ABSTRACT

Risk management is about identifying all risks to which an entity is exposed or might be exposed (Which can be financial or non-financial) and defining and implementing measures that will help to monitor, measure, manage and report these risks. As the Real Estate risk represents a part of the capital investment risk, a demarcation vis-à-vis other capital investments is necessary. Contrary to the alternative investments, real estate are marked through their special features like connection with the location, heterogeneity, high investment volume and transaction costs, length of the life cycle as well as duration of the development process. There are different types of risks occur during the life cycle of the real estate. Risks out of the development, i.e. project development phase have considerable influence on the further risks of the life cycle of the real estate. In practice the real estate risk is seen as potential negative change in the value of individual real estates, through depreciation of the general real estate situation or the individual features (e.g. vacancies, construction damages, changed chances of use), and is interpreted e.g. with rent default risk, fixed costs risk, depreciation of going-concern value risk, loss on disposal risk and investment risk.

Keywords: Risk management, real estate, property valuation, real estate companies

INTRODUCTION

TYPES OF REAL ESTATE RISK

First of all the different types of risk should be classified into risk categories and risk groups for a target oriented risk management. Statements about probabilities of occurrences and level of possible loss and profit potentials can be framed by using statistic-mathematical procedure in the case of uncertainties that can be quantified. For that an adequately big number of observations or that of empirical values is required with which the objectively measurable or at least subjectively assessable probabilities can be allocated to the results of decision. It deals with a risk that cannot be quantified if a unique decision situation is given respectively the criterion of uncertainty is not or is very incompletely measurable. Unidimensional risks are as described above are dominated through a risk element – the risk or the chance i.e. the possible results of a decision deviate only respectively predominantly one-sided from a planned expected value. In the case of two dimensional risks, the result of a decision can deviate two-sided - negative or positive – from a planned expected value. As a base for a possible systematization exemplarily the different phases of the life cycle of a real estate but also typical areas of the real estate business, like project development, financing and investment can be consulted.
All the chances and risks that can originate due to the general market development are summed up under systematic risks. Contrary to this, the non-systematic risks are influenced by the microeconomic and property-specific determinants. In the existential and financial risks the differentiation takes place as per the different spheres of the risk origination. While exemplarily property-specific uncertainties of a real estate investment are understood under existential risks of an investment property, in the financial risks it deals with risks or chances that originate in association with the financial transactions independent of the investment property.

OBJECTIVES OF THE STUDY

1. To study various types of risk in real estate.
2. To analyze various property valuation techniques.
3. To know various risk management techniques.

RISK MANAGEMENT: NEW RISK DIMENSIONS

Investing in real estate has traditionally been popular for three reasons: its inflation hedging characteristics; as a diversification asset with regard to the time variation in the proceeds on stocks and bonds and; its relatively stable returns.

But nowadays, with risk being key in every investment decision, real estate risk has been under greater scrutiny. The global financial crisis has made investors wary of the unknown and unexpected. This means more weight is given to simple metrics of historic volatility whenever new capital is allocated.

The basic assumption is that true real estate investment risk is not a simple and uniformly applied metric like a standard deviation of 6.83%. Proper investment risk assessment is forward-looking in nature, takes the cyclicity that characterises real estate markets into account and can be tailored to specific investment strategies, both in investment style and duration.

Investment decisions require due diligence efforts, a data-driven process. Therefore, allocating funds to real estate assets means that the available information needs to be analysed thoroughly before the point of no return. In the case of real estate, investors face two distinct challenges in this phase of deliberation – time series and metrics.

Moreover, unlike those for stocks and bonds, real estate time series are often limited in duration, frequency, coverage and quality. Due to the lack of asset liquidity – the high transaction costs force investors to take a long-term perspective on their real estate investments – most real estate time series are based on appraisals instead of market-tested pricing information of transactions. The underlying appraisal process, the human overlay, tends to smooth out the intertemporal fluctuations, as bad news is often reported later and in small portions at a time.
Furthermore, these time series offer only a limited history as they typically stretch less than two decades of annual data for most markets – an era which includes a full investment cycle but offers only limited degrees of freedom for the investment analysis. In other words, the available real estate time series are rather short, and need to be handled with care in order not to mistake the appraisal signals for low risk evidence. While the emergence of transaction-based indices has started to alleviate the issues with historical time series for private real estate markets, these tend to be relatively short, limited in market coverage and will fail to show proper market movements when it matters most – times of crisis characterised by illiquidity, not uncommon in direct real estate markets.

Once the apparent data issues are acknowledged, investors also need to be careful about the metrics they apply to analyse risk appropriately. It is a metric that captures a history that is rapidly losing relevance. The past decade has demonstrated that there is little standard in the most striking deviations in investment returns. Furthermore, a simple standard deviation is unable to disentangle the different layers of uncertainty that matter in varying degrees to investors with different ambitions and endowments.

As traditional risk models focus on the volatility in returns – in essence, a structural factor – they fail to incorporate the current status of highly cyclical real estate markets. After all, strong cycles have become the proxy for risk for many investors but offer a source of return for others and are arguably irrelevant for the likes of sovereign wealth funds with 30-year investment horizons. A broader set of consistently measured global risk metrics allows for a model that is capable of satisfying the needs of long-term and shorter-term investors without building on anecdotal evidence or losing international comparability.

The model which has been incorporated into CBRE Global Investors’ forward-looking global Risk Adjusted Real Estate (RARE) model – builds upon long-term (structural) and short-term (cyclical) economic and real estate specific variables.

### 2. CBRE GI global risk scores

Each segment in this four-quadrant overview incorporates a couple of factors derived from reputable data sources with global coverage which can be combined into one risk measure. An example of a structural economic risk factor is the economic base of a country. While a focus on one industry is beneficial, if that industry performs it naturally increases the risk profile of a market. Cyclical economic risk is measured by factors like credit default swap spreads and perceived uncertainty in economic growth outlook. Structural property markets risk relates to factors such as transparency of a market and the important ease of building permit issuance.

The last quadrant not only incorporates the cross-sectional volatility of property markets but also measures the current position of each market within its own history, as not only the expected return is affected by entering into volatile and historically expensive markets.
The structured yet flexible nature of this model makes it not only capable of adequately calculating relativities in risk profiles for investors with different characteristics but also allows for a deeper understanding of major risk factors that drive these relativities, as illustrated in figure 2. An investment industry traditionally focused on expected returns still greatly benefits from a better understanding of what drives true investment risk before being satisfied by advances in index measurement.

RISK MANAGEMENT FOR REAL ESTATE COMPANIES

PROPERTY RISK

The Alternative Investment Fund Management Directive (AIFMD) is a piece of European Union legislation aimed specifically at “non-standard” funds that wish to operate and market themselves within the Union. In direct response to the recent financial crisis there are specific requirements in the area of the risk management of a fund which are both new and potentially quite onerous for a fund.

"The qualitative and quantitative risk limits for each AIF shall, at least, cover the following risks: (a) market risk (b) credit risk; (c) liquidity risks (d) counterparty risks; (e) operational risks.”

In addition to giving the scope (very broad) of the required risk management function, the legislation also specified the timeliness of the operation of the risk management function – an AIFM must:

“(a) identify, measure, manage and monitor at any time the risks to which the AIFs under their management are or might be exposed;”

This is a serious burden on the operation of any fund, but in the information scarce world of property funds, identifying all of the relevant risks is difficult, but amassing the information necessary to give an estimate of the magnitude of the risks and their correlation is doubly so. However the legislation goes further than just requiring the estimation of the current risk profile, there is also the requirement to effectively forecast the risk profile – look carefully again at the words above “…..the risks to which the AIFs under their management are or might be exposed;”

Thus many property investment managers will have to deal with a whole set of new regulations and requirements that they may well have been aware of but may have heretofore largely ignored. “AIFMs should be able to demonstrate to their competent authorities that appropriate and effective liquidity management policies and procedures are in place. That requires due consideration to be given to the nature of the AIF, including the type of underlying assets and the amount of liquidity risk to which the AIF is exposed, the scale and complexity of the AIF or the complexity of the process to liquidate or sell assets.”

So whilst many property managers would have been acutely aware that property is a highly illiquid asset class (even in good times) AIFMD requires that they monitor the liquidity of the underlying assets and that they can model investor redemption profiles. The governance of real estate companies will also be impacted under AIFMD. “AIFMs shall functionally and hierarchically separate the functions of risk management from the operating units, including from the functions of portfolio management”.

A literal interpretation of this is taken to mean that there must be an effective Chinese Wall in place between the front office and the risk management function. In other words a property investment manager now has to either build a separate risk management function in-house or outsource to a professional risk analytics company.

PROPERTY VALUATION TECHNIQUES

The return from property can be decomposed into two primary sources: capital return and income return. The income side of the portfolio primarily deals with the lease details (covenant, terms etc) and general risks to the ability of the tenant to comply with the lease terms in terms of paying over rent on a monthly, quarterly or however agreed basis. It can be seen that the prospect for capital gains (or losses) on the property depends primarily on the general macro-economic environment and the
prospects for the real interest rate level. Like most financial assets property is valued as a stream of income discounted at a certain rate (the correct discount rate to be applied is quite a subjective matter and small changes in the rate used can make a large difference to the valuation of a long-tail asset such as property).

There is undoubtedly overlap between both the prospects for income and capital gains (or losses). For example in a recession there is likely to be a greater chance of void periods and subsequent income loss. Likewise as the economy emerges from recession there is likely to be the prospect of attracting new tenants and stronger rental growth. There are several well-known methods to value property e.g. Sales Comparison, Capitalization, and Replacement Cost Methods. As an analogy to equity valuation and its associated measures of risk (using the Capital Asset Pricing Model) it can be seen that market risk (capital return) is analogous to beta in the CAPM framework whilst the selection and management of tenants is akin to alpha (colloquially known as manager skill). Thus allocating capital to purchase property in higher risk areas will demand a lower discount rate (higher return) and will likely require more management time. This is similar to equity managers allocating to higher risk equity markets such as emerging markets. The investment manager may be rewarded for allocating assets to these risky markets versus the “home” market; however he/she will not be rewarded for merely generating the market return similar to a passive portfolio in those regions (or indeed the home market). It is the managers skill in actively managing a property portfolio through active tenant management, development etc that generates alpha.

To focus on the asset level firstly it can be seen that the risk in a single property can encompass risks such as build quality, planning issues etc. At the portfolio level the risk becomes one of concentration, liquidity, leverage, counterparty etc. The standard CAPM model uses volatility as a measure of the riskiness of a portfolio of assets. Most investment managers (and indeed many academics) know that volatility does not equal risk (property development is considered the most risky aspect of property management and yet may be the least traded and hence appear least volatile). However it is a useful place to start.

One of the major problems in assessing risk in a property portfolio (the same applies by and large to private equity) is that property is not traded very often. Unlike the equity markets property transactions are irregular and often hidden from view, often taking place privately without disclosure to property registers or databases. Thus there are oftentimes wide dispersion’s between transactional based valuations (sales comparison techniques) and valuation based techniques (capitalisation or discounted cash flow techniques). This lack of data points results in poor time series data for comparison purposes but more importantly makes calculation of Value at Risk (VaR) metrics using historical data (non-parametric) difficult if not impossible – more on this later.

From speaking with several property managers it is clear to us that many property managers conflate risk management with valuation. A property investment manager may decide buying properties (that are well built, well located and occupied by tenants with good covenants) is low risk and that therefore this is good risk management. However risk management is not just assessing, monitoring and then managing known risks but also involves performing similar analysis on unknown risks. This could, for example, be the financial institution that lends money to the property manager going bust while perhaps, at the same time, there is a sudden large redemption from an institutional investor. Whilst this apparent coincidence may have seemed fanciful a decade ago the financial crisis in 2008 brought home the reality that when bad things happen they tend to happen at the same time. This then is the essence of risk management – standing back dispassionately and saying “what if” and carefully evaluating the downside. The management of risk is most certainly not designed to eliminate (possibly not even to minimise) risks rather it is about taking advantage of opportunities in a carefully controlled manner and being able to survive the inevitable downturns.
RISK MANAGEMENT TECHNIQUES

As outlined above due to the idiosyncratic nature of property investment conventional risk management techniques cannot be performed exactly as they are used for hedge funds for example. A typical hedge fund may trade highly liquid instruments and be priced daily by the administrator. This will not be the case for a property company. Therefore different techniques must be used such as those typically used in the fund of hedge fund space.

Determining the financial risk of a property portfolio is non-trivial and as such any implemented risk model would be highly influenced by the input of the relevant fund managers. It is fully appreciated that the valuation of the portfolio is of principal concern to the relevant managers, however it is the analysis of potential losses and the correlation of those losses with other losses in the portfolio that need to be addressed. In other words it is a requirement of the market risk management process that the risk factors associated with the valuation of the property(ies) must be assessed, and their magnitude determined. Furthermore the variability of these risk factors and the correlations between them must also be assessed. Currently there are two models that may be used to evaluate the financial risk. The first approach relates primarily to the discounted forward value of the property(ies) and as such may be characterised using market specific property indices along with an appropriate level of specific idiosyncratic risk.

A second approach is to forecast rental yields using exogenous data such as long term interest rates, GDP etc., and use a value/yield model to evaluate the sensitivity of the property portfolio to stressed conditions. It should be noted that in both models macroeconomic variables, such as GDP etc. will also have a real impact on the overall risk profile.

It should be stressed at this point that it is not the purpose of risk management to attempt to forecast future values of a single property or a portfolio thereof. The purpose of risk management is to determine the likelihood of the correlation between, and impact of, extreme events in the risk factors on the overall value of a single property or a portfolio of properties.

Counterparty and credit risk are closely related in a property portfolio. Credit risk may be increased depending on the leverage of the fund and the stability of the leases. In general it is envisioned that Monte Carlo simulation is an appropriate methodology to determine, monitor and manage the various financial risks of a property fund. Whilst there are undoubtedly a number of assumptions that will need to be made their impact may be included in the production of statistically significant risk metrics in the required areas of market, counterparty and credit risk.

According to the legislation liquidity risk is determined as a combination of investor liquidity in the fund and the liquidity of the investments of the fund. It should be noted that the legislators added a separate chapter into the AIFMD to cover liquidity risk and were quite specific in outlining the requirements for compliance with the provisions on liquidity risk. In this chapter they specify that both market and investor liquidity must be assessed under both business as usual (BAU) and stressed conditions and to ensure that the resultant liquidity profile of the fund is consistent with the information that the investors have been given.

Whilst traditional financial risk management has not gained common currency in property related funds to date, the requirements of AIFMD, and the likely increase of regulatory oversight of all funds going forward mean that far greater emphasis will have to given to risk management than was hitherto the case. This may mean considerable disruption for both funds and fund managers; however a robust risk management process will be seen to become a necessity both as a means of mitigating regulatory risk, but also a way to manage effectively the complex risks to which property funds are exposed.
REFERENCES

2. The changing face of Indian real Estate, 2018/2017, India Investment Journal November Edition By Deepak Varghese,
3. International journal of social sciences & interdisciplinary research vol.1 no. 3, March 2012, emerging trend in real estate investment in india *Dr.N. Kathirvel, **JohnV. Sugumaran,