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Corporate Finance
Profitability of Icelandic Hotels

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Preface

In autumn 2012 I decided, after reviewing several options in terms of approach, to write a 30 ECTS master’s thesis in Corporate Finance at Reykjavik University on a topic which could somehow benefit the Icelandic business community. Followed by that, I sent out emails to various companies to explore demand for research material. KPMG, one of the companies that responded believed to be demand for research in tourism, particularly on hotel profitability. Preliminary study showed that profitability of Icelandic hotels has been low in recent years. Why that is, and how it can be improved was a question I wanted to answer.

In the working process many people gave me advices and useful suggestions. I would especially like to thank the following:

Katrínu Ólafsdóttur, my supervisor, for useful advices and feedbacks.

The corporate advisory department at KPMG Iceland who provided me with facilities, and Benedikt Magnússon and Alexander G. Eðvarsson partners at KPMG, for useful comments and help with data collection, and all the other staff at KPMG that assisted me.

Dagmar, Ívar and Guðni for their understanding and the joy they bring me.

Last and certainly not least I would like to thank Sigurður Ingólfsson for proofreading and useful comments.

Reykjavik, May 13, 2013

Rúnar Guðnason
Abstract

The main objective of this research was to find out why hotel profitability in Iceland has been low and how it can be improved. Many possible explanations have been proposed in this context but no inquiry has been conducted into the factors that might explain the low profitability in the Icelandic hotel industry and indicate how it might be improved. Factors affecting firm profitability are numerous and originate both externally from the surrounding economy or industry and from within the firm. To know to which degree each of these drivers influence the bottom line can be of great value for the Icelandic hotel industry, as the remedies are different. Data for 54 for Icelandic hotels from 2007-2011 was collected. The effects of changes in the state of the economy, effects from factors that shape the industry and the impact of internal factors on hotel return are examined via panel regression test. Test results show that hotel location, changes in the real exchange rate, financial leverage ratio, changes in hotel room demand and operating efficiency are significant explanatory factors of hotel returns.

The main findings of the study are that interaction between changes in the real exchange rate and over leverage were probably the main reasons for low hotel profitability over the period from 2007 to 2011. To improve profitability, hotel operators should focus more on improving the internal factors of the business rather than focusing on the external factors.

Keywords: hotel profitability, economic factors, industry factors, business-specific factors.
Declaration of Research Work Integrity

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature of any degree. This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by giving explicit references. A bibliography is appended.

By signing the present document I confirm and agree that I have read RU’s ethics code of conduct and fully understand the consequences of violating these rules in regards of my thesis.

.................................................................
Date and place Kennitala Signature
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Profitability of Icelandic Hotels

Tourism has been a fast growing industry in Iceland over the last decade. Foreign tourist arrivals almost doubled from 2000 to 2011 (Oddný Þóra Óladóttir, 2012, p. 3), and grew by 6.1% annually on average over the period, while the international growth in the same period was around 4% on average (World Tourism Organization [UNWTO], 2012, p. 1). The share of tourism in the nation’s GDP was 5.9% in 2009, but on average it was 5% from 2001 to 2009 (“Tourism industry share”, n.d.). Tourism is the third biggest source of foreign exchange earnings in Iceland after fisheries and the aluminum industry and employs more than 5% of the nation's workforce (“Ferðaþjónusta á Íslandi”, n.d., p. 3).

There is no doubt that tourism is one of Iceland’s most important industries and with the growth in tourism the demand for accommodation services has increased. This rapid growth has been answered with a growing supply of hotel rooms and other types of accommodation. Table 1 shows the average growth in number of hotel rooms, overnight stays and occupancy rate for hotels, guesthouses and other accommodation in Iceland from 2001 to 2011. The average growth in number of hotel rooms in Iceland was 5.8% from 2001 to 2011 (“Available accommodation”, n.d.), while the average growth in number of overnight stay in hotels amounted to 6.4% over the whole period.

<table>
<thead>
<tr>
<th></th>
<th>Hotels</th>
<th>Guesthouses</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average growth in number of rooms</td>
<td>5.8%</td>
<td>3.7%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Average growth in number of overnight stay</td>
<td>6.4%</td>
<td>5.9%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Average Occupancy rate</td>
<td>40.9%</td>
<td>34.0%</td>
<td>N/A</td>
</tr>
<tr>
<td>Average growth in occupancy rate</td>
<td>0.0%</td>
<td>1.0%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Despite rapid growth in the industry, profitability among hotels and guesthouses has been low. Recent research into the Icelandic tourism industry has shown that profitability of hotels was negative on average in 2004-2007 (Jakob Hansen & Friðrik Eysteinsson, 2012, p. 101). Many possible explanations have been proposed in this context. High seasonal fluctuation is one of them (McKinsey Scandinavia, 2012, p. 78). In table 1, the average occupancy rate for hotels and guesthouses nationwide is presented. Between 2001 and 2011 this rate was around 40.9% on average for hotels and 34% for guesthouse. In July the occupancy rate has been 77% for hotels and 68.5%
for guesthouses on average over the same period or around twice the annual average ("Occupancy rates in hotels", n.d.). Another possible explanation for low profitability in the hotel sector is intense competition (Jakob Hansen & Friðrik Eysteinsson, 2012, p. 105). As shown in table 1, no growth was in hotel occupancy on average over the period and only 1% for guesthouses, which indicates vast competition in the industry. Exchange rate risk is also a factor that has been mentioned at the same time as hotel profitability ("Íslensk ferðaþjónusta á afslætti?", 2012; “Ferðaþjónusta á Íslandi”, n.d., p. 4). Sigurður Jóhannesson, Sveinn Agnarsson and Þórhallur Ásbjörnsson (2006, p. 49) proposed that fluctuations in the exchange rate may have a big impact on hotel profits, since a large part of their revenue is in foreign currency. In a report made by McKinsey Scandinavia (2012, p. 76) poor operating efficiency is also mentioned as one of the reasons for low profitability in Icelandic tourism.

Hotels require large capital investment, and research into the factors affecting profitability in the Icelandic hotel industry is important as a foundation for decision making if entrepreneurs are to be able to build hotels that provide investors with acceptable return on their investments.

Despite indications that industry characteristics like seasonality and fierce competition, economic factors like exchange risk, and business specific-factors like operating efficiency have a major impact on hotel profitability, no inquiry has been conducted into the factors that might explain the low profitability in the Icelandic hotel industry and indicate how it might be improved. This study addresses that question: why is profitability in the Icelandic hotel industry low and how can it be improved?

The remainder of the paper is organized as follows. In section 2 the research literature regarding profitability, both in general and in the hotel industry, is reviewed, and the variables which have been used as measures in research on firm profitability are discussed. In section 3 the Icelandic hotel industry is discussed. Supply, demand and occupancy rates for the Icelandic hotel sector will be summarized and the possible relationship between movements in the Icelandic real exchange rate and demand for hotel rooms in Iceland is discussed. In section 4 the conceptual framework and a research hypothesis are presented along with description of methodology. Section 5 presents panel regression models and results. The final section contains a discussion, conclusions and recommendations for further research.
2. Literature Review

The accounting definition of profitability is the difference between the cost of a product or service and the revenues that they create (Edmonds, Edmonds, McNair, Olds & Milan, 2008, p. 4). Profitability is usually measured by focusing on the firm’s profits/earnings as a percentage of assets, equity or sales (Bodie, Kane & Marcus, 2009, pp. 636-639).

2.1. Return on Assets (ROA)

Return on assets is a profitability measure that expresses how effectively assets are used to generate firm profit. In other words it compares the level of income with the amount of investment in the firm (Edmonds et al., 2008, p. 711). The basic formula for return on assets is presented in formula (1).

\[
\text{Return on assets} = \frac{\text{Net income}}{\text{Total assets}}
\]

When comparing firms using ROA or comparing a company’s ROA between years using formula (1), the positive or negative impact of firm leverage is taken into account, as this has an impact on ROA. If a leveraged firm is able to benefit from a tax shield (after tax interest rate), net income will be higher, hence ROA will be higher than for an entirely equity-financed firm. If a leveraged firm is making a loss it is unable to use its tax shield. When that situation occurs, net income will be lower than for an all equity financed firm, due to the interest payments (Brealey, Myers & Allen, 2011, pp. 739-740).

Using formula (1) to calculate ROA and to compare a firm’s performance between years, or as a benchmark in comparing ROA between firms, may lead to biased results as leveraged firms pay interest on their debt and different firms have different capital structures. Therefore the ROA measure will to some degree be dependent of firm’s capital structure (Brealey, et al., 2011, p. 740).

To avoid the effect of the firm’s financial structure on ROA, formula (2) can be used, since earnings before interest and taxes (EBIT) is independent of the capital structure (Bodie et al., 2009, p. 637).
2. Literature Review

Return on assets = \( \frac{\text{EBIT}}{\text{total assets}} \)

There is a third relevant way to calculate ROA. By finding the after-tax interest (subtracting the tax shield) and adding it to net income, ROA for all firms can be calculated as if they were all-equity financed (Brealey, et al., 2011, p. 740). Formula (3) shows how to calculate net operating profit after tax (NOPAT) and formula (4) shows how to calculate ROA for companies as they were all-equity financed.

\[
\text{(3)} \quad \text{NOPAT} = \text{after tax interest} + \text{net income}
\]

\[
\text{(4)} \quad \text{Return on assets} = \frac{\text{NOPAT}}{\text{Total assets}}
\]

The Du Pont formula is yet another way to measure ROA. Formula (5) shows how ROA is calculated using it. The formula is divided up into two parts showing different effects. In the first part of the formula, the effect of asset turnover is calculated and in the second part of the formula the effect of operating profit margin is calculated (Brealy et al., 2011, p. 743).

\[
\text{(5)} \quad \text{Return on assets} = \frac{\text{sales}}{\text{assets}} \times \frac{\text{after-tax interest} + \text{net income}}{\text{sales}}
\]

Firms’ return on assets is limited by competition and this formula highlights the constraints that firms face, either regarding asset turnover, profit margin, or both (Brealy et al., 2011, pp. 743-744).

2.1.1. Return on Net Operating Assets (RNOA)

In his book, Stephen H. Penman (2010, pp. 369-370) presents another way to measure profitability. Instead of using ROA as a measure, he uses RNOA, i.e. return on net operating assets. Penman’s motivation for using this formula (6), is that it only takes into consideration operating income and net operating assets, but excludes income from financing activities and financial assets, which yield or should yield a lower return than operations.

\[
\text{(6)} \quad \text{Return on net operating assets} = \frac{\text{Operating income}}{\text{Net operating assets}}
\]
Penman (2010, p. 406) breaks up formula (6) further in formula (7), which is similar to the Du Pont formula (5). Instead of splitting it up into asset turnover and profit margin as the Du Pont formula does, Penman divides the formula into four parts. The first part is the core sales profit margin which is found by dividing core operating income from sales by sales. The second part of the formula is the asset turnover, which is found by dividing sales with net operating assets. The third part consists of core other operating income divided by net operating assets. The fourth part contains unusual items divided by net operating assets.

\[
\text{Return on net operating assets} = \frac{\text{Core OI from sales}}{\text{Sales}} \times \frac{\text{Sales}}{\text{NOA}} + \frac{\text{Core other OI}}{\text{NOA}} + \frac{\text{UI}}{\text{NOA}}
\]

By breaking return on net operating assets up into these components, it is possible to see the core profit margin and therefore the core RNOA, the other core RNOA, and to what extent unusual items affect the RNOA.

When measuring profitability there is another common and popular method, return on equity.

## 2.2. Return on Equity (ROE)

Return on equity measures how effectively stockholders equity is used to generate firm’s profit. Financial leverage is often inflated by firms to increase the return on equity since interest are usually lower than the firm’s required return on investments, and interest is tax deductible. (Edmonds et al., 2008, p. 138). With increased financial leverage comes increased financial risk. With increased financial risk investors and creditors will require higher return, which defines the boundaries that constrain the degree of firms’ financial leverage (Brealy et al., 2011, pp. 456-458). The basic formula for return on equity is presented in (8).

\[
\text{Return on equity} = \frac{\text{Net income}}{\text{Stockholders equity}}
\]

As with ROA, problems arise both when comparing firm’s ROE with other firms and when comparing firm’s ROE over time. Holding all other factors equal a change in a company’s financial structure will change its ROE. That makes formula (8) a poor
2. Literature Review

estimate when comparing ROE between firms or in comparing the same firm’s ROE over time (Bodie et al., 2009, p. 636-639).

To be able to use ROE as an unbiased comparable it must be broken up to isolate the financial leverage factor to see how he affects the ROE (Brealy et al., 2011, p. 746). This is shown in formula (9) where NI is net income.

\[
(9) \text{Return on equity} = \frac{\text{assets}}{\text{equity}} \times \frac{\text{sales}}{\text{assets}} \times \frac{\text{after-tax interest + NI}}{\text{sales}} \times \frac{\text{NI}}{\text{after-tax interest + NI}}
\]

Part two and three in formula (9) are in fact ROA from formula (5). The first part of formula (9) where assets are divided by equity is the leverage ratio and the last part of formula (9), where net income is divided by after-tax interest and net income, measures to what extent interest expense reduces net income. If a firm is entirely financed with equity both the leverage ratio and the last part of the formula are equal to 1, and therefore ROE = ROA. If a company has financial leverage then the leverage ratio, part one in the formula, is larger than one since assets are higher than equity. The last part of the formula is less than one, since net income will be lower than net income plus after tax interest and due to that ROE is either going to be higher or lower than ROA (Brealy et al., 2011, p. 746).

Whether ROE is going to be higher or lower than ROA depends on companies’ net income assuming a fixed interest rate. In a bad year, when net income is relatively low ROE is likely to be lower than ROA, but when net income is relatively high ROE is likely to be higher than ROA (Brealy et al., 2011, p. 746).

2.3. Return on Invested Capital (ROIC)

A profitability ratio that is often more informative than ROA and ROE is the Return on invested capital (ROIC). ROIC is calculated as annual net operating profit after tax (NOPAT) divided by invested capital at the beginning of the year, as presented in formula (10) (Damodaran, 2007, p. 7).

\[
(10) \text{Return on invested capital} = \frac{\text{NOPAT}_t}{\text{Book value of invested capital}_{t-1}}
\]
Net operating income after taxes (NOPAT) is derived according to Damodaran (2007, p. 8) as shown in formula (11). Non net operating income is the portion of firms operating income that is derived from activities not related to its core operations. Example of that is profit or losses from investments, gains or losses incurred due to foreign exchange and assets write downs (Penman, 2010, pp. 405-406).

\[
\text{NOPAT} = \text{Net income} + \text{Interest expense} \times (1-\text{tax rate}) - \text{Non net operating income} \times (1-\text{tax rate})
\]

By adding the tax shield back to net income when calculating NOPAT, the formula (10) can be used to compare different firms since the formula is set up as if all firms were entirely equity-financed (Brealey et al., 2011, p. 740).

To calculate the book value of invested capital formula (12) can be used.

\[
\text{Book value of invested Capital} = \text{Fixed Assets} + \text{Current Assets} - \text{Current Liabilities} - \text{Cash}
\]

By finding the return earned on capital invested in all projects that a firm has on its books, it can be used as a comparable between years, as a benchmark for the firm’s cost of capital and as comparable to competitors ROIC (Damodaran, 2007, p. 7-11).

### 2.4. Return on Assets vs. Return on Equity

The principal disadvantage of both return on assets and return on equity as profitability measures is that both of these measures are derived from accounting numbers which can easily be manipulated (Barber & Lyon, 1996, p. 365; Damodaran, 2007, p. 11-13).

As Bodie et al., (2009, p. 637-639) explains, return on equity does increase with more financial gearing as long as borrowed funds earn higher returns than the interest payable on these funds and decreases if the return on the borrowed funds is below the interest on the borrowed funds. With increased leverage the financial risk of a firm increases. Using ROE to compare a firm’s profitability between years increases the possibility of bias, as the capital structure may change. The same applies to comparing firms’ ROE within an industry, since firms may have a different capital structure (Du Toit & De Wet, 2007, p. 60).
Return on assets can be calculated as if a firm were all equity financed using formula (1.5) and the measure is therefore indifferent to financial leverage. This makes ROA a better measure of profitability and a more comparable measurement between firms than ROE (Lee, 2008, p. 268). Comparing the ROA and ROE of different firms can be useful to see to what degree return is dependent on leverage (Chin-Chun Hsu Boggs, 2003, p. 29).

**2.4.1. Return on Assets vs. Return on Invested Capital**

ROA calculations will always give lower return figure than ROIC calculations for a given firm if everything else is equal, as the ROA measures include all balance sheet assets while ROIC measures only include fixed assets and non-cash working capital (Damodaran, 2007, p. 13).

If the purpose of calculating ROA or ROIC to use the measure as a benchmark in comparison with competitors, it does not matter which method is used (Damodaran, 2007, p. 13).

**2.5. Operating ratios**

Operating ratios can be used to measure profitability or financial soundness of a firm by looking at certain numbers in the income statement, and they also show the connection between the income statement and the balance sheet (Brealy et al., 2011, pp. 741-742).

**2.5.1. Profit margin**

Profit margin measures the proportion of sales that a company keeps as net earnings. It can be a useful measure when comparing firms in the same industry. The higher the profit margin, the more profitable a company is compared to its competitors. Formula (13) shows how profit margin is calculated (Brealy et al, 2011, p. 742).

\[
\text{Profit margin} = \frac{\text{Net income}}{\text{Sales}}
\]

When comparing the profit margin between different firms or different years for the same firm, it is better and more accurate to calculate net income as if all firms were equity financed, since different firms have different capital structure. Formula (14) shows how profit margin is calculated in that case (Brealy et al, 2011, p. 743).
2. Literature Review

Operating profit margin = \( \frac{\text{after-tax interest + net income}}{\text{sales}} \)  
\hspace{1cm} (14)

2.5.2. Asset turnover ratio

The asset turnover ratio measures firm’s efficiency in using its assets in generating sales or revenue. In other words it measures how hard the firm’s assets are working. The higher the asset turnover ratio, the better (Brealy et al, 2011, p. 741). The asset turnover ratio can be calculated using formula (15)

\( \text{Asset turnover ratio} = \frac{\text{Sales}}{\text{Total assets}} \)  
\hspace{1cm} (15)

2.5.3. The connection between Profit margin and Asset turnover

Companies with low profit margins tend to have a high asset turnover, while those with high profit margins tend to have low asset turnover ratios. A retail store like a supermarket tend to have low profit margin but high asset turnover while a car dealership tends to have high profit margin but low asset turnover (Lee & Lee, 2006, p. 217).

2.5.4. EBITDA margin

EBITDA margin is a measure of firms operating profitability. EBITDA margin reflects the company’s earnings before interest, tax, amortization and depreciation divided by total revenues. The higher a company’s EBITDA, the less of the operating expense eats into a firm’s net income. The higher the EBITDA as a proportion of the firm’s revenue, the more efficient the company is going to be. Calculation of the EBITDA margin is carried out as in formula (16).

\( \text{EBITDA margin} = \frac{\text{EBITDA}}{\text{Total revenues}} \)  
\hspace{1cm} (16)

According to Stumpp (2000, p. 1) there are some reasons to be careful in using EBITDA. For instance, EBITDA is a not considered a good measure for companies with short lived assets, since they need continual reinvestment to maintain their asset base. Depreciation and amortization can be significant in proportion to the EBITDA. To assess the share of depreciation and amortization in EBITDA, it can be broken up into
three components, EBIT, depreciation and amortization. The higher the percentage of EBIT in EBITDA, the stronger the underlying cash flow.

2.5.5. EBIT margin

EBIT margin is calculated in the same way as EBITDA margin, except that it is earnings before interest and taxes (EBIT) that is divided by total revenues as presented in formula (17). This margin helps investors better understand the cost of running the business, as the firm’s property, plants and equipment has to be replaced at some point in time. The lower the EBIT margin, the lower the profitability of operations (Bodie et al., 2009, p. 632), and the lower is the operational efficiency of cost control and pricing strategies (Claessens & Tzioumis, 2006, p. 268). This measure can be helpful as a comparison between companies within an industry and companies of different size (Bodie et al., 2009, p. 632).

\[
\text{EBIT margin} = \frac{\text{EBIT}}{\text{Total revenues}}
\]  

(17)

2.5.6. Interest coverage

Interest coverage ratio is found by dividing EBIT with interest expense as presented in formula (18). The ratio illustrates the ease with which a company can pay interest on interest bearing debts. As this ratio falls it becomes harder for the company to meet its obligations regarding interest payments. An interest coverage ratio lower than 1, indicates that a firm’s earnings before interest and taxes are insufficient to pay its interest expense (Bodie et al., 2009, p. 640).

\[
\text{Interest coverage ratio} = \frac{\text{EBIT}}{\text{Interest expense}}
\]  

(18)

2.6. Factors affecting firms’ profitability

It was in the 1970-ies, that research into factors affecting firms’ profitability and its persistence started to emerge. These studies mainly yielded two distinct theories, the industry view and the firm-efficiency view (McGahan & Porter, 1999, p. 143).

Proponents of the industry view held that industry structure has a great impact on firms’ profitability (McGahan & Porter, 1999, p 143). The logic was that competition in
different industries varies with the level of entry barriers, product differentiation and rivalry among competitors and that these factors help shape industry profitability (McGahan & Porter, 1999, p. 143).

The firm-efficiency view is that firms’ profitability is primarily determined by how efficiently they operate. Although its proponents admit that industry structure can affect firms’ profitability, they tend to play down that effect (McGahan & Porter, 1999, p. 143). In fact, neither party categorically excludes any influence of the factors promoted by the other, and both take to some extent into consideration both industry and business-specific effects on profitability (McGahan & Porter, 1999, p. 143).

Advocates of the industry view see the business-specific factors as a part of the industry structure because they believe that they are first and foremost shaped by the industry but not by each firm. Conversely, advocates of the firm-efficiency view hold that industry effects emerge mainly from competitors’ attempts to imitate efficient rivals. Adherents to the firm-efficiency view argue to the contrary, that such attempts are usually short lived and have little effect (McGahan & Porter, 1999, p. 143).

The earliest widely published research advocating the industry view is a study conducted by Schmalensee (1985), where he examined the profitability of American manufacturing firms. Among them, he found that industry effects accounted for around 20% of the variation in firms’ profits, but business specific effects had no significant impact on profitability (p. 346). Schmalensee (1985, p. 349) used return on assets for an all-equity financed firm as the response variable. As explanatory variables he used industry effects, market share and business-specific effects (operating efficiency).

Rumelt (1991) studied the impact of numerous factors, including industry specific ones, economic and business-specific ones on operating return on assets. Rumelt’s (1991, p. 179) results differed from Schmalensee’s, as he found that industry effects on return on assets were small but stable, but business-specific effects were large and stable. This suggests that managers’ ability to run a firm is more important for its performance than the industry environment.

McGahan and Porter (1997) examined the economic effect (measured year on year), the industry effect, and the business-specific effect along with a corporate-parent effect on the profitability (operating return on assets) of U.S public corporations. The findings of
McGahan and Porter (1997, pp. 24-26) show that both industry effects and the business-specific effects had a significant impact on profitability, but industry effects varied more between industries and was high, e.g. in the hotel industry.

To summarize, the varied and long standing research of authors such as Schmalensee (1985) Rumelt (1991) McGahan and Porter (1997) indicates that the factors affecting firm profitability are numerous and originate both externally from the surrounding economy or industry and from within the firm. Their systematic analysis and application to data relating to the Icelandic hotel industry is necessary to achieve the aims of this study.

2.7. Economic factors affecting firm profitability

Economic conditions change in a periodic way that is often referred to as the business cycle and empirical research confirms that firm performance is closely related to this systematic movement (Chen, 2010, p. 665). A common way of measuring economic success is the gross domestic product or GDP (Chen, 2010, pp. 666-667), due to the fact that changes in economic conditions can influence the performance of all firms in a given industry (McGahan & Porter, 1997, p. 24). In an economic downturn, the overall profitability of an industry is likely to go down below its long-term average and in an economic upturn it is likely to exceed the average. Other economic factor that can affect firms profitability, especially firms with revenues in foreign currency, and is commonly used as independent variable in empirical research is the exchange rate (Shapiro, 1975, p. 485; Chang, 2009, p. 302-303).

2.8. Industry factors affecting firm profitability


2.8.1. Effects of competition on profitability

Profitability of an industry can be determined by the intensity of competition. According to Porter (1980, p. 30) there are five basic competitive forces and the strength of these forces are determined by the economic and technological characteristics of each industry. The five forces are the following: threat of new
entrants, bargaining power of buyers, rivalry between existing competitors, threat of substitute products and bargaining power of suppliers.

Neither the level of competition nor the effects of each of the five forces are identical between industries. Industries differ fundamentally when it comes to the level of competition and profit potential because the strength of the forces of competition differs (Porter, 1980, pp. 30-31). The structure of each industry changes over time due to technology change and changing trends. Consequently, the key to success for every company is to understand the structure of the industry they are operating in (Porter, 2008, p. 27).

2.8.2. Threat of new entrants

New entrants are firms in an industry that have recently started to operate or firms that threaten to begin operating in the industry (Barney & Hesterley, 2010, p. 36). According to Porter (1980, pp. 31-32) firms will enter into an industry as long as profits for some firms in that industry are superior. When new companies enter the industry they will raise the level of competition in the industry and reduce the profitability of existing firms.

The extent, to which new entry acts as a threat to existing firms’ performance, depends on the cost of entry. If the cost of entering an industry is lower than the return on entry, entry will occur until the profits derived from entry are less than the cost of entry. In other words, the competition will increase until it is so intense that the gain associated with entering is less than the entry cost (Barney & Hesterley, 2010, pp. 37-38).

The magnitude of competition and profitability in an industry depends on how easy or hard it is for new companies to enter it, i.e. the barriers to entry. Barriers to entry are defined by McAfee, Mialon, and Williams (2004, p. 463) as a cost that must be incurred by a new entrant into an industry, which existing firms do not, or have not had to incur. The greater this cost, the higher the barriers to entry. As it becomes harder for companies to enter an industry, competition in that industry will be lower and firms more profitable (Porter, 1980, p. 37; Barney & Hesterley, 2010, pp. 37-38).
There are four important barriers to entry. They are economies of scale, product
differentiation, cost advantage independent of scale, and government regulation of entry

**Economies of scale**

Economies of scale exist when increased volume of production results in a lower cost
for each unit produced. If economies of scale exist in a given industry, new firms
entering the market need either to immediately start producing on a large scale or to
produce fewer units at higher unit cost than their competitors (Porter, 1980, p. 32;
Barney & Hesterley, 2010, pp. 38-39). Economics of scale can be found in all types of
businesses (Porter, 1980, pp. 32-33). As shown in figure 1, a firm will increase its
economies of scale as long as a production increase results in a fall of cost per unit
produced. At some point, though, the firm’s volume becomes too large and its cost
begin to rise again (Barney & Hesterley, 2010, p. 38)

![Figure 1. Economies of scale and the cost of production. Source: Barney and Hesterley (2010).](image-url)
Product differentiation

If incumbent firms enjoy brand identification and have achieved customer loyalty in the past, it can be hard for new companies to enter into that market (Porter 1980, p. 33). This is due to the cost outlay that newcomers need to cover to overcome the differentiation advantages of the established firms, in addition to the cost of entering the industry. If this cost is greater than the potential returns from entering, newcomers will not enter (Barney & Hesterley, 2010, p. 40).

Cost advantages independent of scale

A cost advantage independent of scale can according to Barney and Hesterley (2010, p. 40) consist in proprietary technology, managerial know-how, favorable access to raw materials and learning-curve cost advantages.

Proprietary technology applies when established firms have patents or a confidential technology that potential entry firms do not have access to and is costly to imitate (Barney & Hesterley, 2010, p. 40).

Managerial know-how is defined as knowledge, skills and information that incumbent firms possess, but would take a long time for new firms to build up and may therefore constitute a barrier to entry (Barney & Hesterley, 2010, p. 41).

Favorable access to raw materials can take on the role of a barrier to entry if existing firm enjoys easy and/or low-cost access to raw material which newcomers are lacking (Barney & Hesterley, 2010, p. 42).

According to Barney and Hesterley (2010, p. 43) learning-curve cost advantages can serve as barrier to entry if established firms in a given industry have gained cost advantages through cumulative increase in the volume of production.

Government policy

Government policy can have an impact on entry barriers. Governments can limit or prevent newcomer’s entry through licensing requirements or limited access to resources (Porter, 1980, p. 34). Government policy that can have an impact on entry barriers mostly occurs when a firm operates as government regulated monopolies (Porter, 1980, p. 34).
2. Literature Review

2.8.3. Bargaining power of buyers

According to Porter (1980, pp. 38-39) buyers can decrease firm’s revenue and therefore the firm’s profitability, if they have a bargaining power by forcing lower prices. If a company has few customers the threat of buyer bargaining power may be significant, but as the number of customers increases the threat from the buyer side recedes. The threat from buyers is also higher when products are undifferentiated, when the amount of products that certain buyers buy is a large portion of the buyers final product, and when buyers are not earning significant economic profits (Porter, 1980, pp. 38-39).

2.8.4. Rivalry between existing competitors

Rivalry between existing competitors often involves price competition, advertising battles, product introductions and enhanced customer service (Barney & Hesterley, 2010, pp. 42-43). When one firm in a given industry makes a competitive move, for example by lowering its prices, it usually has an effect on the rest of the industry. If other firms respond by lowering their prices and this escalates then all firms in the industry will suffer. Porter (1980, pp. 35-36) says that price competition usually has a significant effect on profitability and leaves companies worse off than before, and high fixed costs create pressure for all firms to fill capacity and often leads to price cutting. Advertising battles on the other hand, often have a positive impact for the whole industry since they can increase overall demand and product differentiation.

Signs of intense competition between rival companies are frequent price cuttings, large number of competing firms of similar size, slow growing industry, lack of product differentiation and capacity added in large increments (Barney & Hesterley, 2010, p. 43).

2.8.5. Threat of substitute products

A substitute meets approximately the same customer needs as the original product, but in a different way. A product that has a substitute has limited profit potential since the substitute puts a ceiling on the prices that firms can charge in a given industry (Porter, 1980, p. 38).
2. Literature Review

2.8.6. Bargaining power of suppliers

According to Porter (1980, p. 39) suppliers provide firms with raw materials, labor, and other assets available to firms. Suppliers can threaten a firm’s performance by raising prices of supplies or reducing their quality. Suppliers are a threat to an industry when few suppliers are serving an industry, when they are selling unique or highly differentiated product and when they themselves are not threatened by substitute products. Conversely, in an industry where there are many suppliers and substitute products exist, the threat of suppliers is not great (Porter, 1980, p. 40).

2.8.7. The five forces model

The five forces model can help managers implement their firm’s strategy, to analyze the overall threat in the industry, and to anticipate the average level of company performance in an industry. In the same way as the five forces model can be helpful to managers it can also be of use to industry analysts (Barney & Hesterley, 2010, p. 47).

2.9. Business-specific factors affecting profitability

According to (Chen & Zhao, 2004, p. 1) many studies have treated the effects of leverage on profitability. The findings of these inquiries have shown that more profitable firms generally have lower leverage ratios. According to the so-called trade-off theory, firms can benefit from leverage as long as they are able to service their debt (Chen & Zhao, 2004, p. 6) which seems to contradict these findings.

The most important internal or business-specific factors according to Rumelt (1991, p. 179), and Peteraf (1993, p. 180) are related to firm’s operating efficiency. The more efficient companies are, the more profitable they are in comparison to others.

2.9.1. Firm leverage ratio

There is no single universal theory of optimal capital structure. According to Modigliani and Miller (1963, pp. 436-439) the value of a firm will be unaffected by its capital structure if there is no transaction cost, and individuals and corporations can borrow at the same rate. But as leverage rises, so does risk. Increasing leverage will therefore put pressure on investors’ required return, keeping firms weighted average cost of capital constant, in a world without taxes. This is presented in figure 2.
When company and personal debts are not perfect substitutes and individuals cannot borrow at the same rate as corporations, due to interest expense tax benefits, capital structure does matter. Investors can borrow through a company at the after corporate tax rate, while they borrow personally at pre corporate tax interest rate (Brealy et al., 2011, pp. 471-472). In reality there is a trade-off between debt and equity financing of firms and a different mix can have differing effects.

Risk-free debt

\[ \frac{D}{E} = \frac{\text{debt}}{\text{equity}} \]

According to the trade-off theory, a capital structure optimum is characterized as a trade-off between the present value of the interest tax shield which can be advantageous for companies on one hand, and the disadvantages of debt financing, including the risk of financial distress on the other (Brealy et al., 2011, pp. 486-487). The tax shield depends only on the corporate tax shield (tax rate * interest rate) and on the ability of the leveraged firm to earn enough revenue to cover its interest payments (Brealy et al., 2011, p. 475).
If firms are able to service its interest expense burden, they benefit from debt financing but if not, they face financial distress (Brealy et al., 2011, p. 475). The value of a leveraged firm according to the trade-off theory of capital structure is presented in formula (19), where $V_u$ is the value of unlevered firm and $PV$ is the present value.

\[
\text{Value of levered firm} = V_u + PV(\text{interest tax shield}) - PV(\text{costs of financial distress})
\]

(19) Value of levered firm = $V_u + PV(\text{interest tax shield}) - PV(\text{costs of financial distress})$

### 2.9.3. Operational efficiency

Operational efficiency can be defined as the ratio between input, which can be e.g. cost, people or time, and output which can be revenues, margin and cash for instance. To increase efficiency, the ratio between output and input needs to be improved (Chen, 2007, p. 696).

### 2.10. Characteristics of the hotel industry

The hotel sector is international by its nature, and therefore exposed to exchange risk. Another characteristic trait of this industry is its relatively high operational risk compared to many other businesses due to the high portion of fixed cost in their operations, as well as revenue fluctuation (Lundberg et al, 1995, p. 68; Nicolau, 2005, pp. 105-106; Pan, 2007, p. 749; Younes & Kett, 2007, p. 72; Chen, 2010, p. 665). This makes hotels sensitive to economic downturns, since they cannot reduce cost in equal measure in response to a contraction in sales (Chen, 2010, p. 665). Fixed cost in hotel operations is often 70% to 75% of total cost and when revenues drop either due to lower room rates or occupancy rate, the bottom line for the hotel sector is often hard hit due to this high fixed cost (Lundberg et al., 1995, p. 68). According to Lundberg et al. (1995, p. 59) the lion's share of this fixed cost is usually labor cost.

Hotels are frequently faced with profit variations due to periods of fluctuating demand (Graham & Harris, 1999, p. 201), that may originate in seasonality (Lundberg et al., 1995, p. 160), in economic factors like recession (Chen, 2010, p. 665), or in currency rate fluctuations (Chang, 2009, p. 304).

In expansionary periods large amounts of credit are often made available which, can lead to excessive hotel construction. In such cases it can take a long time for demand to catch up with the supply (Lundberg et al., 1995, p. 59). Problems that often cling with hotel buildings are that they are overleveraged (Lundberg et al., 1995, p. 59) and...
analysts that carry out feasibility studies about hotel buildings are often too optimistic about occupancy rate, fixed- and variable costs, income projections and other factors affecting the hotel operations and building, which can seriously reduce or even annihilate investment returns (Rushmore, 1993, p. 359-361)

2.11. Hotel operating ratios

In the hotel sector several operating ratios may be used as indicators of efficiency and as benchmarks to competitors. The two most widely used ratios are occupancy rate and average daily rate. Ratios that are also commonly used are revenue per available room and the profit margin, discussed in chapter 2.5.1. Cost of labor as percentage of revenue, variable ratios, and liquidity and solvency ratios are also often quoted (Lundberg et al., 1995, p. 77).

2.11.1. Hotel occupancy rate

Hotel occupancy rate is the average proportion of rooms rented out in a given hotel, and can be calculated by using formula (20). Occupancy rate is considered low when it is below 60% on average, and when the occupancy rates drop hotel managers tend to seek ways to lower prices (Lundberg et al., 1995, p. 68). Hotels that have an average annual occupancy rate over 60% are generally profitable and when occupancy rate in a given country or location exceeds 70% it starts attracting the big international hotel chains (Law, 1998, p. 234).

\[
\text{Occupancy rate} = \frac{\text{Rooms sold}}{\text{Rooms available}} \times 100
\]  

(20)

As the occupancy rate increases, so does the average daily rate since the cheapest rooms are most often sold first (Lundberg et al., 1995, p. 70). The first five to ten years off hotels’ lifetime they often experience a rapid growth in occupancy rate and income (Lundberg et al., 1995, p. 72).

2.11.2. Average Daily Rate (ADR)

The average daily rate (ADR) is what a hotel actually earns on each room rented out. The average daily rate is calculated by dividing the room revenues by number of occupied rooms (O’Neill, 2003, p. 8) as presented in formula (21).
According to Lundberg et al. (1995, p. 67) the average daily rate is usually lower than published rates. Groups get discounts, hotels have special offers and hotel prices change by season. The goal of hotel operators is to raise the ADR and the occupancy rate while reducing expenses or keeping them constant.

In research by Singh and Schmidgall (2002, p. 210) they asked hotel financial executives what operating performance metrics they thought were most important for the hotel industry. The financial executives choose average daily rate as the most important ratio.

2.11.3. Revenues per available room (Rev-Par)

Revenue per available room (Rev-Par) is a performance metric in the hotel industry. Rev-Par is found by multiplying average daily rate with hotel occupancy rate as shown in formula (22).

\[
(22) \quad \text{Revenue per available room} = \text{Average daily rate} \times \text{Occupancy rate}
\]

Rev-Par can also be calculated by dividing room revenues with rooms available multiplied with number of days in the period as presented in formula (23).

\[
(23) \quad \text{Revenue per available room} = \frac{\text{Room revenue}}{\text{Number of rooms} \times \text{Days in a period}}
\]

Revenue per available room is a more realistic measurement than average daily rate since it show the revenues per available room but not only the revenues per occupied room. Rev-Par is therefore lower than average daily rate (except the occupancy rate is 100%) and expresses the hotel true revenues per room over some period. By comparing hotels Rev-Par on yearly basis, or over some season it can be observed which hotel is most efficient in putting its assets to work (Ismail, Dalbor, & Mills, 2002, p. 74). Rev-Par is usually used to compare the same time frame between years, for example, summer months with summer months. It is also used to forecast future room revenues (Ismail et al., 2002, p. 75). According to Ismail et al. (2002, p. 74) security analysts consider Rev-Par a key factor in moving lodging-stock prices.
2. Literature Review

2.12. Profitability in the hotel sector

Profitability varies between industries. In research made by McGahan and Porter (1997, p. 23), factors affecting profitability in six industries in the United States were tested between 1981 and 1994. The results are shown in table 2. Of the six industry sectors, lodging and entertainment had 9.2% operating return on assets over the period, placing it fourth among the six. This study indicated that industry effects could account for more than 40% of profit variance in the lodging industry, which includes the hotel sector.


<table>
<thead>
<tr>
<th>Industry</th>
<th>ROA*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture &amp; mining</td>
<td>11.2%</td>
</tr>
<tr>
<td>Wholesale &amp; Retail trading</td>
<td>10.4%</td>
</tr>
<tr>
<td>Services</td>
<td>10.3%</td>
</tr>
<tr>
<td>Lodging &amp; entertainment</td>
<td>9.2%</td>
</tr>
<tr>
<td>Transportation</td>
<td>8.9%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>8.1%</td>
</tr>
</tbody>
</table>

Porter’s findings from 2008 (p. 7) show that industry return on invested capital (ROIC) was 14.9% on average from 1992 to 2006. Of thirty industries Porter studied, hotels had an average ROIC of 10.4% over the period, the third lowest of 30 industries. As discussed in chapter 2.4.1 ROIC is normally higher than ROA since ROA includes all assets from a firm balance sheet in the denominator, while ROIC only includes fixed assets and non-cash working capital (Damodaran, 2007, p. 13).

In a list of 215 industries at Yahoo finance (n.d.) the lodging industry holds 120th place when it comes to profit margin, which is 5.8% on average for this industry. Lodging has 12.8% return on equity on average which makes it the 92th most profitable industry on the list. When it comes to financial leverage, the lodging companies have a long term debt to equity ratio of 64.5% on average, making them the 110th most leveraged industry.

The average profit margin for the 215 industries is 7.67%, placing the lodging industry below the average in this respect. The average ROE for the industries is 15%. In this case, the lodging industry is below the average of all industries in the list. The list for
the lodging industry contains 148 lodging companies traded on an open market all over the world (Yahoo finance, n.d.).

2.13. Factors that affect hotel profitability

The literature regarding hotel profitability and its determinants is not voluminous. Chen (2010, pp. 667-669) conducted research where he tested the effects of economic factors and industry factors on return on assets, return on equity, and various other financial ratios on the occupancy rate of tourist hotels in Taiwan. The independent variable Chen used to represent the impact of the economy on hotel profitability was the real change in the gross domestic product between years. To represent the response of the industry, Chen used the growth rate of total foreign tourist arrivals between years.

Chen (2010, p. 669) directed his research towards finding out which had more impact on hotel profitability; industry factors or economic factors. Chen’s (2010, p. 667) research was partly motivated by the relative scarcity of studies of factors affecting hotel industry profitability.

However, Chen’s study in 2010 was not the first to address this issue and related ones. Chen (2007a, p. 600) showed that hotels in Taiwan had higher return during periods of expansionary monetary policy by the local central bank. Chen (2007b, p. 202) came to the conclusion that a favorable economic environment generally causes firm earnings to rise.

Wheaton and Rossoff (1998, pp. 69-70) found that hotel industry business cycle in the U.S is highly correlated with the state of the general economy as represented by the country’s GDP.

Studies of hotel profitability using economic factors, industry factors and business-specific factors as explanatory variables are not frequently seen, although some research has been published where one or two of these three factors are considered. In chapters 2.13.1 to 2.13.3 some of the variables used in these studies will be discussed.

2.13.1. Economic factors affecting hotel profitability

The hotel industry is sensitive to the state of the economy and its cyclicality can have great impact on hotel profits (Chen, 2010, p. 665). A factor often selected to represent
the economy is gross domestic product or GDP (Chen, 2010, pp. 666-669). Other economic factors that are seen in such studies are inflation and exchange rates (Chang, 2009, pp. 302-303).

**Real Gross Domestic Product (GDP)**

In the short run, development in the tourist industry is expected to follow the economy as a whole because supply cannot be quickly adjusted to changes in demand (Corgel, 2004). Wheaton and Rossoff’s (1998, pp. 69-70) study lends support to this hypothesis by showing that the demand for hotel rooms follows the cyclical pattern of the economy very closely, while the supply of hotel rooms follows the investment pattern in the industry, which is slower and therefore not in sync with macroeconomic fluctuations. Since the hotel industry follows the cyclical pattern of the economy, GDP can be seen as an economic driver of profitability.

GDP measures total final goods and services produced in the economy during a given period of time. Real GDP is adjusted for price changes, i.e. inflation. Consequently, real GDP growth is the change in real GDP between periods and therefore synonymous with changes in economic conditions (Chen, 2010, p. 669).

Shifts in economic conditions can impact profits and the success of hotel corporations. Economic expansion seems to increase their profitability, while the impact of economic recession is negative (Chen, 2010, p. 669). The logical consequence is that hotel profitability should be greater in a favorable economic environment if everything else is equal.

**Exchange rate risk**

In tourism, business transactions occur in both domestic and foreign currency since tourists are both domestic and foreign. Changes in currency exchange rates can have a great impact on tourism. Studies have shown that depreciation in the domestic currency can cause the number of foreign travelers to increase dramatically and when the domestic currency appreciates again, the number of foreign traveler’s decreases, negatively affecting hotel profitability (Lundberg, Krishnamoorthy & Stavenga, 1995, p. 40).
Hotel operations are very sensitive to exchange rate risk. Research by Chang (2009, p. 301) showed that average daily rate, revenue per available room, and occupancy rate improved when the domestic currency was weak. When the domestic currency was strong these rates declined, and so did hotel profit. Marvel and Johnson’s (1997, p. 287) findings showed that appreciation of the domestic currency had significant negative impact on hotel profitability.

2.13.2. Industry factors affecting hotel profitability

Every industry has its special characteristics that condition the profitability of firms (Porter, 1980, pp. 30-31; Hansen & Wernerfelt, 1989, p. 400). According to Harrison (2003, p. 148) the specific factors that it is necessary to evaluate in the hotel industry include intensity of competition and industry growth. Other factors that should be considered are hotel location and hotel size (Urtasun & Gutiérrez, 2006, p. 396), as well as seasonality (Baum & Hagen, 1999, p. 299; Koenig-Lewis & Bischoff, 2005, p. 201).

*Competition in the hotel industry*

According to Barney and Hesterley (2010, p. 38) the level of competition and profitability in an industry depends on how easy or hard it is for new companies to enter it, i.e. the barriers to entry. The lower the entry barriers, the less profitable the industry is (Narver & Slater, 1990, p. 29). The hotel industry can be characterized as highly competitive since the only significant entry barriers are large up-front capital requirements (Matovic, 2002, p. 46). According to Matovic (2002, p. 106), barriers to entry are one of the most important factors in determining the level of financial performance of hotels, since high competition level has a negative impact on hotel profitability.

In the United States, competition in the hotel industry has been increasing. From 1991 to 2000, the number of brands in the industry grew by more than 34%. This makes it harder for firms in the industry to grow and sustain their levels of profitability (Matovic, 2002, p. 24). Matovic (2002, p. 70) uses the increase in the number of competitors to measure the level of competition and predicts lower profitability for more intense competition.
Rivalry between existing competitors can be fierce. According to Porter (1980, p. 35) price competition usually has significant effect on profitability and leaves companies worse off than before, especially when many firms compete in the market. By differentiating its product, however, firms can attenuate the effect of price competition (Mazzeo, 2002, p. 716). According to Yelkur and DaCosta (2001, p. 259), the hotel as a product is considered to possess a high level of differentiation from competing products and therefore price competition in the hotel industry should not be very intense. Harrison (2003, p. 148) concludes that industry growth impacts the level of rivalry. In a fast growing industry, the rivalry is less intense than in a slow growing industry.

**Growth in the hotel industry**

Narver and Slater (1990, p. 29) concluded that a growing market makes it easier for all sellers to reach out to and retain customers and make profits. But if the market is easy to enter, new firms entering the market can destroy the profit for existing firms since new firms can easily enter the market when the demand is growing and exit again when the demand settles. Narver and Slater (1990, p. 29) used market growth among other variables to measure the industry effect on firm profitability.

Growth in tourism can have strong influence on hotel performance since it increases their occupancy rate and revenues (Chen, 2010, p. 665). According to Chen (2010, p. 672) the total foreign tourist arrivals growth had a positive impact on profitability in the hotel industry. Harrison (2003, p. 148) points out that when growth in tourist arrivals is slow, it is important for hotels to cut cost as they are highly revenue dependent due to high fixed costs. Therefore slow growth has a negative impact on hotel performance. Chen (2010, p. 669) used the changes between years in total foreign tourist arrivals to measure the industry-wide growth of hotel stays.

**Hotel location**

Hotel location has become one of the most important determining factors of successful hotel operations, and can make a big difference regarding market share and profitability growth (Kimes & Fitzsimmons, 1990, p. 12; Choi & Chu, 2001, p. 279; Jeffrey, Barden, Buckley, & Hubbard, 2002, p. 86; Chou, Hsu, & Chen, 2008, p. 293). When it comes to location the economic environment, geographical position, natural resources and the size of the location can have a great impact on hotel profitability (Chou et al., 2008, p.
According to O’Neill and Mattila (2006, p. 149) location has an impact on profitability, and is, along with prices, the most important factor influencing customer choice (Choi & Chu, 2001, p. 279). The findings of O’Neill and Mattila (2006, p. 149) have shown that resort hotels are more profitable than urban hotels.

**Hotel size (Number of rooms).**

Evidence from many studies support the conventional wisdom that bigger firms are more profitable than small ones (Lee, 2009, p. 200). Porter (1980, p. 34) on the other hand says that the positive relationship between firm size and profitability does not apply to all industries. Lee (2009, p. 189) measured firm size and its effect on profitability of 7,000 firms across different industries. His findings imply that bigger firms are more profitable than small ones. According to O’Neill and Mattila (2006, p. 149), hotel size or number of rooms in a hotel can have an impact on profitability. Jeffrey et al. (2002, p. 84) came to the conclusion that small independent hotels had weaker occupancy performance and lower profitability than larger hotels. In a study by Chen (2010, p. 673) his findings show that large hotels tend to have a higher occupancy rate. With increasing number of rooms, however, their profitability falls.

**Seasonality**

Seasonality in tourism demand is globally recognized and considered a problem in tourism (Baum & Hagen, 1999, p. 299; Koenig-Lewis & Bischoff, 2005, p. 201). Seasonality is usually caused by either natural or institutional factors or both and this pattern is stable over long periods. Since seasonality is predictable it makes it possible for all stakeholders to take measures to minimize its impact (Getz & Nilsson, 2004, p. 18).

Seasonality is considered to have a detrimental impact on hotel operations through unused capacity and inefficiency in the off-season, (Getz & Nilsson, 2004, p. 19; Koenig-Lewis & Bischoff, 2005, p. 209) which can have negative impact on hotel returns. Seasonality can also make it hard to attract investors and lenders, and keep skilled employees (Getz & Nilsson, 2004, p. 19). Attempts to dampen seasonality often fail even when all stakeholders are determined to change it, and even the hotel industry in big international cities like London suffers from seasonality (Koenig-Lewis & Bischoff, 2005, p. 209).
2. Literature Review

2.13.3. Business-specific factors affecting hotel profitability

The business-specific factors affecting hotel profitability are the factors that affect the business performance of individual hotels. Many scholars argue that operating efficiency is a business-specific factor that can have big impact on firms profitability (Narver & Slater, 1990, p. 32; Rumelt, 1991, p. 179; Peteraf, 1993, p. 180; Barros, 2005, p. 457), and Chen (2007, p. 702) regards operating efficiency on hotel profitability as a very important business factor. Chen and Zhao (2004, p. 26) find that financial leverage influence profitability.

Operating efficiency and hotel profitability

Despite the importance of efficiency, relatively few hotel studies address operating efficiency (Barros, 2005, p. 457). Narver and Slater (1990, p. 32) findings show a positive relationship between operating efficiency and profitability. The more efficiently companies operate the more profitable they are. Rumelt (1991, p. 179) concludes that operating efficiency has a big impact on firms profitability. Chen's (2007, p. 702) findings implicate that hotel efficiency is closely related to their profitability and Barros (2005, p. 457) concludes that the hotel industry demands efficiency due to the intense level of competition and because operating efficiency can be controlled by the management team of every hotel.

There are several ways to measure hotel operating efficiency. The classical approach is to use ratio analysis, aggregate indices of market and revenue performance (Chen, 2007, p. 697). In many papers written about the effects of operating efficiency on firms profitability and performance, the classical approach ratios like average room rates and occupancy rate are the favored efficiency measure (Anderson, Fish, Xia, & Michello,1999, p. 46; Hwang & Chang, 2003, p. 360). Other popular indicators of efficiency under the classical approach, involve e.g. the cost of labor as a percentage of revenues, gross profit divided by revenue and net profit divided by revenue (Lundberg et al., 1995, p. 78; Anderson et al., 1999, p. 47).

Financial leverage and hotel profitability

Many studies have been focused on the relationship between financial leverage and profitability, and their findings indicate that firms with lower leverage ratio are more profitable than firms with high leverage ratio (Chen & Zhao, 2004, p. 1).
Jang and Tang (2009, p. 358) used ROA as dependent variable when measuring the effect of leverage on hotel profitability. To derive a measure of financial leverage they divided long term debt with total assets. The results showed that too much financial leverage had negative impact on ROA (p. 364). Lee and Park (2009, p. 108) also used ROA as dependent variable for hotel profitability while they used debt to asset ratio as variable for leverage.
3. Tourist demand, exchange rates and the Icelandic hotel industry

Among explanatory factors most often used to measure tourist demand are relative price, currency exchange rates and qualitative factors. These were the findings of Christine Lim’s (1997, pp. 842-844) study, surveying 100 earlier studies of tourist demand. Lim’s findings show that the relative price of goods and services bought by tourists at the destination compared to his hometown or competing destinations is a factor in tourist demand, as it affects the traveler’s purchasing power. Currency exchange rates have impact on tourist demand. With depreciation of the exchange rate in the destination country boosts the traveler’s purchasing power in that country and vice versa. Finally, qualitative factors may have a significant effect. One of them is the number of tourist attractions in the destination country. Chen’s (2010, p. 672) findings showed that rising tourist demand had a positive effect on hotel profitability.

In what remains of this chapter, the Icelandic hotel industry will be discussed. Supply, demand and occupancy rate in the Icelandic hotel sector will be reviewed and so will the relationship between movements in the Icelandic real exchange rate and the demand for hotel rooms in Iceland.

3.1. Accommodation in Iceland

All parties that sell accommodation service in Iceland are required by law to fill in a report detailing the number of rooms available, the number of overnight stays and the number of guests, and return the forms to Statistics Iceland every month (“Um gistiskýrslur”, n.d.).

According to Statistics Iceland there were 343 hotels and guesthouses registered in Iceland in 2011, with 9,863 rooms. Of these rooms, 4,811 were in hotels and 5,052 were in guesthouses. The number of available hotel and guesthouse rooms grew by approximately 4.6% annually in the country from 2000 to 2011, i.e. 5.8% for hotels and 3.7% for guesthouses (“Available accommodation”, n.d.). Of all accommodation services available in Iceland, 70% of tourists stays occur in hotels or guesthouses (“Overnight stays, arrivals and average length of stay in all”, n.d.). The cumulative percentage change in supply and demand for hotels and guesthouses from 2001 to 2012 is presented in figure 3.
The observed difference in growth between the supply of hotel and guesthouse rooms is significant. While for guesthouses the growth in room supply is around 44% over the period, the hotel supply growth is closer to 75%. While the growth in demand for guesthouse rooms is around 81%, it is around 90% for hotel rooms. As presented in figure 3, the supply follows the demand much closer for hotel rooms than for guesthouse rooms (“Overnight stays, arrivals and average length of stay in hotels”, n.d.; “Available accommodation”, n.d.).

![Cumulative percentage change of growth in supply and demand for hotel- and guesthouse rooms in Iceland from 2001-2012. Source: Statistics Iceland.](image)

There has been considerable growth in both supply of and demand for accommodation service, but the seasonal variation in occupancy rate for Icelandic hotels and guesthouses has been substantial. The occupancy rate for Icelandic hotels and guesthouses from 2001 to 2012, by months of the year is presented in figure 4.

Over this period the occupancy rate between the same months in different years was closely correlated. The correlation in the occupancy rate between 2001 and 2012 is 0.96, indicating that seasonality in accommodation services has not changed much over this period. The occupancy rate is always highest in July and lowest in December and January. Over the period the average occupancy rate for hotels and guesthouses was similar, except in 2012. In 2001 it was around 42.5%, while it was 43% in 2011 and between 2001 and 2011 it was around 42% on average. In 2012, however, the
occupancy rate grew by 11.76% from the year before and was 48%, which is the highest occupancy rate over the whole period ("Occupancy rates", n.d.).

Figure 4. Monthly occupancy rate for Icelandic hotels and guesthouses from 2001-2012. Source: Statistics Iceland.

Statistics Iceland splits the size of hotels and guesthouses into two categories; hotels and guesthouses with 59 rooms or less and 60 rooms or more. When comparing smaller hotels and guesthouses with the larger ones, it is evident that the larger size category had a much higher occupancy rate on average, or around 50%, while hotels and guesthouses in the smaller category had an occupancy rate of around 34% over the period ("Occupancy rates", n.d.).

3.1.1. Hotels in Iceland

According to Icelandic laws ("Starfsleyfisskilyrði fyrir Hótel", 2009), an accommodation service facility is a hotel if it has a round-the-clock reception, serves breakfast every morning and has a fully equipped bathroom in every room.

Though hotels and guesthouses are in a competition for customers the operations and investments in hotels and guesthouses differs. Hotels are on average much larger than guesthouses. While hotels in Iceland have on average around 58 rooms, guesthouses have around 19 rooms on average (“Available accommodation”, n.d.). Hotels also differ from guesthouses since their operational cost is higher than guesthouses due to their business model (“Starfsleyfisskilyrði fyrir Hótel”, 2009).
According to Statistics Iceland there were 83 hotels in Iceland in 2011 with 4,811 rooms. In figure 5 the number of hotels in Iceland by geographic location is presented. Of these 83 hotels, 40% are located in the Reykjavik area and of the 4,811 room available, 2,826 are in Reykjavik or around 59%. In the rural areas, Suðurland has most hotels or 15, while there is only one hotel in Vestfirðir. Of all hotels in Iceland 8% are in Vesturland, 4% in Norðurland west, 15% in Norðurland east, 8% in Austurland and 6% in Suðurnes (“Available accommodation”, n.d.).

![Figure 5. Number of Icelandic hotels and distribution after regions in 2011. Source: Statistics Iceland.](image)

The cumulative percentage change in supply and demand for hotel rooms in the Reykjavik area are shown in figure 6. From 2001 to 2010 the growth in supply exceeded the growth in demand for hotel rooms (“Overnight stays in hotels by citizenship”, n.d.; “Available accommodation”, n.d.), which indicates a high level of competition, which should according to the law of supply and demand push prices of hotel accommodation down. In fact, according to Markaðspunktar Arion banka (2012), the price of hotel rooms in Reykjavik declined by more than 39% between 2007 and 2011 measured in a basket of Euros and US dollars.

Between 2010 and 2011 the growth in hotel room demand increased sharply while the growth in supply of hotel rooms was stable. Between 2011 and 2012 the cumulative growth in demand exceeded hotel room supply (“Overnight stays in hotels by citizenship”, n.d.; “Available accommodation”, n.d.), and at the same time the overall
occupancy rate increased by 13.8% in the capital region. Since the start of data collection by Statistics Iceland in 1998, hotel occupancy rate in the capital area was highest in 2012, or 69%, compared to 61.1% on average from 1998 to 2012 (“Monthly occupancy rate”, n.d.).

![Figure 6. Occupancy rate and cumulative percentage change in the supply and demand for hotel rooms in the Reykjavik area from 2001-2012. Source: Statistics Iceland.](image)

The change in the occupancy rate for the Reykjavik area is positively correlated (0.68) with the difference in the cumulative percentage change for demand and supply presented in figure 6. In other words, when the demand grows more than the supply the occupancy rate increases and when the demand grows less than the supply the occupancy rate decreases. Between 2010 and 2012 the growth in demand increased at a much higher pace than the supply and the occupancy rate took a jump at the same time, as can be seen in figure 6.

The cumulative percentage change in supply and demand for hotel rooms in the rural areas of Iceland also increased sharply in many parts of the country from 2001 to 2012. For the South (Sudurland) the change in supply and demand from 2001 to 2012 is shown in figure 7 along with the occupancy rate. From 2004 the growth in demand exceeded the growth in supply and in 2008 the gap between supply and demand increased since the demand was growing faster than the supply (“Overnight stays in hotels by citizenship”, n.d.; “Available accommodation”, n.d.). In 2012 the demand increased sharply and so did the occupancy rate, which grew by more than 12%, and
was 41% over the whole year, while the average occupancy rate from 2001 to 2011 was 34.6% (“Monthly occupancy rate”, n.d.).

![Figure 7. Occupancy rate and cumulative percentage change in the supply and demand for hotel rooms in Suðurland from 2001-2012. Source: Statistics Iceland.](image-url)

The change in occupancy between years for hotels in the South is positively correlated (0.65) with the difference in the cumulative percentage change for demand and supply summarized in figure 7. The demand growth is higher than the growth in supply from 2004 to 2012 and over the same period there is almost constant growth in the occupancy rate for the area, except for a small decline between 2005 and 2006, and between 2009 and 2011.

In the Northwest and Northeast (Norðurland) supply and demand of hotel rooms grew considerably between 2001 and 2012 as presented in figure 8. The cumulative growth in supply from 2001 to 2012 was 45.5% while the growth in demand over the same period was around 63%. In the North part of the country demand exceeded supply in 2006 and that remained so until 2011 when amounted growth in supply and demand had reached similar level. In 2012 the demand growth was extraordinary or almost 20%, while the growth in supply was only around 3% (“Overnight stays in hotels by citizenship”, n.d.; “Available accommodation”, n.d.).
The occupancy rate for hotels in Norðurland, presented in figure 8, was lowest in 2005 when it was 30.9%, but highest in 2012 when it was 35.6% (“Monthly occupancy rate”, n.d.). The correlation between the change in occupancy rate between years and the difference in the cumulative growth in demand and supply was 0.75 over the period. Between 2006 and 2007 demand for hotel rooms grew considerably more than supply. While demand growth was 13%, supply grew by only 5%. Between 2011 and 2012 demand grew by 19.5% and supply by only 2.8%. At the same time, occupancy rate grew by 8.7%, and 9% respectively. When the largest difference in demand and supply for hotel rooms occurred between 2001 and 2012, occupancy rate had its largest growth phases.

In West and Westfjords (Vesturland and Vestfirdir) the cumulative supply and demand growth for hotel rooms was negative between 2008 and 2009 as shown in figure 9, meaning that some hotels were closed or room availability was reduced at the same time as demand for hotel rooms declined. From 2009 the supply and demand started growing again, but has not yet reached its 2007 peak in demand when almost 58,000 nights were spent in hotels in the area, while in 2012 this figure was around 55,000 nights (“Overnight stays in hotels by citizenship”, n.d.; “Available accommodation”, n.d.). Occupancy rate for hotels in Vesturland and Vestfirdir is presented in figure 9. From
2008 to 2010 the occupancy rate is declining but in 2011 the rate started rising again ("Monthly occupancy rate", n.d.).

![Figure 9. Occupancy rate and cumulative percentage change in supply and demand for hotel rooms in Vesturland and Vestfirðir from 2008-2012. Source: Statistics Iceland.](image)

In the East (Austurland), cumulative growth in hotel room demand exceeded the growth in supply between 2001 and 2012 as presented in figure 10. The demand grew almost constantly from 2001 to 2008. From 2008 to 2010 there was a decline in the demand, but after 2010 the growth in demand picked up again. The supply of hotel rooms in Austurland rose from 2002 to 2008, but was relatively stable between 2008 and 2011. After this period of stable supply, the supply of hotel rooms grew sharply in 2012, or by more than 30% from the year before ("Overnight stays in hotels by citizenship", n.d.; “Available accommodation”, n.d.).
The occupancy rate for hotels in Austurland is illustrated in *figure 10*. It is slightly positively correlated (0.26) with the difference in cumulative percentage change in demand and supply over the period. Between 2001 and 2004 the occupancy rate was rising, it declined between 2005 and 2006, rose again in 2007, but declined in 2008 and was relatively stable after that (“Monthly occupancy rate”, n.d.).

In Southwest (Suðurnes) the cumulative demand for hotel rooms has been growing significantly from 2010 following slow growth between 2009 and 2010 as shown in *figure 11*. In 2011 demand growth exceeded the growth in supply. Between 2010 and 2011, supply of hotel rooms in Suðurnes grew by only one room or 0.5%, while demand grew by over 16%. Between 2011 and 2012 the growth in supply of hotels rooms again exceeded the growth in demand (“Overnight stays in hotels by citizenship”, n.d.; “Available accommodation”, n.d.).

The occupancy rate for Suðurnes is also presented in *figure 11*. It declined between 2008 and 2009 in line with a decline in demand for hotel rooms. It was relatively stable between 2009 and 2010, and grew again from 2010 to 2011 simultaneously with renewed growth in demand. Between 2011 and 2012 the occupancy rate was relatively stable as the supply of hotel rooms grew more than demand (“Monthly occupancy rate”, n.d.). A positive correlation (0.63) was observed between changes in the occupancy rate

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*Figure 10. Occupancy rate and cumulative percentage change in supply and demand for hotel rooms in Austurland from 2001-2012. Source: Statistics Iceland.*

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one hand and cumulative changes in the demand and supply mismatch on the other, in during the sample period.

![Figure 11. Occupancy rate and cumulative percentage change in supply and demand for hotel rooms in Suðurnes from 2008-2012. Source: Statistics Iceland.](image)

### 3.2. Changes in the real exchange rate and tourist demand

A number of studies have demonstrated that changes in the value of the domestic currency can impact the number of foreign tourists visiting the country. Depreciation in the domestic currency generally increases interest in traveling to that country and vice versa (Lundberg et al., 1995, p. 40; Sigurður Jóhannesson et al., 2006, p. 6). According to Chang (2009, p. 302), however, domestic currency changes do not always have impact on hotel demand since travelers are often indifferent of the local exchange rate as long as room rates do not change stated in the traveler’s currency. Other factors that can outweigh the effect of currency changes are tourist interest in the destination country and their own revenues (Sigurður Jóhannesson et al., 2006, p. 6).

When the impact of the foreign exchange rate on tourist demand is assessed using the nominal rate, inflation is not taken into consideration, although it can obviously affect the purchasing power of tourists. Therefore it is more accurate to use the real exchange rate, a measure of purchasing power of one currency relative to another, to estimate the effect of exchange rate changes on tourist demand (Shapiro, 2010, p. 407)
According to Sigurður Jóhannesson et al. (2006, p. 7) the real exchange rate can be defined as the percentage change in prices of goods and services measured against its biggest trading partners, adjusted for wage changes in the home country. In tourism research the changes in the price level of goods and services is an important variable, since tourists often make decision about their travels based on their purchasing power in the country they are planning to visit (Sigurður Jóhannesson et al., 2006, p. 7).

3.2.1. Changes in the real exchange rate and hotel demand

In figure 12, the split in overnight stays in Icelandic hotels between foreign and domestic tourists is presented. In 2001, 19% of total nights in hotels were spent by domestic tourists, while 81% of overnight stays came from foreign travelers. The proportion of Icelandic overnight stays increased steadily until 2007 when it reached 23% of the total demand. From 2007 this proportion has declined from year to year and was around 17% in 2012 (“Overnight stays in hotels by citizenship”, n.d.).

Figure 12. The split in overnight stays in Icelandic hotels between foreign and domestic tourists between 2001 and 2012. Source: Statistics Iceland.

Figure 13 presents the percentage change in the real exchange rate of the Icelandic krona against a basket of Iceland’s main trading partners’ currencies, together with the percentage change in number of foreign hotel guests from 2001 to 2012 (“Real exchange rate”, n.d.; “Overnight stays in hotels”, n.d.). The change in number of foreign hotel guests exhibited low but positive correlation (0.19) with changes in the real
exchange rate of the Icelandic krona over the period, indicating that when the ISK appreciated in real terms, the number of foreign travelers tended to rise. This is contrary to Lim’s (1997, p. 842) results. Intuitively, when the ISK appreciates, the purchasing power of foreign travelers deteriorates, and therefore a negative relationship between the real exchange rate and number of foreign hotel guests in Iceland would be expected.

![Figure 13. Changes in the real exchange rate and change in number of foreign hotel guests between years from 2001 to 2012. Source: Statistics Iceland and Central bank of Iceland.](image)

In *figure 14* the percentage change in the real exchange rate (“Real exchange rate”, n.d.) is plotted together with the percentage change in the number of domestic hotel guests from 2001 to 2012 (“Overnight stays in hotels”, n.d.). When the correlation between the real exchange rate and the number of Icelandic hotel guests is measured over the period it shows a positive correlation of (0.65). This indicates that an appreciation in the real exchange rate induces Icelanders to travel more domestically and to increasingly stay in hotels.

*Figure 14* also shows the percentage change in Icelandic travelers going abroad (“Passengers through Keflavik”, n.d.). When the correlation between the real exchange rate and Icelandic travelers going abroad is measured, the variables move together with a correlation of (0.86). This indicates that a real appreciation of the ISK is likely to induce Icelanders to travel more to other countries and vice versa. Interestingly, the results from *figure 14* indicate that Icelandic citizens both increased their stays to Icelandic hotels and traveled more abroad when the real exchange rate appreciated.
explanation may be that Icelanders gain more purchasing power when the real exchange rate appreciates. Therefore they can both travel more abroad, as goods and services becomes cheaper there when the real exchange rate rises, and increase their domestic traveling, since imported goods also become cheaper locally, hence their purchasing power rises both domestically and abroad.

![Graph of changes in real exchange rate, number of Icelandic hotel guests and Icelandic travelers going abroad between 2001 and 2012. Source: Statistics Iceland and Central bank of Iceland.]

In *figure 15* the percentage change in the real exchange rate and the total change in number of hotel guests from 2001 to 2012 are shown. A measure of the correlation between changes in the real exchange rate and changes in total number of hotel guests is positive (0.35). Although the correlation is not particularly strong, it seems that the real exchange rate and the total number of hotel guests to some extent move together.
The results from a study of the correlation between the real exchange rate and hotel demand series shown in figures 13, 14, and 15 suggest that a strong real exchange rate positively influences the number of hotel guests in Iceland, especially when it comes to domestic travelers, as the correlation for the foreign travelers is low. Sigurður Jóhannesson et al (2006, pp. 37-38) remark that Iceland is a place that many travelers are determined to visit independently of the cost and that business travelers’ demand for traveling is not very sensitive to changes in the real exchange rate. These two factors might explain the lack of negative correlation in foreign hotel stays and thus the positive relationship of the total number of hotel guests in Iceland with changes in the real exchange rate.
4. Conceptual framework

The focus of this study is how economic factors, industry factors and business specific factors affect the profitability of Icelandic hotels. To know to which degree each of these drivers influence the bottom line can be of great value for the Icelandic hotel industry, as the remedies are different. For instance, if business-specific factors are the main determinant of profitability, the response is in the hands of the management of each hotel, but if the greatest impact stems from industry factors measures may need to be taken by the industry as a whole.

A number of studies focus primarily on each of these factor types, and explore their links with profitability (Schmalensee, 1985, p. 341; Rumelt, 1991, p. 167; McGahan & Porter, 1997, p. 15; McGahan & Porter, 1999, p. 143). This research was covered in the literature review in chapters 2.7 - 2.9, as well as in chapter 2.13, and the principal results regarding the variables of interest from these chapters are recapitulated in what follows.

A common dependent variable used to measure firms profitability is ROA or return on assets (Schmalensee, 1985, p. 349; Rumelt, 1991, p. 171; McGahan & Porter, 1997, p. 17; McGahan & Porter, 1999, p. 145; Chen, 2010, p. 666).

To measure economic effects on profitability, \textit{changes in the real gross domestic product} (McGahan & Porter, 1997, p. 16; Chen, 2010, p. 669) and \textit{changes in the exchange rate} (Marvel & Johnson, 1997, p. 287; Chang, 2009, p. 309) are commonly used.


To gauge business-specific effects on profitability, the \textit{leverage ratio} (Chen & Zhao, 2004 p. 26; Jang & Tang, 2009, p. 358; Lee & Park, 2009, p. 108) and \textit{operational efficiency} (Narver & Slater, 1990, p. 29; Rumelt, 1991, p. 171) are popular measures.
The independent variables commonly used to explain hotel profitability are presented in figure 16.

### Independent Variables

#### Economic factors:
- Real GDP
- Exchange rate risk

#### Industry factors:
- Intensity of competition
- Growth in hotel demand
- Location
- Firm size
- Seasonality

#### Business-specific factors:
- Leverage ratio
- Operational efficiency

### Dependent Variable
- Profitability:
  - Return on assets

The question whether international results carry over to the Icelandic hotel industry has so far not been explored extensively. In what follows, a number of hypotheses with foundations in international research into hotel profitability will be formulated and applied to Icelandic hotel sector data.

#### 4.1. Economic factors

The economic variables proposed as determining factors of profitability in the hotel industry were covered in chapter 2.13.1. The findings of Wheaton and Rossoff (1998, pp. 69-70) indicated that hotel demand rose and fell with GDP. Chen’s (2010, p. 672) results showed that hotel profits moved in line with real GDP growth between years. Therefore a positive relationship is also expected between changes in real GDP and return on assets for Icelandic hotels.

**Hypothesis 1:** A positive change in the real GDP between years has the impact that return for hotels rises.
The relationship between changes in the exchange rate and hotel return on assets was addressed in chapter 2.13.1 in an international setting. For most Icelandic hotels, the lion’s share of revenues is denominated in foreign currency, mostly euro’s or US dollars. This is a direct result of the fact that 80% of guests in Icelandic hotels are foreign travelers (“Overnight stays in hotels”, n.d.). This suggests that in Iceland, changes in the exchange rate may significantly impact hotel returns. Chang’s (2009, p. 301) findings indicate that hotel returns are negatively correlated with changes in the currency exchange rate. Marvel and Johnson (1997, p. 287) come to similar conclusions. In the present study, changes in the real exchange rate are used instead of the nominal exchange rate index, as the former is adjusted for inflation and measures the purchasing power of one currency relative to another.

*Hypothesis 2: Stronger domestic real exchange rate decreases hotel returns.*

### 4.2. Industry factors

As discussed in chapter 2.13.2, Matovic (2002, p. 114) concluded that intense competition in the hotel industry had negative impact on return on assets. It is reasonable to adopt the null hypothesis that the same applies to the Icelandic hotel industry.

*Hypothesis 3: Increased competition in the hotel industry reduces hotel return.*

In chapter 2.13.2, industry growth and its impact on hotel profitability was discussed. The relationship between growth in demand and hotel profitability is positive according to Chen (2010, p. 672). In his study, demand growth had statistically significant impact on hotel return on assets. When demand for hotel rooms grows, hotel profitability is expected to increase and vice versa.

*Hypothesis 4: Growth in demand for hotel rooms increases hotel returns.*

Hotel location and its impact on ROA were also discussed in chapter 2.13.2. According to O’Neill and Matilla (2006, p. 149) resorts hotels are more profitable than urban hotels. In that perspective, hotels in the Reykjavik area are expected to be less profitable than hotels in the country side, as the latter are more similar to resorts in the international sense.
4. Conceptual framework

**Hypothesis 5:** Hotels in the capital area have lower returns then hotels in the countryside.

The impact of size on ROA was discussed in chapter 2.13.2. Lee (2009, p. 200) found bigger hotels to be more profitable than small ones. O’Neill and Mattila, (2006, p. 149), and Jeffrey et al. (2002, p. 84) came to similar conclusions. Chen (2010, p. 672), however, found that more rooms in a hotel, decreases its profitability in terms of ROA. The conventional wisdom is that bigger firm’s are more profitable than small ones due to economies of scale, but Porter (1980, p. 34) does note that this does not always apply and the relationship between size and profitability may be industry dependant. Except for Chen (2010, p. 672), studies generally conclude that the size of a hotel is positively related with profitability.

**Hypothesis 6:** As the number of rooms in a hotel increases the higher its profit.

Seasonality is considered influential factor in hotel profitability as discussed in chapter 2.13.2. It is considered to have negative impact on hotel returns (Getz & Nilsson, 2004, p. 19; Koenig-Lewis & Bischoff, 2005, p. 201). The greater the magnitude of seasonal fluctuations in hotels, the less profitable they are likely to be. Seasonality is definitely a problem in the Icelandic hotel industry as illustrated by figure 4, in chapter 3.1.

**Hypothesis 7:** Hotels operating all year round have lower returns than summer hotels because of the seasonality effect.

4.3. Business-specific factors

The impact that a firm’s degree of financial leverage may have on profitability was discussed in chapter 2.13.3. Jang & Tang (2009, p. 364) findings show that too high leverage ratio negatively impacts hotel profitability. Chen & Zhao (2004, p. 26) findings showed that increasing financial leverage is negatively related to profits. In general, the higher the leverage ratio, the less profitable hotels.

**Hypothesis 8:** As hotels’ leverage increases, return decreases.

Operating efficiency was addressed in chapter 2.13.3. Narver and Slater (1990, p. 32) came to the conclusion that operational efficiency is positively related to profits. This is expected to hold also for Iceland.
Hypothesis 9: The more efficient the operations of a hotel, the more profitable it will be.

4.4. Methodology

In this chapter, the research methodology of this study is discussed. The chapter also presents information about the sample among definitions and measurements of variables.

4.4.1. Sample

According to Statistics Iceland 79 hotels operated in Iceland in 2007. In 2008 there were 84, 79 in 2009, 81 in 2010 and 83 in 2011 (“Available accommodation”, n.d.). The research sample consists of data from the financial statements of 54 hotels from 2007 to 2011. For 22 of them, information about revenues and labor cost was also available\(^1\).

The criteria that the sample hotels had to fulfill were to have turned in financial statements to the tax authorities in all years between 2007 and 2011, and to have hotel rooms with bathrooms in accordance to the hotel definition set out by Icelandic law ("Starfsleyfisskilyrði fyrir Hótel", 2009). All data was gathered from these financial statements.

The data collected for each hotel was EBITDA, EBIT, interest expense, interest income and profit before tax from the income statement. Profit before tax was used since many hotels in the sample did not declare their profits after tax. From the balance sheet figures like the value of total assets, real estate assets, long-term debts, total debts and equity was collected. Data for revenues and labor cost were also gathered on the condition that they were accessible in the financial statements. Only 22 hotels in the sample published information about their revenues and labor cost.

The data came from the Directorate of Internal Revenue (Ríkisskattstjóri) and was compiled by the author between 12\(^{th}\) and 15\(^{th}\) of March 2013.

In chapter 5.3 the Icelandic hotel sector is compared with the hotel sector in Western Europe. All data for the hotels in Western Europe was retrieved from Bloomberg\(^2\).

\(^1\) All annual reports from the Icelandic hotels in the sample are cited in Appendix A.
\(^2\) All the Western Europe hotels used as comparables in chapter 5.3 are cited in Appendix B.
4. Conceptual framework

4.4.2. Definitions and measurements of variables

In line with international research, ROA was selected as the dependent variable for the Icelandic data. To clarify how ROA of Icelandic hotels is, depending on their financing by debt or equity, both ROA before taxes (ROA EBT) and ROA before interest expense and taxes (ROA EBIT) were regressed on the various explanatory variables.

Return on assets is computed as net income divided by total assets and expresses the profit per dollar of assets. Since many hotels in the sample did not publish its profits after taxes, but only profits before taxes, net income before taxes was used instead, as shown in formula (25). This formula takes financial leverage into account as discussed in chapter 2.1.

\[
\text{(25) \quad \text{Return on assets}} = \frac{\text{Net income before taxes}}{\text{Total assets}}
\]

ROA for hotels assuming an all-equity financing was calculated by dividing EBIT by total assets. This is the profit before interest and taxes per dollars of assets. To calculate ROA before interest and taxes formula (2), from chapter 2.1 was used.

\[
\text{(2) \quad \text{Return on assets}} = \frac{\text{EBIT}}{\text{Total assets}}
\]

**Independent variables: Economic factors**

To measure the impact of economic conditions on hotel profitability in Iceland between 2007 and 2011 the nation’s change in real gross domestic product (ΔGDP) was used. The data was retrieved from the “National accounts” (March, 2012, p. 7).

To measure the impact of changes in the strength of the domestic currency (ISK), on hotel profitability, the percentage change in the Icelandic real exchange rate index (ΔRERI) between years was calculated for the period 2007 – 2011 as presented in formula (26). This data was retrieved from the Central bank of Iceland (“Real exchange rate”, n.d.).

\[
\text{(26) \quad } \Delta RERI_t = \ln(RERI_t / RERI_{t-1})
\]
Independent variables: Hotel industry factors

To gauge the intensity of competition ($\Delta IC$) and how it affects hotel profitability in Iceland, the percentage change in the supply of hotel rooms’ year on year was computed from 2007 to 2011 using formula (27). The data was retrieved from Statistics Iceland (“Available accommodation”, n.d.). When the supply is growing the changes are considered as negative and if the supply declines the changes are considered to be positive.

\[
\Delta IC_i = \ln(IC_i / IC_{i-1})
\]

To measure the change in hotel demand, the changes in total overnight stays ($\Delta TOS$) for Icelandic hotels were calculated between years for 2007-2011 using formula (28). The raw data was retrieved from Statistics Iceland (“Overnight stays in hotels”, n.d.).

\[
\Delta TOS = \ln(TOS_i / TOS_{i-1})
\]

Hotel location (LOC) is a dummy variable and takes the value of 1 if hotels have the postal code from 101-225 and 270-276 (capital area), but 0 otherwise.

The size of a hotel is measured as number of rooms. The data for number of rooms in each hotel was taken from the hotels web site or collected through email exchange with each hotel.

Seasonality (SEA) is measured by a dummy variable by splitting hotels into two groups; those open all year round (1) and summer hotels (0).

Independent variables: Business-specific factors

Leverage ratio (LR) is expressed as the ratio between the long-term debts of each hotel and its total assets as presented in formula (29).

\[
LR = \frac{\text{Long-term debts}}{\text{Total assets}}
\]

Operational efficiency (OE) is found through dividing labor cost with revenues and finding the cost of labor as percentage of revenues. This cost is than subtracted from 1 as shown in (formula 30).
4. Conceptual framework

(30) \[ OE = 1 - \frac{\text{Cost of labor}}{\text{Revenues}} \]

All data was coded and processed in Microsoft excel. The regression analyses were performed using the E－views statistical software package.

4.4.3. Research design

To examine the economic-, industry-, and business-specific effects on hotel profitability, panel regression tests were carried out using pooled ordinary least squares (OLS). A panel of data from 54 hotels spanning the period 2007-2011 was used in regression A and panel from 22 hotels over the same period in regression B.

The regression equations that were tested are summarized in equations A and B:

(A) \[ \text{ROA TAX} = \alpha + \beta_1 \Delta GDP - \beta_2 \Delta RERI - \beta_3 \Delta IC + \beta_4 \Delta TOS - \beta_5 \text{LOC} + \beta_6 \text{SIZE} - \beta_7 \text{SEA} - \beta_8 \text{LR} + \epsilon_i \]

(B) \[ \text{ROA EBIT} = \alpha + \beta_1 \Delta GDP - \beta_2 \Delta RERI - \beta_3 \Delta IC + \beta_4 \Delta TOS - \beta_5 \text{LOC} + \beta_6 \text{SIZE} - \beta_7 \text{SEA} + \beta_8 \text{OE} + \epsilon_i \]
5. Empirical results

In this chapter the results from the panel regression, statistics on operational performance and financial position of the Icelandic hotel industry, and comparison between Icelandic and Western Europe hotels is presented.

5.1. Results from panel regression

Results from the panel regression analysis formulated in equations A and B in chapter 3.4.3 are summarized in tables 3 and 4. The results in table 3, where the dependent variable is ROA before tax, indicate that an increase in hotels leverage ratio (LR) has a negative impact on hotel profitability as expressed by ROA. The effect of the leverage ratio was statistically significant at the 1% level and consistent with the expectations expressed in Hypothesis 8. Location (LOC) had a statistically significant impact on ROA at the 5% level. The implication is that hotels in the capital area appear to be less profitable than hotels in the rural areas of Iceland, which bears out the “resort hypothesis” (Number 5). Growth in hotel demand (ΔTOS) was statistically significant at the 10% level and this lends support to Hypothesis 4, i.e. that growth in demand for hotel rooms had positive effects on hotel profitability.

As for Hypothesis 1, it is not borne out by the facts since the statistical relationship of changes in GDP (ΔGDP) with ROA is of opposite sign to that postulated by Hypothesis 1. The effects of the real exchange rate (ΔRERI) on hotel profitability were also opposite in sign to those postulated in Hypothesis 2 and could not be corroborated by the data. Increased competition (ΔIC) in the hotel industry did not have significant impact on hotel profitability, and similar results were observed with hotel size. Seasonality (SEA), for which Hypothesis 7 stated that hotels open the year around have lower returns than summer hotels, was not statistically significant either, meaning that the data cannot be seen to support this hypothesis.
5. Empirical results

Table 3. Results from panel regression test. Dependent variable: Return on Assets before tax.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.524356</td>
<td>0.382058</td>
<td>-1.372453</td>
<td>0.1711</td>
</tr>
<tr>
<td>ΔGDP</td>
<td>-13.43092</td>
<td>7.745302</td>
<td>-1.734073</td>
<td>0.0841</td>
</tr>
<tr>
<td>ΔRERI</td>
<td>1.297623</td>
<td>0.407843</td>
<td>3.181673</td>
<td>0.0016</td>
</tr>
<tr>
<td>ΔIC</td>
<td>-3.733</td>
<td>4.113991</td>
<td>-0.907393</td>
<td>0.3651</td>
</tr>
<tr>
<td>ΔTOS</td>
<td>7.587699</td>
<td>4.088851</td>
<td>1.855705</td>
<td>0.0646*</td>
</tr>
<tr>
<td>LOC</td>
<td>-0.116723</td>
<td>0.056392</td>
<td>-2.069837</td>
<td>0.0395***</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.0000172</td>
<td>0.000194</td>
<td>0.088799</td>
<td>0.9293</td>
</tr>
<tr>
<td>SEA</td>
<td>0.102182</td>
<td>0.065848</td>
<td>1.551792</td>
<td>0.1219</td>
</tr>
<tr>
<td>LR</td>
<td>-0.111824</td>
<td>0.024199</td>
<td>-4.620959</td>
<td>0.0000***</td>
</tr>
</tbody>
</table>

Adjusted R² 0.2657  F-statistics [p-value] 13.1674 [0.0000***]
Total panel observations 270

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

Results from the panel regression with EBIT return on assets as the dependent variable are presented in table 4. They show that Location (LOC) stands in a negative relationship with ROA that is statistically significant at the 5% level. This indicates that as expected, hotels in the Reykjavik area are less profitable than those located in the rural areas of Iceland. Operating efficiency (OE) has a positive effect on ROA, statistically significant at the 5% level, indicating a positive effect of a low labor cost share in revenues on hotel profitability. Neither the change in GDP (ΔGDP), nor the real exchange rate (ΔRERI) had a statistically significant impact on ROA EBIT, and the same applies to the variation in industry competition (ΔIC), hotel demand growth (ΔTOS), hotel size and seasonality (SEA). All in all, only Hypothesis six and ten were supported by the data as bona fide statistical relationships.
Table 4. Results from panel regression test B. Dependent variable: Return on Assets (EBIT).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.38021</td>
<td>0.302362</td>
<td>-1.257465</td>
<td>0.2123</td>
</tr>
<tr>
<td>ΔGDP</td>
<td>-4.191159</td>
<td>5.556368</td>
<td>-0.754298</td>
<td>0.4529</td>
</tr>
<tr>
<td>ΔRERI</td>
<td>0.161524</td>
<td>0.291036</td>
<td>0.554995</td>
<td>0.5805</td>
</tr>
<tr>
<td>ΔIC</td>
<td>-1.6266</td>
<td>2.94416</td>
<td>-0.55248</td>
<td>0.5822</td>
</tr>
<tr>
<td>ΔTOS</td>
<td>2.309605</td>
<td>2.940183</td>
<td>0.785531</td>
<td>0.4345</td>
</tr>
<tr>
<td>LOC</td>
<td>-0.106183</td>
<td>0.042473</td>
<td>-2.500046</td>
<td>0.0145**</td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.0000276</td>
<td>0.000102</td>
<td>-0.271391</td>
<td>0.7868</td>
</tr>
<tr>
<td>SEA</td>
<td>0.035352</td>
<td>0.050497</td>
<td>0.70008</td>
<td>0.4859</td>
</tr>
<tr>
<td>OE</td>
<td>0.45963</td>
<td>0.218889</td>
<td>2.099828</td>
<td>0.0389**</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.147768</td>
<td></td>
<td>2.8856 [0.0071***]</td>
<td></td>
</tr>
</tbody>
</table>

Total panel observations 88

*Significant at the 10% level.
**Significant at the 5% level.
***Significant at the 1% level.

5.2. Operational performance and financial position of Icelandic hotels

When the distribution of data is exactly normal, the average and the median are identical. As the data becomes skewed, however, the average no longer provides the best measure of its central location. The statistical data presented in this chapter is skewed to a certain degree due to outliers. For this reason both the average and median of the value is presented, as the median is not influenced by the skewedness of the values (Newbold, Carson & Thorne, 2007, pp. 49-50).

Hotel profitability in Iceland in terms of return on assets before tax was poor between 2007 and 2011 as shown in figure 17. Average ROA was negative from 2007 to 2009, but in 2010 and 2011 it was positive. ROA before tax from 2007 to 2011 was -9.45% on average. The median ROA was negative in 2007 and 2008, but positive between 2009 and 2011.
5. Empirical results

As shown in Figure 18, in 2008, 81.1% of the hotels in the sample generated losses compared to 56% in 2007, and 37.7% in 2009. On average over the whole period, almost half of the hotels in the sample had negative net income before tax.

Figure 19 presents the percentage of hotels with negative equity from 2007 to 2011. The majority, or 58%, had negative equity on average over the period. The proportion...
of hotels with negative equity increased from 42% in 2007 to almost 68% in 2008, but declined slightly in 2009 to 60.38%. In 2010 and 2011, the proportion of hotels with negative equity was 62.26% and 56.6% respectively.

![Figure 19. Percentage of hotels with negative equity from 2007 to 2011. Source: Hotels annual reports.](image)

The average and median EBITDA per hotel room from 2007 to 2011 is shown in figure 20. Large fluctuations in this measure characterized the Icelandic hotel sector from 2007 to 2011. From 2007 to 2008, EBITDA per hotel room declined by 14%. Between 2008 and 2009 the growth in EBITDA per room was 81%, from 2009 to 2010 it declined by 31.5%, and between 2010 and 2011 EBITDA per room grew again by 45%.

The median EBITDA per hotel room was lower than average EBITDA per room over the period, except in 2008 when they were equal. Fluctuations in median EBITDA per hotel room were less pronounced than those of the average between 2007 and 2009, when the median grew by 3% and 51% between years, but in 2009 to 2011, fluctuations were similar.
5. Empirical results

Figure 20. Average and median EBITDA per hotel room from 2007-2011. Source: Hotels annual reports.

Figure 21 shows the average and median EBIT per hotel room from 2007 to 2011. Average EBIT per hotel room declined by 30.5% between 2007 and 2008 but from 2008 to 2009 it grew by 230%, declined again by 55.7% between 2009 and 2010, before rising by 107% between 2010 and 2011. Fluctuations in the median EBIT per hotel room were slightly lower than the fluctuations in the average except between 2009 and 2010, when median EBIT per hotel room declined slightly more than the average.

Figure 21. Average and median EBIT per hotel room from 2007-2011. Source: Hotels annual reports.
In *figure 22* the average and median net interest expense per hotel room from 2007 to 2011 is presented. Interest expense for 2008 stands out as interest payments amounted to 1,593 million ISK on average for each hotel room, or 513% higher than the preceding year and 277% higher than the following year. The median net interest expense for 2008 was considerably lower than the average, but still pronounced at 341% above its 2007 level, and 178% higher than in 2009.

![Figure 22. Average and median net interest expense per hotel room from 2007-2011. Source: Hotels annual reports.](image)

*Figure 23* shows the average and median profit per room from 2007 to 2011. From 2007 to 2009 hotels on average generated losses per room, but in 2010 and 2011 they were profitable. In 2008 losses were severe, at 1,490,855 ISK per room. The median profit per room in 2007 was slightly negative, while in 2008 it was 696,718 ISK. From 2009 median return for hotels has been slightly positive.
5. Empirical results

The leverage ratio for hotels in the sample is presented in figure 24. It increased sharply between 2007 and 2008 and declined in 2010 from the year before, but in 2011 it rose again. A rising leverage ratio signifies an increase in a firm’s financial risk. The median leverage ratio followed the same trend although it was higher than the average leverage ratio in 2007, but lower in the period 2008 to 2011.

Figure 23. Average and median profit per hotel room from 2007-2011. Source: Hotels annual reports.

Figure 24. Average and median leverage ratio for Icelandic hotels in 2007-2011. Source: Hotels annual reports.
5. Empirical results

The average and median interest coverage ratio of Icelandic hotels between 2007 and 2011 is presented in figure 25. The interest coverage ratio shows how easily firms are able to pay interest on their debts as described in chapter 2.5.6. The average interest coverage ratio for Icelandic hotels was below 1 between 2007 and 2009, but sharply increased in 2010, reaching its highest level in 2011, when it was 1.60. The median interest coverage ratio was higher than the average for all the years except for 2011, meaning that in those years’ hotels with an extremely low ratio were pulling down the average, but in 2007 and 2008, notably, the ratio was below 1, meaning that operations were not covering interest expense in those years.

![Figure 25. Average and median interest coverage for Icelandic hotels from 2007-2011. Source: Hotels annual reports.](image)

Information regarding revenues could be collected for only 22 hotels. As seen in figure 26, the average EBITDA margin for these hotels were highest in 2009 or 50% higher than in 2007 and 2008, and around 65% higher than it was in 2010 and 2011. The average EBITDA margin from 2007 to 2011 was 15%. The median EBITDA margin was more volatile than its average over the period, highest in 2007 and 2009, and lowest in 2010.
5. Empirical results

The average and median EBIT margin from 2007 to 2011 for the 22 hotels are shown in figure 27. The average EBIT margin was between 6.8% and 7.5% throughout the period, except for 2009 when it was 15.8%. The average EBIT margin over the whole period was 8.98% or 43% lower than in 2009. The median EBIT margin over the period was lowest in 2010 at 5.7%, but highest in 2009 or 9%.

Figure 26. Average and median EBITDA margin for hotels between 2007 and 2011. Source: Hotels annual reports.

Figure 27. Average and median EBIT margin for hotels between 2007 and 2011. Source: Hotels annual reports.
Average and median operating efficiency for the 22 hotels is illustrated by figure 28. The measure of efficiency is obtained by dividing labor cost by revenues. Both average and median operating efficiency is growing from 2007 to 2009, when labor cost as percentage of revenues is declining. From 2009 it rises again and reaches an apex in 2011 when labor cost as percentage of revenues averages 34%, compared to 29.7% in 2009.

![Figure 28. Average and median operating efficiency for hotels between 2007 and 2011. Source: Hotels annual reports.](image)

Although the performance of Icelandic hotels in 2007 to 2011 seems poor, it is difficult to comment on it without comparison. In Section 5.1 the Icelandic hotel sector is compared with that of Western Europe.

5.3. A comparison of hotels in Iceland and Western-Europe.

To illustrate how Icelandic hotels were performing compared to hotels in Europe between 2007 and 2011, the average and median EBITDA margin of 22 Icelandic hotels and 36 hotels in Western Europe is presented in figure 29.
5. Empirical results

It is clear that hotels in Western Europe had higher EBITDA margin in 2007 and 2008 than Icelandic ones. In 2009 the tables are turned and Icelandic hotels enjoy higher margin on average. In 2010 and 2011 the average EBITDA margin is similar between Iceland and Western Europe. The EBITDA margin over the whole period was 14.9% on average for Icelandic hotels while it was 17.8% on average for hotels in Western Europe.

In figure 30 the EBIT margin for 22 Icelandic hotels and 36 Western Europe hotels is summarized. In 2007 and 2008 the EBIT margin was far higher for hotels in Western Europe but this turns around in 2009, and after that Western Europe margins remain lower until the end of the period. EBIT margin as percentage of EBITDA margin was relatively stable for Icelandic hotels over the period, or 59% on average. This indicates that hotels in Iceland were neither undertaking much new investment during this period, nor were any significant goodwill impairments or real estate estimation write-downs being made. The Western Europe data tells a different story. In the foreign sample, EBIT margin as percentage of the EBITDA margin is around 60% in 2007 and 2008, but in 2009 it falls to 28%, and is 24% and 37% in 2010 and 2011 respectively. This implies that hotels in Western Europe were depreciating heavily either due to new investments, goodwill impairments or other write downs. From 2007 to 2011, Icelandic hotels had stronger EBIT margin than Western Europe hotels on average, or 9% versus

Reykjavik University
June, 2013
8%. Icelandic hotels also had higher EBIT margin as percentage of EBITDA margin over the period which indicates that the cash flow from operations for Icelandic hotels was stronger than it was for hotels in Western Europe.

![Comparison between EBIT margin of Icelandic hotels and hotels in Western Europe between 2007 and 2011. Source: Icelandic hotels annual reports and Bloomberg.](image)

A comparison of operational performance of Icelandic hotels and Western European hotels show that hotels in Western Europe have slightly higher operating profitability before depreciation and amortization, but when it comes to operating profitability after depreciation and amortization Icelandic hotels are performing better on average.

In the comparison above, the hotel sector in Iceland and Western Europe were evaluated as they were entirely equity-financed. In figure 31 the average and median interest coverage ratio for hotels in Iceland and Western Europe is shown. Interest coverage for hotels in Western Europe is considerably higher with the exception of 2009. For Icelandic hotels, it falls below 1 on average from 2007 to 2009 indicating that many of them were not generating enough operational profits to cover interest payments. Over the period the interest coverage is 0.9 for Icelandic hotels on average and 1.74 for hotels in Western Europe.
Figure 31. Comparison of average and median interest coverage of Icelandic hotels and hotels in Western Europe between 2007 and 2011. Source: Icelandic hotels annual reports and Bloomberg.

In *figure* 32 the leverage ratio of Icelandic and Western Europe hotels is compared. In 2007 Icelandic hotels were on average 79% more leveraged than hotels in Western Europe. In 2008 this difference had increased to 191%. In 2009 and 2010 the difference in leverage between Icelandic and Western Europe hotels decreased and was 121% and 77.5% respectively, but rose again in 2011 to 88%. The difference in the median was slightly lower, except for 2007 when it was higher.
Figure 32. Comparison between the average and median leverage ratio of Icelandic hotels and hotels in Western Europe between 2007 and 2011. Source: Icelandic hotels annual accounts and Bloomberg.

ROA was poor for both Icelandic hotels and Western European ones between 2007 and 2011 as is evident in figure 33. Average ROA of hotels in Western Europe was relatively stable in this period, ranging from -0.9% to 2.5%, while the ROA average of Icelandic hotels ranged between -45.9% (in 2008) and 4.8%, or -4.5% to 4.8% if 2008 is excluded. For Icelandic hotels the median ROA was higher than the average in all years except 2011, indicating the presence of a few laggards with big losses. In Western Europe the same applies in 2008 and 2011.
5. Empirical results

Figure 33. Comparison between the average and median ROA of Icelandic hotels and hotels in Western Europe between 2007 and 2011. Source: Icelandic hotels annual accounts and Bloomberg.

From figure 34 we may conclude that proportionally more hotels generated losses in Iceland than in W-Europe in the sample period. The biggest difference is recorded in 2008 when 81% of Icelandic hotels generated losses compared to 26% of W-European ones.

Figure 34. Comparison between Icelandic hotels and hotels in Western-Europe that generated losses between 2007 and 2011. Source: Icelandic hotels annual accounts and Bloomberg.
6. Discussion and conclusions

In this section the main results of the study will be discussed and compared with results from previous research. At the end of the chapter conclusions are drawn, limitations of the study discussed and some suggestions for further research made.

6.1. Financial- and operational position of Icelandic hotels

The operational and financial figures presented in previous chapters clearly indicate that 2008 was a bad year for the Icelandic hotel sector and in fact the worst over the period 2007-2011 in almost all respects. In 2008, 44 of the 54 hotels in the sample had negative returns. Of the 5 years, ROA, average EBITDA and EBIT per hotel room was lowest in 2008. In 2008, hotels on average suffered the highest net interest expense over the period, more than six-fold that of 2007 and the average loss per room grew thirteen-fold over 2007, which was also a loss-making year for the average hotel. Thus the impact of the 2008 financial crises on the financial position and profitability of the Icelandic hotel sector appears to have been severe.

In parallel with the financial collapse, the ISK exchange rate plummeted and inflation rose sharply. From year end 2007 to year end 2008, the ISK depreciated by 81% (“Markets”, n.d.) as measured by the exchange rate index, and inflation more than doubled from 5.4% in 2007 to 12.4% in 2008, measured over the 12 month period (Thórarinn G. Pétursson, Sturla Pálsson, Tómas Örn Kristinsson, Rannveig Sigurðardóttir, Sigríður Benediktsdóttir & Helga Guðmundsdóttir, 2012, p. 92). In 2007 Icelandic hotels reported around 113,000 ISK losses per hotel room on average. At the same time 54% of hotel assets on average were financed with long term loans. A year later this proportion was 96%. The lion’s shares of these loans were in foreign currency or inflation indexed loans, according to the financial statements of the hotels in the sample.  

\[3\]

If this was intended as a risk-management strategy, the likely logic is that in Iceland, hotel revenues could basically be thought of as denominated in foreign currency. One of the lessons of this study is that in order to conclude that hotel operations constitute a natural hedge against currency fluctuations, a more detailed analysis would have been needed, taking into consideration other factors.
6. Discussion and conclusion

From 2010, performance figures indicate a recovery of the hotel sector. Although weak, ROA before tax was positive in 2010 and 2011, and interest charges were much lower than in 2008 and 2009.4

6.2. Hotel operations in Iceland and Western Europe.

The overall difference in the operational performance of Icelandic and Western European hotels was not great between 2007 and 2011. The principle difference between hotels in Europe and Iceland seems to lie in their capital structure, as on average Icelandic hotels were twice as leveraged as hotels in Western Europe in this period.

The leverage effects are observable through a comparison of the interest coverage figures for Icelandic and Western European hotels. They show that the latter had much higher interest coverage on average over the period, but lower EBIT margin on average at the same. This means that net interest charges were proportionally higher for Icelandic hotels than hotels in Western Europe and that hotels in Western Europe were better equipped to cover their interest payments.5 Higher debt levels, resulting in higher interest payments as a proportion of EBIT seems to be the main factor that separates hotels in Iceland and in Western Europe and causes hotel operations in Iceland to return less profit than hotels in Western Europe.

6.3. The results of panel regression A

In panel regression A, test results revealed that two industry factors and one business-specific factor had a statistically significant effect on hotel ROA before taxes, while neither of the economic factors did have the expected impact.

6.3.1. Economic factors

Based on previous international research, changes in GDP were expected to stand in a positive relationship with ROA, but in the regression it turned out to be negative. High correlation (0.87) between ΔGDP and ΔTOS might be part of the explanation, as collinearity between variables is known to result in sensitive and unreliable coefficient

---

4 Much lower interest charges for Icelandic hotels in 2010 and 2011 indicate that some parts of the foreign loans had been depreciated. When they are depreciated, the depreciation is recognized as interest revenues in the income statement (Kieso, Weygandt and Warfield, 2011), which lowers the net interest expense.

5 Part of the explanation might be the fact that interest rates have been considerably lower for countries in the euro area than in Iceland in recent years (“Hár vextir fylgifiskur fallyslatar krónu”, n.d.).
estimates in OLS regressions. “Multicollinearity increases the likelihood of obtaining unexpected sign.” (Studenmund, 2011, p. 247). It should be noted, however, that Chen (2010, p. 672) also failed to find a statistically significant positive effect of $\Delta GDP$ on ROA.

Changes in the real exchange rate ($\Delta RERI$) did not have the expected impact on return on assets before taxes either, and this was contrary to the findings of (Chang, 2009, p. 301; Marvel & Johnson, 1997, p. 287) where appreciation of the domestic currency had negative effects on hotel profitability and vice versa. The results from panel regression A showed that in Iceland, changes in the real exchange rate affected ROA before taxes positively, i.e. that when the ISK depreciated in real terms, ROA before tax declined too and vice versa. The most likely explanation of this is that the indebtedness of Icelandic hotels in foreign currency negatively affects their profitability and outweighs the positive effects of the exchange rate on revenues, although it can be assumed that around 80% of Icelandic hotel revenue was in foreign currency (“Overnight stays in hotels by citizenship”, n.d.).

The ROA before tax was negative on average in 2007. Between 2007 and 2008 the increase in the leverage of Icelandic hotels was enormous, net interest expense grew more than six fold and ROA was severely negative. In 2009 the leverage ratio stayed at similar levels as in 2008 and ROA was still negative, but net interest expense declined significantly from 2008, simultaneously with a good tripling of average EBIT per hotel room. In 2008 and 2009 the ISK real exchange rate deteriorated by 45% and 35% respectively (“Real exchange rate”, n.d.). This supports the previous conjecture that the effects of leverage outweighed the revenue increase effects when the ISK depreciated.

Changes in the real exchange rate did not have statistically significant impact on return on assets before interest and taxes in panel regression B. In other words, changes in the real exchange rate would not have affected the profitability of an entirely equity financed hotel, which lends further support to the arguments above.

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6This affected ROA before tax for Icelandic hotels since net interest expense and exchange rate difference of foreign loans are recognized through the income statement. Net interest expense and the exchange difference could not be divided since these charges were merged in the annual reports of many hotels in the sample. Since interest payments affects the cash flow but the exchange difference does not (Kieso, Weygandt and Warfield, 2011) it would have been better to separate these numbers, and exclude the exchange difference from all calculations.
6.3.2. Industry factors

In regression A, changes in the supply of hotel rooms ($\Delta IC$) did not have statistically significant impact on hotel profitability. This is contrary to the findings of Matovic (2002, p. 114), who concluded that hotel performance decreased as competition increased. Narver and Slater (1990, p. 29) pointed out that when markets are growing rapidly it is easier to retain customers and make profits. Between 2007 and 2011 demand for hotel rooms in Iceland increased by 26%, while the supply of hotel rooms increased by 24% (“Overnight stays in hotels”, n.d.; “Available accommodation”, n.d.). Although the difference is small, more growth in demand than in supply may explain why competition does not have statistically significant effect on hotel profitability in this study.

Growth in demand for hotel rooms ($\Delta TOS$) had statistically significant effects on ROA before taxes. When demand was growing, ROA increased at the same time, but when demand contracted so did ROA. This is in line with Chen’s (2010, p. 672) results, who concluded that growth in foreign tourist arrivals had positive effects on ROA for hotels in Taiwan. Average growth in demand for hotel rooms in Iceland from 2007-2011 was 5.2% (“Overnight stays in hotels”, n.d.). Growth in demand for hotel rooms and occupancy rate was discussed in chapter 3. These two factors where highly positively correlated between 2007 and 2011 or with correlation coefficient of 0.95, i.e. when there was growth in demand the occupancy rate rose. According to Chen (2010, p. 671) growth in tourism in general can have strong influence on hotel performance since it may increase occupancy rates, revenues and profits.

Location ($LOC$) had a statistically significant impact on hotel profitability during the sample period, with hotels in the capital area less profitable than hotels in the rural areas of Iceland. This is in accordance with the results of O’Neill and Matilla (2006, p. 149) that found resort hotels to be more profitable than urban hotels in general. The average ROA before tax for hotels in the rural areas was almost 4% higher than in the capital area over the period. The average EBITDA per room for hotels in the capital area was less than half that of hotels in rural areas. These results seem to imply that rural hotels were operating more efficiently than hotels in the capital area. The difference may lie in lower operating cost for hotels in the rural areas, where lower wages, and a lower cost of operating hotel real estate may be a part of the explanation. As emphasized by Pan
(2007, p. 749) and Lundberg et al. (1995, p. 68), the high share of fixed cost in their operations makes hotels vulnerable to revenue fluctuations. In research done by Alexander G. Eðvarðsson (2012, p. 5) hotels in the capital area were shown to carry relatively higher housing cost, or 34% of operating revenues, compared to 27% for hotels in the rural areas. The same applied to other operating cost, which was 63% of operating revenues for hotels in the Reykjavik area, while it was 56% for hotels in the countryside. Wages are usually a significant part of this cost (Lundberg et al., 1995, p. 59). The research of Alexander G. Eðvarðsson (2012, p. 6) also revealed that the EBITDA margin for hotels in the rural areas was more than six times that of capital area hotels in 2011 or 16.9% compared to 2.6% in or near the capital. Price competition between hotels in the capital area may explain part of this difference. From 2007 to 2011 hotel room prices in Reykjavik fell by 39% measured in a basket of Euros and US dollars (“Íslensk ferðaþjónusta á afslætti?”, 2012). When a product differentiation is lacking, firms are often forced to compete on prices, which is a sign of high rivalry (Barney & Hesterley, 2010, p. 43).

Hotel size measured as the number of rooms per hotel did not have statistically significant impact on ROA before taxes. This fails to confirm the findings of Lee (2009, p. 200); O’Neill and Mattila (2006, p. 149); and Jeffrey et al. (2002, p. 84), who all found hotel size to have a significantly positive relationship with profits. Porter (1980, p. 34) pointed out that large companies are not always more profitable than small ones, and it may depend on the industry. Seasonal fluctuations in the Icelandic hotel sector are substantial as shown in chapter 3.1. Between 2007 and 2011 the occupancy rate was almost five times higher in July then it was in January and February (Monthly occupancy rate of bedrooms in hotels 2000-2012, n.d). The large fluctuations in occupancy may have reduced the economies of scale of large hotels over small hotels.

The results from the panel regression showed that summer hotels were not more profitable than hotels open around the year. Getz & Nilson (2004, p. 19) and Koening-Lewis and Bischoff (2005, p. 201) argued that strong seasonal pattern can decrease hotel profitability. Splitting hotels up into summer hotels and all-year hotels is probably not the best way to measure seasonal effects on hotel profitability in the sample. Summer hotels in the research sample were only 10, while there were 44 hotels open around the year. Splitting each year into four quarters and measuring the impact of changes in the occupancy rate between quarters on ROA, might have served the
purposes of the study better given the small sample size, but the fact that hotels did not in general declare their financial statements quarterly precluded this. With a larger sample and more summer hotels, the results might have been different and shown a significantly different profitability, due to the large differences in occupancy rate between the high and low season.

6.3.3. Business-specific factors

The only business-specific factor in panel regression A was leverage ratio \((LR)\). The degree of leverage had a statistically significant impact on ROA before tax at the 1% level indicating a strong relationship. When long-term debts against assets were increasing returns of Icelandic hotels were decreasing and vice versa. This is in line with Chen & Zhao’s (2004, p. 26) findings, where an increase in long-term debts to assets had negative effects on ROA. Jang & Tang (2009, p. 364) also concluded that a too high leverage ratio had negative impact on hotel profitability.

The leverage ratio for Icelandic hotels was 0.59 on average in 2007. In that year the average hotel already made losses because EBIT profits did not cover interest payments. In 2008 and 2009 the leverage ratio increased sharply, at the same time as the real exchange rate deteriorated substantially, most likely due to the fact that many Icelandic hotels were financed by long-term foreign currency denominated loans. Average EBIT decreased between 2007 and 2008 and net interest expense rose to six times its earlier level in 2008. That year the average hotel lost 1.5 million ISK per room. In 2009 EBIT per hotel room more than tripled from the year before and interest expense decreased sharply. Nevertheless, the bottom line of hotels was negative on average in 2009. In 2010 average interest expense per hotel room was the lowest over the five year sample period, the leverage ratio the second lowest, and profits were positive on average, although weak. In 2011 profits per hotel room improved even more. Thus it can be concluded from regression A that leverage had a substantial impact on hotel profitability, although the effect may have been exaggerated by the circumstances of the 2007 to 2011 period.

A comparison between Icelandic and Western European hotels reveals a 3% difference in the average EBITDA margin from 2007 to 2011, in favor of the Western European ones. When it comes down to the EBIT margin on the other hand, the Icelandic hotels perform better, by 1%. This difference in operating profitability between Icelandic and
6. Discussion and conclusion

Western European hotels is not great, but the difference in leverage ratio and interest expense is, providing further support to the idea that high leverage was instrumental in the poor return on assets of Icelandic hotels between 2007 and 2011. According to Lundberg et al. (1995, p. 59), over leverage is a problem frequently associated with hotels, and high leverage on top of the high operational risk, can make their operations very risky. Thus it is safe to infer that the culprit for the poor results of Icelandic hotels in the sample period is primarily the interaction between over leverage and the drastic depreciation of the ISK in 2008 and 2009.

6.4. The results of panel regression B results

Panel regression B primarily revealed that location and operating efficiency had a statistically significant impact on the profitability of Icelandic hotels.

6.4.1. Economic factors

Changes in GDP did not have statistically significant impact on ROA EBIT, which is in line with Chen (2010, p. 672) results.

Changes in the real exchange rate ($\Delta RERI$) were not statistically significant with respect to ROA EBIT. In panel regression A they had positive and significant relationship with ROA before taxes, when a negative relationship was expected. This supports the ideas that the positive and significant relationship between $\Delta RERI$ and ROA before tax may have resulted from the negative effects of real exchange rate deterioration on the balance sheet of Icelandic hotels as discussed in chapter 6.3.1.

6.4.2. Industry factors

In panel regression B, the intensity of competition ($\Delta IC$), hotel size and seasonality ($SEA$) were not statistically significant, and this conforms with the results of panel regression A.

Changes in the demand for hotel rooms ($ATOS$) did not have significant impact on ROA EBIT. The regression dataset only included information from 22 firms, since information about gross revenue and labor costs (used to calculate the operating efficiency variable) were not available for the others. By contrast, the data set for panel regression A included information about 54 firms. The small dataset is one possible
6. Discussion and conclusion

A plausible explanation of the insignificance of the relationship between growth in hotel room demand and ROA EBIT.

Location (LOC) however was statistically significant with respect to ROA EBIT. Hotels in rural areas were more profitable than ones located in the capital area, which conforms to panel regression A. ROA EBIT for hotels in the Reykjavik area was one-tenth lower on average than for hotels outside the capital area. The average EBIT per hotel room was eight times lower in the Reykjavik area than for hotels in rural areas. As we inferred in chapter 6.3.2, this indicates that hotels in the rural areas were operating more efficiently for the reasons already discussed there.

6.4.3. Business-specific factors

Operating efficiency (OE) was statistically significant driver of ROA EBIT at the 5% level, indicating that lower labor cost as a percentage of revenues had positive effects on hotel ROA EBIT and vice versa. This result conforms to the findings of Narver & Slater (1990, p. 32).

6.5. Conclusion

In this study, the profitability of Icelandic hotels over the period from 2007 to 2011 has been examined. The purpose the study was to find out why hotel profitability has been low in recent years, and how it can be improved in the future. Variables were classified in three main groups to separate economic, industry-specific and business-specific factors and analyse their impact on hotel profitability.

The analysis indicates that changes in the real exchange rate, growth in hotel demand, hotel location, leverage and operating efficiency significantly affect profitability. Changes in the real exchange rate were positively related to hotel profitability and so were changes in hotel room demand. Hotels in rural areas were more profitable than hotels in the capitol area, leverage had a negative impact on profitability and operating efficiency affected returns positively.

These factors, however, are clearly not exhaustive. In regression A, the model only explained some 27% of the variation in ROA before tax and in B only 14.77% of ROA EBIT. This suggests that large proportion of hotel returns on assets remains unexplained and must be attributed to factors not included in the regressions.
Several impediments were encountered in the implementation of the study. Relatively few hotels in the sample reported information about revenues and operational expense or 22 hotels out of 54, which meant that the dataset for panel regression B included less than half as many hotels. As many of the hotels did not disclose their profit net of tax, it was impossible to use ROA after tax as dependent variable in panel regression A and ROA before tax had to be used instead. It would have been interesting to study ROE as a dependent variable to analyse the impact of leverage on ROE. This was not possible, however, because many hotels in the sample had negative equity in the sample years and meanwhile also returned losses. Other profitability measures like return on invested capital and return on net operating assets could not be calculated due to insufficient information in the hotels’ financial statements. In many annual reports, interest expense on one hand, and exchange rate difference and indexation in the other were not separated, meaning that it was impossible to analyse the exchange difference and the indexation effect separately. These charges are recognized through the income statement but do not affect cash flow like interest expense does, and if they could have been separated, that would clearly have presented a more realistic picture of the financial position of the hotel industry.

Few studies have been conducted on factors affecting hotel profitability and feasibility of hotel investments in Iceland, despite the fact that these investments are often capital-intensive. Whether it is the result of insufficient funds for research, lack of reliable data, or some other reasons, this is a matter that stakeholders in the Icelandic hotel sector could improve.

In view of the findings of the research it would be interesting to repeat the study with larger data set, especially one containing more information on revenues and operational expense. It could also be of interest to extend the sample period, since the turbulence of the financial crash in 2008 clearly had a drastic influence on the results, and this may call into question their validity for more tranquil periods.

It may be inferred that hotel leverage ratio for Icelandic hotels between 2007 and 2011 were too high and that this negatively impacted returns. Against this backdrop, it would be interesting to study the optimal capital structure for Icelandic hotels through an analysis of operating cash flow in order to infer the upper limits of the debt capacity of Icelandic hotels.
Growth in demand has a positive impact on hotel returns, and hotel returns and occupancy rate move closely together in the study period. In view of this, further research into the factors affecting hotel room demand could be interesting and permit demand for hotel rooms to be projected with more certainty. Specifically, a somewhat greater clarity concerning the drivers of demand might be useful for hotel investors in the context of feasibility studies ahead of new investments in the hotel industry, particularly since many new hotel projects seems to be on the drawing board, which may be attributed to substantial growth in hotel demand in 2011 and 2012.

The result that hotels in the rural areas of Iceland are more profitable than those in the Reykjavik area raises the question why this is so, which could lead to a deeper understanding of the specifics of hotel operations in Iceland.

Based on the findings, low hotel profitability in Iceland in the period can be attributed to both internal and external factors of hotel operations.

Although not entirely unexpected, a salient result of the study is that the interaction between changes in the real exchange rate and over leverage were probably the main reasons for low hotel profitability over the period from 2007 to 2011. The real exchange rate is beyond the control of hotel operators, but by reducing leverage they may improve hotel returns in the future. Growth in demand positively affects profitability and as discussed in chapter 3, demand for and supply of hotel rooms were closely related in most regions. The more growth in demand exceeds supply growth, the higher the occupancy rate. Improved hotel profitability in the future could therefore, to some extent, be conditional on continued growth in hotel demand over supply. To continue to improve profits, hotels must strive to operate more efficiently, especially in the capital area. The result, that improving the internal factors of the business is likely to yield better results than focusing on the external factors, should be seen as good news, as the former are easier to control from a management position.
Appendix A. Information on the hotels in the research sample.


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Appendix A. Information on the hotels in the research sample


Appendix B. Information on the hotels in Western Europe


Appendix B. Information on the hotels in Western Europe


Appendix B. Information on the hotels in Western Europe


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