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An Investment Driven Breakeven Analysis for Hotels

ID.RevPAR & ID.GOPPAR: the Investment Driven RevPAR and GOPPAR
By [Elie Younes](#) and [Russell Kett](#), October 17, 2003

Hotel managers, analysts and asset managers typically use the traditional operating and/or interest payment breakeven analysis to assess the potential profit of their hotel properties, or before setting the strategic positioning of a hotel.

In an increasingly competitive hotel market, and with more demanding hotel owners, this method, if used alone, might lead to a conflict of interest between the asset manager, the operator and the hotel investor, as it ignores the investment requirements of the shareholder in the asset.

This article elaborates on the traditional operating and interest payment breakeven analysis and illustrates the advantages of using investment driven breakeven analysis.

Operating Breakeven Analysis

The operating breakeven point is defined as the threshold where total operating costs are equal to total revenues – where operating costs are a combination of both fixed and variable expenses.

Hotel expenses have one component that is fixed and another that varies directly with occupancy or facility usage. The fixed component typically varies with inflation, while the variable component is adjusted for the percentage change between the occupancy and the facility usage that produced the known level of revenue or expense. The concept of identifying the cost structure of a hotel property is easier said than done, and requires proper statistical analysis, or comparable operating performance analysis. We briefly discuss each type of hotel expense item.

- The following items are typically considered to be largely fixed costs: administrative and general expenses (though a small portion is variable), marketing, property taxes, and insurance;
- The following items are typically considered to be variable costs: rooms expenses, direct expenses for food and beverage, allowance for bad debt expenses, management fees, and reserve for replacement (fixed expense – but not fixed!);
- The following items are typically considered to be semi-fixed expenses, including both a fixed portion and a variable portion: energy costs, payroll, and property operation and maintenance expenses.

Let us assume that a 100-room mid-market hotel, Hotel A, has the following cost structure.

Fixed Costs = £1,000,000 per year

Variable Costs = 40% of total revenues

Let us assume too that 75% of the total revenues of the hotel are generated from the rooms department and that 25% are generated from the other operating departments (food and beverage, telephone, and so forth).

Therefore the operating breakeven of Hotel A can be computed by the following formula.

$$\text{Operating Breakeven Revenues} = \text{Operating Fixed Costs} + (\text{Variable Costs \%} \times \text{Operating Breakeven Revenue})$$

Then

$$\text{Operating Breakeven Revenues} = \text{Operating Fixed Costs} / (1 - \text{Variable Costs, or Gross Margin}).$$

As illustrated in Table 1 and Figure 1, Hotel A requires a RevPAR (rooms revenue per available room) of approximately £35 per day in order to achieve an operating breakeven. It is, then, the market characteristics and positioning of the property that dictate the optimal trade off between occupancy and average daily rate that will achieve this RevPAR threshold.

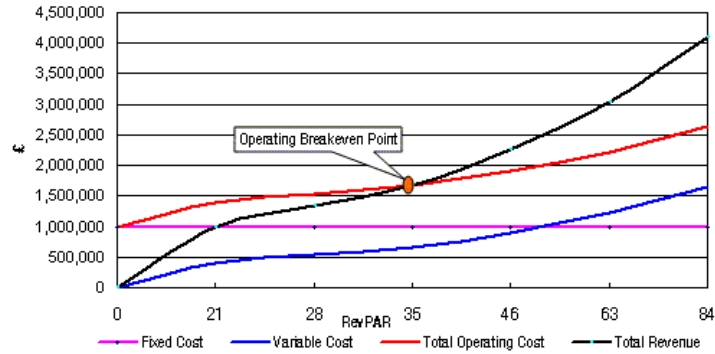
This analysis allows managers and analysts to determine the hurdle point above which the property will show a positive EBITDA (earnings before interest, tax, depreciation and amortisation). Moreover, it enables line managers (in each department) to better assess the cost structure and profitability of their departments.

Table 1 - Operating Breakeven Analysis - Hotel A (£)

Hotel A	
Number of Rooms	100
Operating Expenses	
Fixed Costs	1,000,000
Variable Costs	40% <i>Of Total Revenues</i>
Breakeven Revenue – rounded	1,670,000 <i>(1,000,000 / (100%-40%))</i>
Required Total Revenue	1,670,000
Assumed Rooms Revenue	75% <i>Of Total Revenues</i>
Required Rooms Revenue	1,252,500
Required RevPAR	£35
<u>Range of required operating performance (sav)</u>	
Required Occ	55% 65%

Required ADR	£64	£54
RevPAR	£35	£35

Figure 1 - Operating Breakeven Analysis - Hotel A (£)>



On the other hand, such an analysis neglects the cash required by both lenders and owners to provide the necessary return on their respective investment.

Interest Payment Breakeven Analysis

This analysis takes into account the cost of debt of a hotel property, and determines the threshold above which a hotel is unlikely to default on its interest payment. Typically, lenders use this analysis in order to assess the default risk safety margins of a hotel property. In other words, this threshold is set when EBITDA equals the interest payment of a hotel property.

Table 2 and Figure 2 illustrate our assumptions that the development cost for Hotel A is approximately £150,000 per room and that it is financed with 60% loan finance (60% loan, 40% equity). To simplify the exercise, let us consider that the hotel has a 15-year mortgage, with yearly interest-only payments and that the principal is repaid as a 'bullet/balloon' at the end of the lending period. Let us also assume that the annual interest rate on the loan is fixed at 7.0% (Libor + 350 points). Consequently, the hotel will need to pay £630,000 per year to cover its interest expenses. For the purpose of this exercise, we will also assume that the hotel will be refinanced at the end of the loan term.

According to Table 2, Hotel A requires total revenue of approximately £2.7 million in order to meet its operating and financing obligations. This figure equates to a RevPAR of approximately £56, compared to £35 to achieve the operating breakeven point. If the hotel is financed via a mortgage, whereby both a principal and an interest amount are paid in annuity for, say, 15 years, then the debt service breakeven point will be skewed upwards. In this case, the required RevPAR and GOPPAR would be around £80 and £50, respectively (but this is from a net cash flow standpoint). Alternatively, one can amortise the loan in order to identify the yearly interest expense.

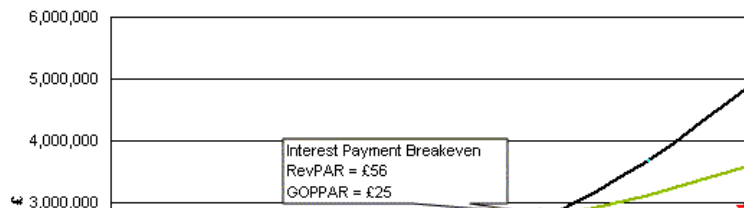
It is also useful to use the gross operating profit (GOP) or GOPPAR (GOP per available room) as the hurdle operating level. The GOP threshold can then be computed by adding the non-operating fixed expenses – those between GOP and EBITDA (property taxes, insurance, incentive fees, and any other fixed charges, which in some hotels might include 'rent') – to the interest payment. As shown in Table 2, Hotel A requires GOPPAR of approximately £25 in order to achieve the interest payment breakeven point.

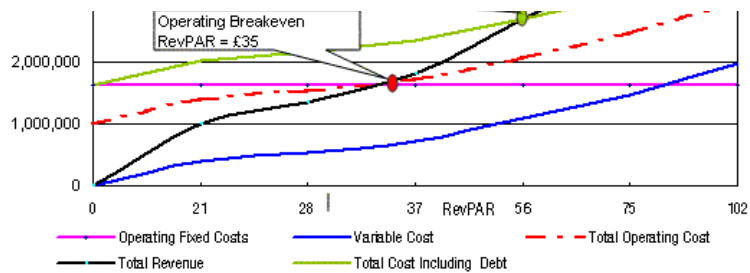
Table 2 - Debt Service Breakeven Analysis – Hotel A (£)

Number of Rooms	100	Required Total Revenue	2,716,667
Development Cost/Room	150,000	Assumed Rooms Revenue	75% Of Total Revenues
Total Development Cost	15,000,000	Required Rooms Revenue	2,037,500
		Required RevPAR	£56
		<i>Range of required operating performance (sav)</i>	
Loan to Cost Ratio	60%	Required Occ	65% 70%
Loan Financing	9,000,000	Required ADR	86 80
Equity Financing	6,000,000	RevPAR	£56 £56
Interest Rate	7.00%	<u>GOPPAR Computation</u>	
Interest Payment	630,000	<i>Non-Operating Fixed Expenses:</i>	
Operating Expenses			
Fixed Costs	1,000,000	Property Taxes	200,000
Interest Expense	630,000	Insurance	75,000
Variable Costs	40%	Incentive Fees ¹	0
Breakeven Revenue	2,716,667	Total non-operating expenses:	275,000
	<i>(1,630,000 / (100%-40%))</i>	Required GOP	905,000 <i>(275,000+630,000)</i>
		Required GOPPAR	£25

¹ Typically subordinated to debt payments, so assumed to be nil

Figure 2 - Debt Service Breakeven Analysis - Hotel A (£)





This analysis takes into account the total cash expenses of a hotel operation and reflects the threshold above which a hotel property is likely to start generating profits for its owner; however, it assumes that there is no cost of equity for the investment. In other words, it does not take into consideration the required returns on the £6 million of equity used to finance the development.

Investment Driven Breakeven Analysis

The investment driven breakeven point is the threshold of revenues and operating performance (RevPAR and GOPPAR) required to cover the operating costs, the financing (interest) costs and the required equity return of a hotel operation and investment. In other words, it is the level of operating performance above which asset managers and general managers will meet the required investment returns to the owner, which is likely to have a positive effect on the asset value. Below this level of operating performance the owner would need to take action, as the property's equity value might be eroding.

The investor would expect a risk-adjusted return on investment, taking into consideration the systematic and non-systematic risk that is borne by the hotel asset. Typically, return on equity requirements for hotel investments range from 12% to 20%. For the purpose of this exercise, we have assumed a required equity return of 15% per annum on the £6 million equity investment in Hotel A.

Therefore, the investment driven breakeven point is computed using the following formula.

$$\text{Investment Driven Breakeven Point (or Required Investment Driven Revenues)} = (\text{Fixed Expenses}) / (1 - \text{Variable Costs, or Gross Margin})$$

Or, in this case,

$$\text{Investment Driven Breakeven Point} = (\text{Fixed Operating Expenses} + \text{Annual Interest Payments} + \text{Equity Investment} \times \text{Equity Yield}) / (1 - \text{Variable Costs, or Gross Margin})$$

Operationally, there are two key measures to monitor for achieving the investment driven threshold: RevPAR and GOPPAR.

ID.RevPAR, or Investment Driven RevPAR, is the threshold level of RevPAR a hotel operation would need to meet its operating expenses and interest payments, and to achieve the required investment return to the hotel investor. In other words, it is the minimum RevPAR that the operator or general manager should achieve in order to meet all operating, financing and investment requirements.

Similarly, ID.GOPPAR, or Investment Driven GOPPAR, is the threshold level of GOPPAR a hotel operation would need to meet its operating expenses and interest payments, and the required investment returns to the hotel investor. In other words, it is the minimum GOPPAR that the operator or general manager should achieve in order to meet all operating, financing and investment requirements.

The investment driven breakeven point is therefore translated into ID.RevPAR using the following formula.

$$\text{ID.RevPAR} = (\text{Required ID. revenues} \times \text{rooms revenue percentage of total revenue}) / (\text{Number of available rooms} \times 365)$$

ID.GOPPAR is calculated using the following formula.

$$\text{ID.GOPPAR} = (\text{Property taxes} + \text{insurance} + \text{incentive fee} + \text{other fixed charges} + \text{interest payment} + \text{equity requirement}) / (\text{Number of available rooms per day} \times 365)$$

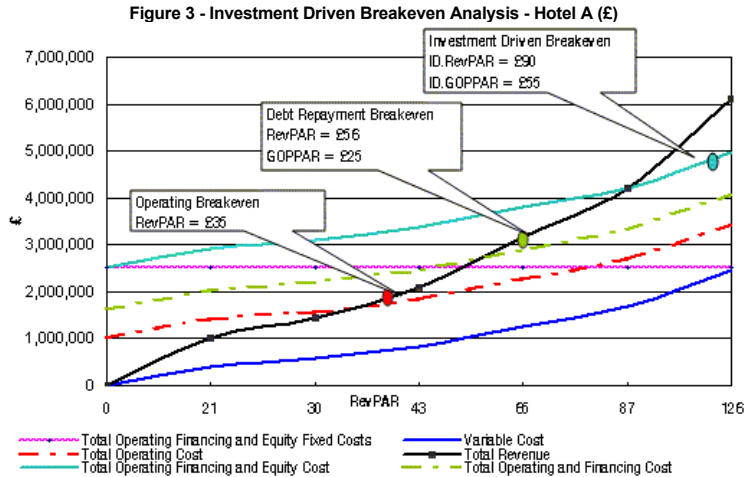
ID.RevPAR and ID.GOPPAR represent the actual financial breakeven point of a hotel investment (assuming a broadly similar return from cash flows and property appreciation. Alternatively one might reduce, and adjust, the required equity yield in a buoyant transaction market where property appreciation represents between 65% and 70% of total returns).

Table 3 - Investment Driven Breakeven Analysis - Hotel A (£)

Number of Rooms	100	Required Total Revenue	4,216,667	<i>Cf ID.Revenues</i>
Development Cost/Room	150,000	Assumed Rooms Revenue	75%	<i>Cf Total Revenues</i>
Total Development Cost	15,000,000	Required Rooms Revenue	3,162,500	
Initial Investment	15,000,000	ID.RevPAR	£87	
Loan to Cost Ratio	60%	<i>Range of required operating performance</i>		
Loan Financing	9,000,000	Required Occ	65%	78%
Equity Financing	6,000,000	Required ADR	133	111
		RevPAR	£87	£87
Interest Rate	7.00%	<i>GOPPAR Computation (say)</i>		
Interest Payment	630,000	<i>Non-Operating Fixed Expenses:</i>		
Required Equity Return %	15% per year	Property Taxes	200,000	
Required Cash to Owners	900,000	Insurance	75,000	
		Incentive Fees	10% of GOP	
Operating Expenses		Total non-operating expenses:	275,000	
Fixed Costs	1,000,000			

Interest Expense	630,000	GOP	2,000,000
Equity Requirements	900,000	<i>(630,000+900,000+200,000+75,000)/(1.10%)</i>	
Variable Costs	40%	ID.GOPPAR	£55

Breakeven Revenue 4,216,667

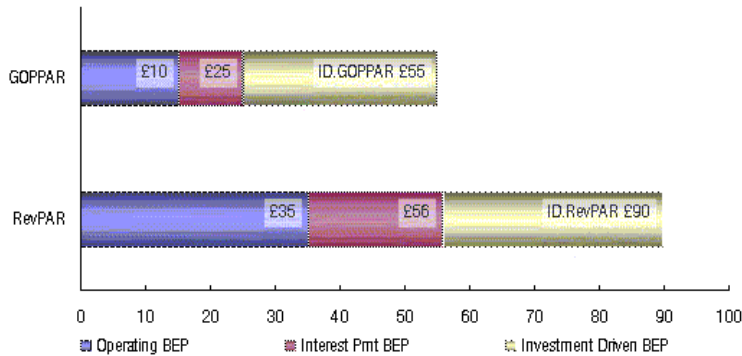


We note from Table 3 that Hotel A requires an ID.RevPAR of approximately £90 in order to meet its operating, lending, and owners' obligations. This figure translates into an ID.GOPPAR of approximately £55. Should the actual operating performance of the hotel drop below these levels, then the asset manager and investor should consider altering the strategy of the hotel or the return expectations associated with the investment in the property.

Synthesis and Conclusion

While one might consider that a hotel operation can 'easily' achieve an operating breakeven point, it is crucial to note that it requires a significant level of incremental performance to meet the financial and investment requirements of a hotel development. This is when a renowned and well-established operator (and asset manager) could potentially add value to the shareholder(s) in a hotel property. On the other hand, this somewhat reflects the usual conflict of interest between the hotel operator and the investor, and, potentially, the asset manager.

Figure 4 - Summary



The investment driven breakeven analysis has the following advantages.

- It serves as a basis for a 'quick and dirty' hotel investment appraisal. For example, if a hotel investment is being assessed and the range of 'investment driven – ID.RevPAR and ID.GOPPAR' operating performances is considerably higher than that achieved by the market (or could potentially be achieved by the property), then the investor(s) should consider altering its/their anticipated return requirements, the capital structure (loan to value – or to cost – ratio) of the property, or decide not to invest in the property (considering no other stimulus for the investment exists);
- It enables a more 'financially sound' incentive fee to be set for the operator, asset manager, and/or general manager;
- It enables asset managers to better assess and compare the operating performances of their hotel properties, regardless of their market positioning. In other words, it enables a comparable assessment of different types and classifications of hotels to be made. For example, let us assume that Hotel A (a five-star property) achieves RevPAR and GOPPAR of £100 and £50, respectively, and that the hotel's ID.RevPAR and ID.GOPPAR are £110 and £60, respectively. Therefore, the operator of Hotel A is considered to be eroding the value of the equity investment in the hotel, and action needs to be taken. On the other hand, let us assume that Hotel B (a mid-market property) achieves RevPAR and GOPPAR of £80 and £45, respectively, and that the hotel's ID.RevPAR and ID.GOPPAR are £75 and £42, respectively. While Hotel B has a lower operating performance than Hotel A, it has a better effect on its equity investment than Hotel A;
- It enables investors and asset managers to better assess the impact of both the operating and the financial strategy on the overall investment returns, and helps them analyse the reasonableness of their return requirements;
- It enables development and acquisition managers to sense check the EBITDA multiples (yields) on any potential acquisition;

- It enables general managers to better understand the investment perspective and requirement of the hotel operation and structure the optimal strategy that best fits such requirements. It is also a useful tool that could be used when preparing hotel budgets.

The investment driven breakeven analysis provides all main stakeholders – the operator, the investor and the asset manager – with a very useful tool to ensure that return requirements to the owner become much more transparent. It helps the operator to devise future revenue strategies and allows the asset manager to enforce a suitable operating strategy to help ensure the owner's returns. Furthermore, it is a useful tool for 'quick and dirty' hotel investment appraisals.