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## **The Results Are In: AGR is the Most Effective Risk Measure**

Since we first started making our ratings commercially available in 2003, Audit Integrity has been monitoring and publishing results on the effectiveness of AGR ratings and AGR-based risk models. The results have consistently shown a clear correlation between AGR and major negative events – regulatory actions, shareholder litigation, material financial restatements, bankruptcy and severe stock declines.

The AGR rating and risk models are designed to be predictive of such events, with all but the restatement model indicating the likelihood of the event occurring over the next 12 months (for restatements, the model identifies the risk for any time in the future.) The first question for anyone relying on these risk indicators is: Do they work?

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***AGR is clearly more predictive when compared to  
both academic and commercial risk measures***

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Audit Integrity regularly provides Scorecards and other materials that consistently show these measures to be predictive of risk. Now, recent academic papers have come to the same conclusion, and found that AGR is clearly more predictive when compared to both academic and commercial risk measures.

As investors take on riskier investments in the inevitable chase for better returns, as insurers remain under pressure to take on greater exposure through reduced premiums, as auditors attempt to uncover the next wave of financial fraud, risk models should play an important role in identifying companies with the greatest potential to harm stakeholders.

Events such as litigation or bankruptcy are infrequent, but carry great cost. Risk models are used most effectively to focus attention on those companies at greatest risk, and direct valuable resources to avoiding or managing that risk.

“I fear that we are witnessing an erosion in the quality of earnings, and therefore, the quality of financial reporting. Managing may be giving way to manipulation; Integrity may be losing out to illusion.” – former SEC chairman Arthur Levitt, circa 1998. Since then, we have had the bursting of the tech bubble and the Great Recession, both driven by financial illusions. Regardless of regulatory changes, the risks from corporate fraud and excesses remain great.

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## Summary of Recent Academic Studies Involving the Audit Integrity Accounting and Governance Risk Rating (AGR®)

Below is a summary of academic papers that have utilized the Audit Integrity Accounting and Governance Risk rating in various studies of corporate risk and accounting quality.

The bullets below are direct quotes from the academic papers. Comments or clarifying text added by Audit Integrity are denoted by the use of brackets: e.g., [text].

### [Detecting and Predicting Accounting Irregularities: A Comparison of Commercial and Academic Risk Measures \(Feb-2010\)](#)

Price, Sharp, Wood:

- ...the purpose of this paper is to provide evidence as to which metric—either academic or commercial—has the greatest ability to detect and predict accounting irregularities
- Our results provide strong evidence that the commercially developed AGR measure is superior to current academic risk measures for detecting and predicting accounting irregularities.
- We find that AGR outperforms academic risk measures in all head-to-head tests for detecting and most head-to-head tests for predicting Securities and Exchange Commission enforcement actions (AAERs), egregious accounting restatements, and shareholder lawsuits related to alleged accounting improprieties
- We include seven risk measures in our study. Our results show that of the 36 comparisons between AGR and the six academic risk measures, AGR is superior to the academic measures in 33 (92 percent) of the comparisons. When AGR is compared against the six academic measures in terms of *detecting* accounting irregularities, AGR performs better in 18 out of 18 comparisons (100 percent). When AGR is compared against the academic measures in terms of *predicting* irregularities one period before the irregularities occur, AGR performs better than the academic measures in 15 out of 18 tests (83 percent)
- From private industry we include Audit Integrity's Accounting and Governance Risk (AGR) measure. From academia we include working capital accruals (Sloan), Beneish's M-score, Dechow et al.'s F-score, Dechow and Dichev's accruals quality measure, the modified-Jones model and Hribar et al's unexplained audit fee measure. We compare the ability of these measures to detect and to predict three different dichotomous variables: AAERs [SEC accounting-related enforcement actions], restatements related to accounting irregularities, and shareholder litigation for accounting improprieties. To determine which measure has the greatest


ability to detect and predict accounting irregularities, we perform a head-to-head comparison of each academic measure relative to AGR.

- We provide evidence that the commercially developed AGR measure outperforms a number of academic risk measures for detecting and predicting bad accounting outcomes. Combined with results from Daines et al. that suggest AGR is superior to other commercially developed risk proxies, our paper provides compelling evidence that AGR is a measure that should be useful to many stakeholders and in future research.
- These findings support the use of Audit Integrity’s risk measures in various contemporary studies and demonstrate that bridging the gap between academic research and commercial practice may provide better tools for research, resulting in improved inferences and new insights.

**[Rating the Ratings: How Good Are Commercial Governance Ratings? \(Sep-2009\)](#)**

Daines, Gow, Larcker:

- AGR [has] statistically significant relationships with future restatements...future litigation... future improvements in operating performance...future alpha (excess stock price return)
- [On the ineffectiveness of governance ratings, specifically RiskMetrics Group/ISS (CGQ), The Corporate Library (TCL) and GovernanceMetrics International (GMI)] ...the predictive ability of the leading commercial governance ratings (*CGQ*, *TCL* and *GMI*) is well below the threshold necessary to support the bold claims made for them
- [The chart below is a graphical representation of “Table 10: Summary of results” from the paper:]

	 <b>AGR</b>	<b>RiskMetrics (CGQ)</b>	<b>Governance Metrics International</b>	<b>The Corporate Library</b>
<b>Correlation with Events</b>				
<i>Stock Performance</i>	❖ ❖			
<i>Class-Action Lawsuits</i>	❖ ❖	X X		❖ ❖
<i>Restatements</i>	❖ ❖		❖ ❖	
<i>Operating Performance*</i>	❖ ❖	❖		

Results correlation data and quotations obtained from Stanford University study, “Rating the Ratings: How Good Are Commercial Governance Ratings?”, May 2008

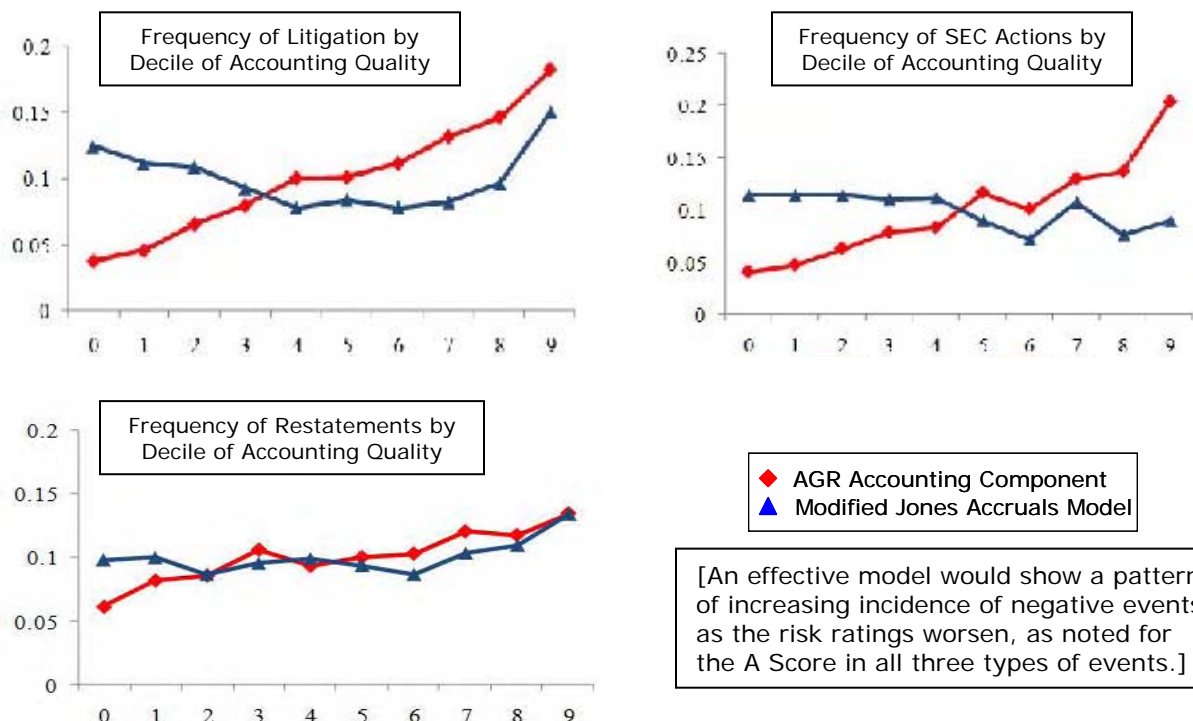
❖, ❖❖, Indicates significance with the expected sign at the 5 percent and 1 percent levels, respectively.  
 X, XX, Indicates significance but with the unexpected sign at the 5 percent and 1 percent levels, respectively.

\* Operating Performance is estimated as return on assets (ROA), measured as operating income divided by average total assets

### [Political Connections, SEC Enforcement and Accounting Quality \(Jul-09\)](#)

Correia, Stanford Rock Center for Corporate Governance (Working Paper):

- ...firms with low accounting quality have greater political expenses
- ...they increase these expenditures during the period of the misreporting and are more likely to target them to the Congressional Committees with stronger ties to the SEC during this period
- ...this evidence suggests that these firms may be using political contributions to lower enforcement costs
- ...politically connected firms are less likely to have a restatement initiated by a comment letter from the SEC, are less likely to be involved in an SEC enforcement action and face lower penalties
- [Previous studies show] an enforcement action imposes severe costs on the firm and its managers
- ...if rewards are sufficiently high with respect to investigation costs, a quid pro quo or a signaling story can explain a positive association between political expenditures and the incidence of misreporting, as well as a lower probability of investigation and prosecution of contributing firms
- [On the use of AGR as a measure of accounting quality] the accounting component of the Audit Integrity AGR score performs better than the traditional discretionary accruals-based measures used in accounting at predicting misreporting leading to restatements, shareholder litigation or an SEC enforcement action



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**[The Association between Financial Reporting Risk and Audit Fees Before and After the Historic Events Surrounding SOX \(Oct-09\)](#)**

Charles, Glover, Sharp:

- We find a positive statistically and economically significant relationship between financial reporting risk and audit fees paid to Big 4 auditors. [i.e., riskier companies pay higher audit fees]
- More importantly, we predict and find that the relation between financial reporting risk and audit fees strengthened significantly in 2002 and 2003, consistent with a shift in the way auditors priced risk, likely in response to the events surrounding the Sarbanes-Oxley Act of 2002...suggesting a significant shift in the way firms risk-priced audit...
- Finally, we provide evidence that a commercially developed, comprehensive risk measure [Audit Integrity's AGR Rating] effectively proxies for an element of risk beyond what has traditionally been captured by various risk measures in audit fee models: namely, the risk that financial statements have been intentionally misstated.

**[Internal Audit Outsourcing and the Risk of Misleading or Fraudulent Financial Reporting: Did Sarbanes-Oxley Get It Wrong? \(Jan-09\)](#)**

Prawitt, Sharp, Wood:

- The Sarbanes-Oxley Act (SOX) prohibits companies from outsourcing internal audit work to their external auditor based on the belief that such outsourcing arrangements create an economic bond that compromises audit quality and thus financial reporting quality
- Our results indicate that, prior to SOX, outsourcing the work of the internal audit function (IAF) to the external auditor is associated with *lower* accounting risk as compared to keeping the IAF in-house or outsourcing the work of the IAF to a third party other than the external auditor
- These results do not provide support for SOX's prohibition of outsourced internal auditing services by external auditors.
- [On using the AGR (accounting only) as a measure of accounting quality] other research provides additional evidence that Audit Integrity's risk measure effectively proxies for accounting risk
- To proxy for the level of transparency, we use data developed commercially by Audit Integrity

**[Investors' Valuation of Recognition versus Disclosure: Accounting for Employee Stock Options \(May-07\)](#)**

Bartov and Hayn

- We investigate the incremental valuation effect of expensing versus disclosing the cost of employee stock options
- The results indicate that information on stock option costs has valuation consequences when this cost is recognized on the income statement rather than merely disclosed in the footnotes
- They also suggest that the increase in public awareness of the disciplinary effect of option expensing and the presumed greater transparency achieved by such expensing has shifted investors' focus away from the negative income effect that predominated in the early 1990s

**[The Market Effects of Breaking a String of Meeting or Beating Analysts' Expectations: Downward Revisions of Future Cash Flows or Increase of Cost of Equity Capital?](#)**

Xie, University of Utah (Working Paper):

- on average, breaking a string of MBE [meeting or beating analysts' expectations] leads to both decreases in expected future cash flows and increases in firms' cost of equity capital
- breaks by firms with higher prior information risk are associated with larger increases in cost of equity capital
- Since a higher cost of equity capital has the potential to impact a firms' investment opportunity set and optimal capital structure, the cost of capital impact of breaking a string of MBE represents a significant penalty for missing analysts' expectations
- firms with lower analyst following, larger standard deviation of analysts' forecasts and worse AGR rating have a larger increase of cost of equity capital [using AGR ratings as a proxy for "information risk"]

### [The Pricing Properties of Audit Integrity's AGR Measure \(Feb-09\)](#)

Walter N. Torous, Lee and Seymour Graff Endowed Professor, UCLA Anderson School of Management (Research sponsored by Audit Integrity)

- This paper demonstrates that the AGR rating not only delivers excess returns on a stand-alone basis, but also provides incremental returns after controlling for the most common investment factors: Beta, market capitalization, style (value vs. growth), momentum, and liquidity
- Audit Integrity's AGR score has incremental power to explain excess stock returns
- AGR explains an aspect of the risk-return tradeoff prevailing in equity markets not associated with any previously documented risk factor
- Our empirical tests all confirm that stock returns indeed reflect the firm's corporate integrity as measured by its AGR score

### [Relationship between AGRs and Future Excess Returns \(Nov-05\)](#)

Professor Carla Hayn, Senior Associate Dean, UCLA Anderson School of Business (Research sponsored by Audit Integrity)

- Audit Integrity Accounting & Governance Risk ratings (AGRs) are predictive of future excess returns

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## **Related Research on Fraud-related Risks**

### **Investor Perceptions about Financial Statement Fraud and their Use of Red Flags (Aug-2009)**

Joseph F. Brazel, et al:

- as investors rely more on financial statements to make investment decisions, they perceive fraud risk assessment to be a more important investment activity
- [there is] a positive association between the importance of making a fraud risk assessment and investors' use of fraud red flags when making investment decisions
- investors tend to focus on SEC investigations, pending litigation, violations of debt covenants, and high management turnover
- Fraud risk assessments can help investors evaluate the credibility of the financial statements and may improve their ability to avoid investing in fraudulent companies
- investors who rely more in financial statement data should be more motivated to assess the risk that this information is fraudulent

### **Litigation Risk and Market Reaction to Restatements (Nov-2009)**

Salavei, et al:

- This paper investigates the extent to which market reactions to restatement announcements are explained by litigation risk
- about half of the -9.2 percent average restatement announcement effect is due to expected litigation costs
- Jones and Weingram (1997) find that restating firms are substantially more likely to be sued than other firms
- Palmrose and Scholz (2004) find that 37.6 percent of restating companies are sued, and those firms are sued because they restate economic issues, commit fraud, make large earnings overstatements, or experience unusually large stock price declines at the announcement
- the stock prices of more "sueable" firms start falling a month before their restatement announcements
- litigation risk is an important determinant of market reactions to restatement announcements
- Apparently, by the time a restatement is announced, investors have already learned much of the financial implications of restatements from other sources. Large negative market reaction at the restatement announcement is primarily attributed to the market learning with more precision the likelihood of litigation
- Results show that firms with higher litigation risk have much larger negative market reactions to restatement announcements

All of these papers can be accessed through links at [www.AuditIntegrity.com](http://www.AuditIntegrity.com), under the Research>Academic menu listing.