

ASSET ALLOCATION IN BALANCED PORTFOLIOS: A NOTE ON THE PLACE OF PROPERTY

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Abstract

Balanced investment portfolios usually contain four major components, namely, equity, debt, property and cash. Each of these has sub-sectors, for example, equity and debt may include local and foreign paper and property may include directly owned real estate and securitised real estate. The issue of the diversification of the portfolio continues to be of signal importance. The allocation of investment funds into the four asset areas is a specialist function whilst the acquisition of assets in each of the areas is relatively straightforward. Anecdotal evidence suggests that property, particularly directly owned property, is still considered to have too many disadvantages to attract more than a token allocation, usually around 10% or less. Directly owned property and unitised property are discussed and compared with debt and equity. Specific investment variables such as volatility, management, depreciation and obsolescence are considered. Thus property is reviewed to assess its position in the asset allocation process.

Keywords

Property, Portfolio, Asset allocation, Investment

INTRODUCTION

Investment is a zero-sum game made up of two activities, namely, acquisition and disposition. Investment is the process of acquiring assets and holding them for a period during which returns are (hopefully) generated and at the end of which divestment or the disposing of assets takes place. One person's divestment is another person's investment hence zero-sum. A third activity is "doing nothing" by either deciding not to invest in a particular asset or, if the asset is already owned, deciding not to divest of it. The two significant questions associated with investment, divestment and doing nothing are what and how much. These questions become more complicated in an investment portfolio which is simply a grouping of several individual assets. The purpose of a portfolio is to select a balanced group of assets that increases investment returns whilst decreasing risk which, in relative terms, may mean either maintaining returns whilst decreasing risk or increasing returns whilst maintaining risk. The process of selecting the balanced group of assets comprises two steps. The first is asset allocation in which the proportions of selected asset classes are decided upon in the creation and maintenance of a balanced portfolio. Typical asset classes are equity, debt, property and cash and these may be subdivided further into domestic and foreign equity and debt and direct and indirect (as well as domestic and foreign) property. The second step is asset choice in which specific

assets are selected, for example, parcels of stocks and shares or particular parcels of real estate. Asset allocation and asset selection have become important activities in the finance and investment markets. It is becoming common for investment managers to make these decisions on behalf of investors thus limiting the decisions required from the investor to a choice of funds manager or in some cases managers. The funds that are managed may be portfolios containing a wide spread of assets in an attempt to be balanced, or they may be portfolios of a specific asset class. It is the latter type of fund that requires a choice, a portfolio, of funds managers. The decisions associated with asset allocation and selection are passed to the funds managers, but the risks remain with the investors. It can be argued that investment in a series of funds is a negative-sum game, the difference between zero-sum and negative-sum being the fees charged by the funds managers.

The purpose of this paper is to review some of the issues related to property in investment portfolios. First, the principles of diversification are discussed in the context of a portfolio of properties. Second, the relationship of property and other asset classes in a balanced portfolio is outlined. Investment through direct and indirect ownership of property is discussed in the third section. Fourth, investor behaviour in the context of volatility of asset prices in the investment cycle is discussed. The paper concludes with a number of issues that are raised as topics for further discussion and research.

DIVERSIFICATION IN THE PORTFOLIO

The principles of diversification are outlined using a case study comprising a portfolio of two properties the first being an office building in central Melbourne and the second being a shopping centre in suburban Brisbane. It is proposed to add a third property to the portfolio and this is an office building in central Sydney. A scenario analysis approach has been used for each of the properties and the results are at Table 1.

The IRR is the return calculated using the conventional approach of a single "most likely" scenario whereas the expected IRR is the average over a number of projected scenarios. The expected IRR is simply the weighted average of the results from each scenario having regard to their respective probabilities. The same situation applies to the investment values and the expected investment values.

The market value of each property is prepared using the conventional wisdom relying on the analysis of past transactions.

The standard deviations of the IRR and of the investment value are arrived at in the usual way and they provide a means by which useful measures of risk can be calculated using the conventional mean-variance approach. The risk is simply the area under the tail of the standard normal curve, using the threshold return (11.75% in the case study) or the market value. This is indicated by the number of standard deviations in the difference between the expected IRR (or expected investment value) and the threshold IRR (or market value) (Greer, 1979; Robinson, 1989).

Table 1: Market values, investment values, risk and return of the three properties

| Property | Melbourne Office | Brisbane Retail | Sydney Office |
|-----------------------------|------------------|-----------------|---------------|
| IRR | 12.26% | 14.77% | 10.59% |
| Expected IRR | 11.75% | 14.08% | 10.10% |
| Standard Deviation of IRR | 1.55% | 1.68% | 1.34% |
| Market Value | \$30.00m | \$31.40m | \$50.00m |
| Investment Value | \$30.02m | \$34.52m | \$44.58m |
| Expected Investment Value | \$29.06m | \$33.49m | \$42.54m |
| Standard Deviation of Value | \$2.70m | \$2.54m | \$5.31m |
| Risk | 50% | 8% | 89% |

The risk may be interpreted as follows:

- Melbourne office property. There is a 50% probability that the threshold return will not be achieved (or a 50% probability that it will be achieved). This is a significant level of risk. As the expected investment value (worth) is less than market value (price), a decision to dispose of the property should be considered. Note that the investment value in the single most likely scenario is equivalent to market value which would be likely to result in a hold decision. Thus the scenario approach potentially provides extra insight.
- Brisbane retail property. This analysis results in an 8% probability that the threshold return will not be achieved (or a 92% chance that it will). This is a relatively low risk investment. Given that the investment value is substantially above market value, the obvious decision is to hold.
- Sydney office property. This property is relatively high risk given the result that there is an 89% probability of not achieving the threshold return (or an 11% chance of success). This is reinforced by the investment value result being well below market value. It would obviously be imprudent to acquire this asset at the estimated price.

Turning now to the assessment of the portfolio, two series of results are summarised in Table 2, one for the existing portfolio of two properties (the Melbourne office and the Brisbane retail centre) and the other for the proposed expanded portfolio of the three properties including the Sydney office. These are calculated in the usual way where the results are weighted by the relative values of the properties in the portfolio and co-variances are established (see Sharpe, 1985). The portfolio variance is made up of the individual variances of the properties and their co-variances.

The results for the two-property portfolio show that the combination of the two properties provides a reduced and arguably manageable risk without reducing returns. The high risk associated with the Melbourne office property in its oversupplied market is counterbalanced by the low risk of the Brisbane retail property in its market with

substantial population growth. Note that the standard deviation of the two property portfolio (\$2.61 million) is practically the same as that for each of the individual properties (\$2.70 million and \$2.54 million respectively) despite the portfolio value of approximately double either of the individual properties. This alone indicates a significant reduction in risk. This is a central issue in Modern Portfolio Theory, the smaller the standard deviation, the lower the volatility of returns or values.

However, the results associated with the proposed three-property portfolio are affected by the relatively high risk associated with the Sydney office property. If the acquisition of the Sydney property proceeded, the return on the expanded portfolio would be reduced (from 13.00% to 11.83%) and the risk of not achieving the threshold return of 11.75% would increase (from 22% to 48%). The Sydney property would need to be acquired for a discount of about 20% on market value (estimated price) in order to maintain the portfolio return and value without adding significantly to the risk.

Table 2: Market values, investment values, risk and return of the two portfolios

| Portfolio | Existing (2 properties) | Proposed (3 properties) |
|-----------------------------|------------------------------------|------------------------------------|
| Expected IRR | 13.00% | 11.83% |
| Standard Deviation of IRR | 1.62% | 1.51% |
| Market Value | \$61.40m | \$111.40m |
| Investment Value | \$64.54m | \$109.10m |
| Expected Investment Value | \$62.55m | \$105.10m |
| Standard Deviation of Value | \$2.61m | \$3.71m |
| Risk | 22% | 48% |

Thus, the purpose of Modern Portfolio Theory is tested: namely that diversification can reduce risk (Markowicz, 1959). It follows that financial market theory can be applied to the direct property market in order to assist investors to achieve a suitable entry and exit strategy in terms of timing of transaction and type of property for investment or divestment.

PROPERTY AND OTHER ASSET CLASSES

Property has always been considered to be one of the major asset classes in a balanced portfolio. However, it has always been considered to have a number of disadvantages when compared with other asset classes, the major ones being illiquidity and management. In the context of property investment, illiquidity is a major deterrent to investment and divestment because of the time required to complete a transaction in a market in which there are either few buyers or few sellers. The hands-on management

required to operate an investment property and maintain it in a satisfactory market position is another deterrent to investment in property.

Illiquidity

Investment property is relatively illiquid when compared with other asset classes as a result of a number of investment factors. First, heterogeneity: each property is unique as a result of its location and significant differences also occur in the improvements. Accordingly, it is relatively difficult to set and agree prices between vendors and purchasers when compared with the stock and share market. Second, immobility: property assets are fixed geographically and bear the risks associated with the political and economic fortunes of the region whereas stocks and shares are portable. Third, indivisibility: trading in property requires significant capital sums a factor that reduces the numbers of likely investors to a very small group when compared to the ability of individuals to invest in the stock market. This is one of the major factors affecting liquidity of property investments, finding a suitable buyer. It is also a major reason for the securitisation of property assets. Fourth, lack of a central market: the property market comprises a series of highly localised sub-markets whereas stocks and shares are traded in a central market. Thus information about the property market is piecemeal and often cloaked in confidentiality whereas market information and pricing in the stock market is universally available. Fifth, marketing, due diligence and settlement: the time taken to properly market an investment property, negotiate a transaction, undertake due diligence and conveyancing and complete settlement can take several months and incur high expenses. Whereas, a transaction on the share market is completed in a very short time at a much lower fee.

Management

Investment property is relatively management intensive when compared with other asset classes. The physical nature of land and improvements requires ongoing management activities including maintenance, cleaning and repairs, redecoration and refurbishment and ongoing costs of operation including utilities, insurance and municipal and water rates and land taxes. In addition, the leasing activities associated with investment properties require significant management input. The timing of lease expiries and renewals, the exercising of options to extend the lease term and the negotiation of rent reviews are all very important activities. These property management activities are increasingly outsourced to specialist firms.

The market has attempted to overcome these investment and management disadvantages by redirecting the emphasis away from direct investment in the land and bricks and mortar to indirect investment in property by way of securitisation, (Jaffe, 1997; Parker & Robinson, 2002). This has led to a rapidly expanding component of the investment market.

DIRECT AND INDIRECT PROPERTY

In an attempt to overcome the two major investment disadvantages of property, namely illiquidity and management, many investment vehicles have been devised to move investment from direct involvement in property to indirect involvement (Property Council of Australia, 2001). The most popular form of indirect property investment has been through the listed property trust vehicles. The investor purchases units in the trust which in turn has the direct investment in property. There are other popular vehicles such as property funds, unlisted trusts, syndicates and shares in property companies.

However, listed property trust performance has imitated the stock and share market rather than the property market, so the diversification or counter-cyclical element does not appear to have eventuated. The unitisation element of the earlier unlisted property trust vehicles does not appear to have assisted investors to move into and out of property, in other words, the illiquidity has not improved, particularly in the case of the major funds managers who invested in large parcels of property trust units.

The trust vehicle usually outsources the specialised management processes thus relieving the investor from the effort required and the specialised knowledge required to maintain the property as a suitable investment.

Thus the real difference between direct and indirect is that a manager/vehicle is inserted between the property and the investor. The investor continues to face all of the risks associated with direct investment in property except that the trust units allow easier access into property investment along with liquidity consistent with stocks and shares in the centralised market

The benefits of investment in income producing property are related to the contractual income arising out of lease agreements as well as the associated financial and taxation cashflows. Once the leases have expired, the property investment then assumes significant risk as income becomes no more certain than that arising out of corporate profits. New tenants must be found or existing tenants must be induced to remain in the premises. These situations require time-consuming negotiations and substantial costs are usually required for lease inducements, in particular the costs required to overcome depreciation and obsolescence.

A key issue in property investment is the wasting asset in the building component that depreciates over time and requires constant upgrading to maintain market position. It has been calculated that one fifth of the income from investment property would need to be set aside for depreciation (Bowie, 1982). This may have resulted in property being overpriced in the market. Most companies make provision for building refurbishment (as well as expansion, new products and so on) by setting aside part of the net income in reserves. The illustration of this is the difference between the yield and the earnings/price ratio (the reciprocal of the price/earnings ratio) which is a measure of the retained earnings (see table 3). However, trusts are unable to keep reserves as all income is required to be distributed. Therefore, it is difficult to retain reserves or sinking funds

out of income. Whereas, investments in property companies generate profits out of which dividends are distributed to shareholders and funds are usually retained as reserves. Accordingly, this appears to lead to an overstatement of the yields from property trusts.

Given that the typical property trust returns 7.5%, a depreciation allowance of 1.5% (one fifth) would be required. Ten year bonds currently (January 2002) yield 6.0% (Australian Financial Review, 4 January, 2002), so the margin covering the risks associated with property investment is NIL (7.5% - 1.5% - 6.0%). There is a view expressed that all of the risks can be reflected in the cash flow so that the discount rate can be a risk free rate such as long term government bonds (gilts) (Purvis, 1995, p. 19). But it is not deemed possible to reduce the internal rate of return to a risk free yield due to the traditionally listed real property factors including immobility, fashion, tenant risk, legislation and regulation standards.

Table 3: Investment yields and reserves

| Investment | Yield | P/E | 1/P/E | Reserves |
|---------------------|--------------|------------|--------------|-----------------|
| Gandel Retail Trust | 7.5% | 13.3 | 7.5% | 0.0% |
| Centro Properties | 7.42% | 13.7 | 7.3% | 0.0% |
| Lend Lease Corp | 1.56% | 40.1 | 2.5% | 0.94% |
| Leighton Holdings | 3.72% | 17.7 | 5.6% | 1.88% |

Source: Australian Financial Review, 4 January, 2002.

Many trusts are obtaining funds by the sale of trust units for development purposes as distinct from investment and trusts are also able to borrow finance for development purposes. In order to obtain funds for refurbishment, trusts need to raise capital through borrowings, through divesting of some of the assets, through distribution of additional units or through retaining some of its assets in cash. In all of these cases, the investor's holdings are diluted. Thus it appears that some of the returns from listed property trusts appear to include an element of capital. Thus it is up to the individual investors to set aside some of their returns in a sinking fund.

In addition to the investor class, entities of all types that once owned and occupied their premises are selling to and leasing back from the investment vehicles discussed above. Many past owners have become managers of the trusts into which their properties were sold, and many entities have effectively sold their properties to their employees by transferring the assets into superannuation funds.

The divestment of real assets by many entities has the effect of major balance sheet changes. Fixed assets have been reduced and replaced by substantial lease liabilities so that asset backing may not have the strength which it had in the past. In order to balance their portfolios, investors would need to consider vehicles that own these fixed assets. As discussed earlier, unitised property has demonstrated a closer relationship with stocks and

shares than with direct property, so the diversification benefits may be illusory in asset class terms.

INVESTOR BEHAVIOUR

Traditional property ownership is undergoing substantial change as property is becoming securitised by being indirectly owned through trust vehicles, companies and the like. These vehicles are being managed not by traditional property operators but by financial market operators. Accordingly, more sophisticated financial analysis is being used and this has given rise to the securities industry's requirement for a standardised discounted cash flow (DCF) methodology for real estate (Parker & Robinson, 2002). At present, most property advisers prepare individual DCF models to reflect a suite of investment/valuation variables which are adopted to suit the particular circumstances. It is common for investment valuations to be prepared in association with market valuations the former by DCF and the latter by capitalisation. It has been common to adjust the investment variables in the DCF so that both methodologies provide the same result. This tends to suggest that price and worth are identical (which would be so in a fully informed market in equilibrium and is certainly so for a buyer in that market). But reference to any of the financial markets dispels this notion; transactions occur as a result of differing opinions about price and worth and this is of significant relevance to property (see for example Peto *et al*, 1996).

Investors tend to exhibit a herd mentality in the face of the exigencies of the economic cycle. The bulls and bears of the stock market are prime examples. A bull market is one in which competition between investors bids up the prices of stocks and shares often to levels far in excess of their worth. A bear market is the opposite, ie, one in which divestors desperate to sell will take any price and often sell stock at prices well below their investment worth. Examples of bull markets include the resources boom of the 1960s/1970s and the IT boom of the late 1990s. A recent example of a bear market is the flight of capital from the market following the crash of October 1987.

The property market exhibits similar behaviour. A bull property market occurred in the mid to late 1980s leading to very high property asset prices and it was followed by a bear property market in the early 1990s in which asset prices fell substantially. Asset values plunged to less than 20% of replacement costs in a period of a little over four years in Melbourne between May 1989 (the peak of the 1980s property boom) and December 1993 (the trough of the property recession). This was repeated around the world to a greater or lesser degree, the main element of difference being temporal (and some parts of the world are already entering a second recession at the time of writing). The recent property cycle has caused a re-weighting of property in most investment portfolios. The proportion of balanced portfolios given over to property has halved from around 20% to around 10% during the 1990s (Fries, 2001).

This behaviour is also exhibited by funds managers in a climate where performance is measured on a quarterly basis. These managers cannot exercise judgements that could

cause their investment, holding and divestment decisions to be asynchronous with their competitors. If the portfolio performance fell behind their competitors in the short term, these managers could well be dumped so that they would not receive the improved returns projected for the long term. There is therefore no incentive for funds managers to act counter-cyclically.

The only way that funds managers, or direct investors for that matter, can achieve investment returns that exceed average market levels is to exhibit different behaviour. This generally amounts to counter-cyclical behaviour, ie, avoiding the herd mentality. In other words, buy low and sell high. “All good investment decisions, whether broad asset allocation or specific stock selection, require sticking with positions that are made uncomfortable by their variance with popular opinion” (Kohler, 2001).

The theory that investment valuations and market valuations converge and diverge over time to provide identifiable investment and divestment periods has been tested using a single office property which was valued annually (Robinson, 1997). It has been interesting to note that, contrary to what would be expected in a rational market, buyers markets in property exist when price is greater than worth and sellers markets occur when worth is greater than price. These are the "bulls" and "bears" of stock market fame. “All a fund manager has to do to be a hero as an investment manager is to avoid buying equity assets high. Why is it that fund managers seem so adept at doing exactly the opposite, concentrating their cash on last year’s story rather than buying those assets that noone seems to want, albeit temporarily?” (Goobey, 1990).

There is no hard and fast rule about property asset allocation in a balanced portfolio. If the allocation is too low, say a few per cent, then it will have little effect on the portfolio returns. There is no theoretical upper limit. One very successful fund manager is “aiming to increase the proportion of the fund invested in illiquid absolute return assets (such as property and infrastructure) to 50 per cent” (Kohler, 2001).

ISSUES/CONCLUSIONS

A number of issues have been raised that are worthy of additional discussion and research well beyond the scope of this paper.

First, ownership of shares in industrial companies has provided a significant allocation to property given the major property holdings of most corporates. But this appears to be diminishing due to corporate rationalisation moves to get assets off balance sheet. The effect on corporate performance of these off balance sheet moves and their replacement through sale and leaseback transaction with lease liabilities needs to be examined.

Second, given that corporations have been moving to reduce their real property asset backing, a balanced portfolio may need greatly increased allocations to property to replace that component of property that has been taken off balance sheet.

Third, the potential dilution of funds through depreciation and obsolescence, through borrowings to undertake refurbishment or through the offering of additional units needs to be investigated to establish whether or not property trust returns contain an element of capital.

Fourth, portfolio investment research needs to confirm, or otherwise, from an asset allocation point of view, that direct property provides substantial diversification to a portfolio whilst an equivalent allocation to indirect property mirrors the behaviour of stocks and shares.

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