

## **HIDDEN IN THE WOODSHED: BIG BATH HERDING**

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### **EXECUTIVE SUMMARY**

The extant accounting studies (Healy 1985, Francis et al. 1996, Kirschenheiter and Melumad 2002) examine big bath behavior of individual firms without considering how this behavior is affected and even induced by their peer firms' actions. However, we demonstrate that the big bath strategy can also arise as an optimal response to other firms' reporting choices, i.e., it can have a “collective” or “coordinative” nature. We show that when a negative shock heterogeneously affects a group of firms in the economy, the firms herd to disclose bad news after observing their peers' write-offs and report write-offs even when such disclosures could be further postponed. More interestingly, as an optimal equilibrium strategy, herding firms over-report bad news, i.e., they take a big bath.

When negative economic shock affects a group of firms, e.g., industry or economy, it leads to the reduction of expected future cash flows and asset fair values of the affected firms. The conservatism of GAAP requires firms to write-down most non-financial assets when their fair values drop sufficiently below their carrying values, but generally does not allow firms to write-up assets when the fair values rise above their carrying values. While writedowns reduce a firm's stock price (Francis et al., 1996), providing incentives to delay such disclosure (Dye 1990, Dye and Sridhar 1995), if the reduction in asset value is material enough managers must disclose bad news to comply with GAAP and avoid potential litigation (Kothari et al., 2009). After the first firms (Leaders) report write-downs, the market updates the expected values of their peers (Followers) conditioning on information disclosed by Leaders. Our parsimonious model shows that the Followers' equilibrium strategy is to voluntarily accelerate bad news disclosure and write-off devaluated assets even when a write-off can be further delayed. Moreover, it becomes optimal for Followers to undertake a big bath and write-down assets below their fair value if such excessive write-offs can be used to gain future benefits. The big bath herding strategy arises from the Followers' lower stock price sensitivity to write-offs because the market has already negatively revised Followers' expected market values after Leaders' reports became public. High stock price sensitivity to the Leaders' write-offs prevents them from engaging in excessive write-offs.

We use data from the National Bureau of Economic Research (NBER) from two major recessions - the 2001 recession induced by the dot-com crash and the 2008 recession induced by the financial markets meltdown - as a unique setting to test our big bath herding predictions. For each recession, we classify firms into Leaders and Followers based on the timing of their large write-offs. We define a “Leader” as a firm that made a write-off around the beginning of the recession, and a “Follower” as a firm that made a write-off during the subsequent periods.

We confirm our theoretical prediction that Followers time their write-offs to occur soon after their peers' write-offs by showing that the probability of a Followers' disclosure at a specific time is

positively associated with the number of peer write-offs in the preceding three months. While Followers' herding can also be attributed to the negative common economic shock, if herding is non-strategic and solely driven by the shock, Leaders' and Followers' write-offs should be unbiased representations of the firms' underlying economic conditions. Therefore, to demonstrate the strategic nature of Followers' herding, we need to show that Followers take a big bath by excessively writing-off their assets at the time of herding, i.e., their write-offs do not truthfully represent underlying economic conditions. Ideally, to demonstrate the big bath strategy, we would distinguish between the "normal" and "excessive" portions of write-offs to show that Followers indeed write-off their asset values below their fair values. However, it is difficult to reliably estimate the amount of the fundamental decrease in asset value that is due to the economic shock, considering the unusual nature of the event. Because we are concerned that any proposed expectation model will yield very noisy results, we perform two sets of indirect tests and one direct test to support our claim.

First, we consider Leaders' and Followers' post-disclosure performance. If Followers indeed excessively write-off assets by shifting their future accrued expenses into the current reporting period, then we expect that Followers will report higher future bottom-line income, which includes all accrual accounting items such as depreciation and amortization as well as other non-operating expenses, compared to Leaders. In contrast, Followers' future performance measured by operating cash flows should be indistinguishable from that of Leaders, because this measure is accrual free. Consistent with the excessiveness of Followers' write-offs, we find that Followers report a greater increase in future industry-adjusted median returns on equity (ROE) than Leaders, but show no difference in future operating cash flows.

Second, consistent with the big bath strategy, which allows managers to utilize reserves created by excessive non-recurring charges (Moehrl 2002), we find that Followers are more likely than Leaders to meet/beat analyst earnings forecasts during the two years after the write-offs.

Finally, we provide direct evidence of the excessiveness of Followers' write-offs using handcollected data on reversals of restructuring charges from the 10-K reports of all Leaders and Followers. Our comprehensive data collection process, which involves actually reading firms' notes to financial statements rather than simply mechanically searching for the word "reversal", allows us to collect and analyze a complete data set of reversals of restructuring charges. We show that Followers reverse restructuring charges significantly more often than Leaders each year in the two-year period after the write-off. Overall, our empirical results support our prediction that big bath herding can arise as an optimal response to peer firms' reporting.

Our study makes several contributions to the literature. First, we show both theoretically and empirically that in the event of a negative economic shock, firms strategically time the release of bad news by herding with their peers, and furthermore, the herding firms undertake a big bath, i.e., they over-report the amount of bad news. Our finding of strategic over-reporting of unfavorable information can be applied to a variety of events such as accounting restatements, earnings warnings, and missing various accounting benchmarks. Second, we contribute to the big bath literature by extending the scope of prior research that considers big bath behavior as a firm-specific event. In this paper, we model and provide empirical evidence of big bath herding - a big bath arises not as a response to firm-level events such as managerial turnover or bad performance,

but rather as a response to other firms' reporting choices. Third, we contribute to the growing managerial herding literature (Tse and Tucker 2010, Myers et al. 2013, Bratten et al. 2016), which presents empirical evidence of bad news herding in cases of earnings warnings, restatements, and failing to meet analyst forecasts. In existing empirical papers on herding, a few important questions remain unanswered: why do firms herd, what kind of real costs do they save, and what real benefits do they gain by herding? Our paper contributes to the managerial herding literature by demonstrating that firms benefit from herding as they receive a less negative stock price reaction to their bad news and are then able to report better future performance by reversing discretionary charges.

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