Is Timeshare Ownership an Investment Product?

Martin Hovey
Head of Department – Finance and Banking
University of Southern Queensland
Toowoomba, Qld 4350
Australia.
Tel: +61 7 4631 2404;
Fax: +61 7 4631 2625;
e-mail: hovey@usq.edu.au

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Abstract

In this paper the question is addressed asking, "Is Timeshare Ownership an Investment Product?" After some discussion, the conclusion is that the purchaser outlays funds for economic benefit, thus timeshare fits well within the definition of an investment product. The paper also adds to the literature in that it advances the discussion regarding the risks associated with timeshare and the methodology applied in timeshare valuation. As investment is based on the notion of risk and return, thus firstly the risks associated with timeshare are discussed. Following, an analysis is conducted from a consumer's perspective considering the viability of investing in timeshare versus that of simply renting a holiday unit for one week per year. The notion that the purchase of timeshare can lock-in at least a portion of vocation expenses to today's rates is tested. The case is based on real figures taken from an offer made on a particular timeshare resort from a popular timeshare location and tourist destination. The viability from an economic perspective of investing in these timeshare investments was not supported by the analysis. The scenario that a capital gain could make up the shortfall was considered, but it was demonstrated that this was not probable in the cases presented.

Based on the cases discussed, there are three aspects highlighted in the paper as contributing to the costs of ownership of timeshare that are considered as factors that could be addressed to make timeshare ownership a more feasible purchase. They are the cost of sales, maintenance costs and exit costs. If the industry were able to take up the challenge of reducing these costs in particular, it is likely that investment in timeshare would be more feasible and attract a wider market.

Introduction

Timesharing is the general name for the purchase of a condominium in a shared recreational resort for a prescribed interval of time. An interval is purchased at a timeshare resort, and represents a portion, typically a week's interval, purchased in a condominium. Thus each unit of a timeshare resort is divided into intervals, either by week or by a point equivalent. The traditional concept of timesharing is the purchase of the use of a property for a period of one week or more during a given year. Under this style of purchase, the member owns their portion of the holiday unit for the time they plan to use it, and could receive a deed for that portion of the property (1). However, more flexible products are becoming popular. The concept is promoted as an alternative and, as a means of hedging against, the rising costs of holiday accommodation. The weeks', periods or points are sold for a one-off purchase price and the owners have access to holiday accommodation reserved for their use. The purchase price depends on features including: the size, location, amenities, and the season in which the condominium will be used. An annual fee covers maintenance and management of the property. However, there are many variations on this and a wide variety of different benefits offered to owners. Some of these will be discussed in the following sections.

The timeshare market has seen considerable growth and is developing as an industry globally (see Figure 1). Given its growth and potential, it is surprising that there has not been a lot of attention paid to the analysis of timesharing. There has been little discussion within the context of timeshare ownership as an investment product. Within this context, an important question is as to whether timeshare is a security. For the practitioner, this is central to the requirements as to the information that is not to be provided to the consumer. From the perspective of consumer protection, the matter has ramifications as to what information is presented to the consumer.

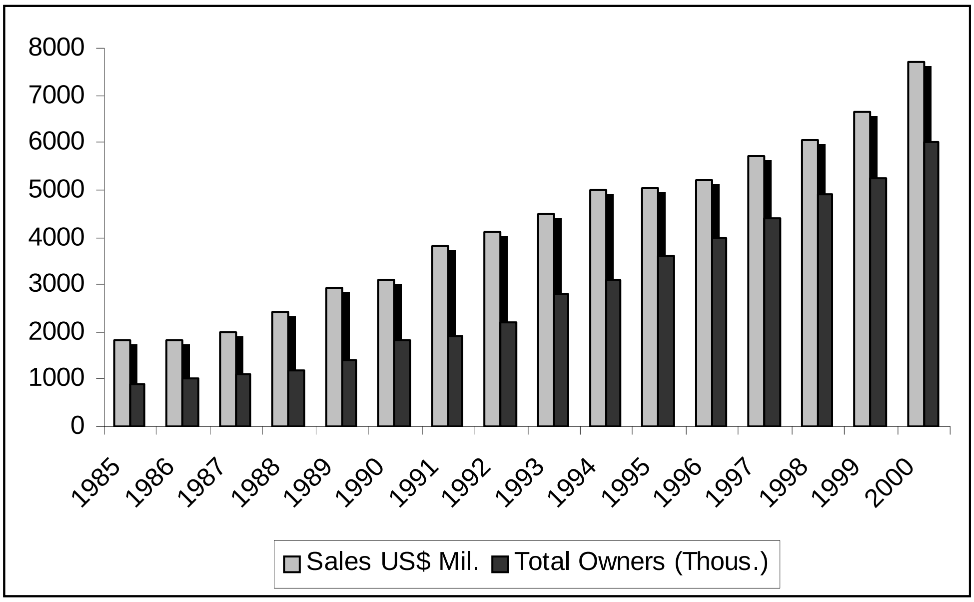
From an economic perspective, aspects such as the risks associated with and valuation of a timeshare purchase are important considerations. Timeshare valuation has been addressed by two prior studies. Ragas (2) applies a discounting cash flow model for timeshare valuation which estimates the net present value of expected after-tax cash flows. The analysis is founded on the notion that a substitute for a timeshare condominium is a hotel room. This notion is contestable as it could be soundly argued that an identical condominium in the same complex is a far superior substitute. Establishments that have identical condominiums available for holiday rental and timeshare ownership are relatively common; hence, figures are readily available for analysis. This then alleviates the need for the many assumptions and calculations in the Ragas model. The adjustments for the different levels of facilities and the "food savings" in the analysis make it cumbersome. Especially considering that substitutes are available, rendering such complexity unnecessary. Ziobrowski (3) presents a simplified discounting cash flow model for timeshare valuation based on readily available variables. The model is more plausible in that it takes similar rental properties as substitutes and applies the 'actual "rent available" and operating costs associated with the timeshare property being priced' (3, p 372). The major flaw of the approach is the argument that it is a risk-free investment. There are quite a number of risks that a purchaser faces in timeshare, which are detailed in this study, demonstrating that it should not be evaluated using a risk-free discount rate. The other flaw in the Ziobrowski approach is the high resale value applied. Whilst high resale values may be applicable in some circumstances, it does not appear to be the case generally, especially after some time has elapsed. On observation the secondary market is not active and typically provides low resale prices. The models proposed in this study follows the essence of the Ziobrowski approach, but applies a theoretically sound discount rate and more realistic resale values, assuming that the purchaser holds timeshare for at least ten years.

The History of Timeshare

The concept of timesharing is said to have come into being in France in the 1960s when a group of European holidaymakers decided that, as the cost of accommodation was so high in their beloved French Alps, and as they could not afford to purchase their own individual holiday villas, they would combine their finances to jointly purchase and share the costs and privileges of ownership of a beautiful deluxe villa. The project located near St. Etienne-en-Devoluy, was commenced in 1967 and was called "Superdevoluy High Alps". Each participant planned to enjoy the use of the villa for a pre-agreed, pre-determined period each year. From this humble beginning the timeshare industry was born (4).

In the 1960s and 70s the concept began to spread internationally as consumers in Florida, United States, and in other countries, began to embrace timeshare (5). Even though from the outset marketing the concept was a challenge (6), the industry has experienced significant growth. Presently, around 5,000 timeshare resorts are to be found in 110 countries worldwide (see Figure 1). Almost half of these resorts are in the US which has more than 3 million timeshare owners. Europe, with 750,000 owners and more than 1,800 resorts is second to the US in timeshare ownership (7). Worldwide sales of timeshare topped US$7.7 billion in 2000 (see Figure 1).

Figure 1: Global Sales and Owners



Source: American Resort Development Association (8)

The Timeshare Industry

The timeshare industry prides itself in that it creates jobs, promotes tourism and assists economies to grow. In the US alone it employed over 50,000 people in 1999. Indirectly the industry contributed approximately 220,000 jobs, and its input into the US economy reached US$18 billion (1). The industry has experienced solid growth of around 1000% in the past 20 years (1). Industry players believe the future is bright and that growth will continue (9, 10).

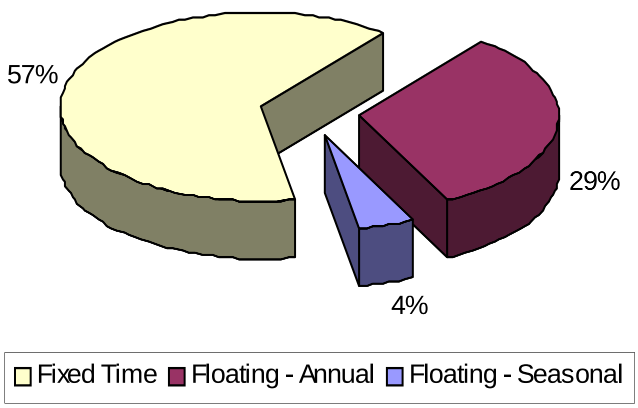
Particularly during the developmental stages of the industry, timeshare suffered a perception of poor credibility shaped by a negative reputation in many parts of the world. This was not helped by the aggressive marketing techniques and dubious financial practices promoted by some players. Wild claims were made in some instances as to the value of the investment and the prospect of expected returns that were never actually realized (11). Hence, in many parts of the world, codes of practice or regulations prevent timeshare being sold as an investment product.

Various measures have been aimed at helping timeshare overcome the negative perceptions, gain greater credibility, and improve its reputation and acceptability. This has also been enhanced by the involvement of brand-name hospitality companies such as Disney, Embassy Suites, Four Seasons, Hampton, Hilton, Hilton, Holiday, Hyatt, Marriott, Radisson, Ramada, Ritz-Carlton, Starwood, and Westin (12, 13). The formation of timeshare industry associations with strict codes of practice has also been a significant catalyst for change and improved credibility. Unfortunately however, despite these efforts, in some countries the industry is still plagued by aggressive marketing techniques and dubious claims which tarnish its reputation.

Types of timeshare schemes

The primary types of timeshare are categorised as fixed, floating, and points schemes. The fixed week timeshare scheme is where the same week every year is owned at the members timeshare resort. It is the most common form of timeshare (Figure 2). The floating week scheme is where the member does not have a fixed week, but rather is able to select the week of choice each year on a first-in preference basis. This could be any time of year (floating – annual), or it could be for a particular season only (floating – seasonal) (Figure 2). The points timeshare schemes are very flexible and refers to where points are redeemed for daily or weekend stays. Usually more points are required for weekends and the high seasons. Most schemes offer membership of exchange schemes that, for a fee, allows the timeshare owner to exchange into other resorts worldwide.

Figure 2: Types of Conveyancing, 1998

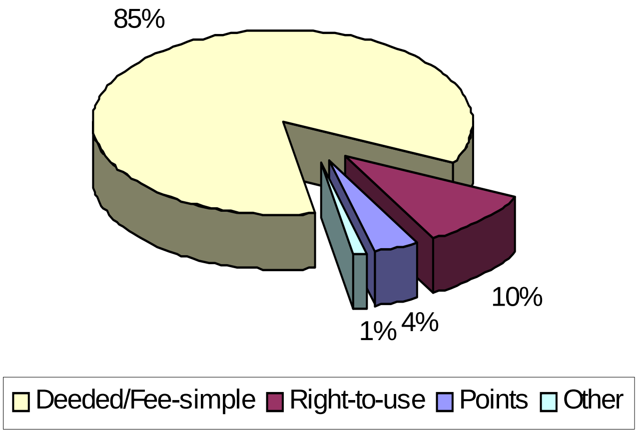


Note: This is the most recent industry data available.

Source: American Resort Development Association (8).

The demand for flexibility has driven the development of a variety of timeshare schemes. For instance, there are point-based programs, vacation clubs, undivided interests as well as deeded, right-to-use, leasehold agreements. Vacation clubs and points schemes are non-deeded arrangements and are gaining popularity due to the flexibility they offer. These schemes facilitate the opportunity to visit various destinations across the world, and benefit from equivalent quality accommodation that is typically offered. Consumers should be aware however that some schemes provide less consumer protection than others. For example, in the EU a cooling-off period does not always apply for holiday clubs, whereas it does on timeshare purchases (14).

Figure 3: Types of Conveyancing, 1998



Note: This is the most recent industry data available.

Source: American Resort Development Association (8).

There are also some variations of the original timeshare scheme. Firstly, the title based schemes. Under a title based scheme each timeshare purchaser receives an interest in the property that is determined by the number of intervals owned. Secondly, share based schemes in which a public company is established by the developer. The property is then transferred to the company. Shares representing the various types of accommodation are then sold in the company. Thirdly, the unit trust scheme is where the buyer acquires a unit in the trust. In this scheme the buyer has no direct control over the manager as they do in title-based scheme. The terms of the constitution govern the right of use of the timeshare interval. Finally, the right to use or share schemes. In the right to use schemes the timeshare owner does not acquire any permanent interest in the underlying property either directly or indirectly. Simply the right to use the property for certain periods is purchased by the member.

Legislation and Regulation

The timeshare industry is typically highly regulated in most countries, and in some by both federal and state laws. This has been brought about as a result of particularly consumer protection concerns. It is principally a response to high-pressure sales and marketing practices and a concern for the unethical and/or deceptive practices used by some operators (1). Timeshare operators in some countries such as the US and Australia face considerable regulation. Whereas timeshare operations in the European Union typically do not face the same level of regulation (5), although added regulation is presently being explored. Increasing the difficulties faced by the timeshare industry, regulations usually vary considerably between countries, and even from state to state within some countries.

All in all, many laws and regulations may apply. By way of illustration, Marriott faces up to 50 compliance and regulatory issues in some situations when it enters the timeshare market (5). Being highly regulated adds considerably to the cost of timeshare overall and adds to the difficulties faced in marketing the product.

The Approach Used by the Timeshare Industry

In most cases in regulated markets timeshare is sold as a consumer product. It is not sold as an investment and no financial advice is given. This has both a positive and negative consequence. The positive side is that it forbids unscrupulous sales personnel making outrageous claims, and promoting the idea that a return can be gained from the investment. The industry bodies and legislators in many countries do make a considerable effort to reign in the unethical behaviour of unprincipled organisations and salespersons. The negative side is that an accurate cost benefit analysis is not provided nor encouraged to be conducted by the purchaser. Sales staff are not required to provide investment advice, and accurate figures as to expected returns (or otherwise) are not provided. This may open the consumer to the salesperson speaking in glowing terms and appealing to the emotions, rather than presenting and being accountable for investment advice. The economic benefits or disadvantages associated with the ownership of timeshare is not offered. Income or cash flow projections, or tax advantages or impacts are not included in materials. As this information is not required, it does reduce consumer protection considerably. Thus with regard to consumer protection, this is both good and bad. It forbids unprincipled sales personnel from overstating the investment possibility, but on the other hand it allows the marketing of timeshare without any form of cost benefit analysis, investment advice or accountability and limits consumer protection.

It is evident that there is still a problem in some countries where unscrupulous operators sell timeshare. The timeshare industry continues to find itself under the scrutiny of the media and under the watchful eye of regulators. Though industry bodies and legislators in many countries do make a considerable effort to reign in the unethical behaviour, high-pressure sales tactics, and deceitful claims and actions of unprincipled organisations and salespersons. The image of the industry is not helped by headlines splashed across the pages, web sites and news bulletins, of the mass media. Yet from time to time unscrupulous individuals or operators do attract the attention of industry watchdogs and the media. Their actions do not help the image of the industry.

Is Timeshare Ownership an Investment Product?

Timeshare schemes are commonly referred to as lifestyle products in the industry and thus are not actually considered an investment by many in the timeshare sector. Many in the timeshare industry vigorously oppose categorising timeshare as a security. Some courts in the US have ruled that timeshare is not a security when the purpose of the purchase is for lodging and is contracted accordingly (15). However, timeshare is categorised as a security in some jurisdictions globally. For example, in Australia timeshare is categorized as a managed fund by the Australian Securities and Investment Commission (Corporations Act 2001, sec. 601FB(1)). The *Responsible Entity*, the organisation running the scheme, must also hold a security dealers licence and sales staff must also pass exams and hold a certificate. Thus, there is a significant question then that matters to consumers, the industry and regulators alike. That is the question, “is timeshare ownership an investment product?”

Firstly, from an economic perspective the purchaser outlays funds with the expectation that the price of holiday accommodation for the future will be fixed. This is the economic benefit of the purchase. Thus there is an investment for an economic benefit and it is therefore reasonable to consider it a consumer investment product. From a securities perspective, as such, it could be classified as a managed investment security. So the original question leads to the question, “does it fit the category of a managed investment security?” A security is a financial asset or paper right to an asset, which is generally considered transferable or tradable. Examples of such financial assets or papers are bills of exchange, bonds, and stocks. This is in contrast to real assets such as real estate, cash or gold. An investment is any asset purchased for the purpose of producing, benefit, income or capital gains. A pooled investment is an investment in which a number of individual investors place funds that are pooled, and as a total the pooled funds are invested in an asset(s). A professional manager administers the investment for the benefit of the investors or to produce a return. A managed investment scheme is similar in that the pooled funds of individuals are placed in the hands of a professional manager with a mutual investment strategy or objective as the motivating force (16, 17). They allow investors to gain access to markets and products that would otherwise be out of reach for the individual small investor. The two main benefits of managed investments are the opportunity to pool funds to achieve a mutual objective and to utilize experienced management to administer it.

Under a title-based timeshare scheme each purchaser invests in and receives an interest in a property that is determined by the number of intervals (or weeks) owned. The funds of investors are pooled and invested in an asset, namely the timeshare property. The investor receives an interest in the property. It is thus almost identical to a managed investment scheme in that the pooled funds of individuals are placed in the hands of a professional manager with a mutual investment objective as the motivating force. In this case an investment is made with the objective of purchasing a share of the property in order to provide lodging and in the belief that it will hedge against increases in future holiday accommodation. Thus, timeshare certainly fits well within the category of a managed investment scheme. Similarly, timesharing is a type of unit trust. If it fits the definition of a security and a managed investment, it is reasonable to consider it as an investment product under that category.

In consideration of the question as to whether timeshare ownership could be considered an investment product, the finding of this section is that it reasonable to consider timeshare an investment product. There is an outlay of funds by the purchaser with the expectation of economic benefit – that of fixing the price of holiday accommodation for the future. Inventors' funds are pooled and invested in an asset that is managed by a professional manager for the financial benefit of the investors, thus it is in practice a managed investment product. Whilst it is acknowledged that non financial benefits are derived from the purchase of timeshare, from an economic perspective, it fits as a managed investment product.

Analysis as an Investment Product

There are two significant aspects to be considered with any investment product. These are the risks involved and the expected returns. Financial theory holds that inventors should be rewarded by way of adequate returns for the risks taken in any particular investment. Inventors that are risk averse may deposit their funds with an intermediary such as a deposit taking institution, which in turn pools the funds and invests them for a return. In so doing the intermediary takes most of the risk and the returns for the depositors are low. For example, a bank takes the savings of individuals, pools them and makes the investments, and bares most of the risk. If an investor desires a higher return they would typically have to bear greater risk. This may mean that they might invest in a pooled fund that invests in more risky assets and does not have the same checks and balances that are required by regulators of banks. Alternatively if an investor was less risk averse still, they may take on greater risk and invest directly in the market. The later would expect to be rewarded for the greater risk with higher returns. Thus, the greater the risk, the higher return that a rational investor would expect.

Given that investors should consider and be aware of the risks associated with an investment and be rewarded for taking the risk, then if we were to consider timeshare as an investment, what are the risks involved in timeshare and what returns could an investor expect? This question is addressed in the following sections. Furthermore, in the Ziobrowski (3) model for valuing timeshare considered later, a risk-free discount rate is applied. Thus there is also the question as to whether timeshare is free of risk and therefore the question as to if a risk-free discount rate is applicable. Theoretically, a risk-free rate should only by applied to a risk free investment.

The Risks Associated with a Timeshare Investment

The risks associated with any purchase should be considered, especially when comparing investment opportunities. Theoretically an inventor should be rewarded for the risk borne. There is also the question associated with valuing timeshare as to whether the risk-free discount rate is appropriate. In this section some of the typical risks of timeshare are analysed and discussed. Those considered most important are outlined below.

According to a study conducted in 1999, 13% of timeshare owners are dissatisfied with their purchase (5). Baumann (18) list three primary reasons owners divest their vacation intervals: an empty-nest situation, unexpected financial difficulties or the owner never fully used the interval. Many of these owners may sell if they could get a fair price. Within this context, a risk that is considered as high in timeshare schemes is that of liquidity risk (see Table 1). Liquidity refers to the ease with which a security or asset can be converted to cash. Accordingly, in the context of timeshare, it is the risk associated with the capacity of a consumer to sell a timeshare investment quickly and at a fair price. If an owner is required to reduce the price below market value or fair value, or takes considerable time or expense to divest the investment, then it is considered illiquid. For example if the asset is cash, it is generally very liquid, whereas real estate may be somewhat less liquid or illiquid depending on the state of the economy and the demand for the property. Liquidity risk is thus the risk that the investment will be illiquid. Thus, based on this definition, timeshare can generally be considered as illiquid and to face liquidity risk.

Liquidity is very much dependent on the demand for the asset and on an active secondary market. In contrast to timeshare, there is an active secondary market for equity held in companies. Stock exchanges provide a relatively liquid means of trading shares in firms. However, there is no such organised secondary market for timeshare. So generally, if an investor wishes to sell timeshare, it is difficult to find a buyer and sales are in the main transacted at significant reductions from the price paid (19). In some countries, such as Australia, the risk that the purchaser might not receive the full purchase price is required to be stated in the prospectus or sales documentation. The ability to sell timeshare over the internet in on-line auctions, such as Ebay (20) will surely enhance its liquidity. It may be in the best interests of the industry to promote the secondary market, as an increase in liquidity should buoy the confidence of purchasers and increase prices on the secondary market.

Another risk that is considered as high in timeshare schemes is marketability risk (see Table 1). It is somewhat similar to liquidity risk and is the risk that a future market will not exist for an asset or investment. If for example a market contracts due to an economic slowdown or if consumer confidence declines, it will reduce the marketability of an asset or investment as a result of the lack of buyers in the market and increase marketability risk.

Liquidity and marketability are very much interrelated and are significant risks in the ownership of timeshare. If an owner wished to sell their timeshare asset, it would often be difficult to find a purchaser interested in buying it at a reasonable price.

Market volatility risk is noted as low for timeshare products in Table 1. Market volatility risk is the risk that the market will be volatile and rise or fall sharply within a short period of time. In general, volatility is a statistical measure of the rise and fall of a market or security. On the other hand, it is shown as high for common stock. Stockmarkets are considered particularly volatile during periods of economic uncertainty especially. Whereas, real estate is typically less volatile since price movements and indiscriminate selling is uncommon (see Table 1). Though timeshare resale prices are low, as discussed previously, they are not volatile and are reasonably predictable. Thus, market volatility risk is low.

Table 1: The Likelihood of a Risk Impacting on Various Investment Products

	Type of Risk							
Managed Investment Product	**Liquidity**	**Marketability**	**Market Volatility**	**Business**	**Interest Rate**	**Inflation/ Deflation**	**Political**	**Counter Party**
Timeshare Schemes	H	H	L	M	L	M	L	M
Property Trusts	M	M	L	M	H	H	L	L
Equity Trusts	L	L	H	M	L	M	M	L
Fixed Interest Trusts	M	L	L	L	H	H	M	L
Mutual Funds	M	L	H	M	L	L	M	L
Property Management	H	M	L	M	L	L	L	L
Serviced Strata Schemes	H	M	L	L	L	L	L	M
Primary Production & Film Schemes	H	H	M	H	L	M	M	H
Other Investments								
Real Estate	H	H	L	L	M	L	H	M
Common Stock	L	L	H	M	M	M	H	L

Legend: H = High, M = Medium, L = Low.

Adapted from: Garman 1985 and 2000. (21, 22)

There are various aspects of business risk that are worthy of comment, since timeshare business risk is noted in Table 1 as medium. Business risk is the risk of a major unexpected deterioration in a firm's business. In particular, there is a risk that the required number of participants to make the scheme economically viable is not attained. The capacity to market timeshare is subject to many constraints, not the least of which are the perceptions in the market. If sales do not progress as well as expected, it can take many years for all units or fractions of timeshare to be sold. This in turn may lead to escalating capital costs, which increases the financial distress and can put at risk the viability of the project which may in turn increase counterparty risk.

There is a risk that maintenance, operational or other levies of the timeshare scheme may increase. These levies are normally contractually payable by the timeshare members annually. Increases in costs associated with operations or maintenance will of course be passed on to members, though some constitutions limit these increases. However there is a risk that future increases would make timeshare membership economically unviable for the consumer. Some operators have been known to subsidise the levies during the selling stage. A consequence being that members face increases in levies after the sales team pulls out and the subsidies removed.

An additional aspect is that of a loss of or failure to recruit quality staff. This is complicated since labour resources are often stretched as timeshare usually operates in tourism or resort areas (5). The timeshare scheme is reliant upon experienced and capable management and staff. Overall in any service industry, superior staff is a primary key to gaining and sustaining sustainable strategic advantage (23). Staffing issues and especially the loss of quality key staff could have a considerable bearing on the operation of the scheme and thus poses a significant risk to timeshare members.

Political risk should also be considered in any venture, but is a relatively low risk in timeshare schemes in most developed countries (see Table 1). Political risk is not only the risk associated with insurrection or political corruption or misappropriation, it is also the risk of politically driven changes will alter the playing field for business. Typically it is coupled with the recurrent changes in government or in government policy, such as taxation or monetary and fiscal policy. Along the same lines is the risk of legislative and regulatory changes. Any changes in these domains may impact upon the way in which the timeshare scheme operates. This risk is considerably higher for timeshare operators, as it is a developing market which has come under the scrutiny of legislators and regulators from time to time. However, in the current political arena in which consumer protection is in the spotlight, any changes are likely to benefit the consumer and thus be positive for timeshare purchasers. So the primary risk is to the developers rather than the consumer directly. However, risks faced by developers may have a flow-on effect to investors. It should be noted that the industry has a strong industry network and industry bodies in most developed countries, which work tirelessly at protecting the industry from adverse influences from any threats. Unfortunately, this may not be the case in less developed economies or within countries that have high political risk.

The next risk to be considered, that of defaulting members of the scheme, is a counterparty risk and is a medium risk (see Table 1). In any business cash flow is the all-important element that will make it viable and sustainable (6). If a substantial proportion of members defaulted it could put the operation at risk and lead to escalating financial distress. If the operation were already facing a level of financial distress due to defaulting members, outside pressures or any other reason, an escalation of members defaulting would increase the risk. A reduction in cash flow could result in the funds required for on-going expenses being affected and the flow-on affect of the reserve fund account being reduced to dangerously low levels. Typically the constitution or legislation addresses the possibility of defaulting members who would normally forfeit their timeshare interest after certain due process is followed. Defaulting members may lead to added loss of revenue and increased costs, especially by way of marketing expenses, as the interest must then be resold.

There are a number of reasons why members may default. It could be brought about by a downturn in the economy overall or personal financial distress impacting upon the capacity of members to maintain their obligations. It could also be brought on by overall dissatisfaction of a member or worse a group of members. For example, if there were an increasing levies that members perceived as unjustified, they may choose to default. Additionally, a perceived reduced level of service, quality, maintenance, holiday experience or confidence in management is also likely to result in defaulting members. Thus a reduction in perceived levels of satisfaction of members or their guests for whatever reason is a risk to be considered. As a considerable portion of a holiday experience for timeshare members is service related and intangible, managing these aspects skilfully is vital to the ongoing success of timeshare ownership. Any deterioration in aspects valued by members or that contribute to their holiday experience could result in a downturn in business and therefore poses a risk to all members (24). Characteristic features that may contribute to the holiday experience include the overall quality, ambiance, aesthetics, neighbourhood, facilities, entertainment, shopping, transport, catering, food, or even other fellow members. Within this context not the least of considerations is the management and staff as they play a very significant part in the perceived level of service, which is also intangible (25). All staff impact enormously on creating an enjoyable, and happy holiday experience. Due to the flow on affect the quality of all levels of management in particularly plays an important part in creating a pleasant holiday experience. For example the dress, attitude, personality, character, and communication and interpersonal skills impacts on the perceived level of service. Consequently any change within the working environment can have significant consequences. There are measures taken to minimise these risks in most situations as the risk to the business as a whole is well recognised. Thus generally management and staff are carefully selected to avoid such problems. The role of brand-name organisations and the reputation that they are protecting also plays an important role in maintaining standards.

Severe financial distress as discussed above or as a result of an economic downturn or other factors could ultimately result in a further counterparty risk being realised. That is the risk that the operator of the timeshare scheme becomes insolvent and ceases to operate. It could thus result in the loss of the benefits enjoyed by the timeshare members and the loss of the funds invested. Of all the risks, this is of course has the most severe consequences but is noted in Table 1 as a medium risk.

Exchange programs and affiliation agreements are found by many purchasers of timeshare to be one of the most attractive reasons for making the purchase. Exchanges and affiliations provide a global channel for timeshare members to be able to exchange their rights for the right to use other condominiums and resort facilities in timeshare resorts available through the affiliation or an exchange company. This is naturally subject to availability and the service is provided for a fee. However, there is a risk associated with this in that these arrangements are not guaranteed and can change at any time. Thus purchasers' could find themselves unable to access the facilities that were considered advantageous to them when the decision to purchase timeshare was made. As this risk is not common to other investments it is not listed in Table 1.

There is also the risk associated with demand for a timeshare unit, which is influence by the quality and location of the property and the season allocated. There is not a great deal of demand for a property that is not at a popular holiday destination or that is poorly situated or maintained. Even if the property overall is in demand, there may not be demand for an out of season week. High season weeks in a high demand property are more expensive to purchase, so some consumers purchase the cheaper less demand resorts or seasons. The risk is that the condominium purchased is in a location that no one wishes to exchange with or in a week that is not popular or not wanted at all. Two risks are associated with this. Firstly, the impact of the demand on exchanges. If a low demand timeshare unit is purchased it may be found that exchanges are not available now or later when the popularity diminishes. Second is resale risk, in that demand for a timeshare unit is governed by the attributes and position of the property and the allocated season. The demand impacts upon the resale value, its marketability and the time it takes to sell the property in the resale market. Furthermore, as timeshare becomes more flexible in its offerings, it is exposed more and more to similar factors as those that impact upon the tourism and lodging industry such as seasonal factors, weather conditions and issues concerning the transport and aviation industry.

The conclusion that can be drawn from the analysis of the risks involved in timeshare is that it is not a risk free investment. As with many other investments, there are quite a number of risks that an investor should consider before making the investment. These risks should also be considered in relation to the return of the investment. As mentioned previously the greater the risk the higher return that a rational investor would expect. In the following section the possible returns are determined, analysed and discussed. Furthermore, it is thus concluded that a risk-free rate is not applicable as the discount rate to be applied in the analysis of timeshare as applied by Ziobrowski (3).

Analysis of the Returns on a Timeshare Investment

The analysis of the value of timeshare is based on the benefits derived from the investment. Ultimately the discount rate and thus the required return on a timeshare investment is determined in part by the risks associated with the investment as outlined above. However, it is difficult to specifically quantify the risks and thus it is somewhat of a challenge to determine a suitable required return. Nevertheless, it is posited that a property market index provides a reasonably proxy. In this section this is considered and discussed and an analysis is conducted of examples of investments in timeshare.

The analysis is conducted considering the viability of investing in timeshare versus that of simply renting a holiday unit for one week per year. The case used is a well-selected representative example and is based on real figures taken from an offer made on a particular timeshare property based on the Gold Coast in Queensland, Australia, a popular timeshare location and tourist destination. Whilst this may appear limited, fifteen offerings were analysed and a representative case was chosen as it was considered a typical representative example in this market. In the primary case the price per timeshare unit per week is AUD19,500 and annual maintenance fees are AUD440 per unit per week. Ziobrowski (3) applies a rate of return of 5% annually in that a timeshare purchase is assumed to be relatively risk-free. Assuming this rather conservative opportunity cost of 5% per annum compounding monthly, if the person were to invest the AUD19,500 for ten years, it would have earned a total of AUD30,556 over ten years. The present annual rate for maintenance fees that the timeshare owner is required to pay is AUD440. Assuming an inflation rate of 3% per annum as applied by Ziobrowski, over ten years the owner of timeshare would expect to pay a total of AUD5,044 in maintenance fees. Accordingly, the sum total of the investment comes to

AUD37,161 after ten years. This is assuming the timeshare owner pays no other levies and does not holiday anywhere else, which would incur further costs. It also assumes the owner has not funded the purchase with borrowings, in which case, the cost of debt should also be factored in.

Holiday rental prices for identical units in the same resort were AUD1,365 per week for the same season. Thus presuming a holiday is taken annual for one week and applying an inflation rate of 3% per annum the outlay totals AUD13,241 over ten years, which is the as the economic benefit of owning timeshare. After ten years with the total investment in timeshare is AUD37,161, compared to holiday rental expenses of AUD13,241. The difference is AUD23,920. At today's value or present value this is a AUD14,685 difference. Thus clearly considerable more is outlay in timeshare ownership.

An investment in real estate may be expected to provide capital gain returns by some investors that may make up this difference. However, a quick estimate demonstrates that in this instance it is unlikely to occur in the foreseeable future. Taking the present timeshare cost of AUD19,500 per week and multiplying it by fifty-two, being the weeks of a year, the present cost of a condominium in total is AUD1,014,000. However, the average offer price for similarly situated two-bedroom units presently on the market in the facility is AUD353,000. Thus, based on this figure, a per-unit-week is currently worth approximately AUD6,788 or a little less, remembering that this is the asking price and the final sale price may be lower. That is approximately 35% of the AUD19,500 per week for a timeshare unit. Evidently, a capital gain is not likely to be realised for quite a while, if at all.

In consideration of capital gains potential, the average of conservative capital growth estimates from five real estate agents from this particular area in question is presently 8% per annum. After a number of years of steady growth in the geographic region, capital gains growth has picked up in the last couple of years and is expected to level back out to a steady growth of around 8%, though of course this is not at all certain. Thus, assuming a capital growth of 8% in the region and factoring in maintenance fees, it would take at least 13.3 years for the overall value of the unit to appreciate to the approximate breakeven point of AUD1,014,000 based on these assumptions. Nevertheless, the fittings, furniture and buildings would depreciate which has not been factored in. However, it is assumed that some of the depreciation will be alleviated by maintenance funded by the maintenance levy.

Analysis of Timeshare as an Investment

In a number of jurisdictions it is forbidden to sell timeshare as an investment. The primary reason is that a major selling point has been that timeshare is a good investment. This sounds plausible to consumers but often simply does not add up as in the example provided above. The associated costs are simply too high for any capital gain that may be enjoyed by the real estate component to make up in a reasonable time horizon. Thus because of the high costs involved it simply does not cut as a viable investment security that would meet the required return of astute investors. However, many have been convinced that timeshare does make a good ecenomic investment by unscrupulous sales personnel and marketing campaigns. A quick search of the internet even today reveals operators touting timeshare units as a worthwhile investment.

A major selling point that has been used by timeshare marketing is that “investing” the purchase price today will fix your holiday costs into the future at today’s rates. This can be tested as to its viability using a NPV analysis. Following the lines of the Ragas (1986) and Ziobrowski (1997) models (2, 3) the following formula is used to determine the net present value of the timeshare purchase:

$$\text{NPV} = \text{Cash Benefit} - \text{ICO} + \text{PVRSP} \qquad (1)$$

Where Cash Benefit = Rent Saved – Maintenance Fee. Rent Saved is the current weekly rental rate of an identical unit, adjusted annually for inflation. It represents the holiday rental fees that are saved by the owner of a timeshare property because they have the use of one week in a timeshare condominium. This assumes that timeshare units are competitively priced to equivalent units in close proximity in the same facility to non-timeshare units. The Maintenance Fee represents the current annual maintenance fee that applies per week per unit, adjusted for inflation annually. ICO is the initial cash outlay per timeshare unit and PVRSP is the present value of the after-tax resale proceeds. Resales are typically made at significant discount of 50% or even 80% of the original price (26). Resale’s for timeshare in this vicinity, which are no longer being marketed by a developer and are thus exposed to the timeshare resale market, are listed with a timeshare sales agent at AUD3,820 which is approximately a 68% discount from the original sale price of AUD12,000. Given that they do actually sell at this price and applying brokerage and transaction costs of 20% (6), the final return to the timeshare owner would be approximately 75.4% discount of the original sale price in this case. Assuming the possibility of the resale value being higher for popular weeks of a popular resort, a discount of at 50% is also applied. Accordingly, in this analysis two values are used for analysis purposes – 75.4% and 50%.

The relationship between expected inflation and interest rates can be expressed as (27):

$$(1+r) = (1+k)(1+\pi) \tag{2}$$

Where r is the nominal interest rate, k is the real interest rate and π is the expected inflation rate. Thus, to determine the real required rate of return for the NPV analysis, the following formula is used (28):

$$(1+k) = \frac{(1+r)}{(1+\pi)} \tag{3}$$

The Ziobrowski (1997) model assumes that a timeshare purchase is relatively risk free and thus applies a risk free rate of return of 5% annually, stating "It is our assumption that most timeshare purchasers view the acquisition as an essentially risk-free way of reducing vacation expenses in the future, not as a money-making venture" Ziobrowski (1997). The use of a "risk-free" rate is contestable as there are numerous risks in timeshare investment, as outlined above, which should be factored into any analysis. Furthermore, there are various investment opportunities which enable an investor to gain higher returns than the risk-free rate, which are assumed have similar risk profiles. The benchmark regarded as being a reasonable proxy for timeshare investment is a property trust index. It is considered that property trusts, as a managed investment product as is timeshare, would serve as a reasonable proxy for timeshare investment. In the Australian market the S&P/ASX 300 Property Trusts - Price Index from the Australian Stock Exchange was selected. Datastream has data from 31 March 2000. The return based on the 2.27 years from 31 March 2000 to 9 July 2002, when this data was accessed, is 8.03% (29). This is applied as the discount rate in this analysis. Once again, it is assumed that the investment is not funded with borrowings, in which case, the cost of debt should also be factored in.

Another distinction to the Ziobrowski (1997) approach is that resale proceeds will be evaluated at a 75.4% as well as 50% discount of the original purchase price. This is considered to be inline with typical resale values in the region and is more representative of resale values, plus it factors in brokerage and transaction (6, 26). A holding period of ten years is assumed by Ziobrowski (1997) "based on the belief that after vacationing in the same place for ten years, the purchaser may want a change." Ten years is probably a reasonable timeline, though the analysis conducted in this paper also applies a longer horizon.

The analysis is rerun based on the economic conditions in Australia in July 2002, where inflation had averaged 2.4% in the ten years from July 1992 (data source: Australian Bureau of Statistics, 2002 (30)). Thus, applying a required rate return of 8.03% to the previous scenario of an initial cash outlay of AUD19,500 per timeshare unit, an annual maintenance fee of AUD440 and the rent for similar holiday unit of AUD1,365 as the economic benefit. With inflation set at 2.4% and a nominal required rate of return of 8.03% the real required rate of return is 5.5%. The NPV analysis is rerun using formula (1) and a recalculation is made. The results of this analysis show that NPV is negative at a generally unacceptable level for the case presented (see Table 2 and Figure 4).

Table 2: NPV results at 8.03%

Initial cash outlay = AUD19,500				
Year	**PV of resale proceeds at 75.4% depreciation**	**NPV**	**PV of resale proceeds at 50% depreciation**	**NPV**
10	$2,809	**-$8,996**	$5,709	**-$6,095**
20	$1,645	**-$4,448**	$3,343	**-$2,750**
30	$963	**-$890**	$1,957	**$105**
33	$820	**$12**		

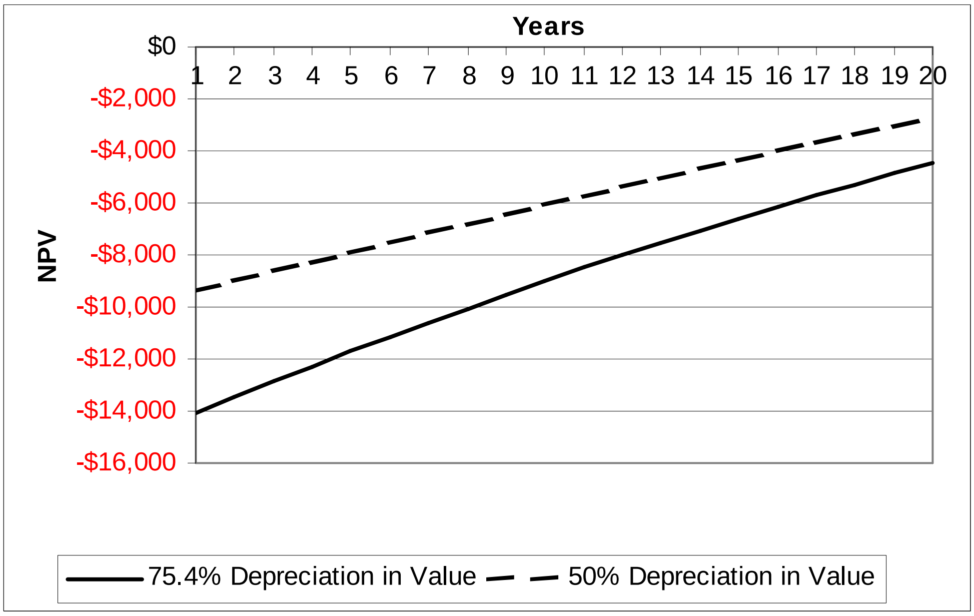


Figure 4: NPV results at 8.03%

If the purchaser were able to resell at a 50% discount to the purchase price, NPV does not attain positive figures until the 30th year (see Table 2 and Figure 4). At a resale price of 75.4%, NPV becomes positive in the 33rd year. These are very long horizons, and thus based on the ten-year horizon, the investment would be soundly rejected. The present value of the benefits gained from the purchase are less than the initial outlay, meaning that it is more cost effective to simply rent a holiday unit year by year in the resort in this case.

Using this same required rate of return, another example of a timeshare offer is briefly considered. In this case the initial cash outlay per timeshare unit is AUD16,850, the annual maintenance fee is AUD385, and the rent for a similar mid-season unit is AUD1,155. The results are presented in Table 3.

Table 3: NPV results of second example at 8.03%

Initial cash outlay = AUD16,850				
Year	**PV of resale proceeds at 75.4% depreciation**	**NPV**	**PV of resale proceeds at 50% depreciation**	**NPV**
10	$2,427	**-$8,017**	$4,933	**-$5,511**
20	$1,421	**-$4,268**	$2,889	**-$2,801**
30	$832	**-$1,328**	$1,691	**-$468**
33	$709	**-$582**	$1,440	**$150**
36	$604	**$108**		

In this example, though the initial outlay and annual maintenance fees are less, NPV analysis still does not show any improvement. At 50 % NPV does not enter positive territory until the 33rd year and at 75.4% the 36th year. Accordingly, the investment would be soundly rejected based on the ten-year horizon. Indeed, although the initial outlay and maintenance fess are less, this is demonstrated to be less cost effective as the benefit gained is proportionally less.

The conclusion therefore, based on this analysis, and these particular representative cases, is that, given a ten-year horizon, this investment would be rejected. Though the discount rate ranged from 5% to 8.03%, each analysis had a negative NPV after ten years. The discount rate of 8.03% is the more accurate rate of the two as it incorporates some risk and is based on a reasonable proxy of timeshare returns. The timeline was in excess of 30 years before a positive NPV was reached. Thus, an investor is quite likely to find a better investment than these in the market place, if well judged investment choices are made.

Ramifications for the timeshare industry

The timeshare industry strenuously defends its position that timeshare is an investment in lifestyle, rather than an investment for return. The argument that consumers should have choice, and that a consumer's choice does not always meet standards of return that an economic analysis may present, is reasonable. Consumer's utility may be met in many ways. Consumer spending may very well fit within models aligned with consumer behaviour, marketing or other disciplines rather than an economic analysis. So if timeshare is marketed as a purely consumer product and is purchased for the utility and pleasure of the consumer that can readily afford to make such an expenditure, then that is probably quite acceptable. The industry is focussing on the vacation ownership product that reflects this view. A survey of timeshare owners conducted by Yankelovich Partners in 1999, found that 87% of timeshare purchasers are satisfied and, of current owners, 45% are very interested in purchasing extra timeshare in the future (1, 5). This indicates that consumers are relatively happy with their purchase.

However, it is difficult to support the notion often purported in promoting timeshare as locking in the future price of a vocation through the payment of an upfront fee or premium today. Putting the notion of a security aside, it should still be able to be demonstrated that it is a viable purchase. Over a reasonable time horizon, the analysis outlined above in which NPV was negative in all cases refutes this claim, at least in the cases examined.

What can the industry do to make timeshare a more viable investment alternative from the consumers' perspective? One of the primary reasons that returns are not being realised is that many of the initial costs are high. To some extent this is to be expected as the costs involved in fractional ownership of any asset is expected to be higher as the economies of scale decrease and the per unit costs increase. Development costs are very high. These include feasibility studies, environmental studies, various consulting and planning fees, project management, construction, financing, regulatory compliance costs and marketing, to name a few. In addition, financiers assume substantial risk and require a return on their investment that will reward them for the level of risk for financing purchases of vacation weeks at the resorts. Also the developer bears considerable risk and of course wishes to be compensated for the risk involved. The returns on the investment must be sufficient to compensate both the developer and the financiers. Thus and decrease in costs will assist in making timeshare more viable.

The purchase price is inflated by the cost of sales. A breakdown of the timeshare price of AUD19,500 per-unit-week used in the above analysis is conducted, given the current per-unit-week property value of AUD6,788, mentioned above. The breakdown reveals that the total cost of sales, other expenses and profit margin amounts to AUD12,712 per-unit-week or a total of 65%. If the cost of sales were 40% (5, 6), it would amount to AUD7,800 per-unit-week. Thus the financing and administration costs and profit margin would be approximately AUD4,912 or 25%. This then explains the difference between the per unit current market value of AUD353,000 and the timeshare price of AUD1,014,000, which includes the cost of sales, other expenses and margin. Likewise, marketing any real estate does have similar expenses, however generally the cost of sales appears higher in the timeshare industry. High marketing costs are exacerbated with variations in legislation across countries and even states, which reduces the potential for mass marketing through mass media or e-commerce.

If the cost of sales and other expenses were able to be reduced it would make purchasing a timeshare unit a more viable option. However, to some extent it is a no-win situation. If the cost of sales were to be reduced, making the purchasing price more attractive, marketing would be reduced and potentially less people would be attracted to the purchase. The investment for developers would then be less viable, as it would likely take longer to sell all the weeks, which in turn would increase financing and marketing costs. However, this may be mitigated to some extent in that more buyers could be attracted to the purchase of timeshare products because it is more viable for the discerning consumer.

Furthermore, the annual maintenance fee is generally quite high. These fees are able to be sustained at a high level as the exit costs are high due to poor resale prices. Furthermore, typically they are compared with the cost of renting a similar unit for one week. As can be seen in Table 4, maintenance fees are made up of both building maintenance and service to members. To reduce the maintenance fee, perhaps the service provision side of the fee could be separated from the actual maintenance costs. This could have two primary advantages. Firstly, the most obvious is that it would make timeshare more affordable and thus a better investment opportunity both as a lifestyle choose and as a more viable project. Secondly, service provision could then be based on a user pay basis. Those who desire a high level of service then pay for the level of service required rather than all members subsidising this high level of service.

Table 4: Typical Expenses Included in Maintenance Fees

Accounting & auditing fees	Local Authority charges levies & rates
Activities provision	Loss prevention
Administration	Management fees
Building maintenance	Other contingencies
Cable television	Pest control
Cleaning – general	Pool & spa heating
Cleaning fees	Pool & spa maintenance
Directors & other management expenses	Postage, printing, & handling
Electricity	Professional fees
Elevator expense	Reservations & front desk
Entertainment facilities	Reserve for replacement fund
Furniture & chattels replacement/ maintenance	Resort fees
Grounds & landscaping maintenance	Taxes – state & federal
Housekeeping services	Telephone
Insurances	Tennis court maintenance
Internet fees	Waste collection
Inventory replacement	Water & sewerage

Adapted from: Ziobrowski and Ziobrowski, 1997. (3)

Therefore a significant matter that the industry as a whole may consider that impacts on the marketing of this service is to work at reducing the cost of sales and increasing resale values. All expenses incurred that are passed on in the purchase price have a bearing on this. More efficient marketing for example could reduce the purchase price and make timeshare not only more affordable, but a more viable consumer investment. If annual maintenance fees could be reduced, it would make the product more viable to discerning purchasers. A more saleable product will increase sales and thus reduce the risk and costs that the developer of the timeshare resorts bears as well. A further consideration for the industry would be to look at reducing the cost of exiting a timeshare investment. This would reduce liquidity and marketability risk, which would also tend to make the purchase more viable and increase sales.

Conclusion

In this paper the question is addressed asking, “Is Timeshare Ownership an Investment Product?” The conclusion is that there is an outlay of funds by the purchaser for economic benefit, thus it fits well within the definition of an investment product. The paper adds to the literature in that it advances the discussion regarding where timeshare fits as an industry, the risks associated with timeshare and the methodology applied in timeshare valuation. An analysis is conducted considering the viability of investing in timeshare versus that of simply renting a holiday unit for one week per year. The example used in this case is based on representative real figures taken from an offer made on a particular timeshare property from a popular timeshare location and tourist destination. The model proposed in this study applies a theoretically sound discount rate and more realistic assumptions and resale values then do prior studies.

As investment is based on the notion of risk and return, firstly the risks associated with timeshare are discussed. Following, an analysis is conducted using two required returns levels. It is found that, in the examples studied, when considering the risks and thus the return that would be expected by a discerning investor, the analysis does not support the proposition that these timeshare investments provide reasonable returns to the consumer. The scenario that a capital gain could make up the shortfall was considered, but it was demonstrated that this was not probable in the cases presented.

The notion, as is often proposed by timeshare sales personnel, that the purchase of timeshare can lock-in at least a portion of vocation expenses to today’s rates by the investment of an upfront fee, was also investigated. The notion is not supported by the analysis and does not prove to be viable in the cases analysed.

Based on the examples discussed, there are three aspects highlighted in the paper as contributing to the costs of ownership of timeshare that are considered as factors that could be addressed to make timeshare ownership more feasible. They are the cost of sales, maintenance costs and exit costs. If the industry were able to take up the challenge of reducing these costs in particular, it is likely that investment in timeshare would be more viable and attract a wider market.

As this study is conducted based on just two examples, further study is required on a much wider scale before any conclusions can be drawn for timeshare investment as a whole. However, this study does provide a basis for further research. Additional research could evaluate a larger data set of timeshare properties, in different markets, over varying timeframes. Further discussion would be valuable as to reducing costs associated with the sale and administration of timeshare.

References

1. Upchurch R.S. A Glimpse at Us Consumers' Interest in Timesharing. *International Journal of Hospitality Management* 2000; 19(4): 433-443.
2. Ragas W.R. Inflation, Changing Buyer Expectations, and Timeshare Valuation. *The Appraisal Journal* 1986; 54(2): 246.
3. Ziobrowski A.J., Ziobrowski B.J. Resort Timeshares as an Investment. *Appraisal Journal* 1997; 65(4): 371-381.
4. Carty P. Timeshare Comes of Age. *Accountancy* 1995; 115(1218): 44-46.
5. Woods R.H. Important Issues for a Growing Timeshare Industry. *The Cornell Hotel and Restaurant Administration Quarterly* 2001; 42(1): 71-81.
6. Madsen E.B. Timeshare Tax Assessment: Price Versus Market Value. *Appraisal Journal* 1999; 67(1): 1(6).
7. ARDA. A Consumer's Guide to Vacation Ownership. In: American Resort Development Association; 2002.
8. American Resort Development Association. *The Timeshare Industry Resource Manual*. Washington, D.C.: American Resort Development Association; 2002.
9. Blank D. Marketing Campaigns Take New Approaches. *Hotel & Motel Management* 2002; 217(1): 26.
10. Lodging Hospitality. Timeshare Boom to Continue Says Interval Chief. *Lodging Hospitality* 2000; 56(2): 18.
11. Haylock R. The European Timeshare Market: The Growth, Development, Regulation and Economic Benefits of One of Tourism's Most Successful Sectors. *Tourism Management* 1994; 15(5): 333-341.
12. Kye-Sung C., Singh A. Marketing Resorts to 2000: Review of Trends in the USA. *Tourism Management* 1995; 16(6): 463-469.
13. Malley M. Timeshare Synergies. *Hotel & Motel Management* 1997; 212(5): 20(3).
14. The Organisation for Timeshare in Europe. Regulation. In: The Organisation for Timeshare in Europe; 2001.
15. Marty-Nelson E. When Is a Real Estate Interest a "Security"? *The Practical Real Estate Lawyer* 2001; 17(3): 7-19.
16. Bodie Z., Kane A., Marcus A.J. *Investments*. 5th ed. Boston: McGraw-Hill/Irwin; 2002.
17. Fabozzi F.J., Modigliani F. *Capital Markets: Institutions and Instruments*. 3rd ed. Upper Saddle River, NJ: Prentice Hall; 2002.
18. Baumann M.A. Resales Help Owners in Their Quest to Divest. *Hotel and Motel Management* 2000; 215(14): 16.
19. Mohl B. Resale Market Is Cheaper Time-Share Option; [Third Edition]. *Boston Globe* 2002: M.5.

20. New York Times. Ebay to Trade Time Shares. *The New York Times* 2002 Jan 21.
21. Garman E.T., Eckert S.W., Forgue R.E. *Personal Finance*. Boston: Houghton Mifflin Co.; 1985.
22. Garman E.T., Forgue R.E. *Personal Finance*. 6th ed. Boston: Houghton Mifflin; 2000.
23. Mintzberg H. *The Strategy Process : Concepts, Contexts, Cases*. 4th ed. Upper Saddle River, NJ: Prentice Hall; 2002.
24. Sweeney J.F. Timeshare Industry Offers Expanded Opportunities to Hotels. *Hotel and Motel Management* 1999; 214(13): 10.
25. Lovelock C.H., Wright L. *Principles of Service Marketing and Management*. 2nd ed. Upper Saddle River, N.J.: Prentice Hall; 2002.
26. Gutner T. Bid $2,375, Asked $18,500. *Forbes* 1993; 151(13): 184(2).
27. Van Horne J.C. A Note on Biases in Capital Budgeting Introduced by Inflation. *Journal of Financial and Quantitative Analysis* 1971; 6(1): 653-58.
28. Bishop S.R., Crapp H.R., Faff R.W., Twite G. *Corporate Finance*. 4nd ed. Sydney: Prentice Hall; 2000.
29. Datastream. Index Data. In: Massachusetts: Primark Corporation; 2002.
30. Australian Bureau of Statistics (ABS). Statistics: Changes in Index Numbers. In: Australian Bureau of Statistics (ABS); 2002.