Aon Risk Maturity Index

Insight Report, October 2017

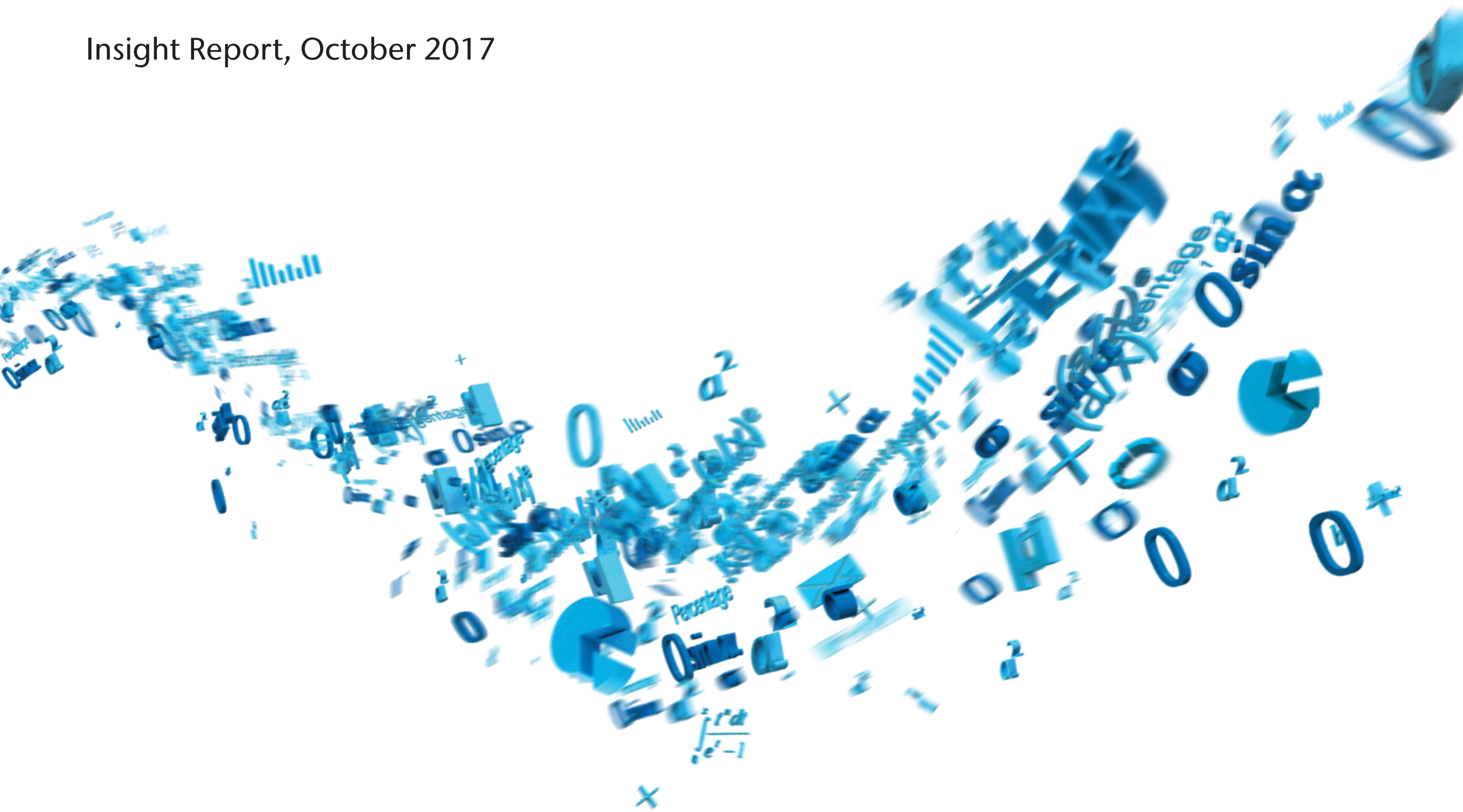

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Table of Contents

Executive Summary

Developed by Aon and the Wharton School of the University of Pennsylvania, the Aon Risk Maturity Index (RMI) was developed in 2011 as a tool to assist senior finance, risk and legal professionals in identifying and addressing critical areas of concern in their risk management programs. The "Index" is an innovative platform that assists organizations in understanding the value of risk management in strengthening operating performance and/or reducing volatility by empowering them with insights and guidance on best practices tools and techniques to enhance their risk governance and risk management practices.

Over the past six years, analysts from the Aon Risk Maturity Index team, the Wharton School and Aon's Centre for Innovation & Analytics have aggregated and analyzed Risk Maturity Index participant data and publically accessible financial performance data to develop annual Aon Risk Maturity Insight Reports which present findings on the interplay of organizational risk management and the relative maturity of their enterprise risk management approaches. Now in its fourth edition, we are pleased to present the 2017 Aon Risk Maturity Index Insight Report as a new installment to drive marketplace insights on the importance of advanced risk management practices with the proper tools and techniques to empower results.

Respectfully submitted,

Richard Waterer | Managing Director, EMEA - Global Risk Consulting
Commercial Risk Solutions
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Managing Risk in a Volatile Environment

In today's era of volatility, the evolving environment across three major dimensions of economics, demographics and geopolitics, along with the continuing pace of technology change, are converging to create an increasingly new and complex risk landscape for organizations.

As evidenced by various bodies of research published by Aon, we continue to witness how the interconnectivity of risks potentially impact organizations. Never before has it been so critical for organizations to consider the interrelationship between building sustainable competitive advantage and adopting effective risk management best practices. At Aon we feel it is incumbent upon organizational executives and key stakeholders to take proactive steps to increase their understanding of the risks they face—both new and emerging—in order to adapt to the changing environment. Technology offers tremendous growth opportunities in the form of operational performance, automation, new products and services, new and enhanced distribution channels and business intelligence. However, new technology brings tremendous exposure in the form of cyber risk which has continued to emerge as a key concern, as evidenced by Aon's 2017 Global Risk Management Survey.

The impact of the interconnected nature of these risks has been felt by many organizations. Increasingly Boards of Directors are obligated, in the case of regulated entities, or challenged to be acutely aware of and understand the key risks their organizations face and how these risks are being managed. The ability of organizations to understand and manage the increasingly interconnected nature of risks and develop effective organizational governance and processes that encourage improved risk-based decision making is imperative to their financial and operational well-being. Insurers providing directors and officers (D&O) insurance*, a type of liability insurance covering directors and officers for claims made against them while serving on a board of directors, also increasingly consider the maturity of organizations' approach to risk management as part of their underwriting process. In this report we present new findings that showcase a correlation between higher risk maturity and lower D&O insurance premium rates over time.

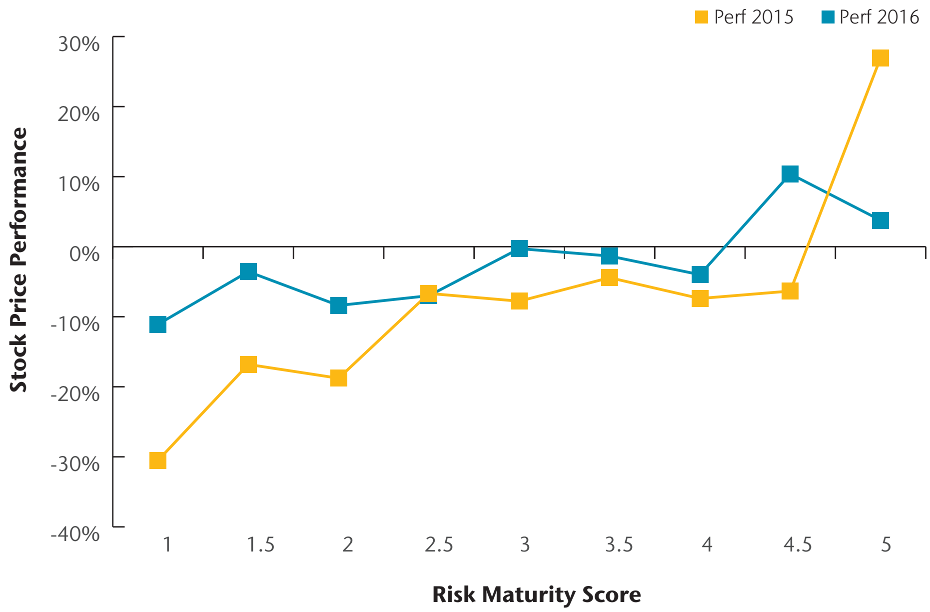
In this edition of the Aon Risk Maturity Index Insight Report, we present the latest results of our research and analysis of the positive effects of enhanced organizational risk management practices.

In this Insight Report, we endeavor to:

1. Re-examine the relationship between Risk Maturity and Financial Performance:
    a. Confirm past analysis from the Aon Centre of Innovation & Analytics (ACIA) and the Wharton School on the relationship between a higher Risk Maturity Rating and superior stock price performance
    b. Confirm prior analysis on the inverse relationship between a higher Risk Maturity Rating and stock price volatility
    c. Expand our analysis to look at how higher Risk Maturity Ratings can lead to higher market valuations
    d. Examine the ability of organizations to respond to political risk, through the lens of Brexit and the uncertainty surrounding the UK's preparations to leave the EU, and demonstrate the relative resilience of organizations with higher risk maturity
2. Examine the relationship between risk maturity and Directors and Officers (D&O) insurance.

** Such policies cover the personal liability of company directors and officers as individuals (Side A cover), but also the reimbursement of the insured company in case it has paid the claim of a third party on behalf of its managers in order to protect them (Side B or Company Reimbursement Cover).*

Graph One: Stock Price Performance by Risk Maturity Rating



Links to Risk Maturity

Aon has continued to build upon the empirical research that we have conducted in previous years. Using the financial results and share market performance of nearly 400 publicly traded companies around the world that have participated in the Risk Maturity Index survey, our analysts have compiled the data necessary to identify the correlations between advanced risk management capabilities and company stock price performance. As in previous reports, we have found continued positive correlation on stock price performance and company profitability from higher risk maturity. Our findings demonstrate positive internal and external benefits that a robust and sustainable risk management program can deliver.

The Relationship between Risk Management and Stock Price Performance

Aon's analysts continue to focus on the correlation between risk maturity and stock price performance for publicly traded organizations. For 2016, as in previous years, our research again shows positive correlation between risk maturity and stock price performance. Our 2015 Risk Maturity Index Insight Report noted that 2014 displayed an absence of any strong correlation, which we hypothesized was due to the bull market providing a boost across the market.

Stock Price Volatility

Our analysts noted that 2016 was a year of increased equity market volatility, across all risk maturity scores. In this environment, the correlation between risk maturity and market volatility has strengthened, with materially higher volatility for organizations that have less sophisticated practices for managing risk in their organizations. 2016 saw equity markets responding strongly to surprise political decisions by electorates around the world.

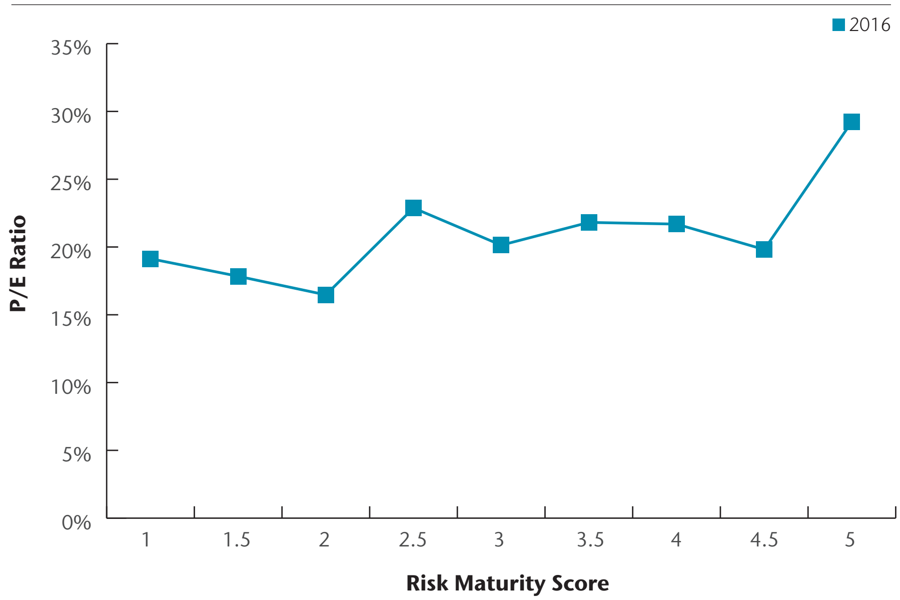
Graph Two: Share Price Volatility 2016

Market Valuations for 2016

An additional view we researched for 2016 is the relationship between the price to earnings multiple applied to our survey group of public entities. This research helps us separate out the market perception of an organization from general market trends and changes in an organization's profitability.

Here, our analysts have noted that the correlation between higher risk maturity and a higher valuation multiple is clear, particularly between significantly low risk maturity organizations and significantly high risk maturity organizations. This indicates that investors are able to identify those organizations that have invested in strengthening their risk practices, and are willing to reward those companies with a higher valuation. This supports our view that companies with more mature risk practices should experience higher rates of growth and future profitability through their ability to identify and respond to changes in their external environments.

Graph Three: Market Valuation 2016



Risk Management and Organizational Resiliency—Brexit Scenarios

As in past years, researchers from Aon examined the relationship between organizations exhibiting higher levels of risk maturity and organizational resiliency in response to key market events. For this report, our researchers subjected the data to a new series of stress tests based on the Bloomberg Scenario Function to determine the effect of market volatility associated with the political and economic uncertainty surrounding the UK's preparations to leave the European Union (Brexit). Our researchers analyzed the stock price impact on the sample set of securities for a new set of scenarios involving a -3% shock to the FTSE 100, a -10% swing against the British Pound (GBD) versus the US Dollar (USD) and -25 basis points shock to the 2 Year UK Gilds.

For all tested market events, our research confirms findings that indicate a direct relationship between Risk Maturity and organizational resiliency as judged by the relative resilience of an organization's stock price in the immediate aftermath of the simulated market event. Graphs Four through Six present these exciting new scenarios.

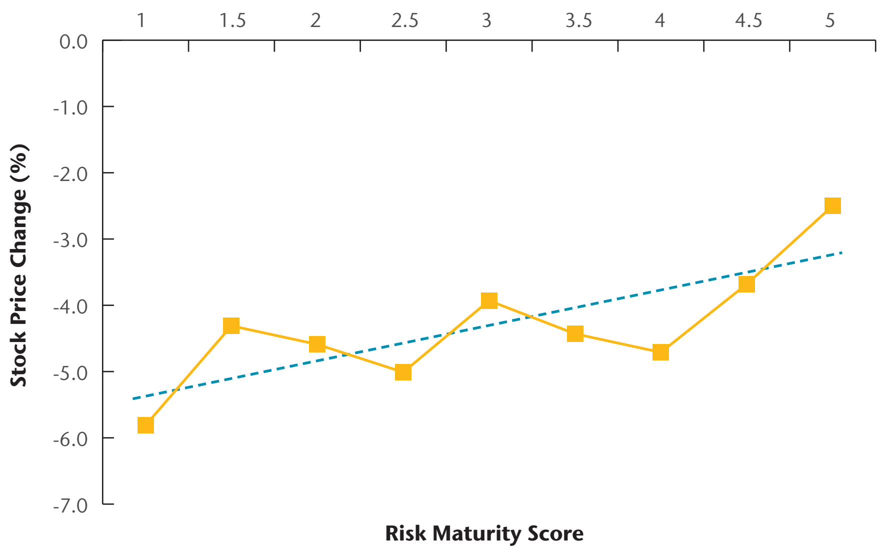
In our first scenario, a shock of -3% is applied to the FTSE 100, which then propagates through to the rest of the model. This is shown in Graph 4 below.

Graph Four: Financial Market Shock Scenario 1 - FTSE 100 -3% downturn

Source: Bloomberg

In the second scenario, the British Pound weakens by 10% relative to the US Dollar.

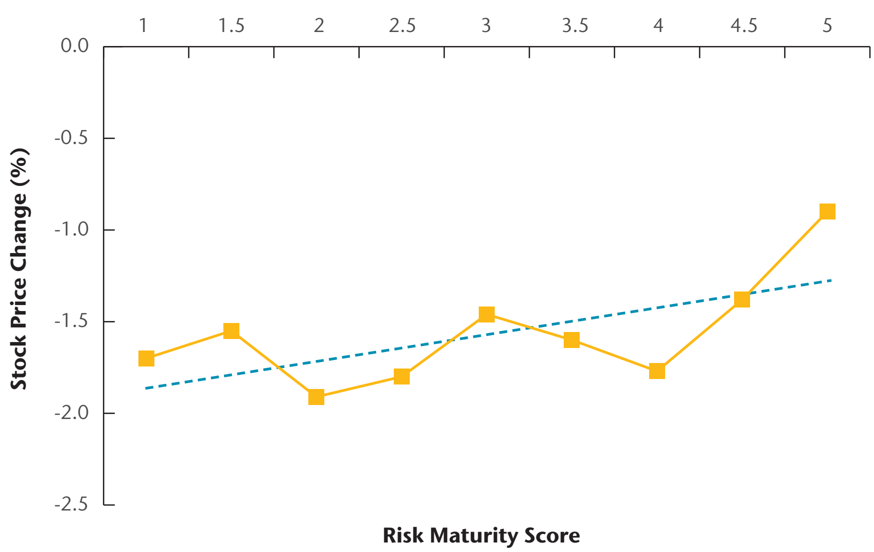
Graph Five: Financial Market Shock Scenario 2 – British Pound (GBP) -10% downturn



Source: Bloomberg

In the third scenario, the UK Gilt two year yield is shocked down by 25 basis points, with the effect pushed out to the rest of the yield curve and the other modeled factors.

Graph Six: Financial Market Shock Scenario 3 – HM Treasury UK Gilt -25bps downturn



Source: Bloomberg

Aon's analysis of the historical and expected future performance of our survey participants supports our belief that well designed and sustainable risk management practices continue to be the best defense against an uncertain external environment. Strong risk management principles and practices, implemented with consensus across and among the organization, can contribute to higher returns, even during significant market events.

Risk Maturity and Directors and Officers Insurance Premiums

Boards of Directors and Officers of organizations are being increasingly challenged to be acutely aware of and understand the key risks their organizations face and how they are being managed. New for the 2017 edition of this report, Aon researchers examined the relationship between the maturity of organizations' approach to risk management and Directors and Officers (D&O) insurance underwriting process and premium rates over time.

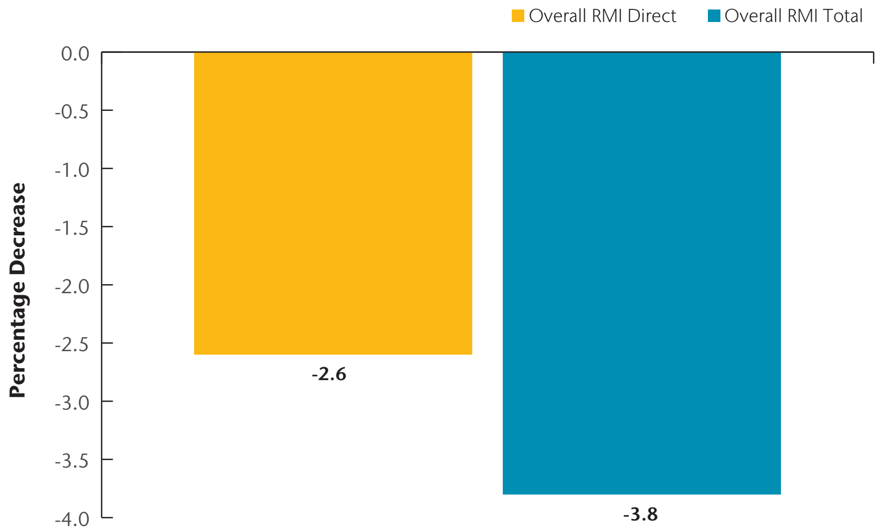
Our prior research has shown that higher risk maturity scores are often associated with lower volatility and higher accounting performance and stock returns. Reductions in insurance premiums are another potential financial benefit for organizations exhibiting more mature risk management processes. This can occur through two channels. First, insurance providers are likely to lower insurance premiums for firms they view as less risky (as reflected in lower volatility). Second, better understanding of risk exposures and their drivers, together with the consistent development and application of risk appetite and risk tolerance concepts to decision-making, provides the information needed to make more informed decisions about which risks to avoid, mitigate, or accept, and which risks to insure.

By optimizing their insurance portfolio through more mature application of risk management processes, firms can potentially reduce premiums by avoiding or mitigating the most costly risks, choosing only the level of coverage that is necessary given the firm's risk appetite and tolerances, and improving its bargaining position with insurers.

To examine whether higher risk maturity scores are associated with lower insurance premiums, we investigated the statistical relationships between the premium per million dollar coverage for which 81 (Aon) insurance brokerage clients that completed the Risk Maturity Index, also paid for Directors and Officers (D&O) insurance. Because D&O insurance premiums differ due to factors other than the firms' risk management practices, our research controlled for the clients' market capitalization, stock price volatility, leverage, board of director characteristics, and extent of securities litigation in its industry. We also controlled for plan limits and deductibles, which typically influence the premium charged.

Our research found that firms with higher overall Risk Maturity Index scores paid significantly lower premiums for D&O insurance, even after controlling for these other factors. As shown in graph seven, a small ten percent increase in overall risk maturity scores is associated with D&O premiums that are 2.6 percent lower than the premiums paid by similar firms. This direct benefit does not take into account the indirect premium benefits that also arise from lower volatility (and thus lower premiums) in firms with higher risk maturity . When we calculate the total effects of higher risk maturity on D&O premiums (including the benefits from lower volatility), the premium reduction associated with a ten percent improvement in risk maturity scores increases to 3.8 percent.

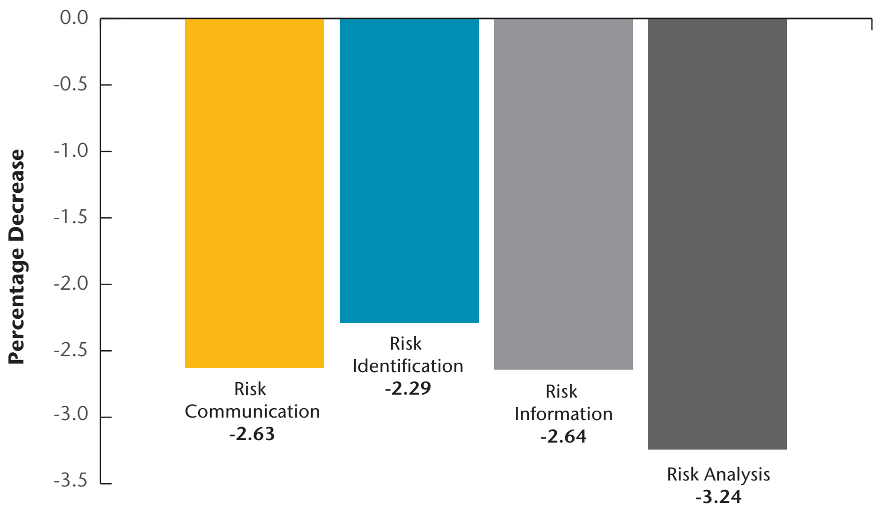
Graph Seven: Relationship between Risk Maturity and D&O Insurance



Overall RMI Direct is the estimated influence of a ten percent increase in the firm's overall RMI scores on D&O insurance premiums after controlling for differences in plan limits and deductibles and firm and industry characteristics, but excluding any insurance premium benefits related to lower volatility. Overall RMI Total is the estimated influence of a ten percent increase in the firm's overall RMI scores on D&O insurance premiums, taking into account the lower volatility observed in firms with higher RMI scores.

To better understand the specific risk management practices that drive these results, we investigated the associations between D&O insurance premiums and each of the ten individual characteristics (see below) that underpin the Risk Maturity Index. Higher scores on four of these characteristics are significantly related to lower premiums. All four of these characteristics reflect the extent to which the firms consistently apply quantitative methods and the concepts of risk appetite and risk management to the analysis of risk exposures. Risk Communication incorporates the nature of risk communications, including its consistency, focus (reactive vs. proactive), and quantitative-orientation. Risk Identification captures the identification of existing and emerging risks through internal and external data and information. Risk Information includes the formal collection and identification of operational and financial risk information into decision-making and governance processes. Risk Analysis assesses the use of sophisticated methods to understand risk and demonstrate value added through risk management. As shown in Graph Eight, ten percent improvements in these scores are associated with premium reductions ranging from 2.29 to 3.24 percent, excluding any benefits from reduced volatility.

Graph Eight: Distinguishing Risk Maturity Characteristics and D&O Insurance

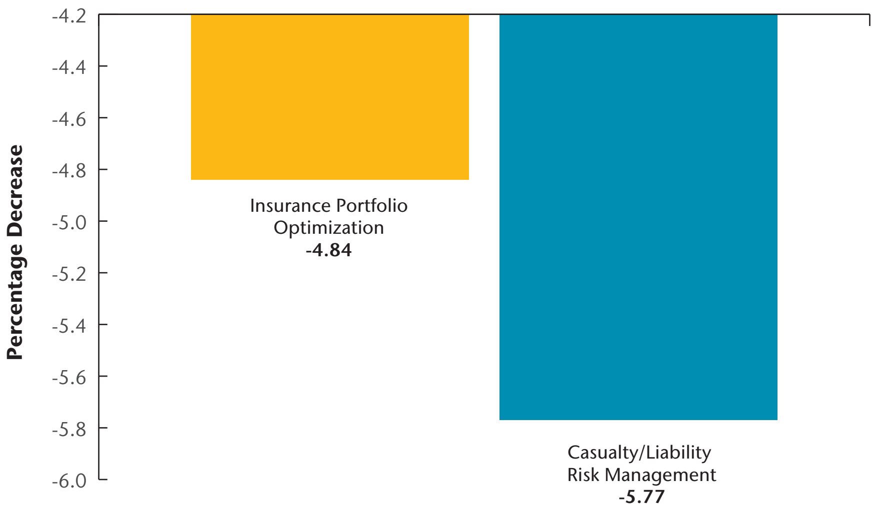


Insurance Optimization, Casualty/Liability Risk Management and D&O Insurance

The estimated insurance premium benefits from more mature risk management processes are even larger when we examine insurance-related practices. The Risk Maturity Index contains two sets of questions that directly relate to insurance risk management strategy. One set of questions relates to insurance portfolio optimization through the use of robust analyses of risk exposures and tolerances for insurable risks that take into account their impact on financial performance.

A second set of questions covers casualty/liability risk control and compliance, including consistent analysis of claims and incidence data and comparison to external benchmarks and best practices, the performance of exposure reviews that go beyond those required by insurers, and the development and tracking of quantitative performance standards for casualty/liability risk control. Scores for these practices have significant and substantial associations with D&O insurance premiums, with a ten percent increase in insurance optimization scores associated with premium reductions of 4.84 percent and a ten percent increase in casualty/liability risk management associated with a 5.77 percent reduction (excluding any benefits from volatility reduction). See Graph Nine.

Graph Nine: Relationship between Risk Maturity and Casualty/Liability Risk Control and Compliance



The Ten Characteristics of Advanced Risk Maturity

The Aon Risk Maturity Index examines specific practices and structures related to ten characteristics of Risk Maturity. These ten characteristics are further broken down into 40 specific components that are scored on a 1 (Basic) to 5 (Advanced) scale similar to the overall Index.

1. **Board-level understanding of and commitment to risk management as a critical factor for decision making and for driving value**

2. **A senior-level executive who drives and facilitates key risk management processes and development**

3. **Transparency of risk communication**

4. **A risk culture that encourages full engagement and accountability at all levels of the organization**

5. **Identification of existing and emerging risks using internal and external data and information**

6. **Participation of key stakeholders in risk management strategy development and policy setting**

7. **Formal collection and incorporation of operational and financial risk information into decision making**

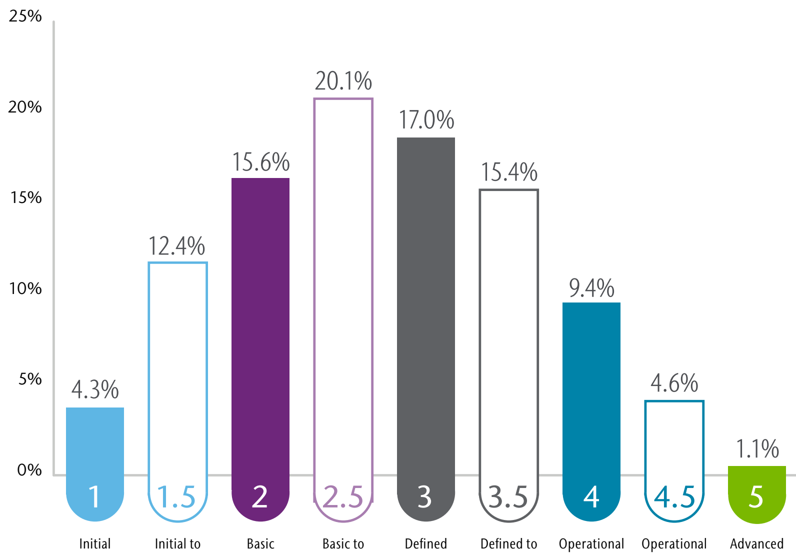
8. **Integration of risk management insights into human capital processes to drive sustainable business performance**

9. **Use of sophisticated quantification methods to understand risk and demonstrate added value through risk management**

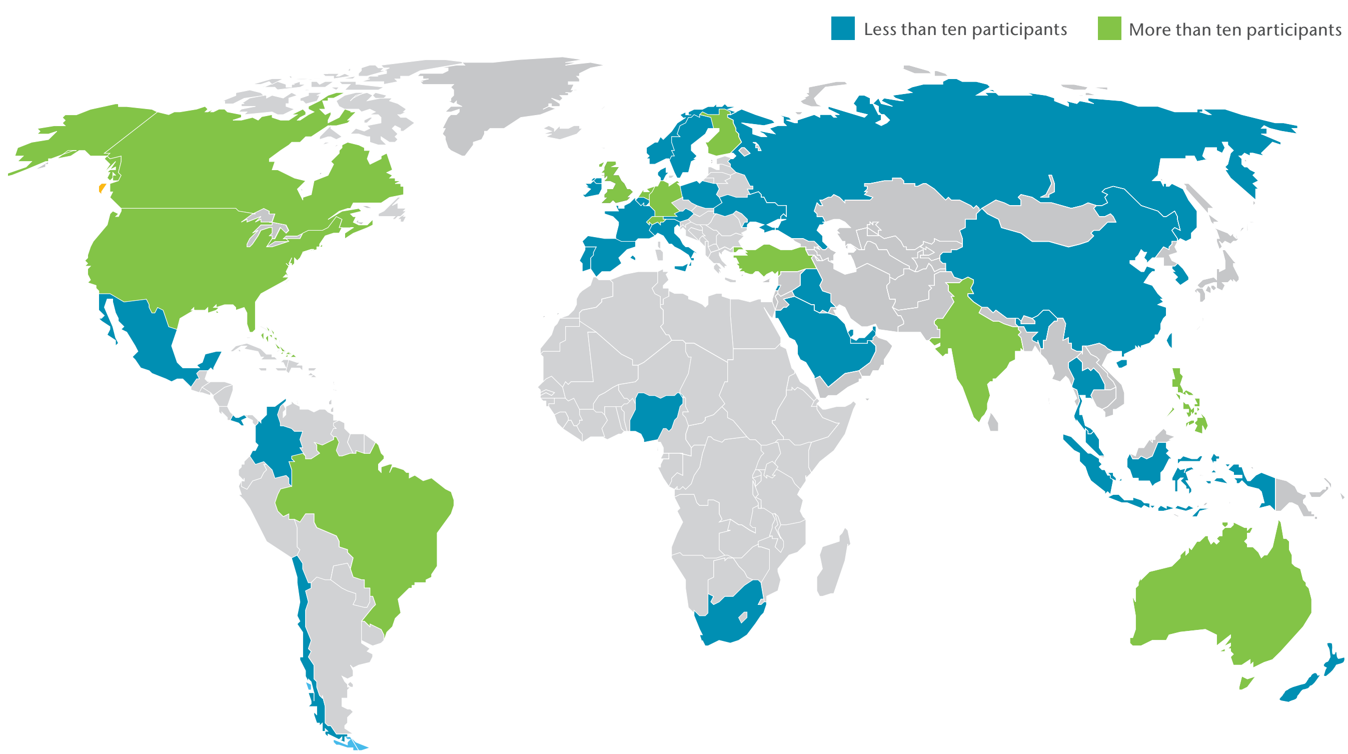
10. **A move from focusing on risk avoidance and mitigation to leveraging risk and risk management options that extract value**

Global Average is "2.5" – Basic to Defined

Aon Risk Maturity Index: Distribution of Risk Maturity Ratings (October 2017)



Reach & Participation is Global



28 **Total number of industries participating in the Risk Maturity Index**

10 **Number of Risk Maturity Index survey languages**

5 **Number of continents with organizations participating in the Risk Maturity Index**

Risk Maturity Ratings

The data captured will support analysis of the relationship between specific business practices and financial performance. Risk Maturity Rating levels are defined in the table below.

5
Advanced

The organization has a well-developed ability to identify, measure, manage and monitor risks; risk management processes are dynamic and adapt to changing risks and business cycles

- Formal statements of risk appetite and tolerance exist and guide decision making
- Risk and risk management information is explicitly considered in decision processes
- Analysis is consistently applied, incorporating qualitative & quantitative techniques
- Risk management is viewed as providing a competitive advantage with a focus on optimizing risk-reward trade-offs

4
Operational

There is a clear understanding of the organization's key risks and also a consistent execution of activities to address these risks; some functional areas may employ more sophisticated techniques

- The set of loss and tolerance guidelines are predetermined or developing
- Explicit consideration of risk and risk management information is taken in key decisions
- Analysis is consistently applied, incorporating both qualitative and quantitative techniques

3
Defined

The organization understands and is addressing its key risks; capabilities to measure, manage and monitor risks are in place but may be inconsistent across the organization

- Guidelines for loss and risk tolerance are less developed
- Risk and risk management information is considered informally / implicitly in decision making
- Analysis is consistently applied, with a focus on qualitative approaches

2
Basic

There is inconsistent understanding, management and monitoring of key risks across the organization; capabilities to consistently identify, assess, manage and monitor risks are limited

- Risk management activities occur at the functional level rather than the enterprise level
- Risk management activities emphasize compliance
- Risk management information is considered informally or implicitly in decision making, often on ad hoc basis

1
Initial

If the organization identifies and addresses risks it is done within silos only; components and activities of the risk management process are limited in scope and implemented in an ad-hoc manner

Concluding Remarks

How should your organization align itself around risk? What strategies should your organization implement to integrate risk and strategy? The award-winning Aon Risk Maturity Index has evolved into an industry-leading tool that helps organizations answer these questions. Analysis of Risk Maturity Index results continue to provide valuable and practical risk management insights in support of sustainable, stable financial results.

Aon will continue its research with The Wharton School of the University of Pennsylvania to identify key risk management practices and processes that contribute to improved financial performance, as well as a deeper understanding of industry-specific best practices in regards to risk management.

The Aon Risk Maturity Index is a free, confidential and online tool. For more information or to participate, please visit aon.com/rmi or email risk.maturity.index@aon.com.

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About Aon's Global Risk Consulting

In today's challenging global environment, business risks are no longer isolated by industry, geography or country. Economic slowdown, regulatory changes, cyber risk, terrorism, increased competition, damage to reputation, and other critical risks are complex, interrelated and global in consequence. Aon's Global Risk Consulting is the world's leading risk consulting organization. With nearly 1,300 risk professionals in 50 countries worldwide, our consultants have the expertise and experience to recognize and address the unique challenges and opportunities that face our clients.

In close partnership with Aon's broking team, we provide comprehensive and tailored solutions through a consistent global approach backed by a panel of industry leaders. Our Risk Control and Claims unit is comprised of 400 professionals who support clients globally in the property and casualty risk control arena.

Our Risk Consulting business unit includes leading disciplines that include actuarial, business continuity management (BCM), enterprise risk management (ERM), financial / operational risk and risk management outsourcing. Our Actuarial & Analytics (A&A) practice consists of more than 100 consultants including 47 actuaries having Property & Casualty credentials.

Aon's Captive & Insurance Management practice is widely recognized as the leading captive manager, managing nearly 1,200 captives globally with local capabilities in over 30 countries and offering leading support in risk feasibility studies.

About Aon

Aon plc (NYSE:AON) is a leading global professional services firm providing a broad range of risk, retirement and health solutions. Our 50,000 colleagues in 120 countries empower results for clients by using proprietary data and analytics to deliver insights that reduce volatility and improve performance.

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