Broadleaf

Creating value from uncertainty
www.Broadleaf.com.au

2023RMIARISK CONFERENCE

RMIA Risk Conference:
Does risk management add value?

Dr Dale F Cooper
Director, Broadleaf Capital International

Adelaide Tarntanya, 10 May, 2023

Broadleaf

2023RMIARISK CONFERENCE

About this document

Some of these slides were presented to the Risk Management Institute of Australasia (RMIA) Conference in Adelaide Tarntanya on 10 May 2023

This document contains additional slides, plus detailed references

Earlier related material is provided on the Broadleaf web site here

- This document updates some of that earlier material, and extends it to address the value of risk management in projects

RMIA Conference 2023: Does ERM add value?
2

Broadleaf

2023RMIARISK CONFERENCE

Risk management is fantastic !!

ISO 31000 (2018)

- The purpose of risk management is the creation and protection of value. **It improves performance**, encourages innovation and supports the achievement of objectives.

COSO ERM (2016)

- Integrating enterprise risk management throughout an organization **improves decision-making** in governance, strategy, objective-setting, and day-to-day operations. **It helps to enhance performance** by more closely linking strategy and business objectives to both risk and opportunity. The diligence required to integrate enterprise risk management provides an entity with a clear path to creating, preserving, and realizing value.

But how do we know these claims are true ?

RMIA Conference 2023: Does ERM add value?
3

Broadleaf

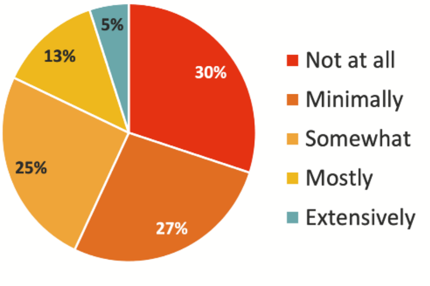
2023RMIARISK CONFERENCE

Many executives are not convinced

To what extent do you believe the organization's risk management process is a proprietary strategic tool that provides unique competitive advantage?

Beasley et al (2019): online survey of 445 executives

Competitive advantage?



'Only 26% of the organizations report that their board substantively review top risk exposures in a formal manner when they discuss the organization's strategic plan.'

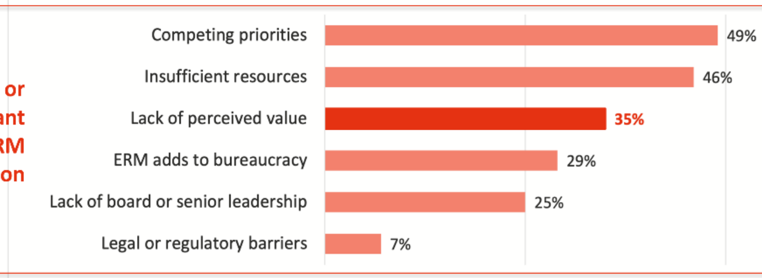
RMIA Conference 2023: Does ERM add value?
4

Broadleaf

2023RMIARISK CONFERENCE

Lack of perceived value is a barrier for ERM implementation

'Barrier' or 'Significant barrier' to ERM implementation



‘Respondents of organizations that have not yet implemented an enterprise-wide risk management process indicate that one impediment is the belief that the benefits of risk management do not exceed the costs or there are too many pressing needs.’

Beasley et al (2019): online survey of 445 executives

RMIA Conference 2023: Does ERM add value?
5

Broadleaf

2023RMIARISK CONFERENCE

What does the evidence show?

RMIA Conference 2023: Does ERM add value?
6

Broadleaf

Good risk management protects value

Broadleaf

2023RMIARISK CONFERENCE

We can be confident that risk management protects value

We have well-established tools for addressing hazards and reducing the chance of things going wrong

- Their focus is on reducing adverse impacts on people, assets and the environment
- They work in a wide range of sectors

There are many examples of significant losses associated with poor risk management

- Financial assets, physical assets, people, environment
- This is one reason why risk management is a focus for regulators

RMIA Conference 2023: Does ERM add value?
8

Broadleaf

2023 RMIA RISK CONFERENCE

Protecting value is an important focus for many regulators

A few examples:

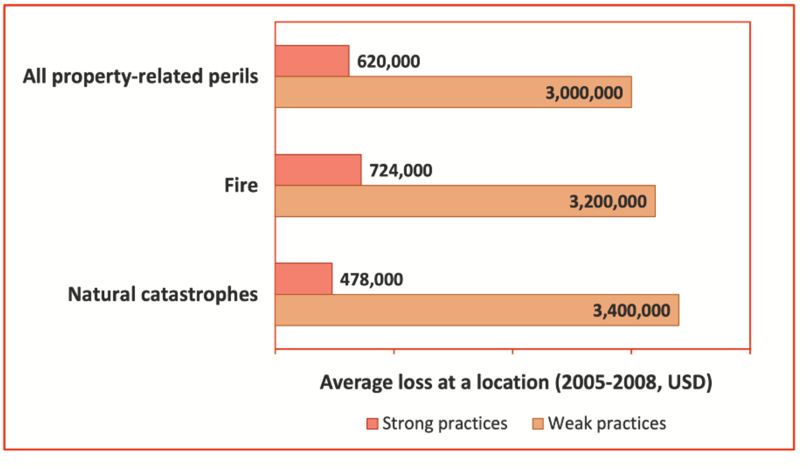
Financial assets	Regulatory capital Liquidity
Physical assets	Hazardous industries Transport
People	Workplace health and safety Food standards Products Medical devices Privacy
Environment	Habitat Biodiversity

RMIA Conference 2023: Does ERM add value?
9

Broadleaf

2023 RMIA RISK CONFERENCE

Good risk management is linked to reduced property losses



FM Global and Oxford Metrica (2010): property losses suffered by companies with strong physical risk management processes were far fewer and much less severe

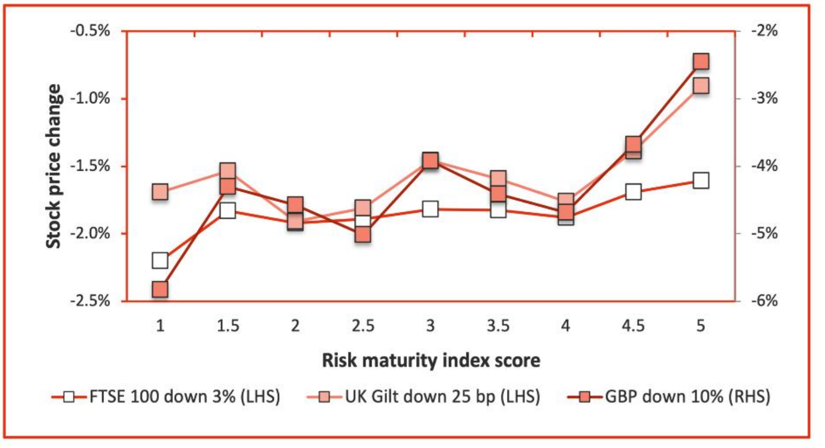
RMIA Conference 2023: Does ERM add value?
10

Broadleaf

Broadleaf

2023RMIARISK CONFERENCE

Higher risk maturity is linked to improved resilience to market shocks



RMIA Conference 2023: Does ERM add value?
11

Aon (2017): resilience expressed in terms of smaller share price reductions in the immediate aftermath of a simulated market event

Broadleaf

But can risk management create value?

Broadleaf

2023 RMIA RISK CONFERENCE

Background

Many have examined the relationship between ERM and company performance in the past 15 years

- Focus primarily on listed companies (where performance information is readily available)
- Wide range of companies, sectors, locations, economies and ownership structures

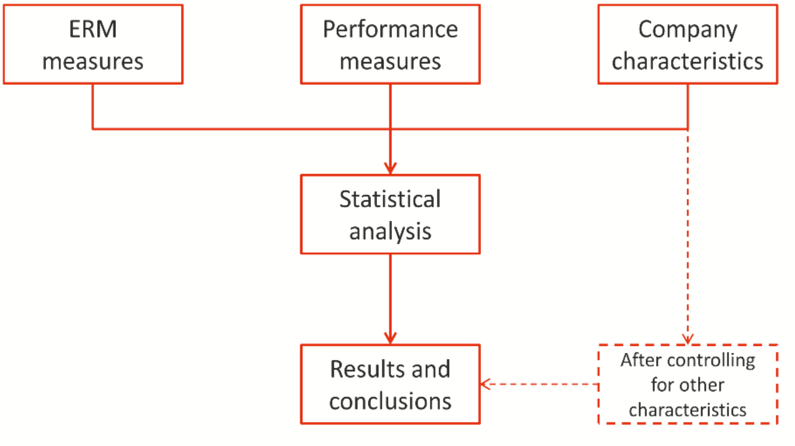
Many company characteristics are linked closely to performance, particularly company size, so the analyses are not always straightforward

RMIA Conference 2023: Does ERM add value?
13

Broadleaf

2023 RMIA RISK CONFERENCE

General approach



RMIA Conference 2023: Does ERM add value?
14

Broadleaf

2023RMIARISK CONFERENCE

Caveat: correlation is not causation!

RMIA Conference 2023: Does ERM add value?
15

Broadleaf

2023RMIARISK CONFERENCE

Measures of business performance

Past performance

- Accounting measures: revenue, profit, EBITDA, return on assets

Projected future value

- Market indicators: Tobin's Q = total market value / total asset value, share price, P/E ratio, cost of capital

Best in class

- Performance over a range of financial and operating metrics, specific to the sector

Growth and volatility in a performance or value indicator

Survey data

RMIA Conference 2023: Does ERM add value?
16

Broadleaf

2023RMIARISK CONFERENCE

Indicators of ERM adoption

Has the company implemented ERM?

1. Search financial media and financial reports for ERM-related phrases, mentions of risk management, CRO appointment, risk committees, Board discussions
2. Manually review 'hits' to confirm relevance
3. Identify earliest evidence to set an indicator variable

Measures based on ERM adoption can indicate causation by comparing performance before and after a change

RMIA Conference 2023: Does ERM add value?
17

Broadleaf

2023RMIARISK CONFERENCE

Measures of ERM maturity

Various maturity models have been used

- Risk and Insurance Managers Society (RIMS)
- Standard and Poor's
- Aon
- Federation of European Risk Management Associations (FERMA)
- Ernst and Young

RMIA Conference 2023: Does ERM add value?
18

Broadleaf

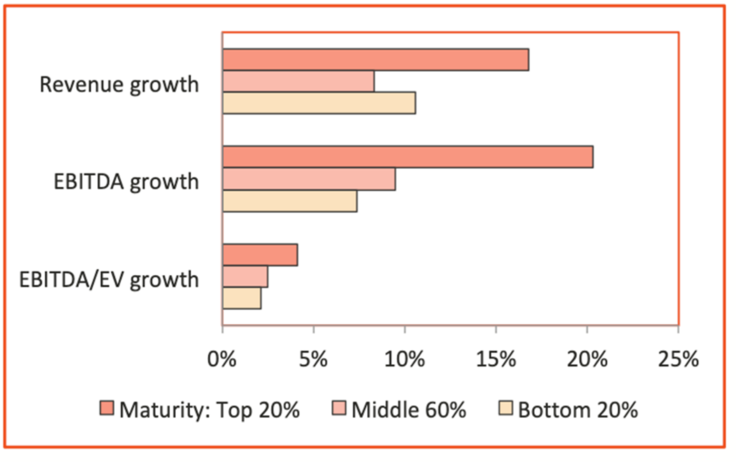
Broadleaf

Strong ERM is linked to strong performance

Broadleaf

2023RMIARISK CONFERENCE

Companies with strong ERM outperform their peers



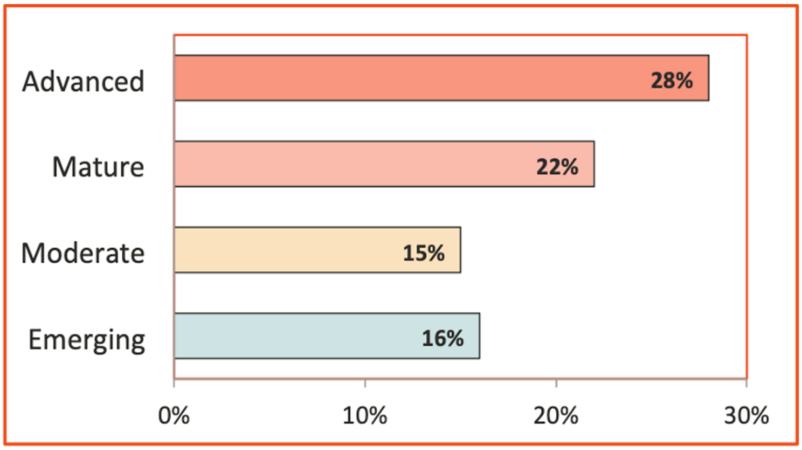
RMIA Conference 2023: Does ERM add value?
20

Ernst & Young (2012): 576 interviews, 2,750 analyst and company reports

Broadleaf

2023RMIARISK CONFERENCE

Companies with strong ERM outperform their peers



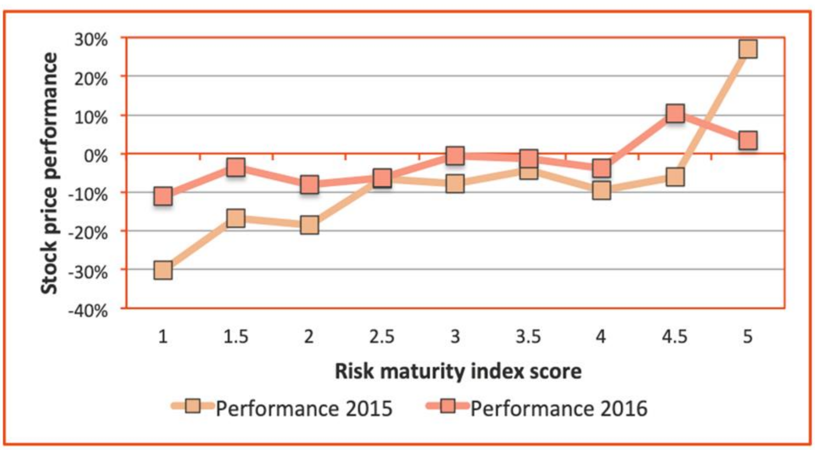
RMIA Conference 2023: Does ERM add value?
21

FERMA (2012): 809 survey responses

Broadleaf

2023RMIARISK CONFERENCE

Companies with strong ERM outperform their peers



RMIA Conference 2023: Does ERM add value?
22

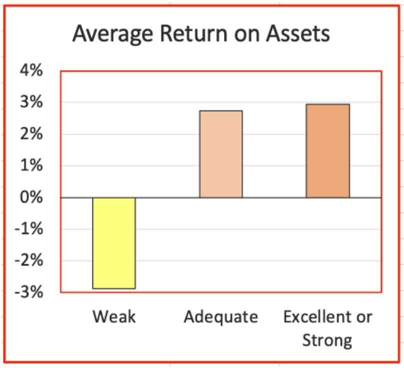
Aon (2017): 81 insurance broker clients

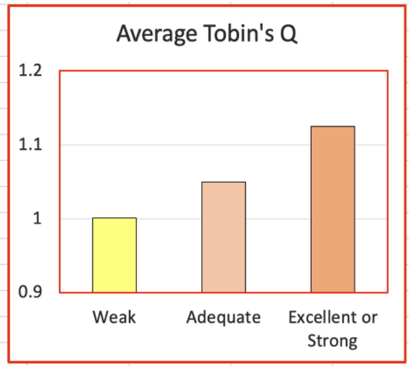
Broadleaf

Broadleaf

2023RMIARISK CONFERENCE

Companies with strong ERM outperform their peers





Ai et al (2016): 51 public and 25 private large property and casualty (P&C) insurers with S&P ERM quality ratings; 340 public and 127 private company observations; 28 firms and 159 observations used for Tobin's Q analysis

Broadleaf

2023RMIARISK CONFERENCE

Higher levels of maturity are important

Farrell and Gallagher (2015)

- Companies in the top tiers of ERM maturity (levels 3-5) are associated with an increase in value of about 25% compared to those in the lower tiers (levels 1-2)

Farrell and Gallagher (2018)

- Increased maturity is associated with increased firm value (up to 35%) and increased return on assets (2.44%), compared to lower-maturity firms

Farrell and Gallagher (2015): 225 publicly listed companies, in a range of countries and sectors; RIMS RMM; value expressed in terms of Tobin's Q

Farrell and Gallagher (2018): 230 publicly listed companies

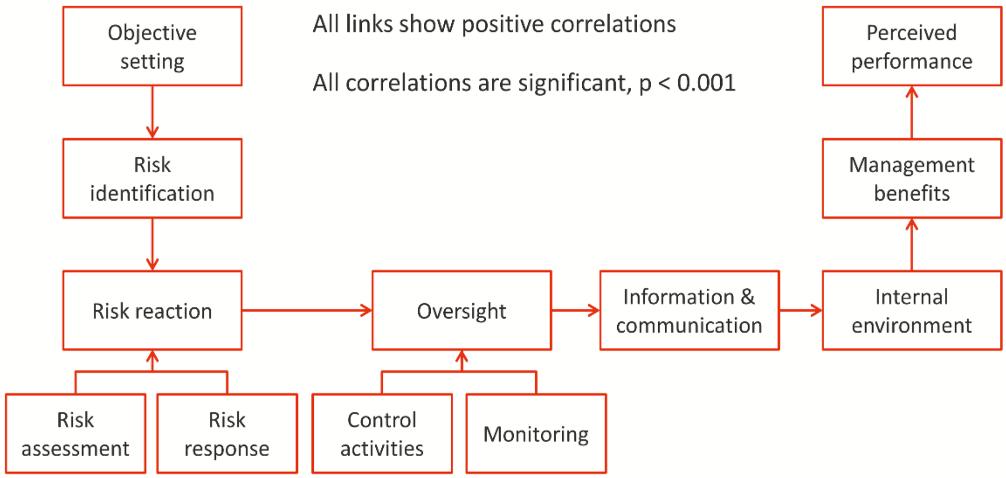
Broadleaf

2023RMIARISK CONFERENCE

ERM components are closely linked

All links show positive correlations

All correlations are significant, $p < 0.001$



Gates et al (2012): survey, n = 150 executives

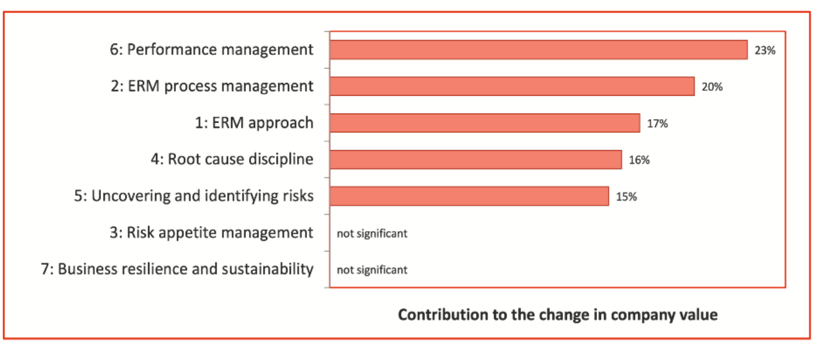
RMIA Conference 2023: Does ERM add value?
25

Broadleaf

2023RMIARISK CONFERENCE

Some ERM components may be more influential than others

Five attributes of the RIMS maturity model seem particularly important, but they are all closely correlated



Farrell and Gallagher (2015): survey of 225 publicly listed companies, in a range of countries and sectors; value in terms of Tobin's Q

RMIA Conference 2023: Does ERM add value?
26

Broadleaf

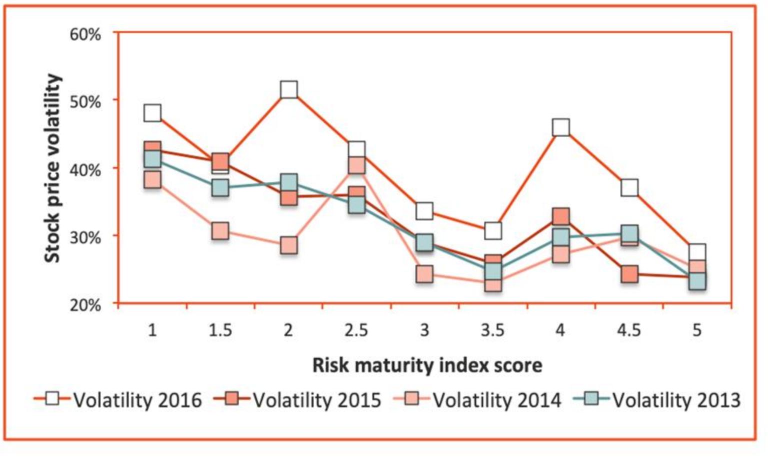
Broadleaf

Strong ERM is linked to more consistent outcomes

Broadleaf

2023RMIARISK
CONFERENCE

Companies with strong ERM show lower price volatility



Aon (2017): 81 insurance broker clients

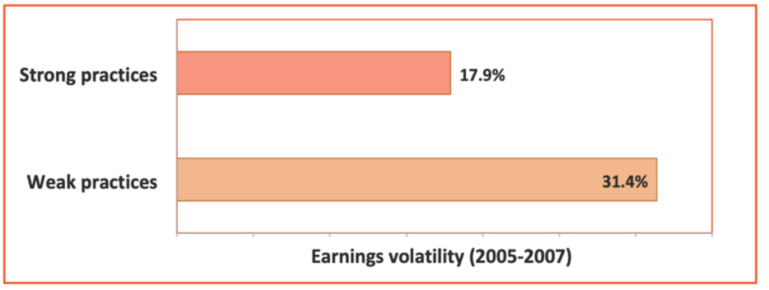
RMIA Conference 2023: Does ERM add value?
28

Broadleaf

Broadleaf

2023RMIARISK
CONFERENCE

Companies with strong physical risk management show lower earnings volatility



FM Global and Oxford Metrica (2010): companies with strong physical risk management processes had far lower earnings volatility

RMIA Conference 2023: Does ERM add value?
29

Broadleaf

‘Best in class’ companies show good performance

Broadleaf

2023RMIARISK
CONFERENCE

Companies are grouped by performance

Operational performance metrics that are specific to the sector

- Unscheduled asset downtime
- Overall equipment effectiveness
- Operating margin compared to the corporate plan
- Ability to meet product launch target dates
- Ability to deliver projects on budget and on time
- Financial metrics

Companies are grouped into classes

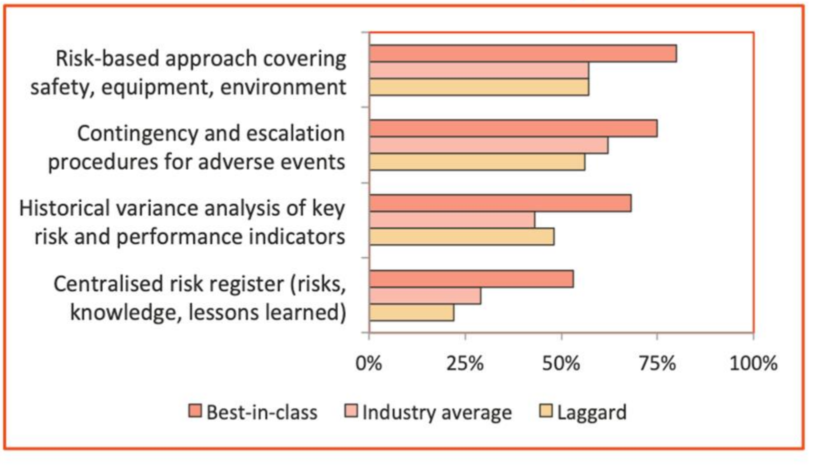
- Triage: best-in-class, industry average and laggards
- Leaders (typically the best-performing 35%) and followers (the rest)

RMIA Conference 2023: Does ERM add value?
31

Broadleaf

2023RMIARISK
CONFERENCE

Leading manufacturing companies demonstrate better risk management



Aberdeen (2013, Table 2): 119 executives, manufacturing companies

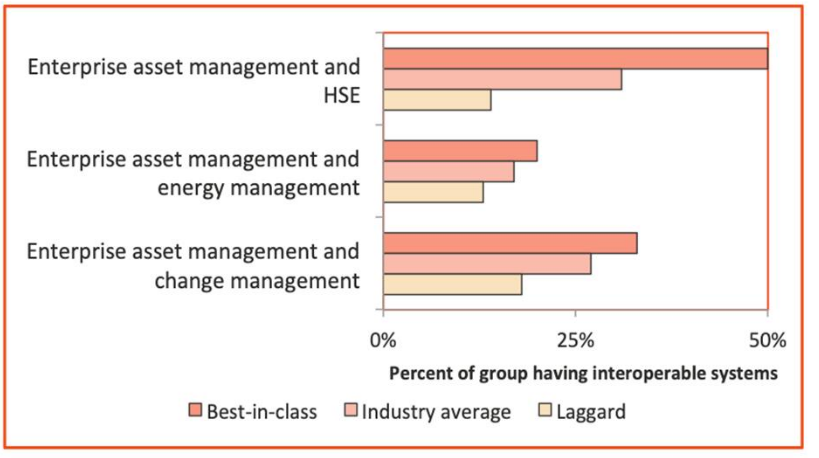
RMIA Conference 2023: Does ERM add value?
32

Broadleaf

Broadleaf

2023RMIARISK CONFERENCE

Leading companies have better system interoperability



RMIA Conference 2023: Does ERM add value?
33

Aberdeen (2013, Table 5): 119 executives, manufacturing companies

Broadleaf

2023RMIARISK CONFERENCE

Leading energy companies demonstrate better risk management

Aberdeen (2015): 187 energy companies

RMIA Conference 2023: Does ERM add value?
34

Broadleaf

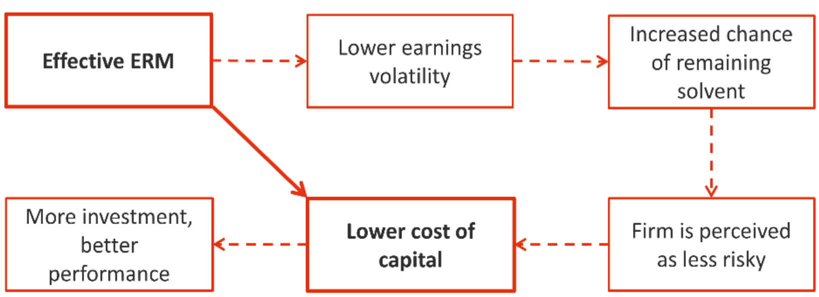
Broadleaf

ERM seems to be a *driver* of good performance

Broadleaf

2023RMIARISK CONFERENCE

ERM adoption leads to a lower cost of capital



ERM adoption leads to a lower cost of capital, by 43 to 60 bp after 1 year

Firms with an ERM program have a 1-3% lower cost of capital than firms without

Berry-Stölzle and Xu (2018), US listed insurers; diagram adapted from Farrell and Gallagher(2018)

RMIA Conference 2023: Does ERM add value?
36

Broadleaf

2023RMIARISK CONFERENCE

ERM adoption leads to improved value for non-financial firms

ERM adoption has a significant and positive effect on firm value

- ERM adoption increases firm value by 4%, for 1,506 Chinese listed non-financial firms
- ERM adoption increases firm value by 6%, for 254 Chinese non-financial State Owned Enterprises

Ai et al (2014): 6,782 observations for listed non-financial firms, 1,317 observations for non-financial SOEs

RMIA Conference 2023: Does ERM add value?
37

Broadleaf

2023RMIARISK CONFERENCE

Causation may change in the medium term

'The level of ERM sophistication is not influenced by operating profitability in the short term …

'However, there is some evidence that in the medium term different levels of accounting performance make available more or less resources to be invested … in designing and performing the ERM system …

'A persistently higher operating performance facilitates the implementation of more advanced ERM practices.'

Florio and Leoni (2017): around 80% of Italian non-financial companies listed on the Milan Stock Exchange, 2011-2013; 462 firm-year observations

RMIA Conference 2023: Does ERM add value?
38

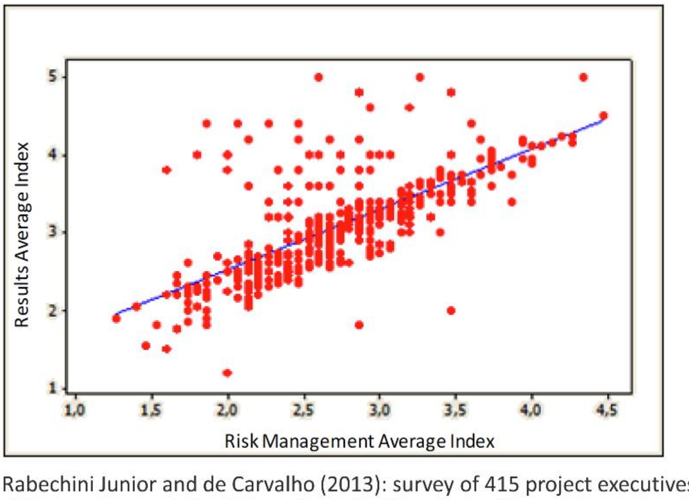
Broadleaf

Sound project risk management is associated with better project outcomes

Broadleaf

2023RMIARISK CONFERENCE

PRM capability may be an indicator of project success



RMIA Conference 2023: Does ERM add value?
40

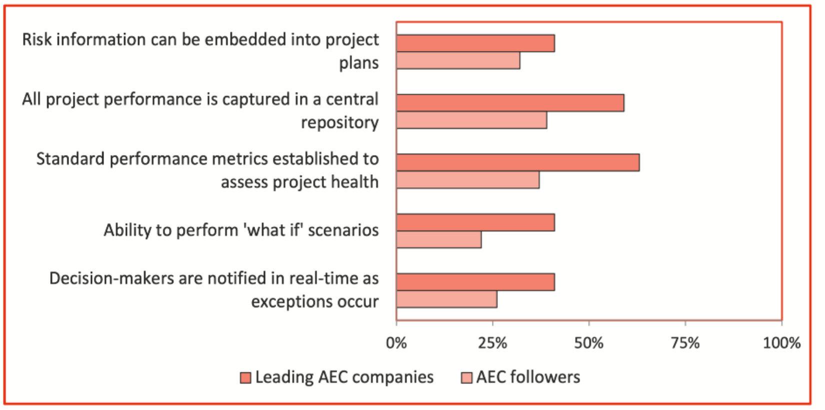
Rabechini Junior and de Carvalho (2013): survey of 415 project executives, Brazil; the risk management index is based on adoption of specific processes

Broadleaf

Broadleaf

2023RMIARISK CONFERENCE

Leading companies are better at some aspects of project risk management



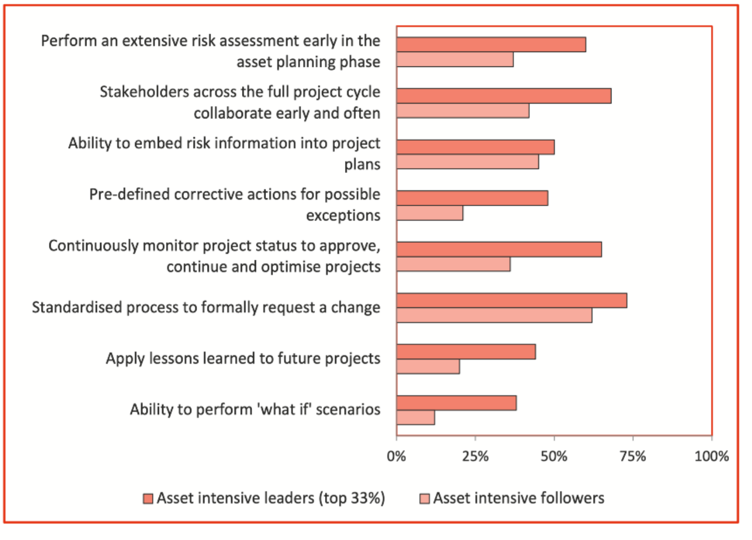
Aberdeen group (2014a): survey of 73 architecture, engineering and construction (AEC) companies; leaders are the top 35% based on project performance

RMIA Conference 2023: Does ERM add value?
41

Broadleaf

2023RMIARISK CONFERENCE

Leaders are better at risk management in asset decommissioning projects



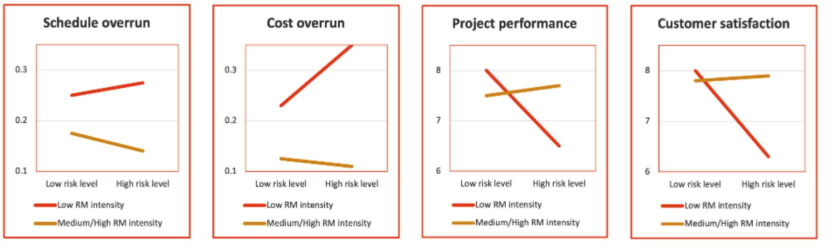
Aberdeen group (2014b): survey of 600 executives in asset intensive industries (oil and gas, energy and utilities)

RMIA Conference 2023: Does ERM add value?
42

Broadleaf

2023RMIARISK CONFERENCE

Risk management planning enhances the success of high-risk projects



- When risk management planning intensity is Low, project success declines as risk increases
- But when risk management planning intensity is Medium or High, project performance outcomes improve

Zwikael and Ahn (2011): 701 projects, 3 countries, 7 industries

RMIA Conference 2023: Does ERM add value?
43

Broadleaf

Summary

Broadleaf

2023RMIARISK CONFERENCE

The evidence shows:

1. Risk management protects value
2. Strong ERM is linked to strong performance
3. Strong ERM is linked to consistent performance
4. ‘Best in class’ companies demonstrate better risk management performance
5. Strong ERM drives good performance (cause and effect)
6. Sound project risk management is associated with better project outcomes

RMIA Conference 2023: Does ERM add value?
45

Broadleaf

2023RMIARISK CONFERENCE

Good risk management is linked strongly to good outcomes

There are strong correlations between good risk management practices and

- Company performance
- Project performance

There is good evidence that there is a causal link

- Good risk management is a driver of good company and project outcomes

RMIA Conference 2023: Does ERM add value?
46

Broadleaf

2023RMIARISK CONFERENCE

Conclusion

Having some ERM is useful

The real benefits come when you're really good at it

And there may be a virtuous circle in the medium term

- Effective risk management improves organisational performance
- High performing organisations are better able to execute effective risk management

So we'll all have a job tomorrow !!

RMIA Conference 2023: Does ERM add value?
47

Broadleaf

2023RMIARISK CONFERENCE

Contact

Dr Dale F Cooper
Director
Cooper@Broadleaf.com.au
+61 419 433 184

If you would like further information about this topic please contact us. We will endeavour to reply promptly.

For further information visit www.Broadleaf.com.au

RMIA Conference 2023: Does ERM add value?
48

References

Aberdeen Group (2013) Operational risk management: How best-in-class manufacturers improve operating performance with proactive risk reduction. Aberdeen Group, Waltham MA, USA, March.

Aberdeen Group (2014a) Improving profit margins in AEC: Visibility, risk mitigation, and project management. Kevin Prouty and Nick Castellina, Aberdeen Group, Waltham MA, USA, September.

Aberdeen Group (2014b) The importance of decommissioning in asset-intensive industries. Reid Paquin, Aberdeen Group, Waltham MA, USA, September.

Aberdeen Group (2015) Powering the energy industry of the future by mitigating risk. Reid Paquin, Aberdeen Group, Waltham MA, USA, February.

Ai, J, H Chen and Y Zhao (2014) Does ERM improve firm value? Evidence from listed Chinese nonfinancial SOEs. (December 15, 2014). Fox School of Business Research Paper No. 15-068. Available at https://ssrn.com/abstract=2538915 or http://dx.doi.org/10.2139/ssrn.2538915.

Ai, J, V Bajtelsmit and T Wang (2016) The combined effect of enterprise risk management and diversification on property and casualty insurer performance. Journal of Risk and Insurance 85(2), 513-543.

Aon (2017) Aon risk maturity index: Insight report. Aon plc, October.

Beasley, MS, BC Branson and BV Hancock (2019) The State of Risk Oversight 2019: An Overview of Risk Management Practices. Enterprise Risk Management Initiative, Poole College of Management, North Carolina State University.

Berry-Stölzle, TR and J Xu (2018) Enterprise risk management and the cost of capital. Journal of Risk and Insurance, 85(1), 159-201.

COSO (2016) COSO Enterprise Risk Management – Aligning Risk with Strategy and Performance, Exposure Draft. Committee of Sponsoring Organizations of the Treadway Commission, June.

Ernst & Young (2012) Turning risk into results. Ernst & Young, ey.com.

Farrell, M and R Gallagher (2015) The value implications of enterprise risk management. Journal of Risk and Insurance, 82(3), 625-657.

Farrell, M and R Gallagher (2018) Moderating influences on the ERM maturity-performance relationship. Research in International Business and Finance. https://doi.org/10.1016/j.ribaf.2018.10.005.

Broadleaf

FERMA (2012) FERMA European Risk Management Benchmarking Survey 2012. Federation of European Risk Management Associations.

Florio, C and G Leoni (2017) Enterprise risk management and firm performance: the Italian case. The British Accounting Review 49, 56-74.

FM Global and Oxford Metrica (2010) The Risk/Earnings Ratio: New Perspectives for Achieving Bottom-Line Stability. FM Global, Johnston RI, USA.

Gates, S, J-L Nicolas and PL Walker (2012) Enterprise risk management: A process for enhanced management and improved performance. Management Accounting Quarterly, 13(3), 28-38, Spring.

ISO 31000 (2018) Risk management – Guidelines. International Organisation for Standardization, Geneva.

Rabechini Junior, R, and MM de Carvalho (2013) Understanding the impact of project risk management on project performance: An empirical study. Journal of Technology Management and Innovation 8, 64-78, Special Issue ALTEC.

Zwikael, O and M Ahn (2011) The effectiveness of risk management: An analysis of project risk planning across industries and countries. Risk Analysis 31(1), 25-37.