOXES have only 7 years in which the number of firms in the sector is at least 10. The minimum and maximum number of firms within a sector in a given year also varies significantly across sectors. Sectors like MINES show small variation and include between 10 and 12 firms while sectors such as retail include between 41 and 76 firms.

For each industry, year, and financial policy we estimate cross-sectional regressions using firm characteristics on size (log of assets), age, current and lagged profitability (ROA), and sales growth to predict financial policy for that year, as shown below.

$$FP(i,t)=a+LogASSETS(i,t)+AGE(i,t)+ ROA(i,t)+ROA(i,t-1)+SALESGR(i,t)+e(i,t) \qquad (1)$$

We use the residuals from the financial policy regressions to classify firms. Since the models are estimated by industry and year, the residuals represent the unexpected financial policy value for the firm for that year. Hence, firms are considered pursuing a conservative policy only to the extent that the financial policy maintained is low in an unexpected sense. Such abnormal financial policies should be relevant for pricing if financial policies impact value at all. However, we also examine the robustness of this assumption by classifying firms according to actual level of policy used rather than employing the residuals from the policy regressions and find our results using this alternative classification generally unaltered.

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and Stulz 2004, on cross-listing, La Porta, Lopez de Silanes, Shleifer, and Vishny, 2002, on equity ownership, and Allayannis and Weston, 2001, on risk management).

As an alternative to using a common model (same factors) for each financial policy for the first-stage regressions (model (1)), we also use policy-specific (custom) models consistent with prior literature. For example, we use proxies for tax-rate, asset tangibility, size, payout, liquidity, and volatility as explanatory variables in the leverage regressions (see e.g., Allayannis, Brown, and Klapper (2003)); controls for R&D intensity, net working capital ratio, size, leverage, payout and liquidity for risk management (see e.g., Geczy, Minton, and Schrand (1997)); controls for profitability, size, leverage, liquidity, and volatility for payout (see, e.g., Chay and Suh (2009)), and controls for size, capital expenditures, net working capital, profitability, growth, leverage, payout, and volatility for liquidity (see e.g., Dittmar et al. (2003)). Our results are qualitatively similar using these policy-specific models.[15]

Further, to ensure that the maintained financial policy is part of a persistent policy and not simply an outlier year event, we use the residuals over a three-year rolling horizon to classify firms into four groups. Firms that maintain a policy above the 75th percentile for the past three years are classified as "Aggressive Rogues" for that policy. Firms that maintain a policy below the 25th percentile for the past three years are classified as "Conservative Rogues" for that policy and year. For liquidity, the classifications are reversed: firms which maintain a policy above (below) the 75th (25th) percentile for the past three years are classified as "Conservative ("Aggressive") Rogues" for that year. Firms that maintain a policy between the 25th and 75th percentile for the past three years are classified as "Mimickers" for that policy and year. Firms which do not maintain a consistent mimicking or rogue policy over the past three years are classified as "Other" or "Not-classified."

Figure 1 provides summary statistics on the percentage of firms that are classified into the first three classifications by year. A few interesting facts emerge. First, there is a consistently higher percent of firms classified as conservative rogues in liquidity than aggressive rogues over time and the percent of conservative rogues ranges between 8% (in 1975) and 14% (in 1993) (Figure 1c). On the other hand, there is generally an opposite trend with respect to payout where aggressive payout policies are

[15] We have estimated variants of these models in which we do not include controls for the other financial policies and find similar results.

maintained by a higher percent of firms than conservative ones (Figure 1b). The other two policies (leverage and risk management) have a similar percent of firms with conservative and aggressive policies on average and for leverage, they range between 8%-15% for aggressive policy and 9%-15% for conservative policy. However, in the majority of the years we observe a slightly higher incidence of conservative rogues for leverage (Figure 1a). The percent of firms maintaining conservative or aggressive policies in risk management is much lower and ranges between 5%-11% for conservative ones, for example. We do not observe a clear pattern regarding a systematic preference for conservative or aggressive rogue policy for risk management (Figure 1d).

Table 2 presents summary statistics on our four financial policies at the sector level. Our final sample contains 32 different industries. We present results using the time-series mean of the annual 50^{th} percentiles (and the mean of the 25^{th} and the 75^{th} percentiles) for leverage, payout, liquidity, and cash flow volatility at the industry level. Not surprisingly, sectors vary significantly across financial policies: for example, the GOLD sector has the lowest average 50^{th} percentile of the leverage ratio (0.15), while the FUN sector has the highest (0.53). There is significant dispersion across policies within a sector and across sectors within a policy. For example, the GOLD sector has a 25^{th} percentile of leverage of 0.04 and a 75^{th} percentile of 0.29 whereas sectors such as PAPER have a tighter distribution (0.34 and 0.50 for the 25^{th} and 75^{th} percentile respectively). Some sectors such as GOLD and MINES pay out a significant amount of net income (0.45 and 0.47 respectively) but they also have significant variation in their payout policy (for example, GOLD payout policy has a mean of 0.29 (25^{th} percentile) and 0.81 (75^{th} percentile)). The CHIPS, COMPS, DRUGS, and TOYS sectors have the highest liquidity ranging from 0.14 to 0.16. On the other hand, the BOOKS, PAPER, and TELCM sectors have some of the lowest liquidity with a 50^{th} percentile of only 0.03. Finally, cash flow volatility ranges (at the median) across sectors from 0.009 (TELCM) to 0.025 (GOLD).

III. Empirical Results

Frequency Distribution of Financial Policies

In this subsection we examine the stability of conservative and aggressive financial policies over time and their own, as well as their joint frequency distribution. In Table 3 we report the results of the transition matrix of the four classifications (conservative, aggressive, mimic, and the not classified firms) from each year to the next in the sample. Because of our requirement that a firm remains in the same upper quartile for three consecutive years to be considered an aggressive rogue for that policy, and similarly we have imposed a three-year criterion for conservative rogues and mimickers, it is not possible to transition between these categories without passing through the not classified category. The most frequent strategies with conservative or aggressive bias are conservative leverage and liquidity and aggressive payout strategies with 12.7%, 12.1% and 12.0% of firms pursuing them respectively. On the other hand, only 8.4% of firms pursue an aggressive liquidity strategy and only 9.0% a conservative cash flow volatility strategy. Among mimicking strategies, the mimicking strategy on leverage has the highest frequency (19.9% of firms) (column 1, Table 3).

The table presents the percentage frequency distributions of being in one category in the current year, classified according to prior year category. For example, out of the aggressive rogues in leverage in any one year, on average, 74.15% (8.35% out of 11.26%) remain aggressive rogues the following year. The most stable classification among conservative or aggressive rogues is conservative rogues in leverage in which about 77% (9.74% out of total 12.66%) of the conservative rogues in any year remain in that classification in the following year. On the other hand, aggressive (conservative) rogues in cash flow volatility maintain their classification in the following year only 67% (63%) of the time.

While Table 3 presents results on the stability of the conservative, aggressive, and mimicking strategies over time for the four financial policies, in Table 4, we show the interaction frequency distributions across policies.[16] Several interesting facts emerge when we examine joint strategies. First,

[16] Note that there is a slight sample change in the baseline frequency distribution statistics from Table 3 to Table 4 based on the lagging structure in Table 3.

3.6% of firms pursue both a conservative leverage and a conservative liquidity strategy; this is significantly higher than the frequency of firms pursuing a conservative leverage and an aggressive liquidity strategy (with a t-statistic of -14.0). It is also significantly higher than the uncorrelated joint frequency of 1.5% (which is equal to the product of the individual frequencies 12.4% for CR_LEV and 11.8% for CR_LIQ reported on column 1, Table 4). Second, firms that pursue an aggressive leverage strategy are also more likely to pursue an aggressive payout strategy (2.0%) and an aggressive liquidity strategy (2.2%) (significantly higher than pursuing a conservative payout and a conservative liquidity strategy respectively). The uncorrelated joint frequency for these values is 1.3% and 0.9%, respectively. Third, firms which pursue a conservative payout strategy are also more likely to pursue a conservative liquidity policy (than an aggressive liquidity policy).[17] Finally, surprisingly, some policies that were expected to be related were found not to be so. For example, the nature of the leverage policy (aggressive/conservative) appears to be independent of the respective risk management policy. We test some of the valuation implications of these joint strategies further below.

Univariate Tests of Valuation Effects

In this subsection we present univariate tests of the value effects associated with rogue financial policies. Table 5 presents univariate results across the four financial policies. Specifically, the last two columns present tests and associated t-statistics for the difference in mean Qs for the sample of aggressive and conservative rogue firms versus mimickers respectively across the four financial policies we examine. We find significant evidence that conservative liquidity and conservative risk management policies are associated with higher valuations relative to a control sample of mimickers and that aggressive leverage is associated with lower valuations (t-statistics of 6.10, 6.15, and -6.33 respectively). For example, the mean log q of firms pursuing a conservative liquidity strategy is 0.29 versus 0.16 for mimickers. For payout, rogue policies on either the conservative or aggressive direction are associated with lower valuations (t-

[17] Although firms pursuing a conservative payout strategy may end up with more cash on hand, this does not necessarily mean that they systematically keep this cash and not invest it, for example. Hence, we do not expect this relationship to be a mechanical one.

statistics of -2.85 and -2.33). Because many other factors affect Qs, we perform further multivariate tests in which we control for factors that have been shown to be related to firm value in prior work.

Table 5 (first four columns) also presents median values of the levels of financial policies for firms pursuing conservative, aggressive, mimicking, or "not classified" strategy. For example, firms pursuing conservative leverage strategies have median leverage of 0.14, whereas those pursuing aggressive leverage strategies have median leverage of 0.53, thereby reflecting our classifications of conservative and aggressive. Similarly, firms pursuing an aggressive liquidity strategy have only 0.02 at the median in cash and marketable securities out of total assets versus 0.19 for those pursuing a conservative liquidity strategy.

Multivariate Valuation Tests and Results

In this section we present multivariate tests of the value effects of rogue financial policies. We explicitly control for factors which theory suggests should affect firm value and prior empirical work has confirmed to be important.[18] Specifically, we control for firm size using the log of ASSETS and profitability using ROA. We expect profitability to be positively associated with firm value, and make no prediction for ASSETS: a positive relationship between size (assets) and firm value would be reflective of size being a proxy for market power, whereas a negative relationship would be reflective of agency costs (see e.g., Lang and Stulz (1994)). Our measure of sales growth captures growth opportunities for the firm and we expect the coefficient on this variable to be positive. We also control for the age of the firm using the number of years a firm has data on Compustat. We expect that younger firms with more growth opportunities should have a higher Tobin's Q and hence expect a negative relationship between a firm's age and Q. We also control for intangible asset intensity and expect the coefficients on these controls to be positive. As in prior work, we use R&D to assets and advertising to assets as our proxies for intangibles. Finally, we control for industry and year effects.

[18] See, e.g., Lang and Stulz (1994), and Allayannis and Weston (2001).

To examine the valuation implications for conservative, aggressive and mimicking financial policies, we include indicator variables that denote whether a firm pursued such strategy for the particular financial policy (for example, we use CR_LEV to indicate a firm with a conservative leverage policy, AR_LEV to indicate a firm with aggressive leverage policy and NC_LEV to indicate a firm which falls in the "not classified" category). Mimickers are not explicitly included in the model and are therefore our control sample. Indirectly, we can infer the coefficient on mimickers as the opposite from the coefficient on the "not classified". We model it in this way (that is, including dummies for conservative, aggressive and not-classified financial policies) so that the coefficients can be interpreted as "relative to a mimicking strategy". For example, a positive coefficient on a conservative strategy should be interpreted as positively valued relative to a mimicking strategy.

Table 6 presents the results of the multivariate tests. Column 1 presents the results for our entire sample (1975-2008) in which the first-stage financial-policy regressions are estimated using model (1) described earlier, using common regressors across policies. The evidence suggests that conservative financial policies are positively and significantly associated with firm value for three out of the four financial policies that we examine (leverage, liquidity, and risk management). We also find a significant negative association between firm value and aggressive rogue policies for three out of four policies (leverage, payout, and risk management). In contrast, we find no significant valuation impact for firms in the not classified (or mimicking) category. These results are consistent with a hedging value effect behind the value of conservative financial strategies and a lack of hedging behind the value of aggressive strategies. Regarding the relative valuation impact of each policy, the coefficients of our multivariate tests suggest that firms with a conservative liquidity are associated with the highest premium (0.088 vs. 0.037 for leverage and 0.053 for risk management). This is consistent with liquidity playing an important role as an alternative risk management policy (Gamba and Triantis (2009)). These results suggest that

conservative financial policies are generally positively associated with firm value whereas aggressive policies are generally negatively associated with firm value.[19]

The coefficients on our control variables are generally consistent with theoretical priors and extant empirical evidence (e.g., Lang and Stulz 1994, and Allayannis and Weston 2001, among others). Specifically, although we make no predictions on size, however, consistent with prior studies, we find a negative relationship between size and firm value, potentially reflecting agency costs of size. We find that profitability and growth are positively and significantly related to firm value consistent with our priors. Finally, as expected, R&D and advertising expenditures (both as a percent of assets) are positively and highly significantly related to firm value.

Endogeneity is a concern in these tests and it could be that the effect does not run in the direction from financial policy to value as we have implied here but in the opposite one and that it is high- (low) Q firms which engage in conservative (aggressive) financial policies and not the other way round. However, regarding risk management for example, one would expect that high growth (Q) firms would be associated with high cash flow volatility (that is, aggressive risk management policies) and not conservative risk management policies, yielding low cash flow volatility. It is unlikely that low-Q (low-growth) firms have more volatile cash flow and pursue aggressive risk management policies. Hence, we argue that the direction is more likely the one we have hypothesized. As an alternative test to address endogeneity, we lag financial policies by 3 years and examine whether lagged conservative (aggressive) policies are associated with higher (lower) values. It is less likely that Q levels three years later yield a conservative or aggressive bias in financial policies three years earlier (which would mean a consistently high or low financial policy for years -6 to -3). Column 2 of Table 6 shows the results of this test. We find that our results remain unaltered (except for the coefficient on AR_LEV which is no longer significant).

[19] We also estimated a model in which we clustered standard errors at the firm level. With the exception of the coefficients on aggressive payout and aggressive risk management which are no longer statistically significant (and the coefficient on conservative leverage which is now significant at the 10 percent level), the remainder of our results are unchanged.

To control for unobserved heterogeneity among firms we estimate a firm-fixed effects model (column 3, Table 6). Results from this firm fixed-effects model are similar to the base-case results presented in column 1 with the exception of the coefficients on conservative leverage and aggressive risk management which are no longer statistically significant.

In columns 4, 5, and 6 we test for the affect of the specification of our first-stage model that is used to classify firms. In columns 4 and 5 we employ specifications for the first-stage regression that include custom variables for each policy. The leverage model includes the prevailing tax rate, asset tangibility, and total assets as regressors. The payout model includes profitability and total assets as regressors. The liquidity model includes the capital expense ratio, the net working capital ratio, profitability, total assets, and sales growth as regressors. The risk management model includes the R&D ratio, the net working capital ratio, and total assets. In column 4, the first-stage specification also includes the other financial policies as regressors in each financial policy model (for example, for leverage, we also include payout, liquidity, and volatility), whereas in column 5 we do not. The inclusion of the other policies or not in the first stage regression reflects a view of whether financial policies are independent or jointly determined. In column 6 we use an unconditional specification where no firm characteristics are used to determine the abnormal policy value but rather the raw values are used directly. Our results are relatively robust to the specification of the first-stage model. The most important assumption appears to be regarding the inclusion of the other policy values. The coefficients on the AR_PAY and CR_VOL are no longer statistically significant once the other financial policies are included in the first-stage model. However, we still find a significant effect for conservative leverage and liquidity, as well as payout, and a significantly negative effect for aggressive leverage and volatility.

As an additional test of the common implications of conservative and aggressive policies, we construct an index of conservatism, aggressiveness, and mimicking, and examine whether firms which pursue more conservative (aggressive) strategies are valued higher (lower) than those pursuing fewer

conservative (aggressive) strategies (that is, regardless of which financial policies).[20] We construct the indices as follows: for each firm, in each year, we add 1 for each financial policy that the firm is classified as conservative (for the conservatism index) and similarly for the aggressiveness and mimicking indices. We find a strong positive association between the conservative index and firm value and a strong negative association between the aggressive index and firm value, thereby confirming our earlier results that conservative (aggressive) financial policies are positively (negatively) associated with firm value. While this test is agnostic to the specific policies that a firm chooses to be conservative or aggressive in, in further tests below we explicitly examine specific joint strategies and their valuation impact.

We perform several additional robustness tests. Specifically, to examine the robustness of our results to our 3-year requirement to classify a firm as following a conservative, aggressive, or mimicking strategy, we extend it to a 5-year requirement –that is, for example, for a firm to be characterized as following a conservative strategy in leverage, the residuals from the first-stage regression have to consistently fall in the lower quartile of the distribution for five years in a row. Although this classification process is quite demanding from our data, most of the results remain, namely that conservative strategies in leverage, liquidity, and risk management are positively associated with firm value and in addition, aggressive risk management strategies are negatively associated with firm value (and aggressive leverage is negative and significant at the 10 percent level) (column 7).

Second, to examine the robustness of our results with respect to our sampling criterion of including the top quartile of firms per industry year, we perform our test using two different size thresholds: 90th percentile and 50th percentile. Columns 8 and 9 report the results for these tests. The findings when restricting the sample to only the top 10 percent of firms are weaker but several of our findings remain (significant positive coefficients on CR_LIQ and CR_VOL and significant negative coefficient on AR_LEV). The findings using the larger 50th percentile are highly significant and similar with the baseline results reported on column 1. We also examine a specification in which we employ all firms in our sample with available data; such sample yields highly statistically significant results in line

[20] To conserve space we do not report results from this test. Results are available upon request.

with the baseline results and in addition, we find that the coefficient on AR_LIQ which was not significant when using a 75th or a 50th percentile cutoff, is negative and significant at the 1 percent level in this sample (results not reported).

As another robustness test, we alter the definition of several of the financial policy definitions to test for impact. Our first specification replaces the book leverage definition with a market leverage definition, where leverage is defined as the total book value of debt divided by total book debt and market capitalization of common equity. This specification is reported in column 10. The alternative definition dramatically increases the correlation between leverage and Q. The coefficient on CR_LEV increases to 0.098 (t-stat=8.31) and the coefficient on AR_LEV decreases to -0.205 (t-stat=-16.30). To some extent, the negative correlation with AR_LEV may be influenced by the mechanical relation with market capitalization being in the numerator of Q and in the denominator in the alternative leverage definition. Next, we augment the payout ratio to include share buybacks (in addition to dividends) over the past three years. These results are reported in column 11. We find that all previous results still hold and the negative coefficient on aggressive payout is economically and statistically significant.

Finally, we have also performed a test using non-overlapping data to examine the robustness of our result to potential cross-correlation across years in our cash flow volatility measure which requires five years of data to estimate (results reported in column 12). Not surprisingly, given the lower power of this test the results are somewhat weaker, but we still find significant positive associations for conservative leverage and liquidity and a significant negative association for aggressive risk management.

In general, across all specifications, we find the strongest results for conservative leverage, liquidity, and risk management strategies and aggressive leverage and risk management strategies. For example, we find a significant positive association between conservative liquidity and Q in all twelve (out of twelve) alternative specifications that are reported in Table 6 and in ten out of the twelve for conservative leverage.

While the results from our entire sample period spanning almost thirty-five years yield significant evidence that conservative (aggressive) financial policies are generally positively (negatively) associated

with firm value, given that this is a long time period that spans booms, recessions, and generally very different market characteristics, it is instructive to examine our hypothesis within sub-periods. This will allow us to examine whether the market has valued conservative and aggressive policies similarly across time.

Table 7 presents the results from sub-period tests in which we have divided the sample in four sub-periods, the "1970's", the "1980's", the "1990's" and the "2000's". The results show that some conservative policies have been consistently positively associated with firm value across most sub-periods, but for others, this is more of a recent phenomenon. Specifically, conservative leverage strategies are significantly positively associated with firm value during the last three sub-periods (since the '80s) although the significance is weaker (at the 10 percent level) during the 2000s. Similarly, conservative cash flow volatility strategies are also significantly positively associated with firm value during the last three sub-periods, however the impact seems to be the largest during the last sub-period (coefficient of 0.090 in the 2000s). Conservative liquidity strategies have also been rewarded with a higher valuation since the 1980s (in the 1990s, the significance is at the 10 percent level). We also observe a change in the market's view regarding conservative payout strategy from a significantly positive association with value during the 1980's to a significantly negative during the 1990's (but otherwise insignificant during the rest of the sub-periods). Finally, regarding aggressive policies, we observe a significant negative association in the 2000s for three out of the four financial policies (leverage, payout, and risk management). However, for leverage and payout this effect has also been significant in the 1990s and for cash flow volatility also during the 1970s. In summary, although we find generally a significant positive effect for conservative strategies (except for payout) across most decades and a negative effect for several aggressive strategies across half of the sub-periods, the effect has been somewhat stronger during the last decade. This pattern can also be seen in Figure 2 (a-d) which shows the value coefficient for the four alternative financial policies estimated on an annual basis (instead of per sub-period). Specifically, Figure 2c documents the increase in the value effect of conservative liquidity strategies in the post-2001 period and Figure 2a shows the generally positive value effect for conservative leverage strategies post 1980.

Time-series tests and results

In the previous section we report some changes in how the market has viewed financial policies over time and document a generally stronger value effect during the last decade. In this section we test specific hypotheses to explain this time variation.

First, we directly test whether the market has become more conservative/ aggressive over time across the various financial policies that we examine by testing whether the value effect of such strategies has increased over time. We use TIME as an indicator variable to capture a potential time effect. In these tests, we employ valuation coefficients which are estimated each year, for each type (conservative, aggressive), for each policy (leverage, payout, liquidity, and risk management), as shown in Figure 2 (a-d). A positive (negative) coefficient on time would suggest that the market has rewarded (penalized) with a higher premium (higher discount) a conservative (aggressive) strategy for this particular financial policy over time. Second, we test whether booms or busts affect the market's view of a policy. For example, it is possible that conservative policies are valued less during boom times than during bust times. We use the growth in real GDP (REALGDP) as a proxy to test this hypothesis. Finally, we examine the overall level and volatility of the financial policy and their impact on the value effect. For example, for leverage, we test whether high levels of leverage on average are associated with the market discounting (valuing) aggressive (conservative) leverage policies more and whether a high volatility of leverage is associated with the market valuing conservative leverage policies more. In our tests, we use our annual mean and standard deviation of each policy, to test for such effects.

Table 8 reports the results from these time-series tests. Columns 1 and 2 show the results using the conservative and aggressive value coefficients respectively, while column 3 shows the results using the difference between the conservative and the aggressive value coefficient as our dependent variable. First, we find evidence consistent with our hypothesis that over time the market has valued more conservative strategies and/or penalized more aggressive ones, only for aggressive risk management policies (a coefficient of -0.006 on aggressive value coefficients on risk management). Consistent with

this result we also find a positive coefficient on time for risk management (0.01) when using the difference in the value coefficients as dependent variable (column 3) suggesting a higher valuation difference over time between conservative and aggressive risk management policies.

Second, we test whether the level of the policy in a given year is associated with the market value impact of conservative or aggressive financial policy. For example, for leverage, we examine whether during times when the aggregate level of leverage is high, the market penalizes (rewards) aggressive (conservative) leverage strategies more. We find significant evidence for this hypothesis regarding aggressive policies for leverage and (weakly significant) for risk management (coefficients of -1.42, and -24.30 for aggressive leverage and risk management respectively). Results are statistically stronger for risk management when we examine the difference in the value coefficients reported in column 3 of Table 8: we find that the higher the level of cash flow volatility, the higher the difference of the value effect between conservative and aggressive risk management policies. In contrast, for liquidity, we find the opposite result: the higher the level of liquidity, the higher the premium for conservative liquidity strategies, and the higher the discount for aggressive strategies.

Third, we examine whether economic growth is linked with the premiums/discounts we observe; we hypothesize that in higher growth periods, the market may be more accepting (less rewarding) of aggressive (conservative) strategies and that the reverse may be true during economic downturns. We find this to be true only for conservative liquidity strategies, in that during economic growth periods the market seems to be assigning lower premiums to conservative liquidity policies (coefficient of -0.017 on the REALGDP variable). We find evidence consistent with this also when looking at the difference of the value effects reported in column 3. Finally, we test whether the dispersion of the financial policy is associated with the premiums/discounts we observe. We expect that the higher the dispersion (the higher the uncertainty regarding the level of the policy), the higher the discount (premium) for aggressive (conservative) policies. We find no significant evidence in support of this hypothesis when testing conservative/aggressive policies individually but find support for leverage when we examine the difference in the value coefficients as reported in column 3 (coefficient of 2.721). That is, the difference

between the premium for conservative leverage and the discount for aggressive leverage is higher, the higher the dispersion in leverage.

Interactions

In the previous sections we document a generally positive association between conservative financial strategies and firm value and a generally negative association between aggressive financial strategies and firm value. In this section we examine interaction effects and whether strategies that are pursued in combination yield any valuation effects. In Table 4 we show results for the likelihood that a firm employs joint conservative/aggressive strategies across policies and find, among other, a higher likelihood that firms pursue joint conservative policies in leverage and liquidity, and aggressive policies in leverage and payout, and leverage and liquidity. In Table 9, we examine the valuation effects of such joint strategies. Column 1 shows valuation results for the strategies on their own and the subsequent columns show results from interaction terms (for example, the second column shows the valuation effect from a joint conservative leverage and aggressive payout policy and a joint aggressive leverage and aggressive payout policy). Note that although we present the results in this way for more clarity, we have estimated one regression model (with 24 interaction variables). Our interaction results are quite revealing: we find a significant negative association with firm value for firms that pursue a conservative leverage and a conservative payout strategy (coefficient of -0.066) and a similar effect for firms that pursue a conservative leverage and a conservative liquidity strategy (coefficient of -0.059). In contrast, we find a positive association with value for firms which pursue both an aggressive leverage and an aggressive liquidity strategy (coefficient of 0.079). Hence, while a conservative liquidity and a conservative leverage strategy are positively associated with value on its own (coefficients of 0.108 and 0.062 respectively), when they are pursued in combination, they are negatively valued. Similarly, while aggressive leverage is negatively associated with value on its own, when pursued in combination with aggressive liquidity, it is positively valued. A potential explanation of these results is that while the market prefers conservative financial policies on average, the pursuit of a combination of conservative leverage and liquidity may be

reflective of agency costs present in such a situation when a company employs both little debt and has a lot of cash on its balance sheet, resulting in a negative valuation effect. A similar effect may also be underlying the negative valuation effect of firms pursuing a combined conservative leverage and conservative payout strategy (coefficient of -0.066). Conversely, whereas the market penalizes aggressive leverage strategies on their own (coefficient of -0.042), the combination of both an aggressive leverage and an aggressive liquidity policy may be reflective of the absence of agency costs (and the positive influence of the monitoring effects of leverage and discipline of low liquidity), resulting in a positive valuation effect.

IV. Conclusion

In this paper we examine the frequency distribution of conservative and aggressive financial policies and the associated valuation effects. We examine this using four alternative financial policies (leverage, payout, liquidity, and risk management) using a large sample of firms during 1975-2008. We find significant evidence of a positive association between conservative financial policies and firm value and a negative association between aggressive financial policies and firm value. The effect is strongest for conservative leverage, liquidity and risk management strategies and aggressive leverage and risk management strategies. These results are consistent with a premium for hedging for the use of conservative policies and discount for lack of hedging for aggressive strategies. The magnitude of the conservative liquidity premium is the largest among alternative conservative financial policies and potentially reflects the use of liquidity as an alternative hedging strategy (Gamba and Triantis, 2009). Over time, across policies, the value effect seems to be the strongest during the last decade. We find that the level of the policy also affects the magnitude of the effect for aggressive leverage and risk management, that is, the higher the average leverage (cash flow volatility) in a year, the more the market penalizes firms pursuing aggressive leverage (risk management) strategies. We also find that the positive effect of conservative liquidity is tempered when there is high economic growth; in other words, the value of a conservative liquidity policy is lower (higher) when there is high (low) growth. Finally, we find

important interaction effects potentially reflecting the impact of agency costs: specifically, while conservative liquidity and conservative leverage policies on their own are positively valued, the pursuit of these two policies in combination is negatively valued. Our results overall point to the significance that the market attributes to financial policies and their potential hedging value and add to evidence found in previous work by Graham and Rogers (2002), Dittmar, J. Mahrt-Smith, and Servaes (2003), and Bates, Kahle, and Stulz (2009), among others.

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Appendix 1

Advertising Expenditures Ratio: This item represents the cost of advertising media (radio, television, newspapers, periodicals) and promotional expense (Compustat data item XAD) divided by total revenue (Compustat data item SALE). If advertising expenditures are not reported we set it equal to zero.

Age: Defined as the number of years a firm (identified by GVKEY) has data on Compustat.

Capital Expenditures: This item represents capital expenditures restated up to 10 years for acquisitions, accounting changes, and/or discontinued operations. Restated data is collected from summary presentations and is reported by the company.

Cash-flow Volatility: Standard deviation of operating cash flows divided by total assets over the past five years (Compustat quarterly data item OIBDQ/ ATQ). When at least 10 years of quarterly data is not available, the standard deviation of the annual cash flow ratio over the past five years is used (Compustat OIBDP/AT).

Leverage: Constructed as the ratio of total debt to total book capital:
(Compustat DLC + DLTT)/(DLC+DLTT+CEQ)

Liquidity: Constructed as total cash and marketable securities divided by total assets
(Compustat CHE/ AT)

Long-term debt: Compustat annual data item DLTT. This item represents debt obligations due more than one year from the company's balance sheet date or due after the current operating cycle.

Number of common shares outstanding: Measured at the end of the fiscal year in millions (Compustat CSHO). This item represents the net number of all common shares outstanding at year-end.

Payout: Sum of the past three years of cash dividends (Compustat DVT) divided by the sum of the past three years of net income (Compustat NI). If the sum of the past three years of net income is negative, the payout ratio is set to missing.

Profitability: Used the ratio of EBITDA (Compustat OIBDP) divided by total assets (Compustat AT)

Research & Development Expense Ratio: This item represents spending on research and development expenses as reported by the firm (Compustat XRD) divided by total revenue. If R&D expense is not reported we set the ratio equal to zero.

Sales Growth: The annual growth rate of annual sales (Compustat SALE/Lag SALE)-1).

Share Price: Measured at the close of the fiscal year (Compustat PRCC_F).

Tobin's Q: Employ the market-to book ratio as a proxy. Constructed as the natural log of the ratio of the market value of equity and book value of debt divided by total assets. The market value of equity is constructed by multiplying the share price times the number of common shares outstanding: ln(Compustat PRCC_F * CSHO + DLC + DLTT) / AT).

Total Assets: This item represents current assets plus property, plant, and equipment, plus other non-current assets, including intangible assets, deferred charges, and investments and advances (Compustat AT).

Table 1. Summary statistics

This table reports summary statistics for the sample of firms. The sample is based on Compustat firms from 1975 to 2008 that have total assets that are larger than the 75th percentile for their industry. Industries are defined following Fama and French (1997) based on 4 digit SIC Code reported CRSP as available and otherwise Compustat. The variable definitions for the firm characteristics are defined in the appendix. Frequency statistics for the 32 sample industries are reported in Panel B. Each industry year must maintain more than 10 firms to be included in the dataset.

Panel A. Summary statistics

	Firm years	Mean	StdDev	25th percentile	50th percentile	75th percentile
Assets	22717	6994.2	23103.8	607.9	1637.6	4761.5
ROA	22592	0.164	0.068	0.118	0.157	0.203
SALESGR	18474	0.136	0.202	0.035	0.107	0.196
LOGAGE	22717	2.542	0.854	2.079	2.708	3.178
RD_RATIO	22717	0.022	0.036	0.000	0.003	0.031
AD_RATIO	22717	0.013	0.028	0.000	0.000	0.015
LEV	22435	0.348	0.204	0.198	0.343	0.481
PAY	15556	0.361	0.601	0.120	0.283	0.439
LIQ	22709	0.101	0.116	0.022	0.058	0.135
VOL	20764	0.018	0.015	0.008	0.013	0.021
LOGQ	22717	0.173	0.601	-0.230	0.100	0.517

Table 1. Summary statistics (continued)

Panel B. Representation for sample industries

Industry	Number of Valid years	Min number of firms in any year	Max number of firms in any year
AUTOS	33	10	24
BLDMT	34	13	46
BOOKS	28	10	15
BOXES	7	10	13
CHEMS	34	14	30
CHIPS	34	19	86
CLTHS	34	10	19
CNSTR	31	10	22
COMPS	34	12	52
DRUGS	34	12	61
ELCEQ	33	10	40
ENRGY	34	37	76
FOOD	34	15	26
FUN	23	10	22
GOLD	16	10	18
HLTH	26	10	35
HSHLD	34	13	31
LABEQ	29	10	25
MACH	34	22	49
MEALS	33	10	38
MEDEQ	30	10	45
MINES	7	10	12
PAPER	28	10	20
PERSV	15	10	16
RTAIL	34	41	76
RUBBR	13	10	12
STEEL	28	10	26
TELCM	34	10	49
TOYS	25	10	18
TRANS	34	16	40
TXTLS	13	10	18
WHLSL	34	18	69

Table 2. Summary statistics for sample industries.

This table reports summary statistics for the 32 sample industries. Industries are defined following Fama and French (1997) based on 4 digit SIC Code reported CRSP as available and otherwise Compustat. Only firms among the top asset size quartile are selected for each industry year. Each industry year must maintain more than 10 firms to be included in the dataset. The table reports the mean 25th, 50th, and 75th annual percentile values for each financial policy and each industry.

	Leverage			Payout			Liquidity			CF Volatility		
	25th	50th	75th	25th	50th	75th	25th	50th	75th	25th	50th	75th
AUTOS	0.32	0.45	0.55	0.22	0.34	0.47	0.04	0.07	0.13	0.007	0.012	0.019
BLDMT	0.27	0.37	0.46	0.22	0.35	0.50	0.02	0.04	0.09	0.009	0.013	0.020
BOOKS	0.20	0.31	0.42	0.27	0.36	0.58	0.02	0.03	0.07	0.009	0.013	0.020
BOXES	0.28	0.34	0.40	0.29	0.36	0.49	0.02	0.04	0.07	0.010	0.017	0.026
CHEMS	0.32	0.40	0.49	0.31	0.40	0.55	0.02	0.04	0.08	0.008	0.012	0.017
CHIPS	0.07	0.21	0.36	0.08	0.19	0.34	0.06	0.14	0.25	0.009	0.016	0.027
CLTHS	0.18	0.29	0.39	0.15	0.27	0.40	0.03	0.07	0.14	0.011	0.017	0.027
CNSTR	0.31	0.45	0.56	0.10	0.19	0.38	0.03	0.05	0.11	0.009	0.013	0.022
COMPS	0.10	0.23	0.39	0.02	0.09	0.28	0.06	0.14	0.27	0.010	0.017	0.027
DRUGS	0.11	0.23	0.37	0.19	0.31	0.46	0.08	0.15	0.26	0.009	0.015	0.024
ELCEQ	0.10	0.23	0.39	0.19	0.33	0.49	0.03	0.08	0.19	0.008	0.013	0.021
ENRGY	0.26	0.37	0.49	0.26	0.39	0.54	0.02	0.04	0.08	0.010	0.015	0.023
FOOD	0.33	0.43	0.53	0.31	0.45	0.55	0.02	0.04	0.08	0.007	0.012	0.020
FUN	0.34	0.53	0.66	0.04	0.13	0.35	0.03	0.05	0.13	0.012	0.018	0.033
GOLD	0.04	0.15	0.29	0.29	0.45	0.81	0.05	0.12	0.20	0.016	0.025	0.047
HLTH	0.26	0.46	0.60	0.05	0.11	0.23	0.02	0.05	0.12	0.007	0.011	0.016
HSHLD	0.24	0.35	0.47	0.28	0.38	0.50	0.04	0.08	0.15	0.009	0.014	0.021
LABEQ	0.10	0.21	0.33	0.05	0.11	0.24	0.05	0.12	0.24	0.008	0.013	0.020
MACH	0.23	0.34	0.46	0.16	0.28	0.39	0.02	0.05	0.11	0.009	0.013	0.021
MEALS	0.27	0.41	0.56	0.05	0.14	0.28	0.03	0.06	0.11	0.008	0.013	0.021
MEDEQ	0.10	0.23	0.37	0.06	0.18	0.34	0.04	0.08	0.17	0.008	0.013	0.025
MINES	0.19	0.31	0.44	0.26	0.47	0.82	0.02	0.04	0.10	0.013	0.023	0.034
PAPER	0.34	0.41	0.50	0.31	0.40	0.52	0.01	0.03	0.06	0.008	0.013	0.018
PERSV	0.18	0.35	0.49	0.05	0.15	0.47	0.03	0.07	0.16	0.007	0.012	0.026
RTAIL	0.22	0.36	0.49	0.12	0.24	0.35	0.02	0.04	0.10	0.010	0.015	0.025
RUBBR	0.24	0.33	0.49	0.20	0.32	0.46	0.02	0.04	0.08	0.008	0.011	0.017
STEEL	0.29	0.36	0.47	0.20	0.32	0.56	0.03	0.06	0.10	0.010	0.014	0.020
TELCM	0.33	0.46	0.54	0.32	0.50	0.64	0.01	0.03	0.07	0.005	0.009	0.019
TOYS	0.12	0.28	0.41	0.12	0.23	0.41	0.07	0.16	0.25	0.009	0.014	0.024
TRANS	0.38	0.49	0.63	0.15	0.27	0.42	0.03	0.06	0.11	0.008	0.012	0.019
TXTLS	0.25	0.32	0.40	0.29	0.38	0.63	0.02	0.04	0.07	0.012	0.019	0.025
WHLSL	0.24	0.36	0.47	0.13	0.23	0.38	0.02	0.04	0.08	0.007	0.012	0.020

Table 3. Transition matrix for financial policies

This table reports the transition matrix of the four classifications across the four financial policies from each year to the following year for the sample. The reported values are the percentage frequency distribution. Because of the requirement of maintaining a policy classification for three years, it is not possible to transition from any classification to another without passing through the "Not Classified" classification. These cells are denoted with "NA."

Panel A. Leverage

		Transistion Frequency			
	Total	Aggressive Rogue	Mimic	Conservative Rogue	Not Class
Lag Conservative Rogue	12.66%	NA	NA	9.74%	2.92%
Lag Mimic	19.89%	NA	13.92%	NA	5.98%
Lag Aggressive Rogue	11.26%	8.35%	NA	NA	2.91%
Lag Not Classified	56.18%	2.78%	6.39%	3.38%	43.62%

Panel B. Payout

		Transistion Frequency			
	Total	Aggressive Rogue	Mimic	Conservative Rogue	Not Class
Lag Conservative Rogue	10.20%	NA	NA	7.24%	2.96%
Lag Mimic	17.63%	NA	11.68%	NA	5.95%
Lag Aggressive Rogue	12.03%	9.06%	NA	NA	2.98%
Lag Not Classified	60.14%	3.39%	5.98%	2.83%	47.94%

Panel C. Liquidity

		Transistion Frequency			
	Total	Aggressive Rogue	Mimic	Conservative Rogue	Not Class
Lag Conservative Rogue	12.09%	NA	NA	9.13%	2.96%
Lag Mimic	16.54%	NA	10.50%	NA	6.03%
Lag Aggressive Rogue	8.36%	5.52%	NA	NA	2.83%
Lag Not Classified	63.01%	3.05%	6.10%	2.91%	50.96%

Panel D. Risk Management

		Transistion Frequency			
	Total	Aggressive Rogue	Mimic	Conservative Rogue	Not Class
Lag Conservative Rogue	9.04%	NA	NA	5.67%	3.38%
Lag Mimic	16.94%	NA	10.90%	NA	6.05%
Lag Aggressive Rogue	9.18%	6.14%	NA	NA	3.03%
Lag Not Classified	64.84%	3.20%	6.31%	3.31%	52.01%

Table 4. Frequency distribution of financial policy classifications.

This table reports the percentage frequency distribution of the three classifications across the four financial policies. The column labeled "Full Sample" provides the mean annual frequency distribution of firms across the classifications for each financial policy independently. The interaction columns report the joint mean annual frequency distribution for classifications across pairs of financial policies. The dummy variables are defined as aggressive leverage rogue (AR_LEV), leverage mimickers (M_LEV), conservative leverage rogue (CR_LEV), aggressive payout rogue (AR_PAY), payout mimickers (M_PAY), conservative payout rogue (CR_PAY), aggressive liquidity rogue (AR_LIQ), liquidity mimickers (M_LIQ), conservative liquidity rogue (CR_LIQ), aggressive risk management rogue (AR_VOL), risk management mimickers (M_VOL), and conservative risk management rogue (CR_VOL). The test statistic is a difference of means test for the difference between the mean frequency of joint aggressive and conservative rogue classifications.

	Full	INTERACTIONS											
	Sample	AR_PAY	M_PAY	CR_PAY	t-stat	AR_LIQ	M_LIQ	CR_LIQ	t-stat	AR_VOL	M_VOL	CR_VOL	t-stat
AR_LEV	11.3%	2.0%		1.3%	2.70	2.2%		0.6%	8.09	1.1%		1.2%	-0.60
M_LEV	19.6%		4.1%				4.3%				4.0%		
CR_LEV	12.4%	1.6%		1.3%	1.61	0.5%		3.6%	-14.04	1.4%		1.2%	1.13
AR_PAY	11.9%					1.3%		1.2%	0.81	1.5%		1.0%	2.35
M_PAY	17.4%						3.4%				3.6%		
CR_PAY	10.1%					0.8%		1.7%	-4.41	1.0%		1.1%	-0.59
AR_LIQ	8.3%									0.6%		1.4%	-4.53
M_LIQ	16.3%										3.9%		
CR_LIQ	11.8%									1.6%		0.8%	4.12
AR_VOL	9.3%												
M_VOL	16.7%												
CR_VOL	8.7%												

Table 5. Distribution and characteristics of firms by policy classification

This table reports the frequency and median values for the full sample organized by the four classifications: Aggressive, Mimic, Conservative, or Not Classified. The breakpoints are the 25th and 75th annual industry financial policy percentiles. Classification depends on being consistently classified over the past three years. Firms without a three-year consistent classification are classified as Not Classified. The t-stat represents the test of the difference in means between the two respective specified classifications.

	Aggressive	Mimic	Conservative	Not Classified	t-stat (Agg-Mimic)	t-stat (Con-Mimic)
Leverage						
Num	1473	2545	1618	7376		
Median Leverage	0.53	0.32	0.14	0.33		
Median log q	0.05	0.13	0.20	0.11		
Mean log q	0.10	0.21	0.21	0.18	-6.33	-0.01
Payout						
Num	1359	1959	1151	6887		
Median Payout	0.54	0.29	0.12	0.31		
Median log q	0.12	0.15	0.14	0.11		
Mean log q	0.17	0.23	0.18	0.17	-2.85	-2.33
Liquidity						
Num	1095	2151	1549	8351		
Median Liquidity	0.02	0.05	0.19	0.05		
Median log q	0.12	0.10	0.23	0.11		
Mean log q	0.18	0.16	0.29	0.17	0.74	6.10
Risk Management						
Num	1178	2110	1103	8243		
Median Stability	0.03	0.01	0.01	0.01		
Median log q	0.12	0.10	0.25	0.11		
Mean log q	0.20	0.17	0.30	0.17	1.50	6.15

Table 6. Multivariate regression estimates

This table reports the regression results from a pooled panel regression with the natural log of firm q ratio as the dependent variable. Regression estimation includes year and industry fixed effects as specified. The dummy variables are defined as conservative leverage rogue (CR_LEV), aggressive leverage rogue (AR_LEV), leverage not classified (NC_LEV), conservative payout rogue (CR_PAY), aggressive payout rogue (AR_PAY), payout not classified (NC_PAY), conservative liquidity rogue (CR_LIQ), aggressive liquidity rogue (AR_LIQ), liquidity not classified (NC_LIQ), conservative risk management rogue (CR_VOL), aggressive risk management rogue (AR_VOL), and risk management not classified (NC_VOL). The control variables are defined in the appendix. The 1st stage regressors refer to the variables used in the first-stage regression. A "standard" specification refers to the specification in equation 1 of the text. A "Custom" specification refers to a specification that is unique to the particular policy as described in the text. An "Other" specification refers to a specification that includes the levels of the other financial policies. An "Uncond" specification refers to an unconditional model where no first stage regression is run. Firm FE indicates firm fixed effects. The 3 year lag specification delays the policy definition by three years such that the policy is sorted based on policy metrics in year t-5 through t-2. The 5 year classification uses five rather three years to define the policy such that an aggressive rogue must maintain the aggressive policy for five years rather than three years. The Sample firms above the 50th and 90th percentile specification alters the sample cutoff from above the 75th asset size percentile to above the 50th and 90th asset size percentile, respectively, by industry year. The alternative leverage refers to the market value leverage specification. The alternative payout refers to a payout specification that includes all share repurchases as defined by the Compustat variable PRSTKC. Non-overlapping sample refers to the use of cross-sections that are five years apart. The table reports the t-statistic to the right of each coefficient estimate.

Table 6. Multivariate regression estimates (continued)

	(1)		(2)		(3)		(4)		(5)		(6)	
	Coef	t	Coef	t	Coef	t	Coef	t	Coef	t	Coef	t
Intercept	-0.491	-10.12	-0.320	-5.76	0.443	2.32	-0.433	-8.72	-0.473	-9.54	-0.551	-11.49
CR_LEV	0.037	3.21	0.067	5.04	0.009	0.86	0.058	4.68	0.064	6.03	0.057	5.81
AR_LEV	-0.038	-3.14	-0.014	-0.95	-0.027	-2.42	-0.032	-2.48	-0.027	-2.30	-0.026	-2.43
NC_LEV	0.013	1.60	0.008	0.78	0.003	0.41	0.015	1.69	0.018	2.12	0.007	0.83
CR_PAY	-0.005	-0.38	-0.017	-1.15	-0.005	-0.41	0.031	2.53	0.044	4.05	0.026	2.72
AR_PAY	-0.024	-2.04	-0.030	-2.13	-0.054	-5.02	-0.003	-0.28	-0.020	-1.92	-0.030	-3.26
NC_PAY	0.007	0.83	-0.011	-1.04	-0.007	-0.92	0.004	0.50	0.003	0.39	-0.021	-2.59
CR_LIQ	0.088	7.12	0.060	4.11	0.028	2.40	0.080	5.72	0.076	6.03	0.077	6.98
AR_LIQ	-0.004	-0.32	0.023	1.36	0.016	1.31	-0.018	-1.21	-0.004	-0.31	-0.017	-1.59
NC_LIQ	0.017	1.88	0.026	2.43	0.005	0.74	0.011	1.14	0.024	2.74	0.017	2.09
CR_VOL	0.053	3.99	0.064	4.11	0.043	3.76	0.007	0.50	0.024	2.00	0.029	2.89
AR_VOL	-0.035	-2.63	-0.042	-2.66	0.010	0.83	-0.039	-2.91	-0.025	-2.11	-0.021	-1.92
NC_VOL	-0.001	-0.07	0.003	0.31	0.014	1.93	0.010	1.18	0.013	1.62	0.016	2.01
LOGASSETS	-0.020	-6.43	-0.021	-5.70	-0.071	-9.52	-0.022	-6.55	-0.021	-6.35	-0.013	-4.16
LOG AGE	0.008	1.13	0.009	0.82	-0.121	-5.02	0.003	0.44	0.010	1.45	0.010	1.39
ROA	4.407	80.55	4.428	66.37	3.346	52.82	4.294	75.46	4.289	74.60	4.328	76.93
SALESGR	0.156	7.84	0.163	6.40	0.060	3.52	0.189	9.23	0.183	8.95	0.150	7.48
RD_RATIO	1.965	13.83	1.846	10.69	0.341	1.37	2.027	14.11	1.948	13.56	1.827	12.66
AD_RATIO	1.153	8.94	1.306	8.60	0.193	0.91	1.216	9.30	1.167	8.95	1.168	9.07
Adj R-sqr	0.657		0.674		0.824		0.656		0.658		0.658	
1st Stage Regressors	Standard		Standard		Standard		Custom/Other		Custom		Uncond	
Firm FE	No		No		Yes		No		No		No	
Industry FE	Yes		Yes		No		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
3 Year Lag	No		Yes		No		No		No		No	
Sample threshold	75th		75th		75th		75th		75th		75th	
5 Year Classification	No		No		No		No		No		No	
Alt. Leverage	No		No		No		No		No		No	
Alt. payout	No		No		No		No		No		No	
Non-overlapping	No		No		No		No		No		No	

Table 6. Multivariate regression estimates (continued)

	(7)		(8)		(9)		(10)		(11)		(12)	
	Coef	t	Coef	t	Coef	t	Coef	t	Coef	t	Coef	t
Intercept	-0.523	-8.60	-0.229	-2.56	-0.289	-9.33	-0.457	-9.60	-0.489	-10.02	-0.505	-4.25
CR_LEV	0.058	3.51	0.020	0.90	0.040	4.42	0.098	8.31	0.038	3.27	0.077	2.64
AR_LEV	-0.033	-1.83	-0.049	-2.22	-0.020	-1.99	-0.205	-16.30	-0.037	-3.07	0.006	0.18
NC_LEV	0.009	0.77	-0.002	-0.10	0.018	2.69	-0.009	-1.06	0.014	1.62	0.030	1.43
CR_PAY	-0.009	-0.44	-0.046	-1.87	-0.007	-0.68	-0.001	-0.05	0.010	0.77	-0.016	-0.49
AR_PAY	-0.031	-1.69	-0.043	-1.90	-0.021	-2.24	-0.019	-1.64	-0.035	-2.79	-0.022	-0.69
NC_PAY	-0.002	-0.16	-0.038	-2.30	-0.001	-0.07	0.008	0.90	-0.005	-0.56	0.002	0.10
CR_LIQ	0.127	6.66	0.068	2.89	0.112	11.37	0.071	5.91	0.088	7.06	0.082	2.47
AR_LIQ	0.040	1.70	-0.034	-1.36	-0.016	-1.48	0.012	0.92	-0.006	-0.47	-0.004	-0.13
NC_LIQ	0.045	3.20	-0.012	-0.71	0.010	1.40	0.015	1.74	0.017	1.90	0.009	0.38
CR_VOL	0.103	4.54	0.075	3.15	0.047	4.49	0.052	3.95	0.055	4.11	0.056	1.58
AR_VOL	-0.071	-3.27	-0.003	-0.12	-0.040	-3.83	-0.027	-2.08	-0.037	-2.81	-0.077	-2.26
NC_VOL	0.010	0.72	0.039	2.42	-0.010	-1.40	0.003	0.36	0.000	-0.05	-0.031	-1.36
LOGASSETS	-0.019	-5.33	-0.017	-2.54	-0.019	-8.35	-0.020	-6.42	-0.020	-6.25	-0.016	-1.97
LOG AGE	0.010	1.07	-0.011	-0.91	-0.001	-0.27	0.006	0.95	0.007	1.08	0.022	1.24
ROA	4.416	71.72	4.738	47.60	4.294	101.96	4.387	81.21	4.411	80.46	4.398	30.88
SALESGR	0.138	5.88	0.161	4.44	0.166	10.48	0.151	7.75	0.157	7.88	-0.057	-1.19
RD_RATIO	1.975	12.25	1.675	7.60	2.025	16.60	1.724	12.37	1.955	13.76	1.504	4.08
AD_RATIO	1.223	8.67	1.064	4.35	0.828	8.42	1.087	8.60	1.164	9.02	1.719	4.87
Adj R-sqr	0.680		0.699		0.629		0.670		0.656		0.692	
1st Stage Regressors	Standard		Standard		Standard		Standard		Standard		Standard	
Firm FE	No		No		No		No		No		No	
Industry FE	Yes		Yes		Yes		Yes		Yes		Yes	
Year FE	Yes		Yes		Yes		Yes		Yes		Yes	
3 Year Lag	No		No		No		No		No		No	
Sample threshold	75th		90th		50th		75th		75th		75th	
5 Year Classification	Yes		No		No		No		No		No	
Alt. Leverage	No		No		No		Yes		No		No	
Alt. payout	No		No		No		No		Yes		No	
Non-overlapping	No		No		No		No		No		Yes	

Table 7. Multivariate regression estimates by decade

This table reports the regression results from a pooled panel regression with the natural log of firm q ratio as the dependent variable. The regressions divide the sample by decade where the 1970s include firm years from the 1975 to 1979 period, the 1980s include firm years from the 1980 to 1989 period, the 1990s include firm years from the 1990 to 1999 period, the 2000s include firm years from the 2000 to 2008 period. The first-stage regression is based on the standard specification described in the text. Regression estimation includes year and industry fixed effects as specified. The regressors are defined in the appendix and Table 4. The table reports the t-statistic to the right of each coefficient estimate.

	1970s		1980s		1990s		2000s	
	Coef	t	Coef	t	Coef	t	Coef	t
Intercept	-1.019	-7.87	-0.723	-9.83	-0.814	-10.70	-1.033	-11.23
CR_LEV	0.004	0.12	0.036	2.02	0.051	2.56	0.041	1.71
AR_LEV	0.047	1.57	-0.004	-0.19	-0.070	-3.36	-0.077	-3.11
NC_LEV	0.033	1.56	0.013	0.97	0.024	1.66	-0.007	-0.40
CR_PAY	0.021	0.69	0.055	2.95	-0.058	-2.51	-0.030	-1.14
AR_PAY	0.011	0.37	0.017	0.93	-0.054	-2.50	-0.056	-2.30
NC_PAY	0.008	0.36	0.013	0.99	-0.008	-0.54	0.000	0.02
CR_LIQ	0.045	1.40	0.071	3.74	0.038	1.81	0.160	5.90
AR_LIQ	-0.042	-1.19	0.020	0.91	-0.007	-0.30	-0.004	-0.14
NC_LIQ	-0.031	-1.36	0.026	1.84	0.011	0.71	0.033	1.71
CR_VOL	0.022	0.59	0.058	2.83	0.053	2.35	0.090	3.25
AR_VOL	-0.078	-1.98	0.008	0.40	-0.015	-0.66	-0.071	-2.53
NC_VOL	-0.006	-0.27	0.036	2.59	0.000	-0.02	-0.004	-0.21
LOGASSETS	-0.011	-1.14	-0.061	-11.53	-0.013	-2.43	0.017	2.77
LOGAGE	-0.101	-2.39	-0.046	-2.64	0.011	0.97	0.017	1.50
ROA	3.857	26.68	3.900	43.59	5.002	51.38	4.586	40.61
SALESGR	-0.006	-0.08	0.129	3.80	0.245	7.37	0.192	5.09
RD_RATIO	3.563	6.58	1.911	7.25	0.183	0.82	3.620	12.99
AD_RATIO	1.998	4.54	0.298	1.26	1.165	6.22	1.360	4.58
Obs		1366		3308		3352		3217
Adj R-sqr		0.586		0.633		0.644		0.582

Table 8. Time series tests

This table reports the results from second-stage time-series test of the coefficients from an annual cross-sectional regression of the Regression 1 specification of Table 6 regressed on a several time-series variables. TIME is a time variable. MEAN is the annual mean value for the policy measure. STD is the annual standard deviation for the policy measure. REALGDP is the annual real US GDP growth.

Leverage		Conservative Rogue coef		Aggressive Rogue coef		Difference (Con - Agg)	
		Coef	t	Coef	t	Coef	t
	Intercept	2.338	0.67	-1.657	-0.36	3.994	0.81
	TIME	-0.001	-0.65	0.001	0.51	-0.002	-0.93
	MEAN	-0.686	-1.70	-1.423	-2.67	0.738	1.29
	STD	1.351	1.64	-1.370	-1.26	2.721	2.34
	REALGDP	0.004	0.86	-0.008	-1.24	0.012	1.77
Payout		Conservative Rogue coef		Aggressive Rogue coef		Difference (Con - Agg)	
		Coef	t	Coef	t	Coef	t
	Intercept	12.238	1.83	4.151	0.79	8.087	1.58
	TIME	-0.006	-1.85	-0.002	-0.80	-0.004	-1.60
	MEAN	0.006	0.02	0.064	0.22	-0.057	-0.21
	STD	0.073	1.13	-0.005	-0.09	0.078	1.57
	REALGDP	-0.003	-0.44	-0.005	-0.85	0.002	0.30
Liquidity		Conservative Rogue coef		Aggressive Rogue coef		Difference (Con - Agg)	
		Coef	t	Coef	t	Coef	t
	Intercept	-2.005	-0.28	1.041	0.13	-3.046	-0.37
	TIME	0.001	0.26	0.000	-0.12	0.001	0.34
	MEAN	2.296	2.40	-2.162	-2.09	4.458	4.16
	STD	0.687	0.50	0.019	0.01	0.668	0.43
	REALGDP	-0.017	-2.38	-0.001	-0.06	-0.017	-2.06
Risk Management		Conservative Rogue coef		Aggressive Rogue coef		Difference (Con - Agg)	
		Coef	t	Coef	t	Coef	t
	Intercept	-2.441	-0.53	12.236	2.33	-14.68	-2.93
	TIME	0.001	0.55	-0.006	-2.31	0.01	2.93
	MEAN	3.376	0.30	-24.297	-1.93	27.67	2.31
	STD	-2.158	-0.28	3.961	0.45	-6.12	-0.73
	REALGDP	-0.011	-1.57	-0.003	-0.32	-0.01	-1.12

Table 9. Multivariate regression estimates with interaction terms

This table reports the estimates of a single pooled panel regression with the natural log of firm q ratio as the dependent variable. The regressors are defined in the appendix and Table 4. The specification includes interaction terms where the interaction term is defined as the product of the row header and the column header. Regression estimation includes year and industry fixed effects. ** and * denote significance at the 1% and 5% level, respectively.

		Interaction terms					
		AR_PAY	CR_PAY	AR_LIQ	CR_LIQ	AR_VOL	CR_VOL
	Coef	Coef	Coef	Coef	Coef	Coef	Coef
Intercept	-0.492 **						
CR_LEV	0.062 **	-0.004	-0.066 *	-0.043	-0.059 *	-0.070 *	0.031
AR_LEV	-0.042 **	-0.011	-0.015	0.079 **	-0.028	-0.048	0.000
NC_LEV	0.013						
CR_PAY	0.003			0.029	-0.021	-0.011	0.033
AR_PAY	-0.029			0.032	0.020	0.020	-0.032
NC_PAY	0.006						
CR_LIQ	0.108 **					-0.038	0.035
AR_LIQ	-0.022					0.001	-0.025
NC_LIQ	0.016						
CR_VOL	0.049 **						
AR_VOL	-0.015						
NC_VOL	-0.001						
LOGASSETS	-0.019 **						
LOG AGE	0.008						
ROA	4.389 **						
SALESGR	0.156 **						
RD_RATIO	1.973 **						
AD_RATIO	1.168 **						
Obs							11243
Adj R-sqr							0.657

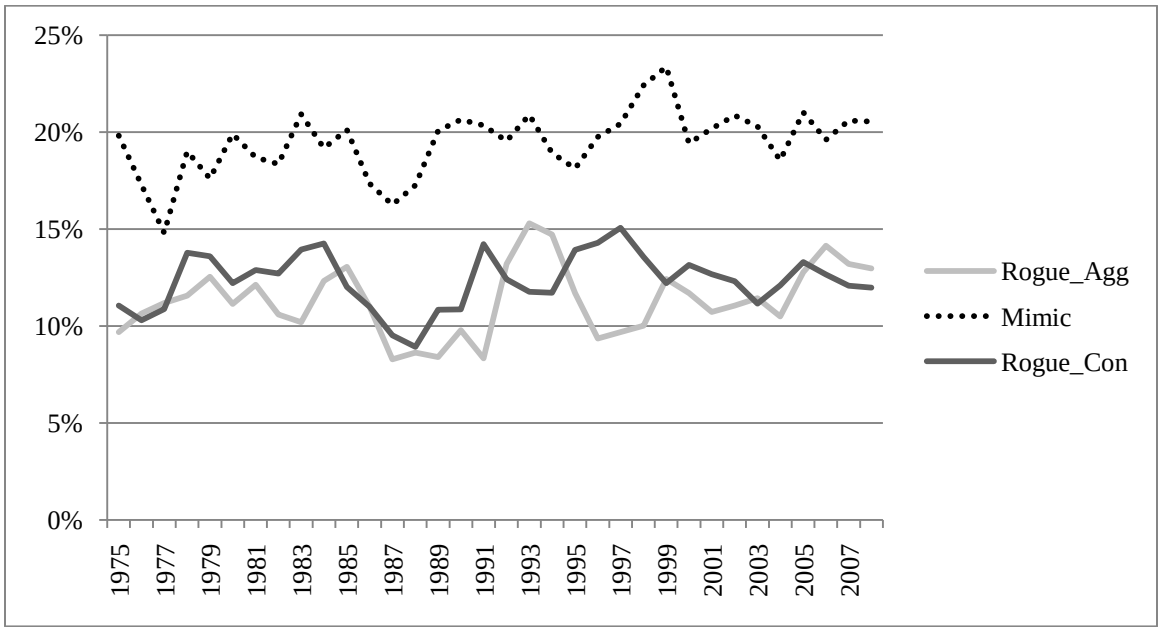

Figure 1a. Leverage

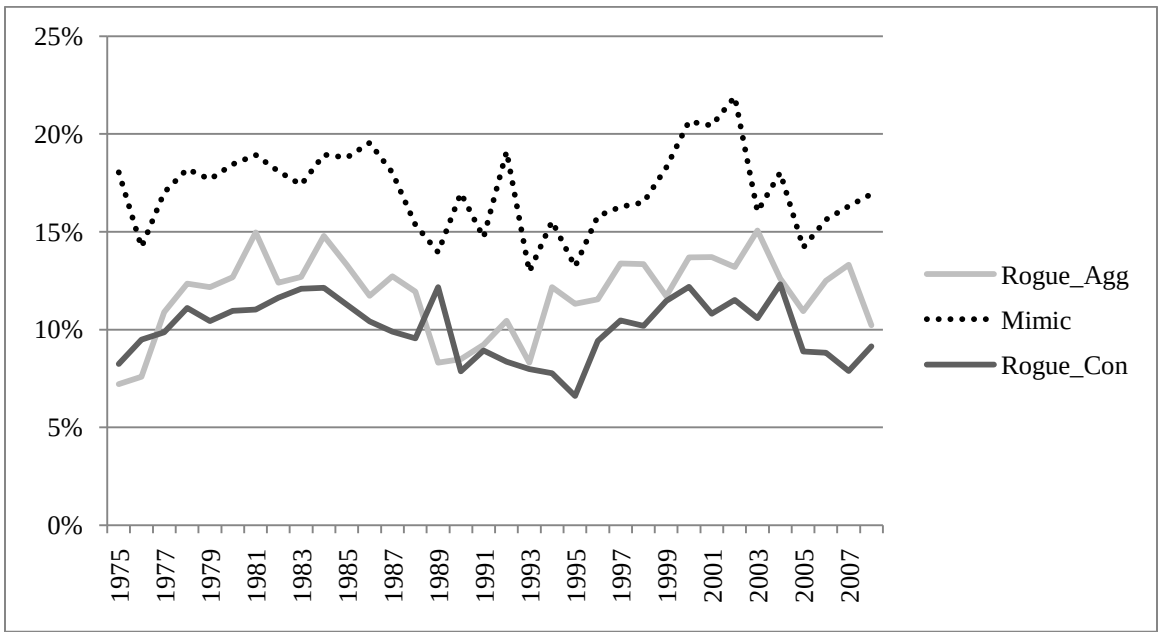

Figure 1b. Payout

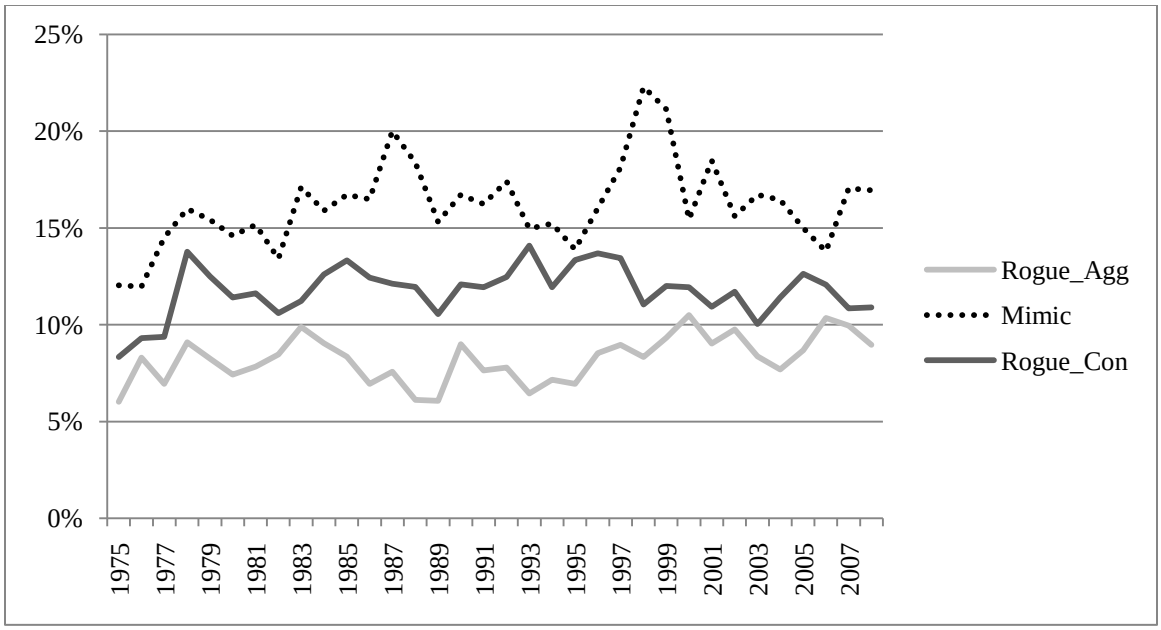

Figure 1c. Liquidity

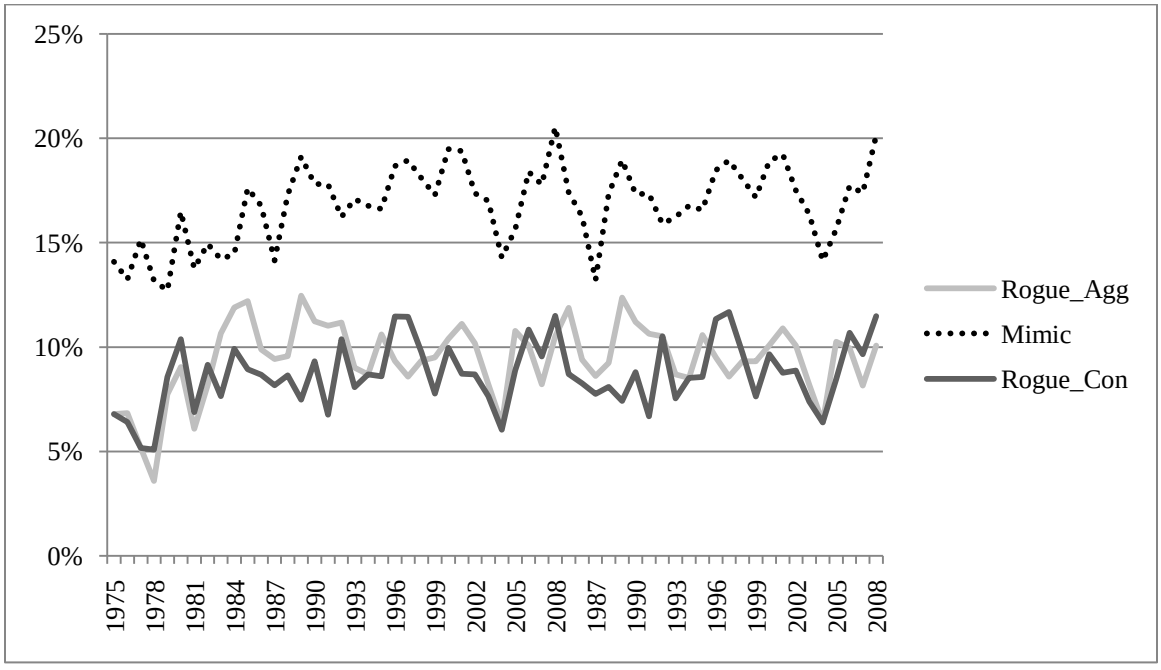

Figure 1d. Cash flow volatility

Figure 1. Annual percentage of firms classified by financial policy type. This figure reports the number of firms classified by financial policy type in each year.

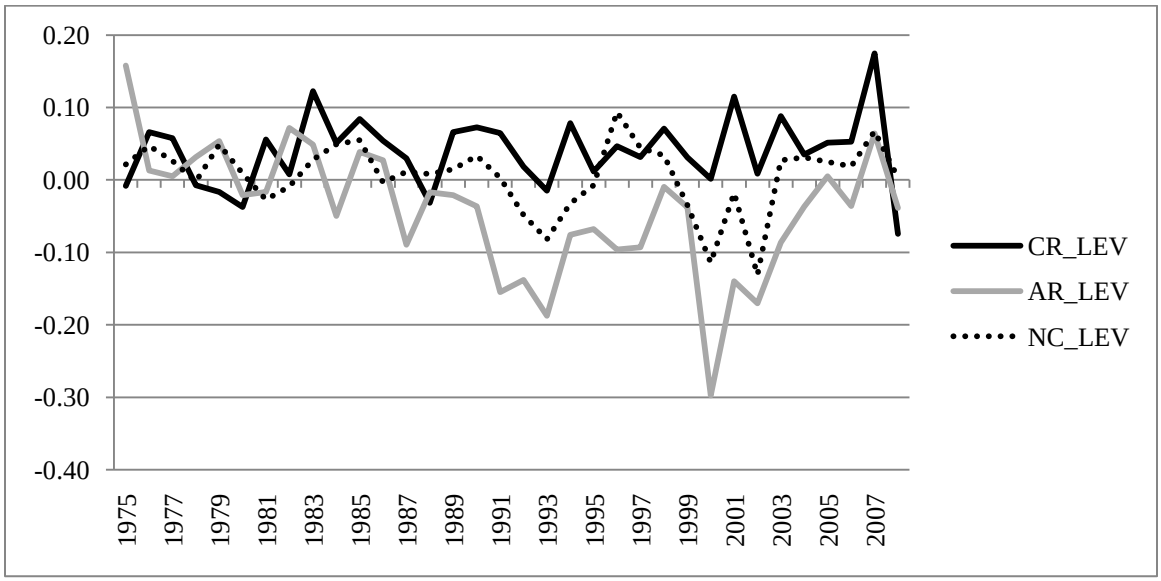

Figure 2a. Leverage

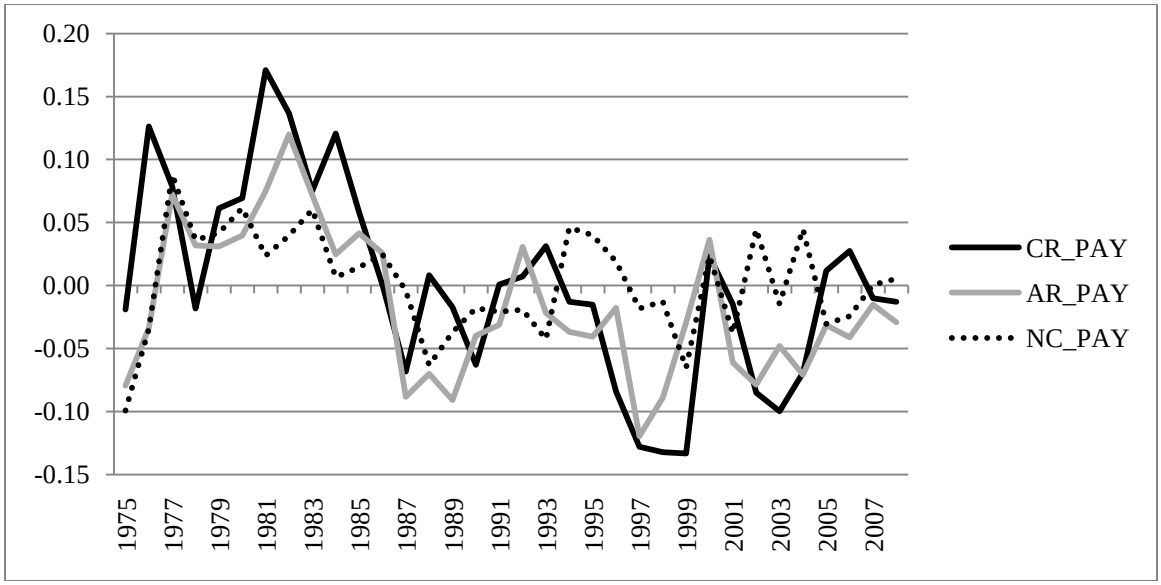

Figure 2b. Payout

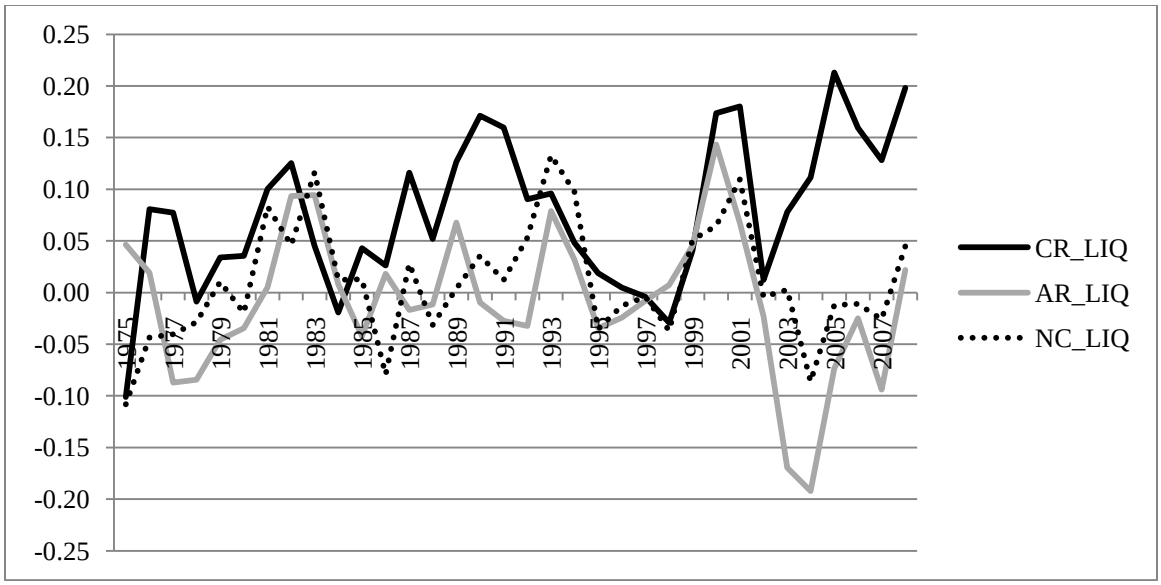

Figure 2c. Liquidity

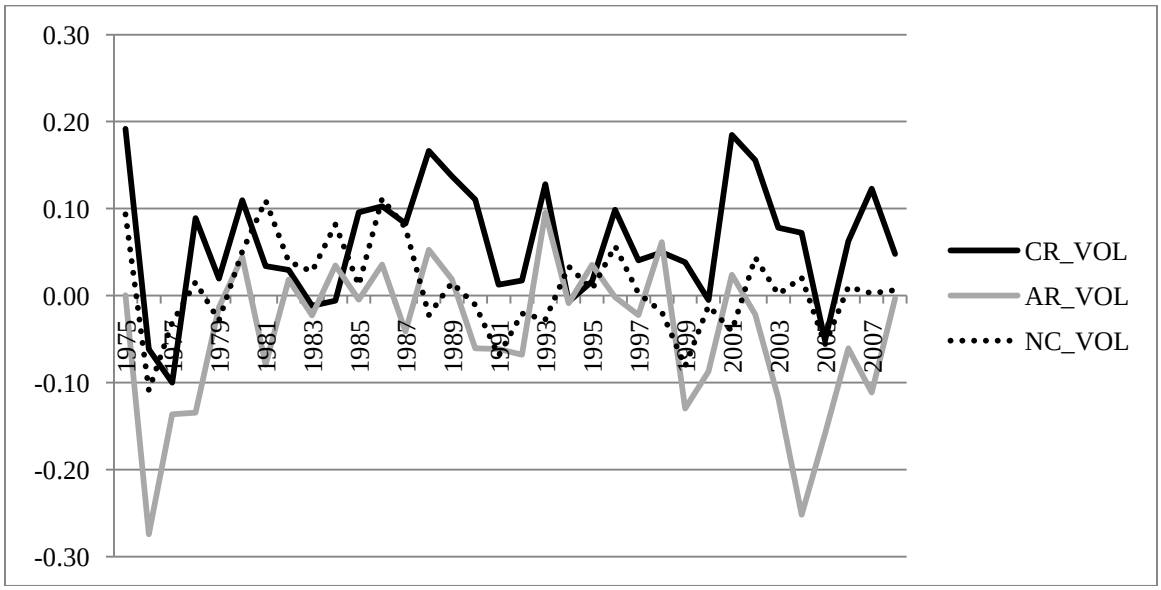

Figure 2d. Cash flow volatility

Figure 2. Annual q-ratio coefficient values financial policy type. This figure reports the coefficient value for annual cross section regressions of firm q ratio on X.