Safe as Houses?

Business Risk in Real Estate Investment

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Abstract

The financial and systematic risks of investing in real estate are well-covered in applications of modern portfolio theory. However, real estate assets and their associated markets have a number of idiosyncratic characteristics that give them unique risks that are not amenable to elimination through diversification. These are business risks arising out of real estate markets, and commercial and financial aspects of real estate ownership. They arise from multiple inefficiencies in the market, and share a common thread of inadequate knowledge that requires real estate investors to expend considerable effort on investment strategy, market assessment, property evaluation, and other due diligence processes. This paper examines the sources and consequences of business risks in real estate investment, and points to strategies for their management.

Intuitively one would not expect much risk to be associated with a market that is literally "as safe as houses". This paper challenges that intuition by examining the sources and nature of business risks in real estate investments, and proceeds as follows: section I sets out definitions and introduces relevant literature; section II identifies business risks in real estate; and then section III discusses their implications and management.

I.   Introduction: Definitions and Literature

Investing in real estate is financially important for most Australians: housing comprises 46 percent of household wealth [Northwood, Rawnsley and Chen (2002)]; and dwellings and other structures comprise 38 and 41 percent, respectively, of net capital stock in Australia [Australian Bureau of Statistics (2003); table 69].

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Thus risks associated with property ownership are very significant for corporates and individuals, and they can be considered in two principal groups. The first is systematic risks that arise from economy-wide factors such as changes in economic activity, inflation or interest rates; financial risks such as uncertainty in return and changes in currency; and risks from the capital structure behind the investment. In addition, indirect investors in real estate face risks from performance of their portfolios' managers. However, these risks are not unique to real estate investors and so are well covered in the literature on modern portfolio theory. Moreover there is a rich literature specific to systematic risk in real estate with good coverage provided by Benjamin, Sirmans and Zietz (2001) and Capozza and Schwann (1990). Thus systematic risks receive relatively little attention in this paper.

The other principal type of risk or uncertainty associated with property ownership is *business risk* which is defined by Deloach (2000) (page 56) as: "the level of exposure to uncertainties that the enterprise must understand and effectively manage as it executes its strategies to achieve its business objectives and create value." Thus business risks have two key attributes. The first is that they are unique to industries, investors or firms and arise from: management decisions and strategies, organisation and operational performance, and actions by external parties such as regulators, competitors and customers.

The second attribute of business risks is that they can be individually identified and managed to reduce overall uncertainty in operations and financial performance. Techniques used to manage business risks include avoidance, insurance, transfer, sharing, hedging and control. But before any risk can be managed, it needs to be identified and understood: how does the risk arise? what are its indications? how does it change? how can its level be influenced?

Despite property's commercial significance to corporates and individuals, there is spares coverage in the literature of the associated business risks. Thus the value added by this paper is to examine the impact of business risks on real estate returns with the aim of identifying risk sources and pointing towards management techniques.

II. Business Risks in Real Estate

This section discusses the business risks of real estate under five headings: market, financial, physical, commercial and operational. The aim is to identify the nature, sources and implications of the risks; and to quantify them where possible using relevant data. The literature is used to source supporting evidence from a variety of markets around the world.

i. Market Risks in Real Estate

Real estate markets have unique characteristics with significant consequences for business risk. In particular: the supply side comprises a large fixed stock that changes only slowly and is not portable; the demand side is driven by a combination of relatively predictable fundamentals (eg. population size and composition) and irregular investment mania; liquidity is low and transaction costs are high; and investor decisions are bounded by limited data and lack of market transparency.

Because of its structure, real estate suffers from each of the inefficiencies identified by Fama (1970). It is weak-form inefficient in that the market is characterised by 3-6 year cycles during which prices retain momentum (up and down) and trend for long periods. This feature has been well documented. For instance, Case, Quigley and Shiller (2003) report positive serial correlation between annual moves in US metropolitan house prices in which the change in any year can be up to about half that of the previous year; Lavin and Zorn (2001) find similar patterns in rural land prices. This strong serial correlation suggests that real estate investors persistently over-react to historical growth and thus is consistent with formation of bubbles.

A good example of pronounced cyclicality in real estate is shown in the chart below, which plots normalised prices of apartments in a well-established block in Melbourne. The building was built by Becton in 1983 as the first high rise on St. Kilda Road, and comprises 90 units on 16 levels with additional commercial space. Sales data were obtained by the author from Melbourne City Council property records for the period 1989-2002, and repeat-sales transactions (i.e. comparison of the price of the same

apartment at different times) were used to construct a constant quality price index. The index was then analysed using multiple regression to explain the sales price in terms of apartment size, floor and year of sale. The chart plots prices after the effects of size and floor are removed, and shows a steady trend up since a low during the mid 1990s: during this upswing, the price of a typical two bedroom 9th floor flat rose by 40 percent from about $240K to $340K (equal to an average of 5.1 percent per

Figure 1
Normalised Apartment Prices at 417 St. Kilda Road

Price Impact of Year
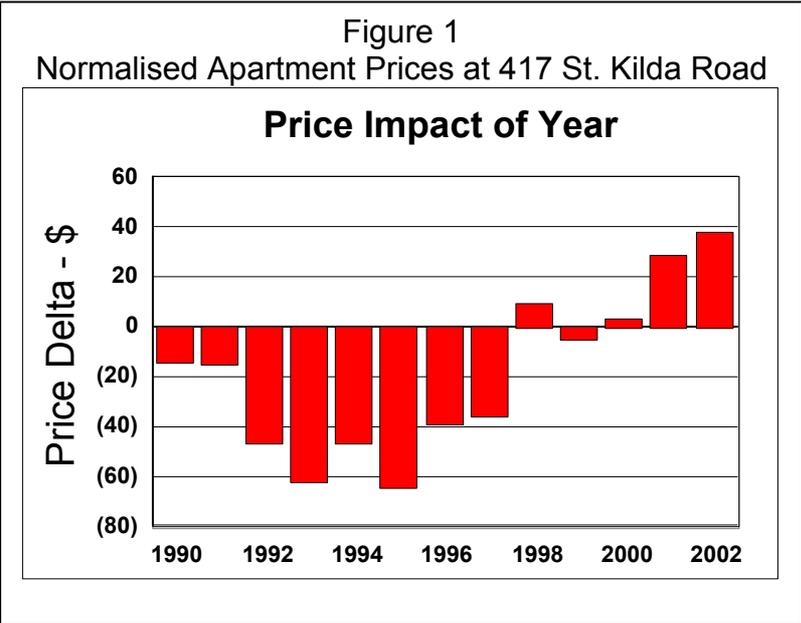
year).

Departing briefly from inefficiency, the market is also notable for investors' behavioural anomalies such as the assumption of mean reversion that is evidenced by the disposition effect, or tendency to sell successful investments ahead of losers. Genesove and Mayer (2001) analysed condominium sales in Boston during a boom-bust cycle in the 1990s and found a strong positive correlation between prices and sales volume, which was driven by low downwards flexibility in prices (that is, the bid-ask spread widens in downturns and the volume of transactions falls). As a caution, though, the analysis of agricultural land prices by Lavin and Zorn (2001) (page 113) concluded "that the probability that a run [up in prices] will end actually increases with the length of the run."

The cyclical nature of real estate markets feeds on investors' behavioural biases to make the real estate market particularly prone to bubbles and busts. According to the World Bank (2003), about 40 percent of housing price booms are followed by a bust

where prices correct by an average of 30 percent over four years (comparable figures for equity markets are 25 percent, 45 percent and 2.5 years, respectively).Typically housing (and equity) busts have been associated with recessions, so that real estate investment can benefit from good cycle forecasting. Recent literature further suggests that the frequency of property busts has risen after institutional changes made the market less stable [Zhang (2001)].

Real estate markets are semi-strong inefficient in that much publicly available information (such as demography and life-style preferences) is slow to be priced in. This possibility was pointed out by Mankiw and Weil (1989) who proposed that predictable demographic effects drive the US housing market: they predicted that - during the 1990s - the relatively smaller post Baby Boom cohort would take over as the source of first home purchases, thereby reducing the rate of growth in housing demand, and – assuming prices follow demand - "real housing prices will fall substantially over the next two decades".

The market is particularly prone to strong inefficiency through the existence of monopoly information, agency problems, appraisal fraud and market manipulation. These are at their worst when fee driven marketing schemes see builders, valuers, lenders and lawyers working in concert to disadvantage less sophisticated purchasers. Even without collusion, information costs in the market are high.

An important contributor to the resilience of these inefficiencies, of course, is the lack of opportunities to arbitrage them through short sales.

    ii.   Financial Risks in Real Estate

The principal drivers of financial-type business risks in real estate arise because property typically constitutes a major proportion of owners' net wealth, and because of micro-economic features of real estate markets.

First consider households in Australia for which house ownership and rental comprise 20 percent of expenditure [ABS (2000)]. The importance of real estate

values and rentals means that property is subject to consumer regulation that can restrict the market's operations.

Similarly commercial and housing construction constitutes about ten percent of employment and GDP which makes this sector economically (and hence politically) significant. As property downturns can lead to severe regional recessions [Case *et al.* (2003)], the construction industry is a frequent target of fiscal policy that can vary between restrictive and stimulatory depending on real economic conditions and political outlooks.

The next figure from Simon (2003) illustrates the role of fundamentals by reference to the dynamics of the Sydney commercial property market. A rapid increase in values during the late 1980s encouraged construction and lifted rentals; vacancy rates soon accelerated as long lead time buildings were streamed; then prices collapsed, and only began to recover as construction halted and vacancy rates fell. These charts warn that real estate market fundamentals of supply and demand remain important over the medium term: demand for real estate is price elastic; and vacancy rates are the major driver of rentals (and are positively related to investor default rates). There is clearly a real business risk in any decision to invest in real estate that relies upon optimistic growth assumptions.

Figure 2
Sydney Commercial Property Market
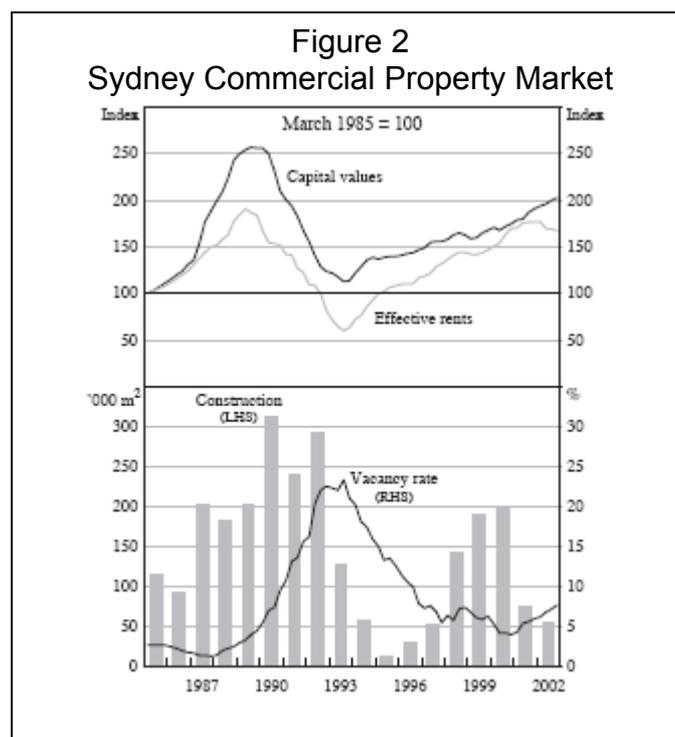
There are other financial risks at the individual investor level. First the market is illiquid, and regularly suffers localised imbalances in supply and demand. Changes in zoning and competitor activity can quickly transform markets and vacancy rates. Shifting composition of neighbourhoods can also be important: US data, for instance, show that an increase in the proportion of African American residents tends to reduce house prices, whilst an increase in Hispanic population tends to lift prices [Macpherson and Sirmans (2001)]. Thus patterns of price change can vary quite markedly between neighbourhoods.

Table 1 provides annual price changes for middle ring suburbs about ten kilometres from Melbourne CBD, lifestyle cities about 100 kilometres from Melbourne, and coastal resort townships. This shows that factors other than geography play a significant role in property prices and their rate of change.

[Insert table 1 here]

Another indicator of the importance of geography to real estate markets is the variation in the real price of housing between countries: in 1998 the ratio of average dwelling price to household disposable income in Australia was 3.6, which is lower than Japan (3.8) but higher than other developed countries such as Britain (2.9), New Zealand (2.8) and United States (1.6). This does not seem to be due to house quality or ownership patterns, although some of it probably arises in the concentration of Australia's population in Sydney and Melbourne because house prices are proportional to city size [Ellis and Andrews (2001)]. Another part of the relatively high cost of housing in Australia may be due to short run supply-demand imbalances (such as chronic delays in release of new land and increased immigration) and a bubble mentality. But over the longer term, there is probably a high business risk from a property portfolio that is concentrated in Australia.

Conversely, diversification across countries does not ensure protection against downside risk as Case, Goetzmann and Rouwenhorst (1999) suggest that local property markets are strongly influenced by global factors, especially GDP. Similarly

World Bank (2003) data show that residential housing price busts tend to be synchronised between countries, and that the linkage seems to have tightened in recent downturns. As neither housing not its amenity is tradeable, the explanation for market correlations must lie in common monetary policy, financial market operations (especially deregulation, which has tended to trigger a boom) and owner expectations.
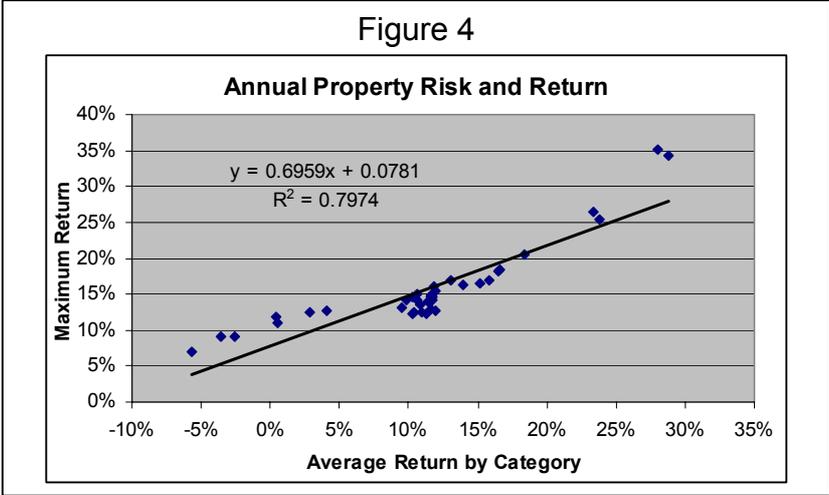
Another barrier to meaningful diversification is the lumpy nature of direct real estate investments. This is compounded by evidence that - although activity in different real estate markets (residential, commercial, industrial, office, hotels and so on) may normally be only weakly correlated - there is a tendency for correlations to tighten sharply during property market downturns, economic recessions and external shocks such as the 9/11 attacks. This feature of increased correlation during downturns is, of course, a feature of most financial markets [eg. Campbell, Koeijk and Kofman (2002)].

The chart below was developed by Property Council of Australia (2004) and shows that the generally loose correlations between annualised returns from office, retail and industrial property in Australia have tightened sharply during recent bear markets.

Figure 3
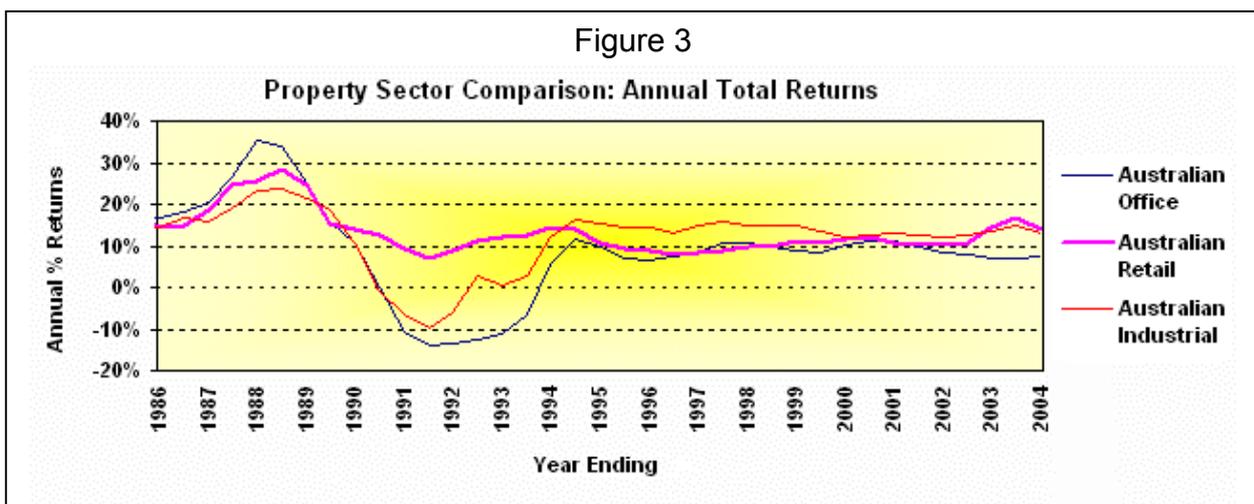
The next chart shows a different perspective of the data by plotting the highest return from any of the three sectors against the sectors' average return. The three real estate asset classes tend to move together, so that uncertainty of return is little

changed by sector diversification. In particular, diversification gives no protection from downside risk.

Figure 4

Annual Property Risk and Return

$$y = 0.6959x + 0.0781$$
$$R^2 = 0.7974$$

Maximum Return (y-axis: 0% to 40%)
Average Return by Category (x-axis: -10% to 35%)

The risk of real estate needs to be considered in light of the risk in alternative investment markets. If asset values equal the risk adjusted present value of the income stream that they produce, then real estate prices will be impacted by any shift in their risk and growth expectations relative to other investments.

Real estate, though, differs in an important aspect from equities: most returns from property come as rental, whereas most returns from equities come in price appreciation. The latter is not realisable until the investment is closed out, and so is subject to considerable firm-specific business risk from poor governance, incorrect reporting and mismanagement. Realised cash returns from rents, of course, have no such uncertainty.

iii.   Physical Risks to Property

Property faces a number of physical risks, although - as evidenced by annual insurance premia of around 0.2 percent of asset values - these are not large relative to other business risks. Conversely, some properties can be vulnerable to specific risks such as damage by criminals, terrorists or natural disasters; or exposed to third party risks (everything from legionnaire's disease to noise and environmental pollution). Other business risks include third party liability that can emerge from building defects and injury during inspections or visits. Building repair requirements can also be expensive and unanticipated. In addition properties face a variety of risks

from complementary industries such as service failures by utility suppliers, and increased costs from higher energy prices. Other physical risks include losses incurred on the property (eg. persons who suffer injury) and off the property (such as migrating contaminants).

Because most environmental problems are connected to land use, an ever-present business risk for real estate investors is the potential cost of site rehabilitation. For instance, Orica received a notice from the NSW Government to clean up its 100 hectare Botany plant in Sydney. Given the deadline, low cost techniques such as bioremediation were not suitable, and Orica estimated a clean-up cost of $51 million, which increased a year later to $116 million [AAP (2004)].

A common response to many physical risks is insurance: although statistics give an indication of the probability of loss or damage to property from natural disasters, fire and other physical risks, it is not possible to determine the risk to any particular asset. Thus investors may prefer the certainty of insurance (known payment to avoid specified potential losses) when the asset is significant relative to their portfolio, or when they cannot tolerate the potential write-off.

iv.   Commercial Risks in Real Estate Transactions

Commercial risks in real estate are associated with buy, sell and rental transactions, and they range from disclosure requirements to dispute resolution. Business risks of rental properties span markets, agency issues and counterparty risks: tenants can leave unexpectedly; or current rentals prove unsustainable because the market weakens or the building or its environment become relatively less attractive (due to obsolescence or neighbourhood change).

A significant operating risk from property is its efficiency: the ability of the property owner or their agent to select, operate and monitor the performance of the asset. A common risk with commercial property, for instance, is vacancy and rental default: an inefficient manager will enter an over-supplied market, be weak in credit evaluation of tenants and in collection of overdues, and inefficiently market available properties.

Another business risk in real estate transactions is information asymmetry that can significantly disadvantage parties. Several recent studies have addressed this issue, including "Measuring House Prices" in the Reserve Bank of Australia March 2004 *Bulletin* and "Home Front: How the [US] CPI underestimates the rising cost of housing" produced by Alliance Bernstein. The RBA analysis points out that housing price data suffer shortcomings because the market is decentralised, transactions are a small proportion of heterogenous stock, and it is impractical to adjust for changes in quality. These shortcomings are so limiting that the study concluded: "the data are not good enough to make definitive judgements … [about recent changes in] prices for houses and apartments." The Alliance Bernstein report argues that limitations in data force a sub-optimal methodology for price estimates that has understated the rate of increase in US housing costs by up to one percent per year.

The persistence of inadequate data on real estate markets suggests that investors do not see much risk: this lack of prudence in investment evaluation reflects gambling, or moral hazard. The latter could arise in property markets because of monetary policies that have supported asset price inflation, and regulatory and credit policies that tolerate over-investment. Property owners simply fail to evaluate, monitor and rebalance their portfolio because they rely on others (eg. due diligence by credit providers), or assume that the market will not be permitted to falter [Shiller and Weiss (2000)]. The latter, of course, was a common assumption by US equity investors through 1999, until it was punctured by the equity market collapse after March 2000.

Given that buildings and structures comprise around 30 percent of the total assets of Australian corporates, their ownership and management represent a major (opportunity) cost and set of business risks. Consider a firm decides that it needs a new building. This requires selection of the location and site, and choice between purchase of an existing building or construction of a new building. The latter involves identification of regulatory and zoning issues, architectural design and approvals, construction, and commissioning. Few corporates have all these skills and so must bear the risk (principally agency risks) associated with outsourcing a variety of professional responsibilities.

Ultimately, though, the owner bears these business risks. For instance, poor site selection can have adverse consequences for: building amenity (location, light); entry and exit for employees, customers and suppliers; parking; and availability of ancillary services. Similarly poor building design can result in low productivity, reduced rental, higher operating costs and early building obsolescence. These risks can also damage employee and customer amenity and increase supply chain costs. The only solution for many owners has been demolition or relocation [Huffman (2002)].

Property development offers another set of business risks, including construction risks that result in delay, higher costs or lower utility. These are caused by incompetence, factors beyond reasonable control (eg. strikes) and changes to project specification after construction commences. A second set of risks arises from the market, particularly a downturn between the time of project commitment and completion that means selling prices or rentals are less than expected.

v.   Operational Risks in Real Estate Ownership

Real estate ownership is often likened to share ownership, but is fundamentally different because real estate owners can exercise effective control over their asset and affect its income. Thus real estate investors avoid the agency and governance problems that impact equities; conversely their own ability to maximise the return from an owned asset becomes a business risk

For firms, real estate can be a significant portion of expenses (often second only to wages). For instance DTZ Research (2004) estimates the average Australian office workstation of 15-18 square metres has an all-up annual cost of $6-10 K. Average workspace sizes have fallen by 25 percent in the last three years, and are small by North American standards but about the same size as in Europe. Such performance metrics enable real estate to be considered strategically, with reduction in opportunity costs and adverse income impact. Conversely, a lack of specialist knowledge promotes inefficiencies and can see expenses exceed benchmarks.

Another implication for corporates of real estate holdings is that they form part of a portfolio of financial assets. Real estate, then, should be included with other market

based assets (commodities, equity investments, securities, debt, foreign exchange and so on) when evaluating company-wide hedging and risk management strategies. Traditionally, though, few firms have treated real estate as either a profit centre or part of their financial portfolio: most view it as just another asset to be minimised and made productive. As an aside, from an investor's perspective relatively high levels of real estate ownership in any firm should provide a diversification benefit and thus lead to higher risk-adjusted returns.

III. Implications for Risk Management

Business risks for real estate investors arise from sources related to the property market and the investor. Some of these are beyond the investor's control, such as fluctuations in economic variables. But many business risks can be offset by appropriate strategies. Table 2 offers a very generic strategy for managing the business risks discussed above.

[Insert Table 2 here]

A challenging issue for real estate investors is that few business risks can be completely eliminated. Some can be covered by insurance and some by diversification. But most of the risks must be accepted and managed because - as noted by Coleman and Casselman (2004) – they are sourced in a lack of knowledge. Thus real estate investors must expend considerable effort on investment strategy, market assessment, property evaluation, and other due diligence processes in order to amass knowledge and mitigate what are inherently risky ventures.

An important strategy for real estate owners and investors is to determine the nature of those exposures that they will accept. For instance the next table shows the changing nature of business risks through various stages of a property's life cycle. Opportunity costs and exposures can be limited by selecting only appropriate business risks. Thus, for instance, a new building can be obtained by construction, purchase or lease; and each brings a different set of business risks. These business risks can be managed by some combination of the classic techniques of avoidance,

insurance, diversification, sharing and hedging. But an interesting feature of the table is to re-inforce the contention that no party can eliminate all risks associated with real estate.

Table 3 Business Risks by Investor's Role in Real Estate			
Business Risk	Owner/Builder	Landlord	Tenant
Property value	Y	Y	n
Information inefficiency	Y	Y	Y
Limited diversification	Y	Y	n
Liquidity of market	Y	Y	n
Consumer legislation	Y/n	Y	Y
Construction risk	Y	Y/n	n
Rental prices	Y	Y	Y
Tenant default risk	Y/n	Y	n
Property damage	Y	Y/n	Y
Property clean-up costs	Y	Y/n	Y
Operating costs	Y/n	Y/n	Y/n
Counterparty performance	Y	Y	Y

Given the range of risks in real estate, relevant skills and expertise are essential. Thus an important element in managing business risk is to ensure that active counterparties (such as borrowers, developers and property managers) and their management teams have the appropriate skill set, which is best evidenced by a successful track record. Similarly prudent risk management makes it desirable to have at least some recourse to the principals in the case of counterparty default. This security can take many forms in addition to a mortgage over the property: personal guarantees, fixed or floating charges over assets, assignment of rents (possibly paid into an independently controlled trust fund), and insurance.

The analysis above suggests that diversification offers relatively little protection to real estate investors, particularly on the downside. About the only practical strategy is to diversify across time, for instance by spreading investments (dollar averaging) and staggering lease terminations to minimise market exposure.

Hedging (with its meaning of matching one risk with an equivalent opposite risk) is a useful strategic objective in real estate risk management. Construction risk, for instance, can be offset by performance and completion guarantees. Because property is often equated to ownership of a fixed income stream, it can serve as an

inflation hedge or be hedged by fixed rate lending (e.g. by issuing bonds). Hedging also includes purchase of land banks and favourable renewal options [Huffman (2002)].

Another mechanism for managing risks is to transfer them, especially through an appropriate lease agreement. For instance, lease provisions can ensure that a tenant takes on business risks associated with the market (through rent floors and escalators), government (pays all taxes), and operations (such as responsibility for utilities and maintenance). There is, of course, a price to this; and more onerous lease conditions impose the additional risk of higher exposure to the tenant's financial strength.

Insurance is another useful risk management strategy, but carries its own business risks because no insurance policy will necessarily cover all costs from all possible business risks. Grey areas include matters such as damages payable to related third parties (especially customers), loss of profits and other consequential damages, and contributory negligence.

By far the most important strategy in managing real estate business risks is due diligence. This involves a rigorous process of identifying those assumptions and representations that are key to the decision, and then validating them by investigation, analysis and reality testing.

A second aspect of due diligence is to recognise that there are myriad *possible* risks, each with low probability of occurrence but significant impact. Some come from third parties such as building blockade or loss of utilities. Others involve loss of critical services such as lifts, air conditioning or lighting. Catastrophic damage can be caused by many natural and man-made disasters. There is little point in analysing them individually as most are buried deep in the noise; conversely there may be so many minor risks that at least one of them will occur. What does need to be tested is the property's ability to withstand the range of shocks that could be brought on by these minor risks. A contingency needs to be agreed for each major consequence.

A good example of applying due diligence is to protect against rent default, which is a common business risk that must be managed strategically. The process starts with tenant selection, including assignment of leases. Normal credit tests should be conducted to ensure the tenant's ability to meet ongoing commitments; a good checklist for evaluating counterparties is provided by Gordon (2003). When financial capability is in doubt, the tenant should provide a deposit or a guarantee from a financially strong party. Through the rental period, the tenant's credit rating should be monitored, and property inspections should include an assessment of business health such as changes in employee numbers or stock levels. Obviously rental payments need to be monitored, too, and penalty interest clauses invoked for late payment [Thomas (2001)].

Another application of due diligence is to apply a simple conceptual model to provide a quick reality check when making real estate investments. Given that any asset's value cannot prudently exceed the discounted value of the income it will produce, a property's fair value can be expressed using the dividend discount model:

$$V_0 = \frac{D_1}{k - g}$$

where: V_0 is the value of the property today; D_1 is the initial cash flow, which is expected to grow at a constant rate g; and k is the investor's discount rate (required rate of return or opportunity cost of the funds).

The uncertainty of g and the variability of k mean that valuation is very much an art. However, investors can use this expression as a rule of thumb in testing values. For instance, the required rate of return may be chosen as the rate that is expected from equities in Australia over the medium term: based on an average historical real return of 9.5 percent [Brealey *et al.* (2000) page 167] plus 2.5 percent expected inflation, k is equal to about 12 percent per year. Thus for a property to sell at a four percent yield (i.e. $D_1 = 0.04 * V_0$), its income must grow at an annual rate of 16 percent. From a different perspective, if rents grow at twice the rate of inflation, then property prices need to double every ten years. If both rents and property values grow at twice the rate of inflation, then an appropriate yield is about six percent.

This approach can be useful in testing for the existence of bubbles in property prices (both over and under valuation) that are notoriously hard to identify; in fact their existence can only be confirmed *ex post* by a collapse in prices!

In conclusion, property investors and owners face a variety of business risks which – if sensibly managed – can add value and reduce opportunity costs. Strategic management of these uncertainties demands a robust process of identifying those assumptions and representations that are key to the decision, and then validating them by investigation, analysis and reality testing. Sensible risk management does not simply generate a daunting list of possible hazards, but adds value beyond alarmist scenarios. It prioritises risks to pay most attention to those that are credible and would have significance adverse impact. This sound understanding of the drivers and signals of business risks enable them to be individually managed.

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Table 1 Median House Price in 2003 and Change Since 1991								
Middle Ring Melbourne			Lifestyle Rural Cities			Coastal Resorts		
	Median Price 2003: $ K	Change since 1991 - % PA		Median Price 2003: $ K	Change since 1991 - % PA		Median Price 2003: $ K	Change since 1991 - % PA
Camberwell	633	7.9	Alexandra	149	5.9	Anglesea	310	8.5
Caulfield	635	10.6	Ballarat	168	7.3	Blairgowrie	330	9.6
Coburg	350	10.1	Castlemaine	185	7.8	Fish Creek	139	6.5
Elsternwick	603	9.6	Daylesford	230	9.8	Flinders	375	7.2
Essendon	518	10.0	Heathcote	105	3.4	Loch	105	5.2
Footscray	301	10.1	Korumburra	153	6.7	Mornington	265	6.7
Northcote	417	10.6	Warragul	169	5.3	Ocean Grove	280	8.4
Williamstown	540	9.8	Wonthaggi	145	6.9	Paynesville	185	6.4
Mean	500	9.8		163	6.6		249	7.3
Source: Victoria Valuer-General (various years) *A Guide to Property Values*								

	Table 2	
	Real Estate Risk Identification and Management Strategy	
Risk Category	Source of Risk	Risk Management Strategies
Market	Prices tend to trend and form bubbles	• Apply fundamental (DDM) valuations • Improve understanding of GDP cycles • Monitor supply-demand interplay
	Prices tend to diverge from fundamentals	• Understand demographic pressures • Study local supply-demand imbalances
	High information costs	• Be alert to incorrect or biased information
	Investors assume mean reversion	• Possible profit uplift from following price trends
Financial	Consumer regulation of markets	• Due diligence and ethical dealings
	Fiscal policy to manipulate construction	• Understand monetary cycles
	Illiquidity in markets and high transaction costs	• Can result in lock-in of investment: ensure return determinants are robust to adverse developments
	Possible bubble in Australian property	• Ensure return determinants are robust to adverse developments
	Moral hazard by investors	• Rigorous counterparty evaluation
	Inefficiency of diversification	• Ensure return determinants are robust to adverse developments • Diversify across time
	Portfolio exposures	• Treat real estate as part of the portfolio of financial assets in hedging and finance strategies
Physical	Property damage	• Insurance
	Insurance cover	• Obtain advice on adequacy of insurance cover
	Clean up costs	• Due diligence (pre purchase inspections; warranties)
Commercial	Loss of rental income	• Rigorous counterparty evaluation • Monitoring of tenants' credit and business performance
	Property development	• Rigorous selection of professional advisors • Completion and performance guarantees and insurance
	Operating costs	• Place liability on tenant
Operational	Opportunity cost of ownership	• Make real estate a profit centre and manage efficiently • Ensure adequate in-house skills