Elixir or delusion: general systems risk management and A-REIT entity performance

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Abstract

The paper conducts a preliminary investigation into the potential benefits of General Systems Theory (GST) inspired risk management (RM). The GST-RM framework directs attention to risks involving surveillance, capacity and controls. In the study, the espoused RM of five publically listed A-REITs was benchmarked on these operational domains based on impressions of public Web-sites. The link between RM score and recent entity performance was then investigated. As predicted by the Efficient Market Hypothesis, the study found no link between assessed RM and volatility-moderated annual returns to May 2010 as indicated by Treynor ratios but establishes a useful pathway for further RM research.

Keywords

Risk management, general Systems Theory, A-REITs, surveillance, capacity, controls governance, performance.

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Introduction

The impact of the Global Financial Crisis (GFC) on the property sector was severe. In Australia, where its impacts were comparatively mild, by early 2009 the GFC had wiped $Au 80 billion off A-REITs market values (Reid 2009). Aside from direct financial losses, the GST provided ammunition for those seeking to discredit the Efficient Market Hypothesis (EMH) (Minsky 2008; Taleb 2007; Ball 2009; Galbraith 2009). At the very least and on a practical level, corporations were compelled to review their RM function. With this turbulent backdrop, the paper conducted a preliminary investigation into whether GST could improve RM practice.

Literature review

Although a risk is variously defined, it essentially reduces to assessing the likely impact of various adverse future events, caused either by operational failure (e.g. BP in the Gulf of Mexico) or by exogenous turbulence (Frame 2003; Cavusgil *et al.* 2008; CPA Australia 2008; CIMA 2009; Servaes *et al 2009*). The identification and estimation of specific risks, in terms of magnitude and probability, presumes clear purpose, priorities and preferences as well as sufficient historical, scientific, or legal information to enable probabilities to be attached to future events (Pearce *et al.* 1981; Brody *et al.* 2009). Even were all parameters specified at a discrete time, inductive uncertainty would persist (Hume (1988 [1748]).

Modern Portfolio Theory (MPT), side-steps individual operational and market risks and, instead, focuses on their *expected* aggregated impact on relative volatility. In practice, expectations are, to a greater or less degree, influenced by past performance. Entity share prices adjust to ensure that expected returns and volatility mirror alternate market opportunities, given economic conditions and likely prospects (Fama and French 2004). When market sentiment on strategy and risk management is positive, entity share price inflates to reflect this optimism. Three factor models indirectly tap the financial impact of operational mechanisms, including robust RM, which ultimately underlie productivity.

RM involves, first, the explicit articulation of strategic goals and 'risk appetite' (KPMG 2008). Based on these foundations, an appropriate risk policy is formulated; risks are scanned, registered and assessed before appropriate treatment. Where risks cannot be terminated, tolerated or transferred, treatment involves diversification or a reduction in impact or likelihood. Even when robustly configured and implemented, RM cannot shield entities entirely from the effects of exogenous turbulence, as the GFC illustrated. Nevertheless robust RM should improve entity resilience the face of downturns. However, the crisis revealed endemic RM shortcomings (Standards Australia Limited 2004; Satayajit Das 2006; Taleb 2007).

With the benefit of hindsight in the post-GFC recrimination phase, several common RM mistakes emerge. First, RM was considered a public relations appendage and not embedded within entity corporate culture, strategy and decision-making. Second, risk-management functions were ill-defined and risk often unmeasured (Servaes *et al. 200*9: 77). Third, even when risk data was systematically collected using, for example, Value at Risk (VAR) models, it became a mathematical curiosity which presumed the span of a few euphoric years was representative. Nobody wanted to contemplate sober cyclical reality. In effect, uncertainties were falsely attributed comfortingly low probabilities. Underlying RM procedural inadequacy was a dogmatic faith in market rationality which infected government regulatory oversight. The conjunction of practical shortcomings and dogma fostered ill-informed speculative activity, short-term gaming and unchecked opportunistic behaviour in 'mercenary' organisations (Turner 2009; Schmidt 2010).

Organisation and methodology

The paper is organized into three sections. The first, establishes a GST-RM framework which identifies the major risks facing A-REITs. Second, RM practice in a selection of prominent real estate entities is benchmarked on the significant GST risks detected. Five A-REITs with significant residential exposure were selected from the GICS (Global Industry Classification Standard) Real Estate Industry Group class: 127 (diversified A-REIT's). The selected cases were key Australian property operators and developers (IBIS World 2009: 24). The Investa Property Group was excluded due to lack of readily available financial data. The selected entities engaged in the acquisition, development, ownership, leasing, management and operation of various types of property:

- Stockland
- Lend Lease Group
- Peet Limited
- Mirvac Group
- AVJennings Limited

Finally, the link between assessed RM practice and entity performance since the GFC is investigated. Entity performance is moderated by relative risk. Performance for the year to 17 May 2010 is tracked using pre-tax annualised return to shareholders, including all price changes and reinvestment of dividends, adjusted by the beta. Beta measures the stock price's relative market volatility or systematic risk. The Treynor ratio adjusts entity returns for volatility and is defined as:

$(k_i - r_f / \beta$

Where:

K_i = return generated by the target entity

R_f = risk-free rate
β = Beta = Cov (P_i, P_m)/Var (P_m)
P_i = share price of target
m = market portfolio

GST-RM framework

GST provides a broad architecture to simplify the apparent confusion of imperfect urban housing markets where communities, planners, developers and buyers seek direction but face a miasma of asymmetrical information. It originated in the scientific field but it is now applied widely, including to geography and property market developers (Von Bertalanffy 1950a and 1968; Boulding 1956; Walmsley 1971 and 1973; Guy and Henneberry 2000 and 2002). GST can comprehend dynamic interconnections or 'churning' between system components and offers insights for understanding an evolving property market. The requirements of any system are: boundaries, inputs, outputs, components, positive and negative feedback mechanisms and sparks or catalysts which ignite and accelerate transmission. Figure 1 applies GST to urban property markets and illustrates how a nested hierarchy of exogenous information, accentuated by capital and migration inputs acts to transform productivity and risk profile. The system has three major risk outputs: market or idiosyncratic and the twin idiosyncratic ones of entity and asset quality which we now explore (Adair and Hutchison 2005; Von Bertalanffy 1950; Trevillion 2002).
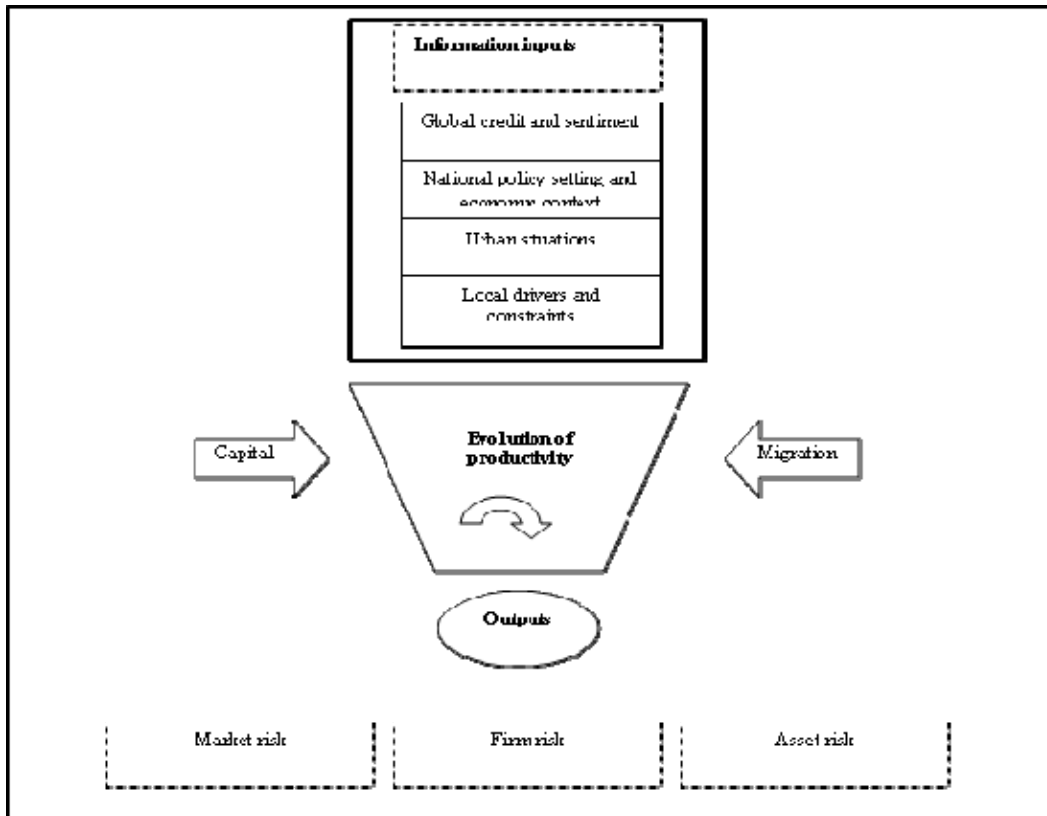
Figure 1: Model showing how a nested hierarchy of exogenous information engages with capital and population flows to modify productivity and risk profile in three main domains
Source: Author, 2010 (influenced by various sources, including Von Bertalanffy 1950 and Trevillion 2002).

Figure 1 illustrates that property market munificence and transparency depends on interactions at four spatial hierarchies: global, national, urban and local. Clearly, RM involves robust surveillance of market conditions. The main global risk is recessionary contagion. One transmission channel could be the Greek debt crisis which triggers derivative toxicity and faltering commodity prices. Nationally, risks are a derailment of GDP or demographic growth trajectories or unexpected policy and regulatory reconfigurations. Urban risks involve turbulence in regional economic drivers or metropolitan planning regimes*. Local risks involve poorly located assets. Either place urban complexity is mis-diagnosed or revitalisation hotspots are undetected. Strategic locations marry attractive geo-social characteristics and transport prospects

Apart from poor location choice, the other asset risk is an unbalanced product in terms of design, technology, build quality, accreditation, obsolescence as well as covenant strength (leases, contracts, consumer protection, and professional liability).

Other operational risks are lack of financial, environmental or planning capacity or governance failures involving, among other matters, a weak

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board of directors (Parker 2009). Long-term strategic risks involve climate change but short-term financial constraints mandate selling affordable product. Appropriate governance mitigates the agency problem and strikes a balance between innovation and oversight. Its practical mechanisms involve policy, board independence and diversity, and strong oversight mechanisms (internal and external controls) as well as an ethical organisational culture.

Using the GST_RM framework, Table 1 below illustrates some of the major risks facing A-REITs.

Table 1: Main risks identified using a GST framework.

Type	Hierarchy	Risk	Number
Market	Global	Commodity prices cool	1
	National	Interest rate increase	2
		Immigration cuts	3
		Foreign investment restrictions	4
	Urban	Downturn hits prosperity and jobs	5
		Infrastructure plans alter	6
		Unforeseen planning hurdles	7
Firm	Strategy	Strategic leadership drift	8
	Governance	Underperforming board	9
	Financial capacity	Banks withdraw financial support	10
Assets	Covenant strength	Major client defaults	11
	Location	Unbalanced location portfolio	12
	Buildings quality	Unsuitable product mix	13

Benchmarking entity RM

The major GST-RM identified risks were translated into four operational risk treatment domains of strategy, surveillance, response capability and control as illustrated in Table 2 which were then investigated in all five of the entities. Assessment involved subjectively scoring the impressions created by browsing entity web sites looking for indicators of robust RM in the domains of strategy, surveillance, capability and controls. Table 3 and Figure 2 illustrate entity RM scores.

Table 2: Main GST risk management domains

Risk domain	RM area	Risk #
Strategy	• Progressive product and location mix	8, 12 & 13
Surveillance	• Global economic conditions	1 & 2
	• National policy	3 & 4
	• Local conditions	5 & 6
Capability	• Planning	7
	• Environmental management	8
Controls	• Governance	9
	• Financial controls	10 & 11

Table 3: Results of entity RM assessment

Entity/Risk #	Strategy innovation	Surveillance	Capability	Controls	Total score
Stockland	2	2	2	2	8
Lend Lease Group	1	1	2	2	6
Peet Limited	1	1	1	2	5
Mirvac Group	2	2	2	2	8
AVJennings Limited	1	1	1	2	5

Key:
0 = no easily detected web evidence that risk is addressed
1 = some web site indication that risk is addressed
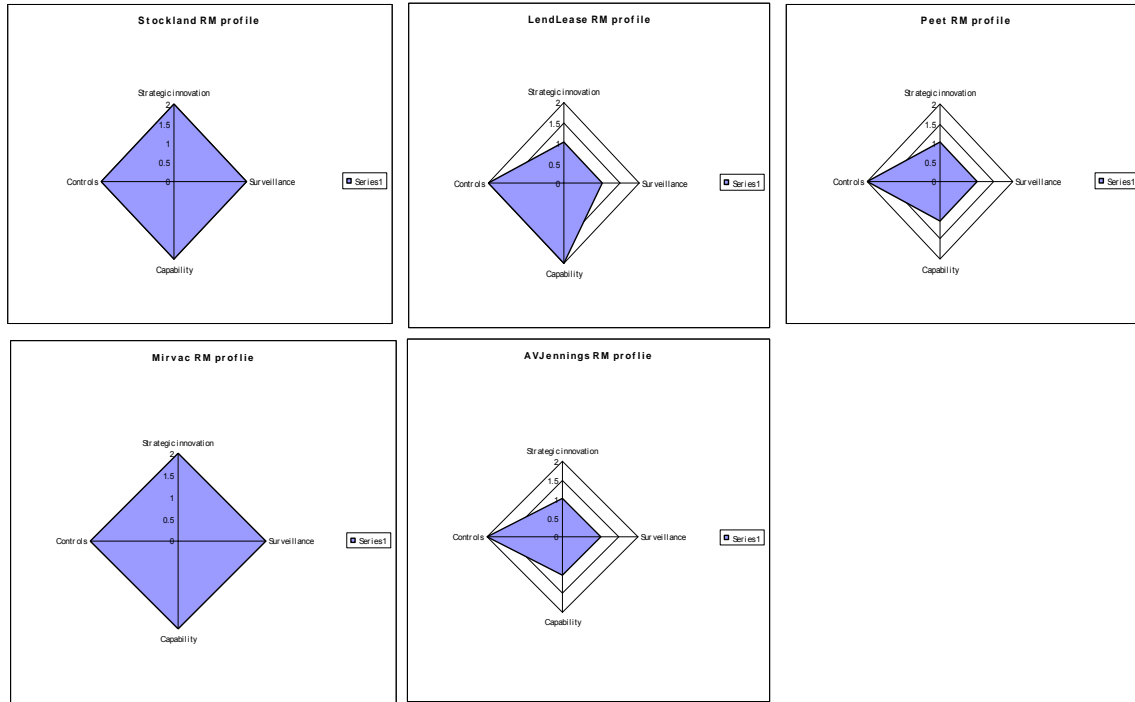2 = strong web site indication that risk is addressed

Figure 2: Entity RM profiles.
Source: Author, 2010.

## *Risk adjusted entity performance*

Table 4: Entity annual performance

| Entity	ASX code	k_i/ %	β	$(k_i - r_f)/ \beta$
Stockland	SGP	31.1	1.28	21.37
Lend Lease Group	LLC	16.0	1.73	7.08
Peet Limited	PPC	46.6	1.46	29.35
Mirvac Group	MGR	34.0	1.47	20.58
AVJennings Limited	AVJ	38.7	2.00	17.48

Source: Aspect Huntley, accessed May 17th 2010
Notes:

1. k_i = Total shareholder returns to 17th May 2010 calculated on pre-tax stock price changes with reinvestment of dividends.

2. r_f is based on RBA the simple average overnight cash rates during the period of 3.75% (http://www.rba.gov.au/statistics/cash-rate.html)

The Treynor ratio results suggest Peet Ltd performed best despite its relatively low GST-RM score while Lend Lease performed relatively poorly. In general there was no correlation between RM score and performance (correlation coefficient = 0.0261). However, graphs of relative performance over a longer three year period, spanning the GFC, suggest that Mirvac and AVJennings had RM issues (see Figure 2 below).
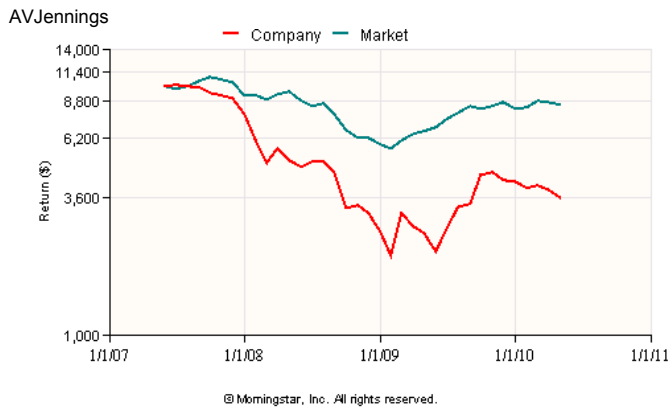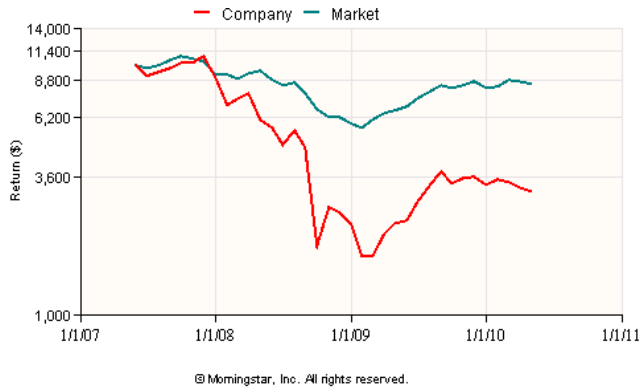
Stockland

Lend Lease

Peet Ltd

Mirvac

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AVJennings
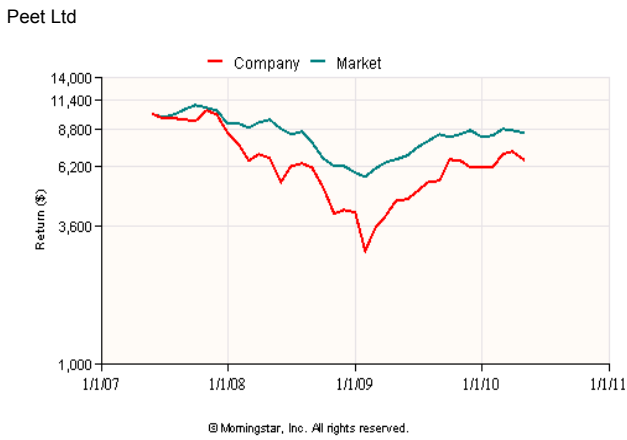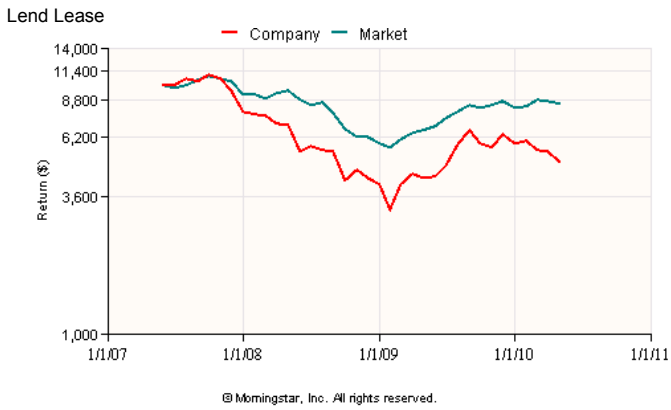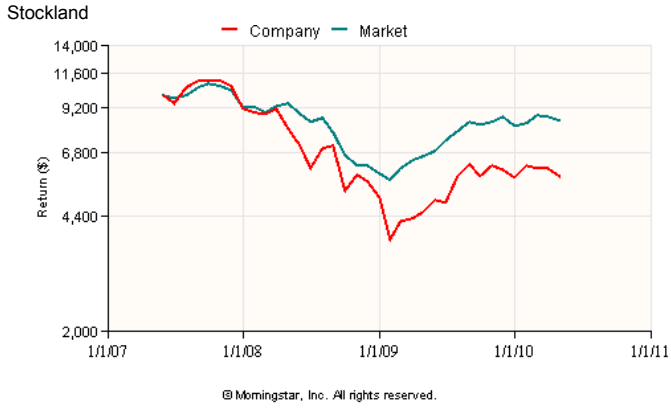
Figure 2: Relative share price performance of the selected entities compared to the market (ASX All Ordinaries)

Source: http://www.aspectfinancial.com.au/af/finhome?xtm-licensee=finanalysis, accessed at 18 may 2010.

Note: charts show the total shareholder monthly returns based on closing prices, assuming the reinvestment of dividends against the total market return, indexed to the beginning of the period. A logarithmic dollar scale means share prices grow, larger dollar increases are needed to sustain a given growth rates.

Implications and limitations

The GST-RM model distilled a hierarchy of risks into four functional areas: strategy, surveillance, capacity and controls. However the Web-sourced public information was inadequate to properly score entity RM practice. As predicted by the EMH, the RM scoring using publically available information gave no risk- adjusted performance advantage. No correlation was detected between RM score and risk-adjusted entity performance. Future research need to devise and deploy more robust RM scoring which means, in effect, developing a mechanism which confers information advantage to investors. It would involve surveying a random and hierarchical sample of employees in the target entity to establish if actual RM practices reflected corporate rhetoric. Clearly, future RM research also needs to be based on an increased sample size. Despite these twin limitations, the research established that, publically at least, A-REITs acknowledge emerging trends and deploy RM which reflects market concerns about environmental trends and corporate governance.

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