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„Hotel valuation in Russia by applying international techniques"

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Executive summary (English)

The aim of this paper is to find the international hotel valuation techniques that could be applied in Russia for getting an approximate market value of a hotel without outside help in the short time.

Hotel valuation has become one of the most important and popular branches of appraisers' business (Dargere, April 19-26 2002).

Hotel valuation should be considered differently from other real estate because the hotels are not rented on a q.m. basis like offices or residential real estate. Hotel cash flow is generated by rooms and other facilities like food & beverages, spa- or health centers (Gasparini, 2011).

In hotel valuation there are a lot of different aspects that should be taken into account for example like tangible and intangible assets, incentives for valuation, etc. Depending on the purpose of valuation, incentives of buyers and sellers, and availability of data, some techniques can produce more reliable results than others (Rushmore, Seven current hotel-valuation techniques, 1992).

When we say about the hotel valuation in Russia we have to keep in mind that the history of capitalism in Russia starts from the break-up of Soviet Union and from this moment the property became private and the market relations started to develop. Therefore the questions like property valuation especially hotel valuation are quite new topics for Russia.

In the world practice three main approaches are used for hotel valuation: cost approach (on the basis of building costs), comparison approach (on the basis of similar hotel sales transactions) and income approach (on the basis of the hotel future net income). Because of underdevelopment of the institution of statistic in hotel area it is not possible to apply comparison approach in Russia. But cost and income approaches have a right to be applied.

The income approach has a lot of different techniques that differ from each other by the basis of net income, methods of determination of capitalization and discount rates. Some techniques cannot be used in Russia on the different reasons, and I consider these reasons in the theoretical part.

In the empirical part I apply all possible techniques for valuation of one of the typical regional hotels – Hilton Garden Inn Perm Hotel. It is made not for professional valuation, but for knowing the techniques that can be applied by the management hotel company BS Hospitality

Management without outside help in the short time for estimation of market value of different hotels in Russia.

As my analysis has showed, a lot of international techniques can be used in Russia. The deviation of my value meaning from the value meaning of the certificated valuation company amounts to 2.2% that says about high accuracy of applied techniques.

Executive summary (Deutsch)

Das Ziel von dieser Arbeit ist die internationalen Hotelbewertungstechniken zu finden, die in Russland für das Erhalten des ungefähren Marktwerts ohne Hilfe eines professionellen Bewertungsunternehmens innerhalb kürzer Zeit benutzt werden können.

Die Hotelbewertung wird zum einem populären und wichtigen Bereich des Bewertungsbusiness (Dargere, April 19-26 2002).

Die Hotelbewertung soll man separat von anderen Immobilien ansehen, weil Hotels nicht auf Basis von q.m. wie Wohnungen oder Büros vermietet sind. Cash Flows von einem Hotel sind von Zimmern und anderer Infrastruktur wie einem Restaurant, einem SPA- oder Gesundcentrum generiert (Gasparini, 2011).

In der Hotelbewertung gibt es verschiedene Aspekten, die man beachten soll wie, zum Beispiel, materielle und immaterielle Anlagen, die Bewertungsmotivation und so weiter. Abhängig vom Bewertungsziel, die Bewertungsmotivationen vom Käufer und Verkäufer und der Datenverfügbarkeit, kann es einige Techniken mit mehr zuverlässigen Ergebnissen als bei den anderen geben (Rushmore, Seven current hotel-valuation techniques, 1992).

Wenn wir über die Hotelbewertung in Russland sprechen, müssen wir in Acht nehmen, dass die Geschichte vom Kapitalismus in Russland nach dem Aufbruch der UdSSR angefangen hat und ab diesem Moment wurden Immobilien privat und haben die Marktbeziehungen angefangen sich zu entwickeln. Deshalb sind Fragen wie Immobilienbewertung und besonders Hotelbewertung ziemlich neuen Themen für Russland.

In der Weltpraxis gibt es drei Hauptansätze, die in der Hotelbewertung benutzt werden können: der Kostenansatz (auf der Basis von Baukosten), der Vergleichsansatz (auf der Basis von ähnlichen Hotelverkäufen) und der Einkommensansatz (auf der Basis von zukünftigen Einkünften). Wegen der Unterentwicklung der Statistikinstitutionen im Hotelbereich ist es unmöglich den Vergleichsansatz in Russland zu benutzen. Aber Kosten- und Einkommensansatz haben das Recht benutzt zu werden.

Der Einkommensansatz hat verschiede Techniken, die sich von der Einkommensbasis, Bestimmungsmethoden der Kapitalisierungs- und Abzinsfaktor unterscheiden. Einige Techniken können in Russland nach verschiedenen Gründen nicht benutzen werden, und ich zeige diese Gründe im theoretischen Teil an.

Im empirischen Teil setze ich alle möglichen Techniken für die Bewertung eines typischen Regionalhotels – Hilton Garden Inn Perm Hotel ein. Es wurde nicht für eine professionelle Bewertung gemacht, sondern für das Kennenlernen der Techniken, die von einem Managementunternehmen im Hotelbereich BS Hospitality Management für das Erhalten des ungefähren Marktwerts eines Hotels ohne Hilfe eines professionellen Bewertungsunternehmens innerhalb kürzer Zeit benutzt werden können.

Als meine Analyse gezeigt hat, können viele internationale Techniken in Russland benutzt werden. Die Abweichung meines Wertes von dem Wert, der von einem professionellen Bewertungsunternehmen generiert wurde, macht 2.2% aus, dass über die hohe Zulässigkeit der benutzten Techniken sagt.

Introduction

"Valuing a hotel is both an art and a science. The science involves using mathematical formulae to reflect the value calculations of typical hotel investors. The art is composed of the various input assumptions that feed the formulae and produce the value. The entire valuation process is intended to mirror the results obtained when a hotel buyer and seller agree on the final price and a transaction occurs"[1].

"Hotel valuation has become one of the major branches of appraisers' business" (Dargere, April 19-26 2002).

"Hotel valuation, like all real estate valuation, must be seen in the context of establishing a point estimate that represents the value of a unique, illiquid asset in an environment with noisy and conflicting information" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004). But hotel valuation should be covered separately from other real estate valuation because of other income basis.

"The hotel industry is cyclical. Hotel profits and values rise and fall relatively rapidly as occupancies and room rates trend upward or downward. For the most part, in the absence of sudden changes in the national economy (e.g., a recession), the movement in occupancy trends is caused by changes in the growth in the supply of rooms, which is, in turn, chiefly driven by the availability of financing. Investors become interested in financing hotels when they observe favorable returns over other forms of real estate.

Hotel valuation is a key to the investment cycle, because developers are generally willing to consider building a new hotel when that new property will be worth more than its replacement cost - a situation known as positive feasibility. In contrast, when it costs more to build a new hotel than it does to buy an existing property with the same utility, feasibility is negative, financing for new construction evaporates, and new construction ceases" (Pott & Perret, March 2012).

"Hotel valuation is a subjective process that involves many variables and assumptions like any other valuation. Consequently, the final value or value range can vary greatly from one appraiser to the next" (Reynolds, 2008).

"Depending on the purpose of the appraisal, the motivations of the buyers and sellers, and the quality of data available, some techniques tend to produce more reliable results than others"

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[1] (Rushmore, The Global Approach To Hotel Valuations, 2002)

(Rushmore, Seven current hotel-valuation techniques, 1992). Therefore appraisers always use several methods to understand better the determined value.

But in any case, regardless of the purposes of the appraisal, buyers and sellers are interested in getting the most accurate results of value.

The history of capitalism in Russia starts with the break-up of the Soviet Union and from this moment the property became private and the market relations started developing. Therefore the questions like the property valuation, especially hotel valuation, became topical issue. There are a certain number of certificated valuation companies in Russia, but they are not very numerous and they evaluate hotel property as any other real estate property without taking into consideration the specificity of hotel.

For the last four years I have worked in the Russian management company BS Hospitality Management that consults some hotels at the stage of construction and runs Hilton Garden Inn Perm Hotel. We faced a lot of cases when we needed to estimate the approximate hotel/business value very quickly without outside help in the short time. We have no elaborated system of tools available so far because it is quiet a new issue in Russia. When we need official results of valuation (for example for getting the credit) we use certificated valuation company's services. But these services are very time-consuming and expensive that is why we need our own techniques of valuation.

Hilton Garden Inn Perm Hotel is the most successful hotel project in the capital of Perm region. Perm is one of the biggest Russian cities with 1 million of population. It is also an industrial city therefore 90 percent of tourists is business-tourists. The hotel was built in 2006 and in September 2008 the management of hotel signed the franchising agreement with the world-known brand Hilton and it became a member of Hilton family. It was the second Hilton hotel in Russia. The hotel is qualified as 4 stars by Russian classification and 3 stars by international classification. It has 104 rooms and the restaurant "Karin" with capacity of 90 seats. It is located in 10 km from the city center in the industrial district. There are some competitors, but most of them are the old soviet hotels with small rooms and bad engineering systems. There is no other brand hotel in Perm.

Last valuation of Hilton Garden Inn Perm Hotel was made by the certificated valuation company at the end of August 2012. Having the official valuation data is a very good opportunity to compare it with results of my work.

Therefore the aim of this paper is to learn about the international hotel valuation techniques and to choose the most appropriated ones for applying them to Russia.

The paper is structured as follows. In the first part I will provide the most important definitions of hotel valuation and notions that I will use further. After that I will dwell on very interesting questions like why we should appraise hotels separately from other real estate, who are the key stakeholders of hotel valuation and which incentives they have, whether we should separate tangible and intangible assets when we evaluate a hotel. To draw the conclusion of the first part I will provide the characteristics of hotel valuation in Russia.

The main part is the theoretical part aiming at defining the three main approaches to hotel valuation: cost approach, comparison approach and income approach. The theoretical section of this paper presents the description, application cases, features, strengths and weaknesses, valuation techniques of each approach.

The second part is the empirical part aiming at finding the possible valuation techniques for applying to Russia and calculating the value of the Russian regional hotel. At the end I will compare my results of calculation with the results made by the certificated valuation company and provide the implications of applying the international hotel valuation techniques in Russia.

1. Hotel valuation

1.1. Definitions

In this paper I will use some specific notions that should be defined at the beginning.

Valuation is "the estimate of the most likely selling price, the assessment of which is the most common objective of the valuer. Valuation is therefore the process of determining market value that is, an estimation of the price of exchange in the marketplace" (Peto, French, & Bowman, 1996).

Market value is "the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently and without compulsion" (Gasparini, 2011).

Market value "defined by Canadian Uniform Standards of Professional Appraisal Practice is the most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in the definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their best interests;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash or in terms of financial arrangements comparable thereto; and
5. The price presents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with sales" (Reynolds, 2008).

Market Value is "the best price at which the sale of the hotel or an interest in the hotel might reasonable is expected to have been completed unconditionally for cash on the date of valuation" (Verginis & Taylor, 2004).

Terminal or residual value is "a value is the estimated value attributed to the building at the end of the analysis horizon" (Dargere, April 19-26 2002).

Net income, NOI, or earnings EBITDA is "the final net number is revenues less departmental expenses, less undistributed expenses, and less fixed costs" (Reynolds, 2008).

"A typical financial statement for appraisal purposes has four distinct parts: revenue departments, departmental expenses, undistributed expenses and fixed costs" (Reynolds, 2008).

Revenue Departments – "revenues that include room revenues, food & beverage revenues, and telephone/other revenues such as spa, parking, tenancies, etc" (Reynolds, 2008).

Departmental expenses – "costs that include room expenses, food & beverage expenses, and expenses attributed to the telephone/other category. These are expenses and costs that can be directly attributed to each related revenue department" (Reynolds, 2008).

Undistributed expenses – "costs that typically include expenses that cannot be specifically or exclusively allocated to any of the noted revenue sources. Included within this category are franchise fees, management fees, administration and general expenses, marketing expenses, repairs & maintenance (property operations), energy costs, and an allowance for reserve for replacements" (Reynolds, 2008).

Fixed costs are costs that "typically include insurance and property taxes" (Reynolds, 2008).

Occupancy rate is "an important indicator for the valuer for analyzing the activity of the hotel as against its competitors; it is the ratio of the number of rooms rented and the number of rooms offered taking into account the periods when the hotel is closed. The occupancy rate depends principally on the geographical situation of the hotel in the country, where there appear lacks of balance between high and low seasons" (Dargere, April 19-26 2002).

ADR (the Average Daily Rate) is "a hospitality industry metric measuring the average amount paid per room over the total rooms occupied over that period" [2].

RevPAR (Revenue per Available Room) is "the total guest room revenue divided by the total number of available rooms"[3].

Tangible assets are the fixed assets as "the land, physical structure, furniture, fixtures and equipment (FF&E)" (Haeggstroem, 2012).

Intangible assets are "vague, abstract, or something that is difficult or impossible to define and therefore quantify... Assets as working capital, profit centers (guest services), affiliation or

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[2] (Average Daily Rate - Hotels (ADR))
[3] (Definitions)

association, the name of individual hotel/reputation, and a trained and skilled work force" (Haeggstroem, 2012).

Total replacements costs are "the sum of land expenses, building and improvements, including soft costs, FF&E, Preopening and working capital. The total represents the replacement cost, without deductions for depreciation, the physical deterioration, functional obsolescence, and external obsolescence of the property" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

Depreciation, or obsolescence, is "the loss in value of buildings over the time due to wear and tear, physical deterioration, age, economic conditions, and/or locational obsolescence" (Reynolds, 2008).

Capitalization rate is "the yield rate that is anticipated in the marketplace" (Reynolds, 2008).

Capitalization rate is "a rate of return that an investment entity seeks when purchasing real estate" (Lesser & Rubin, 1993).

Discount rate is "equivalent to yield or internal rate of return" (Lesser & Rubin, 1993).

1.2. Difference between hotel and other property valuation

Why should the hotel valuation be evaluated differently from other real estate?

"The other real estate like office or residential is rented on a q.m. basis and generates cash-flow on a q.m. basis. Hotels are not rented on a q.m. basis as they do not generate cash-flow on a q.m. basis. Hotel cash flow is generated by rooms, food & beverage, gym/spa/health centre, minor operating department" (Gasparini, 2011).

According to Mitchell & Ingram (2002) the following factors distinguish hotels from other property types:

➢ "Office buildings, multi-family residential properties and retail space are typically subject to leases ranging from one month to a number of years. Conversely, hotel rooms are rented daily, requiring sophisticated and ongoing marketing. This involves greater risk that is reflected in higher rates of return.

- A higher degree of management intensity is involved in hotels with 20-40 per cent of operating expenses being devoted to payroll. Even temporary lapses in service can result in a loss of customers that may be difficult to recapture.

- Although it is difficult to establish a definition for hotels, their common factor is that that all have bedrooms. Consequently transactions (revenues and costs) are often analyzed on a price per room or bed basis" (Mitchell & Ingram, 2002).

1.3. Key stakeholders and incentives for valuations

"The main stakeholder of any valuation is the commissioning party, the person, or group of persons, who are interested in buying, or selling a hotel asset. Frequently this will be executives of a hotel company. The outcome of valuation process will determine for the commissioning party the value of the asset. The second key stakeholder is the valuer. Valuers are commissioned by the buyer or the seller of the hotel to perform a valuation. Often, however, there is a third stakeholder in the form of the lending institutions. This stakeholder group, in providing financing to the buyer, typically base their financing decision on the hotel's valuation. These three groups constitute the primary focus of interest in this study as they represent the main stakeholders of an market value in respect of a hotel property" (Verginis & Taylor, 2004).

There are a lot of different incentives for hotel valuation:

- "Companies in the stock-exchange market need to update the value of their assets every year;
- Hotel owners might be going to a bank to ask for a loan offering the hotel as collateral;
- Hotel investors might be interested in purchasing a specific hotel;
- Hotel owners might be willing to sell their hotel;
- A company would like to merge with another company and need to understand how much capital they will bring through their assets" (Gasparini, 2011);
- Hotel owners prepare valuation for the purposes of accounts (French);
- Hotel must be insured and for insurance purpose valuation is the basis of calculation;
- Other reasons.

Valuations are required for many purposes and it is essential that the appraiser knows about these purposes to choose the most appropriate techniques (RICS, 2008).

"Depending on the purpose of the appraisal, the motivations of the buyers and sellers, and the quality of data available, some techniques tend to produce more reliable results than others" (Rushmore, Seven current hotel-valuation techniques, 1992).

1.4. Tangible and intangible assets

The question about valuation of tangible and intangible assets rises by valuation different businesses and the hotel business is not exception here.

"Hotels are operating businesses whose financial value is affected by a number of intangible factors. When considering the hotel's value the methods of cash-flow and bottom line profit do not examine the dynamics of the operating business or the various intangible assets, transactions, and functions that make up the profit centers. Hotel assets considered extend beyond the tangible, that is to say the land, physical structure, fixtures and equipment (FF&E) to include intangible assets such as working capital, profit centers (guest services), affiliation or association, the name of individual hotel/reputation, and a trained and skilled work force" (Haeggstroem, 2012).

We will examine the influence of one of the intangible assets like affiliation on the hotel value.

O'Neill and Mattila (2009) mark the existing "dispute about the value that a brand brings to a hotel property, but questions remain regarding exactly how the brand creates value". "Over the past twenty-five years, a brand flag has become an essential element of arranging a hotel development deal. Because of this, researchers have examined how brands influence top- and bottom-line revenues and overall asset value" (Dev., Zhou, Brown, & Agarwal, 2009).

According to Brucks et al. (2000) "a brand name is part of the process of giving tangibility to what is essentially intangible, providing a "shorthand" method of establishing a particular property's quality by giving the customer important information about its product and service, sight unseen".

"The remarkable growth of hotel branding rests on the concept that brands provide added value to both guests and hotel companies, in large part because they foster brand loyalty. A hotel brand represents a relationship with guests. This relationship is built as consumers get to know a brand, use its facilities, evaluate their experience, and begin the relationship; and it becomes cemented as guests continue using its services" (O'Neill & Mattila, 2009).

"A hotel's brand drives the operating ratios that are correlated with a hotel property's market value. Some brands consistently have stronger net operating incomes (NOIs) than do others, while other brands report consistently stronger average daily rates (ADRs) than others do" (O'Neill & Mattila, Strategic hotel development and positioning: The effect of revenue drivers on profitability, 2006).

In an earlier study O'Neill and Mattila found that "ADR (an indicator of a hotel's "top line") is a better predictor of a hotel's market value than is its NOI (an indicator of a hotel's "bottom line"), but hoteliers would nevertheless wish to drive both".

"Hotel brand affects hotel market value above and beyond the important effects of NOI, ADR, occupancy rate, and number of guest rooms" (O'Neill & Xiao, The role of brand affiliation in hotel market value, 2006).

The branding literature has demonstrated that consumers use brand name as an important quality signal. The study of O'Neill and Mattila (2006) indicated that "consumers are typically willing to pay a price premium for brands they view as being high in quality". A concurrent study of O'Neill and Xiao (2006) found that "brand affiliation, name recognition, and reputation for high quality service together can contribute as much as 20 to 25 percent of the going concern value of a successfully operating hotel".

"Well-established brands are intangible assets that serve as a source of strategic advantage and create financial value due to their ability to generate cash flows via relatively higher margins" (O'Neill & Mattila, Strategic hotel development and positioning: The effect of revenue drivers on profitability, 2006).

"As customers' loyalty grows, the brand owner can capitalize on the brand's value through price premiums, decreased price elasticity, increased market share, and more rapid brand expansion" (O'Neill & Xiao, The role of brand affiliation in hotel market value, 2006).

Why is the question about separation of tangible and intangible assets?

"The question arises in the interest of reducing the tax burden on the property. Such a practice it is hoped would not only reduce property taxes, but take advantage of much shorter depreciation periods for goodwill as opposed to real property. There is no question that some portion of cash flows generated by a hotel must be used to support the unique characteristics of the hotel investment, such as large continuing investment in furniture, fixtures, and equipment (FF&E) and the need to employ specialized management to realize a property's potential. However,

because there is a significant financial incentive to attribute a portion of the going-concern value to intangible property, valuation of the intangible property component of a hotel is contentious" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"Valuation of the real property and intangible property components generally proceeds by establishing the overall net income before any deductions for property taxes, FF&E funding, management fees, and franchise fees. Deductions are made for income attributable to the business or going concern and tangible property, leaving what is generally called "net income" attributable to the real estate. This remainder is capitalized at a capitalization rate to establish the value of the real estate component" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

But not always intangible assets are considered separately from tangible assets in the hotel valuation. Haeggstroem (2012) gives "possible explanations for the predominant absence of intangible asset value in valuation and budgeting. Intangible by definition means vague, abstract, or something that is difficult or impossible to define and therefore quantify. Intangible assets can make up as much as 70% of a business' total value and yet, despite the role intangible assets play in affecting a hotel financial performance it is not measured or considered on the budget sheets, financial records or commonly used in valuation techniques".

Rachel Heaggstroem (2012) conducted the research about the attitude of key stakeholders of hotel valuation: owners, brokers and general managers to intangible assets and their influence on the hotel value. "Following the answers of professional people in this area on the questions the author makes the implications: Intangible assets can affect financial indicators such as ADR, RevPar and NOI, yet intangibles do not get a financial indicator on the balance and budget sheets. Perhaps intangible assets should not be included because it is known that they can affect financial indicators already present on the budget sheet. Or perhaps intangible assets should be included because we want to see more clearly how they are affecting overall income and financial indicators currently on the budget sheet. But showing intangible assets on the budget sheet will clearly link the intangible assets to cash flow, providing them with legitimacy in the industry and the ability to be included in the sale of a hotel. If intangible assets affect NOI and other indicators they use to determine value, then appraisers are already indirectly considering their affects on the income and value of hotel" (Haeggstroem, 2012).

For this paper we will accept the last idea, that cash flow using for valuation already reflect the influence of intangible assets. But in whole this question remains opened.

1.5.   Hotel valuation in Russia

The history of capitalism in Russia starts with the break-up of the Soviet Union and from this moment the property became private and the market relations started developing. Therefore the questions like the property valuation, especially hotel valuation, became topical issue.

The Russian hotel market is very young, there are only few branded hotels and all of them were opened after 1990 and the most of them are located in Moscow or in Saint-Petersburg. There are almost no special organizations researching this market. Therefore all the techniques, requiring the comparison with similar properties, cannot be applied to Russia.

In 2007 the world's leading consulting and services organization focused on the hotel, restaurant, shared ownership, gaming, and leisure industries HVS opened the office in Moscow and started to research the Russian hotel market. At last research "Russia, CIS and Georgia. Hotel Valuation Index 2011" Korobkin and Chawla characterized the local markets of these countries.

The Russian market has the following features: "the relatively poor standard of hotel accommodation, the rise of international events (such as the Winter Olympic Games in Sochi in 2014 and the UEFA Euro 2018 Football Championships) and an increasing share of international travelers have led to a stronger focus on the hospitality sector.

The development of internationally branded hotels in the regions' capital cities started selectively in the early to mid 1990s, predominantly in the luxury and upscale segments. Increased international (business) travel, along with maturing local tastes, has pushed the 'accepted' hotel standards closer to western-style accommodation.

The last decade can be characterized by heightened activity in hotel developments, not only in the capitals, but also in regional provincial cities in Russia. Real progress has been relatively slow, however, owing to perceived bureaucracy, complicated legal systems and the rising costs of land and debt finance" (Chawla & Korobkin, October 2011).

HVS has tracked value trends between 2007 and 2010 and has forecasted for 2011 and 2012, as outlined below.

Table 1. Historical and predictable value per room - Russia

(Chawla & Korobkin, October 2011), (Pott & Perret, March 2012)

Value per room, €	2007	2008	2009	2010	2011	2012
Moscow Upscale/Luxury	498,000	527,000	327,000	353,000	391,000	409,400
St. Petersburg Upscale/Luxury	358,000	377,000	213,000	222,000	244,000	260,900
Moscow Mid-Market/Budget	294,000	292,000	204,000	201,000	207,000	218,600
Samara	156,000	145,000	88,000	91,000	99,000	105,600
Kazan	119,000	130,000	102,000	86,000	94,000	100,500
St. Petersburg Mid-Market/Budget	139,000	137,000	81,000	83,000	93,000	102,000
Yekaterinburg	143,000	148,000	106,000	82,000	92,000	99,200
Rostov-on-Don	126,000	133,000	96,000	79,000	87,000	92,900
Average Russia, CIS, Georgia	265,000	239,000	159,000	153,000	163,000	175,400
European Average	274,000	244,800	212,000	227,000	236,000	246,000

The Moscow's and St. Petersburg's markets are completely different from the regional markets like Kazan, Samara, Rostov-on-Don, Yekaterinburg, Perm. Therefore we cannot use them for comparison. But Perm city is comparable with Yekaterinburg, Kazan and Samara. All these cities have the population more than 1 million and the economies of Yekaterinburg and Samara are comparable with Perm's one. These cities have mainly business-tourism. The hotel markets in these cities are discreet; in Yekaterinburg there are 4,972 rooms[4], in Samara – 2,200 rooms[5], in Perm -2,073 rooms. In order to compare these data with the results of this paper we will use the average value per room in cities such as Yekaterinburg, Kazan and Samara in 2012: 105,600+100,500+99,200/3=101,766 EUR per room.

1.6. Description of Perm city

As I said earlier Hilton Garden Inn Hotel (further- HGIP Hotel) is located in Perm city and here I would like to give some information about the city.

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[4] (Hotels of Ekaterinbug were occupied on 63% in the first half of 2012, 2012)
[5] (The cities with 1 million of polulation. Samara, 2012)

The Perm is located on the western side of the Urals. With the population of 1.2 million Perm is the 6th largest city in Russia and the second largest in the Urals.

"Perm is internationally known as the name for the geological period (290 - 245 million years ago) in which the Ural Mountain Range was formed. In contrary to the Urals, Perm itself is rather young. Although the first settlement of Perm dates back to 16th century, officially it got its city status in 1723. Nowadays, Perm basically owes its existence to two factors. Firstly the large amounts of natural resources (minerals, oil and timber) that are present in the region, and secondly: its location. The mighty Kama River, the Great Trans Siberian Railroad and main motorways from Moscow/Kazan to Siberia all cross in Perm, making Perm a main Russian transportation hub. The city is the doorway from Europe to Asia and to Siberia in particular"[6].

The Perm is one of the largest industrial centers in Russia and one of the most economically developed areas in Russia. The distance between Perm and Moscow is 1100 km[7]. The region's economy is export-oriented. The main industries are the fuel, power, chemical and petrochemical, engineering and metalworking, timber, woodworking and pulp-and-paper.

"The investment potential of the Perm region is determined by several bright features of the region that are geographical situation, economical stability, richness in mineral resources, diversity of industries, significant scientific and technical power, well developed transportation infrastructure. According to the investment rating the region ranks the 7th - 8th among other Russian regions in terms of foreign investments"[8].

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[6] (General info on the city of Perm)
[7] (About the Perm region)
[8] (Economy of Perm region)

2. Hotel valuation approaches

"In attempting a market value of hotels, valuers consider a combination of valuation techniques. More specifically, this should be a combination of relative valuations" (Verginis & Taylor, 2004).

"Market value is defined as an opinion of the best price, at which the sale of an asset of an interest in property would have been completed unconditionally for cash consideration on the date of valuation, assuming:

(a) willing seller;
(b) that, prior date to valuation, had been a reasonable period;
(c) that the state of the market, level of values and other circumstances were, the same as on the date of valuation;
(d) that no account is taken of any additional bid by a prospective purchaser with a special interest, and
(e) that both parties to the transaction had acted knowledgeably, prudently, and without compulsion (Patel, 2000).
The above can be considered appropriate because hotels are usually bought and sold as fully equipped operational business entities that typically include, besides land and building(s), items such as fixtures, furniture, and goodwill" (Verginis & Taylor, 2004).

"Depending on the purpose of the appraisal, the motivations of the buyers and sellers, and the quality of data available, some techniques tend to produce more reliable results than others" (Rushmore, Seven current hotel-valuation techniques, 1992).

"Appraisers are charged with estimating market value using the classic troika of the cost approach, the sales comparison approach, and the income approach. The market-derived capitalization rate is a hybrid approach; it uses an income approach to value the property, with the capitalization rate derived from comparable sales.

Although all three valuation approaches are generally given consideration, the inherent strengths of each approach and the nature of the hotel in question must be evaluated to determine which approach will provide supportable value estimates. In addition, there is a set of rules of thumb that are used to provide a rough estimate of value. Appraisers use "market" indicators of return requirements and other valuation parameters to produce their estimates. Investors, on the other hand, wish to estimate investment value, which includes the effects of income taxes, the investor's unique cost of capital, and other investor-specific conditions. Investors typically rely

on a modified income approach tailored to their circumstances, augmented with recent transaction information, to estimate value and form their bidding strategy" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

 "The sales comparison approach, properly applied to homogenous properties -in thickly traded markets such as single-family homes, is a sound tool for gauging value based on actual market transactions. The difficulties in applying the technique to income property markets include the fewness of sales, obtaining sales that are truly comparable to the subject, and making accurate adjustments. The most effective use of this tool is establishing a reasonable range of value, based on actual sales transactions" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"The income approaches evolve from two different manners of thinking. The "cap-rate" techniques—band of investment, market derived capitalization, and EVA - are single-period models that implicitly account for growth in income. The "yield" or "discount rate" technique - the hotel valuation formula - is a multi-period model using explicitly calculated cash flows over a holding period to arrive at value. Each set has its strengths. The cap-rate models are easy to implement and easy to understand, while the yield-based model is not. On the other hand, with high-quality input data, yield-based models produce more accurate valuations than cap-rate models. It is important to support all of the income approaches using the best available data. It is difficult in many cases to determine the returns required by equity participants. Market-value models must be supported by the analyst's reasonable expectations of investor behavior and a thorough understanding of market conditions. Firm- or investor-specific data' is available for the investment value models, and thus the parameters used in these models are easy to support" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"Market participants should select the most appropriate models for their own use. Use of a variety of methods is encouraged. For instance, a potential seller would not only wish to know market value, but also buyer-specific valuations, such as the value to a specific public company or to partnerships. In this case/ a classic "three-approaches" appraisal plus the EVA and after-tax SVF are the appropriate models; these produce a most-likely value via appraisal as well as establish estimates of bids by potential buyers" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

2.1. Cost approach

According Rushmore&DeRoos the cost approach usually involves the use of a cost estimating guide to arrive at a cost to determine the replacement cost of the property. "It provides a physically oriented estimate of value. This approach is useful in establishing a benchmark for buy versus build decisions and for relative pricing over time" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

But it has some weaknesses:

➢ "The cost approach may provide a reliable estimate of value in the case of new properties, but as buildings and other improvements grow older and begin to deteriorate, the resultant loss in value becomes increasingly difficult to quantify accurately…. The difficulty in applying this technique is making the proper adjustments for obsolescence and depreciation. These adjustments require judgment in three areas: the amount of physical, economic, and functional obsolescence. For instance, it is easy to identify that a given location has problems, but it is difficult to quantify the impact of these problems on the property's value" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

➢ "The cost approach does not reflect these income-related considerations and requires a number of highly subjective depredation estimates" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

➢ Estimating depreciation is difficult and unreliable.

"Consequently, if the objective of the appraisal is market value, then the cost approach is not considered the best method. The cost method is preferred if the purpose of the appraisal is for insurance or the replacement value of buildings" (Reynolds, 2008).

This approach is used as one of the approaches, but it is given usually minimal weight in the hotel valuation.

2.1.1. Techniques

Age-Life Method

"Appraisers often use a unit-in-place method to estimate value of the building and FF&E. Data for many prototype chain properties is generally available; the more unique the property, the more difficult it is to establish the replacement cost".

"Replacement cost – a ideal average purchaser, having an average level of information, will very likely buy a property at a maximum price that is equivalent to the cost of building a similar property that features the level of utility. We have to compare the construction costs, labor costs, FF&E and so on for estimated hotel and a similar hotel, but technology has advanced and new building techniques makes building today cheaper than yesterday; labor costs and prices of furniture have changed significantly last 10-20 years. Therefore there are a some limitations on this technique: it is not always possible to use, especially for historical hotels, it does not reflect investor rationale, depreciation can be physical, functional and/or external. But this technique is easy to be understood and useful for new properties" (Gasparini, 2011).

"We estimate the costs of building&improvements, including FF&E, preopening working capital and at the end we get the total replacement costs without deductions for depreciation, the physical deterioration, functional obsolescence, and external obsolescence of the property. After that we make the adjustments, reasonable for an n-year-old property. We assume that a physical life for the building of 50 years and an average physical life for the FF&E of ten years, then add back the reserve for replacement invested in the property over the n-year life of the property and we have as result adjusted total costs" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"The use of age-life method is a reasonable approach with a relatively young building and one that is built with conventional means and methods. The principal criticism is that it relies heavily on accurate replacement cost data; there is also the problem of arbitrary adjustments for depreciation" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).
According to Reynolds (2008) "the cost method involves determining the cost of the buildings (improvements) after consideration for depreciation".

"Building cost is often estimated using reliable, cost manual provided by an internationally recognized firm. These costing manuals attempt to estimate the replacement cost value of the improvements as opposed to the reproduction cost of the existing improvements. What this means is that the cost of improvements is based upon the cost to replace the utility of the improvements versus the cost to reproduce the existing improvements. If the purpose of the

appraisal is to cost replacement of improvements, as they exist in their current utility, then a quantity surveyor would likely be ideal in estimating this value. A quantity surveyor often uses manual costs, however, he is also well informed about current cost and is an expert at estimating the costs of replacing improvements as they exist in their present form. In theory, the difference between the market value of buildings and their replacement cost is depreciation" (Reynolds, 2008).

2.2.   Comparative approach

 "Direct comparison approach method relies on the assumption that a matrix of attributes or major features of a property can be analyzed in order to establish an estimate of value. With regards to hotels, the most commonly used unit for comparison is the value per room" (Reynolds, 2008). "Sales comparables – on a per room basis: a potential standard buyer, featuring a standard level of information, will purchase a property at a maximum price equivalent to the sale price of a similar property with the same level of utility. The next features can be used to find the similar property: location, category and service, number of rooms, room pricing"   (Gasparini, 2011).

According to Rushmore (1992) "the sales-comparison approach uses the sales of similar properties to derive an estimate of value. Any dissimilarities between the comparable and the subject property should be adjusted to arrive at an estimate of value for the estimated hotel. The most fundamental adjustment is to derive a sale price per room". "Other adjustments are made for the condition of the physical plant, relative market strength, brand affiliation, age, below-market financing, and the mix of facilities offered" (Rushmore, Seven current hotel-valuation techniques, 1992). "Adjustments will depend on more than the physical characteristics but also include, for example, economic conditions and deal level details (e.g. type of financing)" (Roubi & Litteljohn, What makes hotel values in the UK? A hedonic valuation model, 2004).

 "The obvious weakness of this approach is the fact that a range of dissimilarities is ignored. Although all hotels have rooms, there are many other aspects that affect value including food & beverage outlets, retail tenancies, health clubs, land size, etc. For this reason, the direct comparison approach is not preferred when looking at an income producing property such as hotels. It may be reasonable to rely upon this approach if you are appraising nearly identical properties, such as motels without many amenities. However, it should not be relied upon without considering the income approach" (Reynolds, 2008).

The sales-comparison approach provides a range of values and compares hotels currently for sale to existing properties that have been already sold on the market and it gives an indication of real buyers motivation (Gasparini, 2011). In most cases, the adjustments are part of the appraiser's art, because the appraiser must use own judgment in their application (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

The main limitation of the comparison approach is the facts that no hotel is true comparable. "While hotel investors are interested in the information contained in the sales comparison approach, they usually do not employ this approach in reaching their final purchase decisions. Factors such as the lack of recent sales data, the numerous insupportable adjustments that are necessary, and the general inability to determine the true financial terms and human motivations of comparable transactions often make the results of this technique questionable" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

In other words or using other classification we can say that comparison approach is ex-post approach or model that is based on the idea that buyers and sellers make decisions from knowledge of recent transactions in the space and asset markets (Roubi & Litteljohn, 2004).

When we use the comparison approach we should adjust the similar properties to estimated property. The next points we should take into account:

- ➢ "Physical state – maintenance, repair, decoration;
- ➢ Location – the actual position is an important factor in the value;
- ➢ Tenure – even if each tenant hold a similarly drafted lease, lease terms are likely to vary;
- ➢ Purpose of valuation – e.g. for investment purposes, the direct comparison would be inappropriate;
- ➢ Time – the reliability of evidence of prices diminishes with time" (Patel, 2000).

2.2.1. Techniques

Automated Valuation Model

O'Neill (2004) presented in his article "An automated Valuation Model for Hotels" the sales comparison approach. He deduced a formula or automated valuation model of hotel value using the database with 327 hotel sale transactions from 1990 through 2002 in USA. For each transaction, the database includes (for the trailing twelve months prior to the sale transaction) average daily rate, occupancy percentage, NOI, capitalization rate (cap rate), and room revenue multiplier (RRM), as well as number of guest rooms, sale price, age, sale date, and hotel type.

"The four factors like the twelve-month lagging averages of net operating income, average daily rate, occupancy, and number of rooms were found as significant factors that together provide a reasonable estimate of a property's value. Number of rooms appears to stand in for the extent of the hotel's facilities. The regression analysis tested the following factors but found that they were not significant: region, location in a metropolitan area, age of property (or date of construction), and date of sale" (O'Neill J. W., 2004).

"A hotel's value per guest room may be estimated using the following AVM formula:

−$42,873 (the constant from the regression)

+ NOI per room x 5.615

+ ADR x 615.039

+ rooms x 33.693

+ occupancy x 234.891

= estimated value per room

Description of variables:

      Occupancy - occupancy percentage rate for trailing twelve months prior to sale;

      ADR - average daily rate for trailing twelve months prior to sale;

      Rooms - number of guest rooms;

      NOI/room - net operating income divided by number of guest rooms.

The AVM formula presented in the article of O'Neill (2004) generally should be used in addition to the three traditional real estate valuation approaches of income capitalization, sales comparison, and cost".

The research summarized in the article "An automated Valuation Model for Hotels" by O'Neill (2004) found that the AVM formula presented here has a high level of validity.

It would be interesting to deduce the similar formula basing on the sales data in Russia, but there are not a lot of hotel sales and there is no information about the sale parameters like price.

That is why we will try to apply the formula of O'Neill, supposing that the relations between the four significant factors in the form of AVM could be applied to other countries as well.

2.3. Income approach

The other typical economic asset valuation models are ex-ante (income-based) models. "Ex-ante models are based on the concept that buyers and sellers make decisions from forecasts about future incomes.

Ex-ante models are particularly popular for hotel real estate valuation because the approach reflects an investment rationale and incorporates the strategies of typical buyers. Further, the approach gains support because historical financial data for a subject property or similar properties is available to facilitate cash flow predictions.

However, ex-ante models are not problem-free. For example, there exist technical problems when applying the same rates of discount on positive and negative cash flows such as might be the case with new properties or distressed hotels. Further, discount rates should vary in relation to the amount of amortized debt as the less the outstanding debt the lower the risk and therefore the lower the discount rate" (Roubi & Litteljohn, What makes hotel values in the UK? A hedonic valuation model, 2004).

"The income capitalization approach is based on the principle that the value of a property is indicated by its net return, or what is known as the "present worth of future benefits." The future benefits of income-producing properties, such as hotels, are the net income estimated by a forecast of income and expense along with the anticipated proceeds from a future sale. These benefits can be converted into an indication of market value through a capitalization process and discounted cash flow analysis" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

There are two groups of techniques in the income approach: income capitalization techniques and other income techniques.

2.3.1. Income capitalization techniques

The income capitalization techniques are often considered the most relevant techniques to valuing complex income-producing properties, such as hotels (Detlefsen, February 2012).

"Income capitalization technique is based on the assumption that the value of any asset depends on the stream of benefits that the owner expects to enjoy from the assets' ownership. More specifically, they are based on the "present value" rule, where the value of any asset is the present value of the expected future cash flows from it, minus the initial investment" (Brealey and Meyers, 2000; Brigham and Houston, 2002). "Thus, income capitalization valuation approaches explicitly take into account the present value of money, that is a pound received

today is worth more than a pound received a year from now, because today's pound can be invested to earn a return during the intervening time" (Verginis & Taylor, 2004).

Picture 1. Illustration of income approach (Gasparini, 2011)
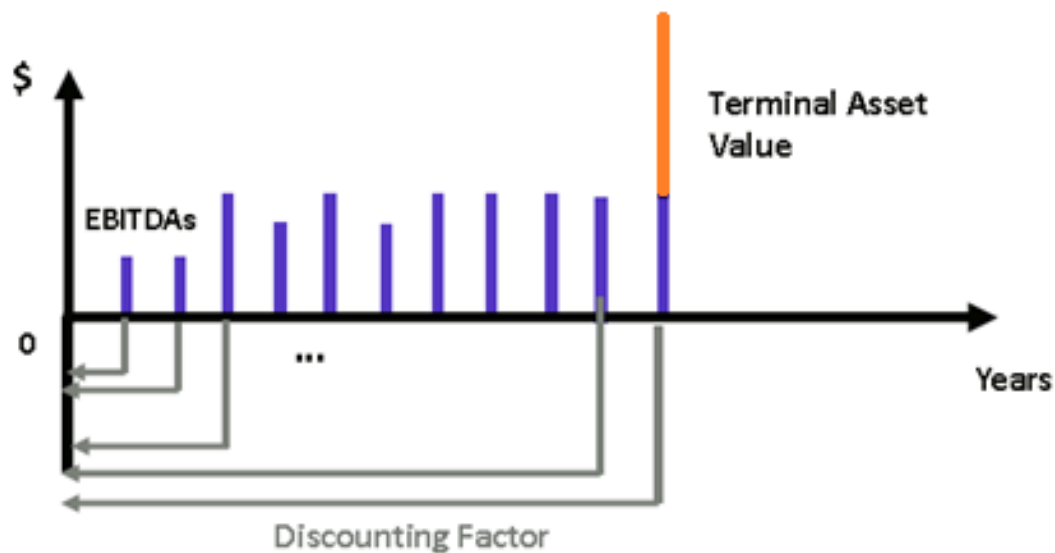
Typically the income capitalization techniques involve the following steps:

1. The selection of the basis for calculation of cash flow: it can be the hotel's current net income; the hotel's stabilized net income or the hotel's estimated future cash flows for 3 to 10 years.
2. The selection of capitalization rate: WACC, the market cap rate, the cap rate getting from investor interviews or public sources.
3. The calculation of hotel value using the hotel's current net income and the terminal hotel value using future cash flow dividing the cash flows on the appropriate capitalization rate.
4. If we say about future cash flows then we need to select the discount rate.
5. Discounting the future cash flows and terminal value and calculation the hotel value as the sum of present net value of future cash flows and terminal value.

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                    ┌─────────────────────────┐
                    │  1.  The selection of   │
                    │ basis for calculation   │
                    │        of CF            │
                    └─────────────────────────┘
```

The current hotel's net income	The hotel's stabilized net income	The hotel's estimated future CF

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                    ┌─────────────────────────┐
                    │  2. The selection of    │
                    │   capitalization rate   │
                    └─────────────────────────┘
```

WACC	The market cap rate	The cap rate from investor interviews	The cap rate from public sources

3. HOTEL VALUE

3. Terminal value

4. The selection of discount rate

WACC	The yield of riskless securities (bonds)	Cumulative discount rate	Other methods

5. Discounting future cash flows and terminal value = HOTEL VALUE

"There are numerous techniques that can be used in the income capitalization approach" (Detlefsen, February 2012). But all these techniques of income approach are the different combinations of the parameters written above. At the beginning I will examine the first, second and fourth step of income approach that have variations and after that I will give the description of techniques.

- *The selection of the basis for calculation of cash flow*

As I have said before it can be three possible ways to calculate cash flows: using the hotel's current net income, using the hotel's stabilized net income or using the hotel's estimated future cash flows for 3 to 10 years. Here we talk about the period of net income, other question is about the "levels of net income, including before or after a reserve for replacement for furnishings, fixtures, and equipment and before or after an incentive-management fee" (Lesser & Rubin, 1993).

The hotel's current net income

"Limitations: it is based on one (last) income year only, do not reflect propensity of income to rise or fall" (Gasparini, 2011).

The hotel's stabilized net income

"The stabilized net income estimate is intended to reflect a representative year for the subject property in terms of occupancy, average rate, and net income" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).
Rushmore and DeRoos suppose that if the hotel is purchased with use debt and equity, stabilized net income would be enough to cover the debt-service payments and the equity dividend and we can use these payments as the stabilized net income. But when the hotel is not purchased we should use other method for estimating stabilized net income.
The hotel's stabilized net income reflects the possibility of income to rise or fall.

The hotel's estimated future cash flows for 3 to 10 years

"The estimation of future cash flows provides a better overview of the property's trading potential, based on future and not on present or past, take into account operations and management characteristics, take into account market-wide changes. Limitations: the estimation needs to understand in depth the market and the trading potential of the asset in that market, the estimation needs to understand in depth the hotel specific operation and management, the estimation needs to be experienced of the hospitality sector" (Gasparini, 2011).

"The projection of income and expenses reflect changing market conditions and extends over a five- to ten-year time frame" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"Some large institutional investors who purchase hotels will use the ten-year projection of net income before debt service" (Rushmore, Seven current hotel-valuation techniques, 1992).

- *The selection of the capitalization rate*

"The single most important factor in applying the income approach is the selection of the cap rate. This is also the most debated matter than it comes to arbitration, assessment appeals, or matters of conflict relating to hotel values. The cap rate is the yield rate that is anticipated in the marketplace. The anticipated yield rate is then applied to the stabilized net income of the hotel in order to capitalize the net income into an opinion of market value" (Reynolds, 2008).

To establish an appropriate capitalization rate or one of the components like equity yield or debt yield when we use the WACC method, a hotel analyst may consult several sources of data. "First, one may analyze recent sales and extract rates based on historical and forecasted net-income figures. Second, one may refer to numerous published sources of data. Finally, one may determine anticipated yield rates through investor interviews" (Lesser & Rubin, 1993).

"A cap rate incorporates both a risk component as well as an assumed growth component for income over the holding period. Cap rates can be useful to illustrate trends and can be an important value factor to consider" (Detlefsen, February 2012).

WACC or mortgage-equity approach

Lesser and Rubin (1993) defined capitalization rate "as a rate of return that an investment entity seeks when purchasing real estate. To establish an appropriate rate of return, an investor must consider the risk inherent in the investment and the returns that may be achieved by alternative investments. Although risk is identifiable, it is difficult to quantify. Therefore the preferred method for quantifying capitalization rates involves the realization that a capitalization rate is merely the weighted cost of the capital utilized to acquire an investment. Hotel real-estate transactions typically involve a capital structure that includes debt and equity funds. The great majority of hotels transactions taking place are being financed, one way or another and mortgage are being put in place on hotel deals" (Lesser & Rubin, 1993).

"This method estimates cap rates by selecting appropriate rates of return from equity markets (risk-free, mortgage, and return-on-equity rates). This approach is not based on upon actual sales data, so it is a less preferable method" (Reynolds, 2008).

"WACC is based on the premise that most hotel investors purchase their properties 'using a combination of debt and equity capital. Both of these capital sources are seeking a specific rate of return on their invested capital as well as the return of their invested capital. The appropriate rate for the debt component is called the mortgage constant, which combines the return on capital (interest rate) with the return of capital (sinking fund factor) into a single rate. The proper rate of return for the equity component is the equity dividend rate. The appropriate overall capitalization rate is therefore the weighted average cost of capital from these two sources" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

WACC = Debt Component + Equity Component.

Debt Component

"One way to quantify return requirements for hotel debt is by looking at individual deals as they occur as well as the terms offered by sellers who provide financing for hotels" (Lesser & Rubin, 1993). Or we can take the credit rate for financing the purchase of hotel.

After the determining the debt rate we can calculate Debt component as Debt Rate (%) x (1 - Tax Rate (%)) x Debt to Value Ratio (%) (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

Equity Component

"The portion of hotel investment not funded by debt in the form of a first mortgage typically comes from an equity investor. The rate of return the equity investor expects over a ten-year holding period is known as equity yield. Equity yield considers a long holding period, annual inflation-adjusted cash flows, property appreciation, mortgage amortization, and proceeds from a sale at the end of the holding period. It is difficult to quantify the rate of return required by equity investors who seek to purchase hotel properties.

Most of appraisals use a mortgage-equity approach by which income is projected and then discounted to a current value at rates reflecting the cost of debt and equity capital. In the case of hotels it is possible to determine an appropriate equity yield rate by excluding incentive-management fees from the projection of income and expense, inserting the projection into a valuation model, and adjusting the appraised value to reflect the actual sale price. But the rates of return assume a specific type of financial structure and may not represent the actual expectations of the buyers" (Lesser & Rubin, 1993).

"CAPM is one of the methods to determine requirements of return equity, i.e. business specific risk which is part of discount rate. The method depicts the risk as a relationship between the share price historical evaluation and the stock market index. According to CAPM the risk premium on equity can be determined by following formula:

$r_e = r_f + ß(r_m - r_f)$

Where,

r_e – expected return on equity

r_f – risk-free rate

$ß$ – Beta of asset

r_m - expected return on market portfolio

$r_m - r_f$ – risk-premium for investment beyond the risk-free rate" (Sjöqvist & Stepanovich, 2008).

"There is difficult to estimate the cost of equity using CAPM when it comes to valuation of non-listed companies since there is no beta for these companies. The possibility to use the CAPM to estimate the requirement on equity for non-listed companies is to find an equivalent in all aspects company which is listed" (Sjöqvist & Stepanovich, 2008).

To calculate the equity component we should multiply expected return on equity on equity to Value Ratio (%).

"The equity component is a direct application of modem portfolio theory. A firm's equity cost of capital is derived as a premium over the risk-free rate. The premium is a function of the overall market premium for equity investments, times the unique beta of the subject firm. The debt to value and equity to value ratios are determined from the firm's capital structure, as the percentage of total firm value attributable to debt and equity, respectively" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

The market-derived capitalization rate

Rushmore in his article "Seven current hotel-valuation techniques" considered the market-derived capitalization rate. "By knowing the sales price of a hotel that was recently sold and the net income before debt service for 12 months prior to the sale, a capitalization rate can be derived from this information by dividing the net income before debt service by the sales price" (Rushmore, Seven current hotel-valuation techniques, 1992) and "these rates are based on historic net income, which does not mirror the future path of expected earnings, which is expected to rise rapidly. It is therefore important to adjust these rates if it is expected that future

conditions will make these rates higher or lower" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"In Canada the most accepted method for determining capitalization rate is to analyze comparable hotels' sales data. The most important step in determining the cap rate is the stabilization of the net incomes (NOI or EBITDA) of the sale data in a manner consistent with how the subject net income was stabilized. When appraising a hotel, it is imperative that a replacement reserve be considered in the NOI. Therefore, the sale data must be analyzed to ensure that a similar expense is reflected in the comparable sales' net incomes before relying on a cap rate extracted from that data. The same principle of consistency regarding stabilization applies to distributed and distributed expenses. This is probably the single biggest appraisal error that occurs among hotel valuators and is a valid reason why appraisers should never reply blindly upon reported cap rates and/or other sources of published information. The appraiser must be able to verify how the various net incomes have been stabilized, which will determine the integrity of the reported cap rate. Once again, cap rates must be applied with caution as they can greatly distort the market value" (Reynolds, 2008).

The cap rate from public sources

"Many real-estate firms and organizations publish newsletters and summaries of investor surveys and hotel real-estate sales. The typical holding periods reported by the surveys range from 5 to 15 years. For example in the USA for example the Hotel and Motel Brokers of America makes a publication lists many types of financial criteria relative to hotel sales. The publication has data on operating performance at the time of sale, including average daily room rate and room revenue per room; statistics on hotel-sales transactions, including selling price per room, room-revenue multiplier, net operating income multiplier, and capitalization rate; and information on financing attained at the time of sale, including first mortgage loan-to-value ratio, amortization period, loan term, and debt-coverage ratio" (Lesser & Rubin, 1993).

The cap rate from investor interviews

"The return requirements of individual investors are often expressed as an equity yield rate based on a 10-year projection of net income before incentive management fees but after debt service.

Clearly the quality, age and class of the property, the strength of its operating and financial history, its historical and potential position in the market place, and the magnitude of any required renovation or repositioning strongly influence the type of equity investor who will be

attracted and the equity portion of the required return on investment. In developing capitalization rates for any property, it is important to recognize those factors, interpret them in light of the kind of equity investor who would be attracted to the property, and understand their effect on the required rates of return to the equity component" (Lesser & Rubin, 1993).

Similarly the investor interviews can be applied for the estimation of the whole capitalization rate.

"There are many variations of capitalization rates and no consensus on the kind of capitalization that should be used. The purpose of any capitalization rate is to reflect the relationship between a property's value" (Lesser & Rubin, 1993).

- *Selection of the discount rate*

"When we discuss the discount rate, we have some problems with definition as well. The term "discount rate" is equivalent to yield or internal rate of return. Some investors segment their analysis of returns between debt and equity yields over an assumed holding period. Others focus on the total property yield or unleveraged return. Again, a discounted-cash-flow can be predicted on a multitude of net-income levels" (Lesser & Rubin, 1993).

"To determine the discount rate which consists in arbitrating as between a real-estate investment and a financial investment depending on the discount period, the valuer can use two methods to calculate the discount rate:

Case №1: discount rate calculated from the yield of private-sector bonds of the 2nd category (rate of low-risk money)" (Dargere, April 19-26 2002). Or in other words we should use the yields of the most reliable, safe, riskless securities, normally of bonds.

Case №2: "discount rate based on the average weighted cost of capital. This method consists in regarding the discount rate as a combined rate which must serve to repay the sources of the funds (the investor's contribution and loan). The financing conditions of the hotel project must be taken into account" (Dargere, April 19-26 2002).

We can use cumulative discount rate by applying the following formula:

d = Emin + I + r,

where d —nominal discount rate;

Emin — minimal real discount rate;

I — inflation;

r —risk premium.

Usually we take minimal discount rate as the return rate of the government bonds.

The risk premium can be determined in different ways; one of them is the calculation of risk premium as sum of country risk, participant's unreliability risk and performance risk.

The main disadvantage of this way is the fact that it does not take into account the equity capital cost of a company. We use inflation rate and return bonds rate which are not connected to the profitability of a company, its assets and weighted average capital cost[9].

It is also possible to apply a different discount rate for every year for more accurate reflection of the increasing investment risk connected with passing time (Skolnik, 1993).

The direct capitalization method (DCM)

"The DCM is considered to be a "snapshot" of a property's income. The DCM looks at a property's income potential based on historical and current financial information as well as industry norms, in order to stabilize the income for a one-year period. Thereafter, the stabilized income is capitalized at an overall rate considered to be constant with the market to yield an estimate of the market value of the property. The DCM is frequently used, as it is relatively simple in application, particularly for smaller properties and for the properties at normalized income levels" (Reynolds, 2008).

"The DCM requires less forecasting than DCF, thus it is less subjective, which can be viewed as its strength. However, its weakness is that it does not fully consider the hotel's future income potential. As a result it does not consider market uncertainty, which would lead to the fluctuations in the subject's income" (Reynolds, 2008).

Direct Capitalization is one of the simplest techniques. "In this method, a value conclusion is developed by dividing a hotel's net operating income, from a single year, by an appropriate capitalization rate or cap rate" (Detlefsen, February 2012).

"It leads to quick results, used commonly and widely understood. Limitations: it is based on one (last) income year only, do not reflect propensity of income to rise or fall, not always reliable (small changes in the cap rate produce large effect on value)" (Gasparini, 2011).

Band of investment – one stabilized year

The band of investment uses a single, stabilized estimate of net income. "The next step in evaluating is to develop a rate to capitalize the stabilized net income into an estimate of value. The band of investment takes the cost of capital used in a hotel investment (debt and equity) and calculates a weighted average of these costs based on the percentage relationship of each capital source to the whole" (Rushmore, Seven current hotel-valuation techniques, 1992).

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[9] (Managarov, 20011)

The stabilized net income is divided by the capitalization rate (WACC) to calculate the hotel value (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

 "This technique is appropriate when the local hotel market is not expected to experience any significant changes in supply and demand, so it can be assumed that the subject property's net income has stabilized" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"Essentially, the band-of-investment technique works backward, using the projected stabilized net income to calculate the value that will meet the demands of both the debt and equity investors" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"Band investment – one stabilized year is a simple technique to describe and perform. It works well for a stabilized property that is expected to maintain a level occupancy and net income into the future. It is difficult, however, to establish an appropriate stabilized net income for hotels that have unpredictable occupancies" (Rushmore, Seven current hotel-valuation techniques, 1992).

Band of investment - Three-Year Buildup

"This technique will use the three-year projection of income and expenses. This procedure works well when a hotel is expected to benefit from improved financial operating performance. The technique takes the third year's net income and capitalizes it at the capitalization rate previously derived by the band of investment" (Rushmore, Seven current hotel-valuation techniques, 1992). "The stabilized third year is intended to reflect the anticipated operating results of the property over its remaining economic life, given any or all applicable stages of build-up, plateau, and decline in the life cycle of a hotel. Thus, income and expense estimates from the stabilized year forward exclude from consideration any abnormal relationship between supply and demand, as well as any nonrecurring conditions that may result in unusual revenues or expenses" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004). "This third-year value is then discounted back to the present value using the rate derived by the band of investment as the discount rate. The projected net income for year one and year two are also discounted to the present value using this discount rate. The sums of these present values are added together to produce the estimate of value" (Rushmore, Seven current hotel-valuation techniques, 1992).

"Band of investment – three-year buildup is relatively simple to describe and perform. It works well for hotels experiencing a buildup of occupancy and net income. The use of the band of investment to develop both a discount and a capitalization rate is not 100-percent mathematically correct, but the results are generally reliable" (Rushmore, Seven current hotel-valuation techniques, 1992).

Discounted cash flows (DCF)

A DCF technique is an income capitalization technique that converts the anticipated future benefits (cash flows) of a hotel into a forecast of present value based on the typical investment parameters and return requirements (Blanco & Perret, 2010) like "the mortgage and equity components based on market rates of return and loan-to-value ratios (similar to the band-of-investment). The total of the mortgage component and the equity component equals the value of the property" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"The discounted value is the present value of the future cash flows. Therefore, the discount rate applied in a DCF analysis should be the prospective internal rate of return (IRR) of the investment; or it should be an estimated target rate of return of the investment" (Kishore, 1996).

Rushmore (1992) and Luehrman (1997) proposed the following steps in this technique to the application of DCF hotel valuations:

(1) Forecast future cash flows for a specified number of years (between five and fifteen, but traditionally, hotel investors use a ten-year forecast, but the choice of the length of the period studies may depend on the property owner or investor and his characteristics), excluding cash flows associated with the company's financing program, such as dividends, and assuming that at the end of the period the hotel will be sold and therefore add the terminal or residual value of the property on the final year's or the next after final (eleventh when 1o year forecast is used) cash flow.

(2) "Select an appropriate discount factor, based on the investor expectations on return on investment and the investment's riskiness (or the opportunity cost of funds which is the return an investor could expect to earn on an alternative investment entailing similar risk).

(3) Apply the proper discounting procedure" (Verginis & Taylor, 2004).

Application cases, strengths and weakness

 "This valuation technique is appropriate in dynamic hotel markets where supply and demand is constantly changing and the subject property's occupancy, rate, and net income has not stabilized" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"The authors noted that this approach to hotel valuation has the following advantages:
- It provides more flexibility adapting to more conventional and uncertain times, considering current and medium-term operating and lending conditions;

- It reflects more accurately the investors' sentiment and investment strategies – notably, it considers the very likely scenario that the investor will refinance after a period of time to take advantage of better available lending terms;
- It reports Market value as opposed to a value which more reflective of distress, producing a more realistic estimate of the hotel's true potential earnings" (Blanco & Perret, 2010).

"A ten-year discounted cash flow is the most accurate method of valuation, providing that there is transparency for the valuer to prove the source of all market assumptions and investment parameters" (Blanco & Perret, 2010).

"One of the principal reasons for being the preferred valuation approach is because it forecasts the present value of an investment and it simulates the investment rationale and strategies of investors" (Rushmore, 1992). "Furthermore, most of the data required for a DCF valuation derive from the hotel property's market, which reduces the need for subjective inputs by the valuer, in contrast with some of the other valuation techniques" (Verginis & Taylor, 2004).

"It is ideal if future income does not mirror the current income, and when future income is subject to variances. This is typical for hotels, as they usually have various sources of revenue and are highly sensitive to both micro and macro-economic factors" (Reynolds, 2008).

"It provides a better overview of the property's trading potential, reflects a value based on future and not on present or past, take into account operations and management characteristics, take into account market-wide changes" (Gasparini, 2011).

"The DCF is ideal if future income forecasts are required, which is often the case when considering mortgage financing a hotel" (Reynolds, 2008).

"The DCF looks at a number of years, as opposed on one year of stabilized income. The DCF requires the appraiser to forecast revenue and expenses for a predetermined period of time. The proper application of the DCF involves selection of not only an overall cap rate, but an appropriate discount rate and transaction cost amount. Industry norms as well as the property's available financial information form part of the date analysis necessary in order to accurately forecast future revenue and expenses" (Reynolds, 2008).

"This method, takes an essential factor into account: the time. The value of the asset depends on the net advantages expected of it, which correspond to the net cash flow elements generated in the future in a given period (economic life of the property or investment period selected for this

property). These advantages take into account the rates of profitability required of the property period by period" (Dargere, April 19-26 2002).

But the DCF has some limitations and weaknesses as well. And all these limitations can be divided into three categories: projections related; reversion related; and discounting related (Verginis & Taylor, 2004).

Table 2. Limitations of DCF

Projections-related	Reversion-related	Discounting-related
Revenue and expenses growth rates	Terminal value	WACC
Inflation – interest growth rates	Cap rate	Constant debt/equity ratio?
Tax laws and future tax rates	Sale costs	Why ten years?
		Monthly or annual discounting

"It is a complicated technique to describe and perform. The results most accurately mirror the cation of typical hotel buyers who purchase properties based on a leveraged discounted cash-flow approach" (Rushmore, Seven current hotel-valuation techniques, 1992).

"The value needs to understand in depth the market and the trading potential of the asset in that market, the value needs to understand in depth the hotel specific operation and management, the value needs to be experienced of the hospitality sector in order to estimate all cash-flows that are the basis of valuation" (Gasparini, 2011).

This technique "is riskier and more speculative in terms of value predictability. It involves more subjective estimates and appraiser assumptions/predictions in regards to the hotel's income and hotel market trends" (Reynolds, 2008).

"The simpler procedure of using a ten-year forecast and a discount rate (total property yield) is less reliable because the derivation of the discount rate has little support. Moreover, it is difficult to adjust the discount rate for changes in the cost of capital" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

Damodaran (2002) argued that "valuations are neither the science that some valuers make it out to be, nor the objective research for true value that some would like it to become. The models used for valuations may be quantitative, but the inputs leave plenty of room for subjective judgement. Thus, the final value that we obtain from these models is affected by the bias that all interested parties bring into the process".

Stuart-Jones (1982) said that "the weakness of the DCF valuation is that it relies on estimates of future performance, growth opportunities, financing needs, and discount rates often made without the benefit of access to detailed information which is necessary for making confident predictions".

The research of Verginis and Taylor (2004) showed that "the majority of the key stakeholders in hotel valuation perceive the DCF hotel valuation approach as the most appropriate for all hotel types. Slightly more respondents believe that DCF valuation is more appropriate for city centre properties rather than resort properties. Overall, these findings would indicate that respondents perceive DCF valuation as being more suitable for high star-rated properties than low star-rated properties. However, there is, of course, no logical or technical reason as to why the market level of a hotel property should make it more or less suitable for applying a DCF valuation approach" (Verginis & Taylor, 2004).

"The Royal Institution of Chartered Surveyors recommends that the DCF method should be the primary valuation method because it is technically superior to other valuation methods" (Verginis & Taylor, 2004).

Ten-Year DCF Using Mortgage and Equity Rates of Return

"The hotel-valuation formula derived by Suzanne Mellen of Hospitality Valuation Services values hotels using a ten-year projection of income and expense discounted through a mortgage-equity procedure that allocates the anticipated net income and reversion to the mortgage and equity components based on market rates of returns and loan-to-value ratios. The total equity component equals the value of the property. Four steps are involved in the formula:

1. The terms of typical hotel financing are set forth including interest rate, amortization term, and loan-to-value ratio.
2. An equity-yield rate of return is established. A number of typical hotel buyers currently base their equity investments on a ten-year equity-yield-rate projection that takes into account the benefits of ownership such as periodic cash-flow distributions; residual sale or refinancing distributions that return appreciation; and mortgage amortization, income-tax benefits, and nonfinancial considerations such as status and prestige.
3. The value of the equity component is calculated by first deducting the yearly debt service from the forecasted income before debt service, leaving the net income to equity for each forecasted year. The net income as of the eleventh year is capitalized into a reversionary

value. After deducting the mortgage balance as of the end of the tenth year along with normal legal and selling costs. The equity residual is discounted to the date of value at the equity-yield rate. The net income to equity for each of the ten projection years also undergoes a similar discounting process. The sum of these discounted values equates to the value of the equity component. Adding the equity component to the initial mortgage balance yields the overall property value. (Because the amount of the mortgage as well as debt service is unknown, but the loan-value ratio was determined in step 1, the preceding calculation can be solved either by an iterative process on a computer or through an algebraic equation that computes the total property value).

4. The proof of the value is performed by allocating the total property value between the mortgage and equity components and verifying that the rates of returns set forth in step 1 and step 2 can be precisely met from the forecasted net income. The process forth in step 3 consists of two algebraic equations that express the mathematic relationships between the known and unknown variables. The following symbols will be used:

NI = Net income available for debt service

V = Value

M = Loan-to-value ration

f = Annual debt-service constant

n = Number of years in projection period

d_e = Annual equity dividend

d_r = Residual equity value

b = Brokerage and legal cost percentage

P = Fraction of load paid off in projection period ($P=(f-i)/f_{p-i}$), where I = the interest rate of the mortgage)

f_p = Annual constant that would be required to amortize the entire loan within the projection period

R_r = Overall "terminal capitalization" rate applied to net income to calculated total property reversion (sales price at end of projection period)

$1/S^n$ = Present worth of \$1 (discount factor) at the equity-yield rate.

Using these symbols, the following formulas cab ne derived to express some of the components comprising this mortgage-equity-valuation process.

Debt service. A property's debt service is calculated by first determining the amount of the mortgage, which is the total value (V) multiplied by the loan-to-value ratio (M); then multiply the amount of the mortgage by the annual debt-service constant (f) as follows:

$(f)(M)(V) = $ debt service

Net income to equity (equity dividend). The net income to equity (d_e) is the property's net income before debt service (NI) less the debt service, as follows:

$NI - [(f)(M)(V)] = d_e$

Reversionary value. The value of the hotel at the end of the tenth year is calculated by dividing the eleventh year's net income before debt service (NI) by the terminal capitalization rate (R_r). The following formula represents the property's tenth year's reversionary value:

$(NI^{11}/R_r) = $ reversionary value

Broker and legal costs. When a hotel sells, there are costs associated with the transaction. Normally, a broker is paid a commission and attorneys collect legal fees. For hotel transactions, broker and legal costs typically range from 1 percent to 4 percent of the sales price. Since these expenses reduce the proceeds to the seller, they are usually deducted from the reversionary value in the mortgage-equity-valuation process. Broker and legal costs (b) expressed as a percentage of the reversionary value can be calculated:

$[b(NI^{11}/R_r)] = $ broker and legal costs

Ending mortgage balance. The balance of the mortgage at the end of the tenth year must be deducted from the total reversionary value (debt and equity) to determine the equity residual. The financial formula used to determine the fraction of a loan paid off (expressed as a percentage of the original loan balance) at any point in time (P) takes the annual debt-service constant of the loan over the entire amortization period (f) less the mortgage interest rate (i) and divides it by the annual constant that would be required to amortize the entire loan within the ten-year projection period (f_p) less the mortgage interest rate. The following formula represents the fraction of a loan paid off (P):

$(f-i)/(f_p-i) = P$

If the fraction of a loan paid off is P, then the percentage of the loan remaining expressed as a percentage is 1-P. The ending mortgage balance is the fraction of the loan paid off multiplied by the amount of the initial loan, and is represented as:

$(1-P)(M)(V) = $ ending mortgage balance

Equity residual value. The value of the equity upon the sale at the end of the projection period (d_r) is the reversionary value less the broker and legal costs less the ending mortgage balance. The following formula represents the equity residual value:

$$(NI/R_r) - [b(NI/R_r)] - [(1-P)(M)(V)] = d_r$$

Annual cash flow to equity. The annual cash flow to equity consists of the equity dividend for each of the ten projections years plus the equity residual at the end of the tenth year as follows:

$$NI^1 - [(f)(M)(V)] = d_e^1$$

$$NI^2 - [(f)(M)(V)] = d_e^2 \ldots$$

$$NI^{10} - [(f)(M)(V)] = d_e^{10}$$

$$(NI^{11}/R_r) - [b(NI^{11}/R_r)] - [(1-P)(M)(V)] = d_r$$

Value of the equity. If the initial amount of the mortgage is calculated by multiplying the loan-value ratio by the value of the property, the equity value would be one minus the loan-to-value ratio times the property value, represented as:

$$(1-M)V = \text{value of the equity}$$

Discounting the cash flow to equity to the present value. The cash flow to equity for each of the projection years is discounted to the present value at the equity-yield rate $(1/S_n)$. The sum of all these cash flows is the value of the equity. The following formula represents the calculation of the equity as the sum of the discounted cash flows:

$$[(d_e^1)(1/S^1)] + [(d_e^2)(1/S^2] + \ldots + [(d_e^{10})(1/S^{10}] + [(d_r)(1/S^{10})] = (1-M)V$$

Combine equations (annual cash flow to equity and discounting the cash flow to equity to the present value). The last step is to make the following overall equation that shows that the annual cash flow to equity plus the yearly discounting to the present value equals the value of the equity:

$$(\{NI^1 - [(f)(M)(V)]\}1/S^1) + (\{NI^2 - [(f)(M)(V)]\}1/S^2) + \ldots + (\{NI^{10} - [(f)(M)(V)]\}1/S^{10}) +$$
$$(\{(NI^{11}/R_r) - [b(NI^{11}/R_r)] - [)1-P)(M)(V)]\}1/S^{10}) = (1-M)(V)$$

Since the only unknown in this equation is the property's value, is can be readily solved" (Rushmore, Seven current hotel-valuation techniques, 1992).

2.3.2. Other income techniques

Except of the income capitalization techniques in income approach there are some other techniques based on the income but without applied capitalization rate.

Room-Rate Multiplier

In the hotel industry, there is a rule of thumb known as "the average daily rate (ADR) rule, which states that a property is worth 1,000 times its average daily rate on a per-room basis. The rule is essentially a RevPAR multiplier, setting value per room at 3.5 to 4.5 times annual room revenues, depending on occupancy. More formally:

Value = Average Daily Rate x Number of Rooms x 1,000

One of the questions that immediately arises when implementing the rule is which ADR to use: a "trailing" or historical ADR, ADR in the first projection year, or the stabilized year ADR. Since the rule's origins are clouded in lodging folklore, a generally accepted standard must be used when applying the rule. Extensive research by Corgel and deRoos revealed that practitioners generally use the current year's expected ADR when applying the rule to existing hotels, but apply a stabilized ADR when applying the rule to properties under development. This inconsistency is a source of confusion and inaccuracy. The authors take the position that the rule should be consistently applied to a stabilized ADR" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

"Room-rate multiplier is a rule of thumb that provides a check to verify the accuracy of the techniques" (Rushmore, Seven current hotel-valuation techniques, 1992).

The room-rate multiplier "does not consider occupancy, other sources of revenue, or expenses, and it assumes a stabilized operation. Its persistent presence begs the question: Does the "rule of thumb" still hold weight in today's market?"[10]. It was made some valuations with applying this techniques and other, and the results were very close. Therefore we can say that "it is a general benchmark that survives the test of time, inflation, and hotel development cycles".

The Coke™-Can Multiplier

"Another valuation rule-of-thumb used in the lodging industry is that each room of a hotel is worth 100,000 times the price of a Coke™ in the on-floor vending machine or in-room mini-bar. More formally:

Value = Coke™ price x Number of Rooms x 100,000" (Rushmore & DeRoos, Hotel Valuation Techniques, 2004).

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[10] (Sahlins, 2000)

3. Valuation of Hilton Garden Inn Perm Hotel applying the international techniques

In this part I will calculate the value of Hilton Garden Inn Perm Hotel applying the international techniques.

At the beginning I will provide common information about Hilton Garden Inn Perm Hotel that will be used further for the different techniques.

Table 3. Parameters of HGIP Hotel used for valuation

Parameter	Meaning
Number of rooms	104
Stars	3
Start of operation	01/12/2006
Date of valuation	01.09.2012
Age of property	6 years

3.1. Cost approach

Age-Life method

Management company BS Hospitality Management is building the new brand hotel in Perm and therefore I have information about building costs that we can apply for Age-Life Method.

Table 4. Valuation of HGIP Hotel. Age-Life Method

Cost items	Meaning, €	Costs per room
Building & improvements, including soft costs	15,600,000	€122,000/room
FF&E	1,310,400	€12,600/room
Preopening & working capital	468,000	€4,500/room
Total replacement cost	**17,378,400**	**€176,400/room**
Less: Building depreciation	1,872,000	6/50 of the replacement cost
Less: FF&E depreciation	786,240	6 /10 of the replacement cost
Add: CapEx reserve	2,000,000	6 years of net new investment
Adjusted total, €	**16,720,160**	

3.2. Comparison approach

We do not have any information about sales of other hotels in Russia. Therefore it is not possible to apply the comparison approach. But we have an automated valuation model, where the value of hotel was determined through the formula or automated valuation model of hotel value using the database with hotel sale transactions in USA. Usually we cannot apply similar formulas for valuation in other countries, because correspondences in the formula reflect features of country market. But it is interesting to apply and analyze results.

Table 5. Valuation of HGIP Hotel. AVM

	Coefficients	Data	
The constant			-42 873
NOI	5,615	14 673	82 389
ADR	615,039	155	95 518
Rooms	33,693	104	3 504
Occupancy	234,891	59%	139
Value per room			138,677
Value total, $			14 422 362
Value total, €			**10,816,771**

As we will see later, this value has completely different meaning than meanings from other techniques, therefore unfortunately we cannot apply it in Russia as I supposed earlier.

3.3. Income approach

For applying income approaches we need some valuables that we can find by the different methods. These variables are the stabilized net income, the capitalization rate, the discount rate.

The most appropriate way to find these variables in the Russian reality are investor interviews.

I made a research among hotel professionals from company BS Hospitality Management in which I asked them to answer questions about necessary parameters for valuation. The questionnaire is in Appendix 1. I need these parameters for valuation of Hilton Garden Inn Perm Hotel therefore I suppose that I can ask the employees of management company BS Hospitality Management who all participate in the management of the hotel and I can use the received results of my valuation. I succeeded in getting answers from 3 people: Director of BS Hospitality Management Sergey Stashkov, Financial Director of BS Hospitality Management Mikhail

Rabinovich, General Manager of Hilton Garden Inn Perm Hotel Elena Tarasyuk, and I also took into account my own opinion being Project Manager of BS Hospitality Management.

In table below I provide results of the survey.

Table 6. Survey results

Question	1st person	2nd person	3rd person	4th person	Average
1. Most optimal forecast period for hotel valuation in Russia	10 years	3 years	4 years	5 years	**5.5 years (5 years)**
Comments	This period reflects the correct value of hotel business	Accurate forecast of each item of revenue and expenses. The opportunity of crisis exists when we say about the period longer than 3 years	It is not possible to predict accurate cash flow for more than 4years	Because of lack of long-term forecasts, reliable statistical information, underdevelopment of planning system the optimal forecast period is not longer than 5 years	
2. Capitalization rate for hotel business in Russia	12%	10%	10%	12%	**10.8%**
3. Investment risk for hotel projects in Russia	3%	5%	5%	5%	**4.5%**
4. Discount rate for hotel business in Russia	12%	15%	11%	12%	**12.5%**
5. Stabilized net income for HGIP Hotel	2012	2014	2014	2014	**2014**

These average meanings I will use further for my valuation. Recently I have made a forecast of net income for the next 5 years that was approved by the company's management. In 2012 I have actual data for period from 01.01.2012 to 31.08.2012, and for period from 01.09.2012 to 31.12.2012 I have made a forecast.

Table 7. Forecast net income of HGIP Hotel for 5 years

	2012			2013		
	€	% of gross	€ per room	€	% of gross	€ per room
Total Revenues	4,220,249	100%	40,579	4,731,884	100%	45,499
Departmental Expenses	1,390,296	35%	13,368	1,458,274	31%	14,022
Departmental Income	2,829,953	72%	27,211	3,273,611	69%	31,477
Undistributed operating expenses	1,092,218	28%	10,502	1,231,774	26%	11,844
Income before fixed charges	1,737,735	44%	16,709	2,041,836	43%	19,633
Fixed Charges	497,536	13%	4,784	704,472	15%	6,774
Net income	**1,240,199**	**32%**	**11,925**	**1,337,364**	**28%**	**12,859**
	2014			2015		
	€	% of gross	€ per room	€	% of gross	€ per room
Total Revenues	5,152,186	100%	49,540	5,610,084	100%	53,943
Departmental Expenses	1,545,711	30%	14,863	1,639,669	29%	15,766
Departmental Income	3,606,475	70%	34,678	3,970,415	71%	38,177
Undistributed operating expenses	1,335,912	26%	12,845	1,429,269	25%	13,743
Income before fixed charges	2,270,563	44%	21,832	2,541,146	45%	24,434
Fixed Charges	667,398	13%	6,417	622,991	11%	5,990
Net income	**1,603,164**	**31%**	**15,415**	**1,918,155**	**34%**	**18,444**
	2016			2017		
	€	% of gross	€ per room	€	% of gross	€ per room
Total Revenues	6,108,950	100%	58,740	6,652,462	100%	63,966
Departmental Expenses	1,720,104	28%	16,539	1,806,964	27%	17,375
Departmental Income	4,388,845	72%	42,200	4,845,498	73%	46,591
Undistributed operating expenses	1,513,108	25%	14,549	1,604,318	24%	15,426
Income before fixed charges	2,875,737	47%	27,651	3,241,180	49%	31,165
Fixed Charges	695,671	11%	6,689	775,215	12%	7,454
Net income	**2,180,066**	**36%**	**20,962**	**2,465,965**	**37%**	**23,711**

Further I calculate the value of HGIP Hotel by applying all possible techniques of income approach for which I have data.

Table 8. Valuation of HGIP Hotel. Direct capitalization method

Parameter	Meaning
Stabilized net income (2014),€	1,603,164
Average capitalization rate from interviews	10.8%
Value, €	14,913,156

As I mentioned above in the discount cash flow method we can use different methods for determination of discount rate. There are two possibilities to calculate it in my case: cumulative discount rate and discount rate from investor interviews. The average meaning of discount rate from investor interviews amounts to 12,5%. When I calculate discount rate using cumulative method as sum of inflation, investment risk and riskless return, I have the following results:

Table 9. Cumulative method for discount rate

	2013	**2014**	**2015**	**2016**	**2017**
Inflation	6.2%	5.2%	4.9%	4.9%	4.8%
Investment risk	4.5%	4.5%	4.5%	4.5%	4.5%
Bond returns	2.6%	2.6%	2.6%	2.6%	2.6%
Discount rate	13.4%	12.3%	12.0%	12.0%	12.0%

I took inflation data from the official web-site of Ministry of economical development of Russian Federation[11], from the federal program of social-economical development of Russia in 2013-2015 and from the long-term program of development in 2015-2030.

I used an average investment risk meaning from investor interviews as value of investment risk.

I took return on Eurobonds Russia-2030 from the web-site of information agency Cbonds[12]as riskless return.

As result I have got the discount rate for each year of my forecast period. The 5-year average meaning of discount rate determined by cumulative method is 12.3%. It is very close to the

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[11] (Forecasts of social-economical development of Russia and several sectors of economy)
[12] (Eurobonds Russia 2030)

meaning from investor interviews, but I suppose that it is better to use an appropriate discount rate for every forecast period, if we have the opportunity to do it, because it is more accurately. Therefore I will use results of cumulative method for discounting cash flows.

Table 10. Valuation of HGIP Hotel. Discount cash flow. 3 years

	2013	**2014**	**2015**
Period	1	2	3
Net income, €	1,337,364	1,603,164	1,918,155
Capitalization rate			10.8%
Terminal Value, €			17,843,303
Discount rate	13.4%	12.3%	12.0%
Discount coefficient	0.88	0.79	0.71
Discounted cash flow	1,179,718	1,270,651	12,703,527
Value, €	**15,153,896**		

Table 11. Valuation of HGIP Hotel. Discount cash flow.5 years

	2013	**2014**	**2015**	**2016**	**2017**
Period	1	2	3	4	5
Net income, €	1,337,364	1,603,164	17,843,303.2	2,180,066	2,465,965
Capitalization rate					10.8%
Terminal Value, €					22,939,211
Discount rate	13.4%	12.3%	12.0%	12.0%	12.0%
Discount coefficient	0.88	0.79	0.71	0.63	0.57
Discounted cash flow	1,179,718	1,270,651	1,365,629	1,383,390	13,032,230
Value, €	**18,231,618**				

Table 12. Valuation of HGIP Hotel. Room-rate multiplier

ADR of stabilized year (2014), €	146
Number of rooms	104
Value, €	**15,161,900**

We cannot apply the technique "Ten-Year DCF Using Mortgage and Equity Rates of Return" because of absence of the data for calculating the rates of return. For the same reason we cannot use the set of band-investment techniques that apply WACC as capitalization rate. It explains the fact that we do not sale or buy the hotel and therefore we do not have the financial sources for that and capital costs respectively. When HGIP Hotel was being built, there were two sources for project financing: equity and debt, but now all debt has been returned and in the reality there are no owners' dividends on equity capital, therefore we have neither equity capital costs nor debt capital costs and we should determine the capitalization rate in our case by other possible methods, for example, by investors interviews.

We cannot apply the coke-can multiplier as well, because in the standards of Hilton Garden Inn Hotels for Europe it is not necessary to have a coke-can in mini-bar or in pavilion pantry. And it would be wrong to substitute the coke-can with something different.

So, we have one value from cost approach and four values from income approach. I will use average meaning among 5 values as my final value of HGIP Hotel.

Table 13. Meanings of HGIP' value by applying all techniques

Technique	Value, €
Cost approach. Age-Life Method	16,720,160
Income approach. Band-investment. One year	14,913,156
Income approach. Band-investment. Three years	15,153,896
Income approach. Band-investment. Five years	18,231,618
Income approach. Room-rate multiplier	15,161,900
Average value	**16,036,146**
Average value per room	**154,194**

I can compare my results of the value per room with the data of HVS from part 1.5, where I have defined the average value per room for Perm as 101,766€. There are complete different results, but I have some explanations for that:

First one is that Hilton Garden Inn Hotel is the only branded hotel in Perm and as we discussed above that the affiliation of hotel gives it additional value. As the only branded hotel in the city it has a high demand that gives opportunity to set a price above the market average one.

Second one is that HGIP with the restaurant Karin inside hotel infrastructure is one of the most successful hotel and restaurant projects in Perm. Therefore its value has to be higher than the average value.

Last official valuation of Hilton Garden Inn Perm Hotel was made by the certificated valuation company at the end of August 2012 and according to its report final value of HGIP Hotel was 16 392,387 €.

Deviation of my meaning from the meaning of the certificated valuation company amounts to 2.2%. I suppose that is very high accuracy of valuation.

4. Implications

Hilton Garden Inn Perm Hotel is a typical regional Russian hotel with the medium amount of rooms (104) that is located in the one of the Russian million-cities.

Therefore the techniques that were used for valuation of this hotel can be applied for valuation of other hotels in Russia, namely:

- Age-life method
- Direct capitalization method
- Discount cash flow method. Three years
- Discount cash flow method. Five years
- Room-rate multiplier

In the case of buying or selling a hotel we can use the band-investment techniques, when it is possible to apply WACC as capitalization rate.

Application of these techniques in the forms that are described in this master thesis should be applied only for receipt of an approximate hotel value.

Appendix 1. Survey of the parameters for valuation of HGIP Hotel (questionnaire)

Dear colleagues, professionals of hotel business,

 I would like to ask you to answer below the following questions referring to an investment in hotel business and valuation of its market value.

Mostly used valuation approach in hotel business is the income approach. Applying it we use the net cash flows for the determined time period, calculate terminal value of a hotel by dividing net cash flow at the first post-forecast period into the capitalization rate and then discount all cash flows to the present time point. Questions are as follows:

1. Which forecast period, on your opinion, is the most optimal for valuation of hotels in Russia?
   - 1 year
   - 3 years
   - 5 years
   - 7 years
   - 10 years
   - other.

   Please give short comments if it is possible.
   Answer: _____

2. Give a quantitative estimation of capitalization rate applied for the estimation of terminal value?
   Answer: _____%

3. Discount rate is used for reduction of the future cash flow to the present time. One of the calculation method of discount rate is the cumulative method, by that discount rate is determined as:
   d = Emin + I + r,
   where d – nominal discount rate;
   Emin — minimal real discount rate (for example bond returns till 2030);
   I — inflation rate;
   r — coefficient of investment risk or risk premium.
   Investment risk consists of three components: country risk, risk of unreliability of project participants and risk of non-getting the projects future cash flows.
   Give a quantitative estimation of the investment risk for project of achievement by HGIP Hotel financial results (net income stated in table of question №6) for the period that you have signed as optimal in question №1.
   Answer: _____%

4. Give a quantitative estimation of final discount rate applied for the discounting of the cash flows?
   Answer: _____%

5. If we would use other technique of income approach and the value of hotel would be calculated as the stabilized net income of hotel divided by capitalization rate, which meaning you would use as the stabilized net income (stabilized EBITDA) having the following fact and predicts of EBITDA from 2012 to 2023:

	2012	2013	2014	2015	2016	2017
EBITDA, €	1,240,175	1,337,350	1,603,150	1,918,150	2,180,050	2,465,950

	2018	2019	2020	2021	2022	2023
EBITDA, €	2,672,975	2,892,875	3,126,350	3,374,150	3,637,100	3,916,025

Answer: _____

Your answers will be included in the master thesis "Hotel valuation in Russia by applying international techniques". You can find out more about this thesis in English after its approval at the University of Vienna.

Thank you very much for your assistance!

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Curriculum Vitae

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EDUCATION

10/2011-03/2013	Master study at the **University of Vienna** *International Business Administration,* *Corporate Finance*
07/2012-08/2012	Internship **ZEHR JSC, Paris, France** o Business-plan creation for the branch opening in Russia
2001 – 2006	Diploma study at the **Perm state University, Russia** *Business management, Investment management* diploma with honors

WORK EXPERIENCE

10/2011 – date	*Project manager (distant work)* **BS Hospitality Management LLC, Perm, Russia** o Business-planning in hotel, horticulture, energy sectors
07/2010 -09/2011	*Project manager (part-time)* **BS Hospitality Management LLC, Perm, Russia** o Leading of hotel projects on the stage of projecting in Russia o Current and strategic business planning for the projects o Preparation of regular management statements o Organization of credit financing for projects
05/2008 – 09/2011	*Deputy General Director for Economics* **BK-Development LLC, Perm, Russia** o Maintenance of 4-star-hotel construction Doubletree by Hilton (170 rooms) on the stage of projecting o Business planning o Organization of credit financing for the project
01/2007– 04/2008	*Leading specialist, Investment project department* **Investment supporting agency of Perm region JSC, Perm, Russia** o Appraisal of investment projects o Management of project "Building of the touristic ski-resort in Urals"
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PERSONAL SKILLS

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