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Valuation of Intangible Assets: The Case of the National Basketball Association

Master's Thesis by the 2nd year student:

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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ

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May 24, 2018

АННОТАЦИЯ

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Описание цели, задач и основных результатов	Целью данного исследования является проведение анализа влияния нематериальных активов на оценку франшиз Национальной баскетбольной Ассоциации, путем теоретического сравнения стоимости франшиз, предоставленного журналом Forbes, и фактических цен продажи франшиз НБА, а также анализа тенденций роста в ценах продаж команд НБА, при помощи объединенной регрессия обыкновенных наименьших квадратов, анализирующей влияние нематериальных активов на прошлые транзакции. Основными результатами данной работы являются определение главных нематериальных активов, влияющих на рыночную стоимость франшизы: нематериальный гудвил, человеческий капитал и структурный капитал. В настоящий момент, владельцы франшиз могут повысить стоимость своих франшиз, сосредоточившись на нематериальных активах, которые влияют на стоимость в краткосрочной и долгосрочной основе в зависимости от их целей.
Ключевые слова	Нематериальные активы, оценка нематериальных активов, баскетбол, Национальная баскетбольная ассоциация, НБА, профессиональные спортивные команды, спортивная экономика, спортивное финансирование

ABSTRACT

Master Student's Name	Victor Eschlimann
Master Thesis Title	Valuation Intangible Assets: The Case of the National Basketball Association
Faculty	Graduate School of Management
Major subject	Corporate Finance
Year	2018
Academic Advisor's Name	Prof. Alexander V. Bukhvalov
Description of the goal, tasks and main results	The goal of this study is to analyze the effects of intangible assets on NBA franchises valuation through a comparison of theoretical franchises' value provided by Forbes magazine and the actual sales prices of NBA franchises, an analysis of growth trends in NBA teams' sales prices, and a pooled Ordinary Least Squares regression analyzing the effects of intangible assets on past NBA transactions. Main results of this work are that intangible goodwill, human capital, and structural capital are the main intangible assets that influence a franchise' market value. Moreover, current franchises' owners may improve the value of their franchises by focusing on intangibles that affect the value on a short-term and a long-term basis, depending on their objectives.
Keywords	Intangible assets, intangibles, intangible assets valuation, basketball, National Basketball Association, NBA, professional sports teams, sports economics, sports finance

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INTRODUCTION

Since the early 1990s, the intangible assets' awareness was raised and with it came the problems of valuing these assets. Nowadays, these intangibles are recognized as value generators and they are recognized as significant when assessing an organization competitiveness, especially when noting the raise of such concepts such as "conceptual companies" which are characterized by lesser relevant physical assets and the increased importance of intangible intensive activities (OECD, 2012).

Intangible assets are important to be clearly defined within a company as they became important value drivers but also strategical tools for a company to develop. Thus, company executives see their identification and valuation as important metrics to be known and to be cared for. However, the valuation is too seldomly thoroughly performed and an important number of firms do not show their importance in their periodic financial results disclosure. The awareness regarding these value determinants still has to be raised and information about their quantitative and qualitative valuation methods must be spread. This is especially true for intangible assets intensive industries where these assets take up a significant portion of the company performance and market value.

Such intangibles intensive organization are seen in multiple industries, and professional sports organizations are some of these. In professional sports teams, intangible assets such as the brand value, the organization's history, and the skills of its employees from the administrative workers to the players are the main value drivers and have to be assessed as such. That is why, we will develop our intangibles valuation analysis around professional sports franchises, and especially NBA franchises, to analyze the importance of intangible assets in a sports franchise valuation.

The purpose of this thesis is, therefore, to analyze intangible assets in NBA franchises and their effect on valuation. The goal of this research is to analyze the actual market values of past transaction involving NBA franchises and to see which intangible assets impacted the valuation of the teams. By analyzing 68 sales of NBA franchises since the league creation in 1946 through an empirical study, we expect to gain insights on the intangibles that drives a franchise value and identify the intangible assets judged important by franchise purchasers and resulting in these buyers to pay a premium on top of an NBA team's book value. In fact, Vine (2004) found out that NBA franchises between 1999 and 2003 were sold on average at a 38% premium on top of their book value. For this research, we assume that these premiums paid to acquire teams are, in fact, representing the effects of intangible assets on the value of a professional sports team.

Thus, we will try to answer the following research questions:

- What are the intangible assets that influence an NBA franchise's value?
- How are these intangibles affecting the market value of these franchises?

To answer these questions, we will first define intangible assets, analyze the different valuation methods explained in different literatures, and highlight the intangible assets found generally in sports organizations and in NBA franchises. Then, we will perform a primary analysis to assess the existence of these premiums paid by franchises acquirer and analyze the growth of NBA franchises values since the creation of the league. Finally, we will assess the effects of intangible assets on NBA franchises market value through an empirical study.

This study seeks to differentiate itself from previous researches in several ways. First, most of the papers devoted on sports franchises value determinants base their empirical study on either the four major North American sports leagues, namely the NFL, MLB, NHL, and NBA, or on only one league but by analyzing the impact of value determinants on the theoretical value of franchises. When analyzing the four leagues simultaneously is sufficient to determine the general value of professional sports team ownership, by doing so, researchers do not account for any league specificities being different revenue models, popularity, financial and organizational structure, and many other variables. When focusing on one particular league, it is possible to account for league specific variables that may differ from the one that would be suited for other leagues, but also to gather determinants that impact the value of franchises only in the league studied. Moreover, when using values published by Forbes Magazine and Financial World Magazine instead of actual sales prices to acquire a franchise, the researches have several limitations. The first being the impossibility of analyzing value before 1991 as Forbes / Financial World Magazines only started their teams value estimation in 1991. The second being that these estimated values approximate franchises value based on revenue and income. Even though, the evaluation model improved over the years, it remains based on less variables than an actual transaction, e.g. irrational behaviors or other human behavior's biases. These estimated values can fail to account for all the variables affecting a team's worth.

The second way this paper differs from previous works is its focus on intangible assets. When most of the papers on franchises value determinants mention the importance of intangibles and use variables that represent them in their analysis, they focus their research on analyzing the importance of specific value determinants on the value of professional sports teams, without assessing the link of these variables with intangible assets. As this study is not focused on simply

analyzing factors that affect the value of franchises, but more on the effect of specific intangibles on this value it separates itself from previous works on franchises value determinants.

This research is directed to potential owners and investors willing to invest in professional sports organization but has also the purpose to help current sports teams' owners to identify which intangible assets drive the value of their organization, in order for them to focus their efforts in developing these value drivers to boost the value and the competitiveness of their organization.

CHAPTER 1: THEORETICAL BACKGROUND AND LITERATURE REVIEW

1.1. Intangible assets definition and theory

When it comes to company valuation, most of the people will think about money, cash flows, balance sheets, and profit & loss (P&L) statements. However, even though it is true that a company's value is based on its book value, other characteristics must be taken into account when it comes to sell or acquire a company or an organization. That is why the persons buying a company are ready to pay a premium on top of the book value of a company. This premium can be commanded by multiple factors which are not tangibles and not perfectly measurable; these factors are named intangible assets. Intangible assets, intangibles, knowledge assets, intellectual assets, and intellectual capital, are just different names that revolve around the concept of intangible assets and many authors use them interchangeably (OECD, 2011; Pastor, Glova, Lipták, Kováč, 2016). Even though many authors disagree on the fact that there is a difference between intellectual capital and intangible assets, the OECD states that a difference among the two terms indeed exists: "intangible assets are non-monetary assets without physical substance held for use in the production or supply of goods or services, for rental to others, or for administrative purposes and intellectual capital is the estimated, imputed economic value of intangible assets of a company" (Pastor et al., 2016, p.389). As for the distinction between intangible assets and intangibles, many authors regard intangibles as being either assets or liabilities, when intangible assets can, logically, only be assets. Intangible liabilities are the corresponding liabilities to intangible assets and represent the difference between market and book value when the difference is negative, whereas intangible assets are representative of a positive difference. Some example of intangible liabilities might be weak strategic planning or reputation of the firm (Pastor et al., 2016). For the sake of readability, and as this paper will mainly treat about intangible assets, when writing intangibles, the term will correspond to intangible assets.

The Oxford Dictionary defines intangibles as "difficult or impossible to define or understand; vague and abstract" and goes further when designing "an asset or benefit" in saying that it is "not constituting or represented by a physical object and of a value not precisely measurable" (Oxford English Dictionary Online, 2018). We agree on the fact that trying to give intangibles a precise value would give a headache even to the most thorough analysts, however, this work is not dedicated on giving the readers a framework to calculate intangibles with an acute precision, but more on finding the main intangibles that drive up a company value. Another definition, this time provided by Webster and Jensen (2006), explains us that "intangible capital consists of all forms of capital not immediately manifest in tangible matter" (p.83). Under this intangible asset concept are all ideas, skills and creative potential of a company and is, therefore

necessary in every industry, as even the most basic ones require skills and knowledge. We can also add to these examples, a brand reputation and the standing of a company. The Organization for Economic Co-operation and Development, better known as the OECD also provide us with three classification groups for intangibles: computerized information including software and databases, innovative property such as copyrights, designs, trademarks, and scientific and non-scientific R&D, and economic competencies revolving around brand equity, firm-specific human capital, networks joining people and institutions, organizational know-how, and marketing and advertising (OECD, 2011).

According to the International Accounting Standards, there are three critical attributes of intangibles, which are: identifiability, control, and expected future economic benefits. This specification is dedicated to separate intangibles from unidentifiable goodwill, as intangible assets are supposed too be separable and to arise from contractual or legal rights. However, even though this definition makes sense from an accountant perspective, intangibles are in fact not strictly separated from goodwill and mostly constitute a part of it. If one would follow these criteria, we would not apply the term intangibles to many resources (Pastor et al., 2016). On the other hand, the Chartered Global Management Accountant (CGMA) (2012) characterizes intangible assets differently. In their guidelines are given four characteristics of intangibles that differ slightly from the International Accounting Standards. The first characteristic is the same as the one cited above: identifiability, then the three others are different. An intangible asset is characterized by: its manner of acquisition by seeing if the intangible asset was purchased or developed internally, it is also characterized by its determinate or indeterminate life, and by its transferability as an intangible asset can be bought, sold, licensed, or rented and is subjected to the rights of ownership (CGMA, 2012). Intangibles have another specificity in the fact that they are, in general, nonrival, meaning that they can be deployed simultaneously without affecting the deployment of other intangible assets. They are also not subjected to the diminishing return characteristics of physical assets; they can therefore be used in a simultaneous and repetitive manner without diminishing their usefulness, when physical and financial assets can only be exploited to a limited degree with the use of economies of scale or scope in production (Lev, 2000). However, these characteristics remain quite general and do not give a clear understanding on what defines an intangible. Even by merging the International Accounting Standards and the CGMA's characteristics, a lot of freedom is given to the companies to identify their intangibles, which is the main problem nowadays, as companies do not really know what their intangibles are and how to analyze them.

However, some researchers classified intangibles into categories to achieve a better understanding of these specific assets: Córcoles (2010) divides intangible assets into visible and

hidden intangibles depending on whether they are recognized by accounting reports or not. Besides these visible and hidden intangibles, we also find intellectual capital which is divided into three parts: human capital, structural capital, and relational capital. Not all authors agree on this division, as for example Edvinsson and Malone (1997) argue that intellectual capital is divided among human and structural capital, and that structural capital comprises organizational and customer capital. In this paper, we will follow Pastor et al. (2016) in dividing intellectual capital in human, structural, and relational capital. Regarding intellectual capital, not everything considered intellectual capital is knowledge (Pastor et al., 2016). Truban and Frenzel (1992) define knowledge concisely in writing "knowledge is information that has been organized and analyzed to make it understandable and applicable to problem solving or decision-making", moreover we can consider knowledge as actionable information, as it is related to an action (Pastor et al., 2016). McInerney and Koenig (2011) categorize knowledge in three categories: explicit knowledge which represents knowledge in its tangible forms, implicit knowledge which is categorized by knowledge in intangible form but that can be converted in tangible form, and tacit knowledge which is again knowledge in its intangible form but that one would find very hard to transform it into tangible form.

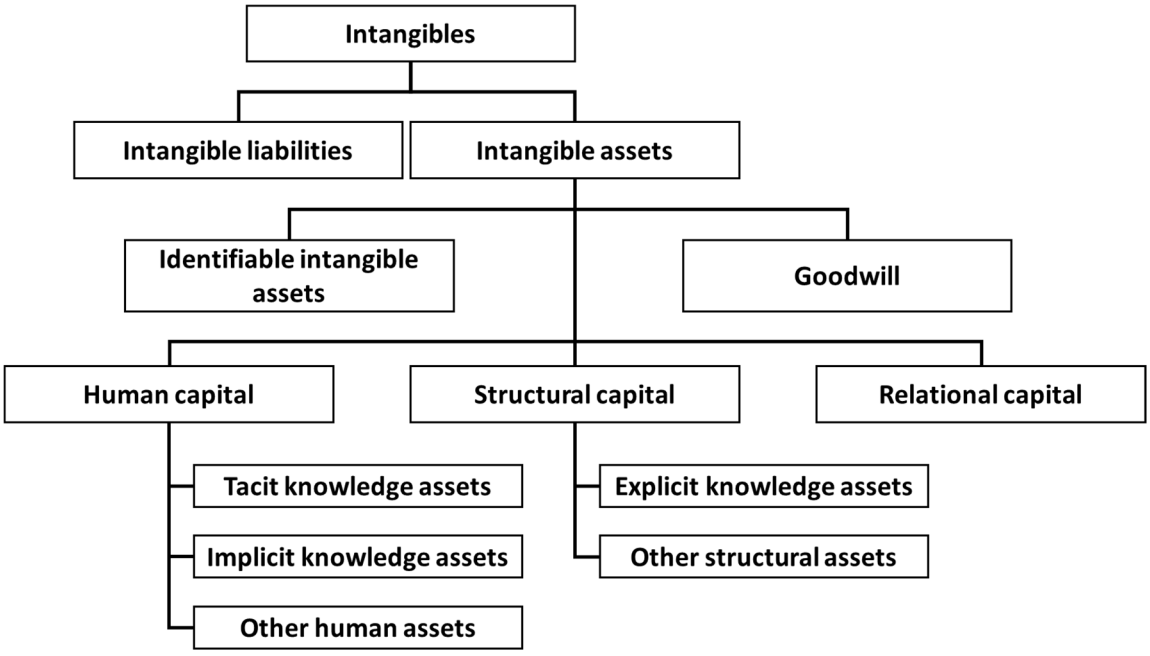
Pastor et al. (2016) follow these categories and the definition of knowledge to divide the three divisions of knowledge and sort them into intellectual capital. According to Becker (2011), human capital is referring to the employees of an organization and their capabilities, knowledge, adaptability, experience, innovation, and education, therefore Pastor et al. explain that implicit and tacit knowledge are important parts of human capital. On the other hand, Structural capital is then defined as "everything left at the office when the employees go home" (Edvinsson and Malone, 1997, p.11); this could consist of processes in the company, databases, or even a company's organizational structure. Under structural capital we can find explicit knowledge. The third subcategory of intellectual capital being relational capital, encompasses relationships with customers and suppliers, a company's brand and reputation, the distribution channels, etc. and does not consist of knowledge.

Table 1 is a categorization of intangibles regarding the above-mentioned definitions coming from Pastor et al. (2016) and gives a clear overlook of the divisions of intangibles.

The growing importance of intangibles can be retraced up to the 1990s when a significant change of a company's assets appeared: in the 1980s the book value of corporations saw an unprecedented shrinking in relation to market value. Lev and Daum (2004) explain that the capital markets view of a company's intangibles, also called the residual, rose during this period and, as a result, the average S&P500 company saw the relation between book value and intangibles to

reverse and shift towards an increased importance of intangibles. As Lev and Daum (2004) state in their work, intangibles' value, which represented 38 percent, on average, of the market value in 1982, increased to represent up to 62 percent of a S&P500 company's market value in 1992. In the meantime, the opposite happened to companies' book value which dropped from 62 to 38 percent. Nowadays, intangibles are recognized growth creators and there seem to be a consensus on the fact that accounting-based information systems are not able to generate adequate information on corporate intangible assets, which is one of the cause of the increased volatility in stock prices and is favoring the information imbalance between corporate outsiders and insiders (Lev and Daum, 2004). Following this period, from the mid-1990s to the early 2000s, intangible assets have been proven to account for 18% of the multi-factor growth in productivity in the US. Meanwhile, the World Bank is estimating that the main form of wealth of countries is intangible assets (OECD, 2011).

Table 1: Relations between components of intangibles (Pastor et al., 2016)



Intangible assets raise many issues in nowadays business, but there are mainly two that need to be highlighted:

(1) Intangibles are neither creating value nor growth when taken alone: they need to be combined with other tangible factors to generate an impact on a company. Moreover, they need to be taken care of, or their effect will dissipate much faster than usual tangible assets.
(2) Intangibles' value is anchored in the future: they represent possibilities for "potential" future growth and income, which is contradictory to the current bookkeeping methods that are turned towards past information (Lev and Daum, 2004)

As intangibles took more and more place in a company's value, reporting and analyzing these assets became important for companies. By keeping track of them a company might be able to improve its existing base of intangibles but also measure their effect on the company.

1.2. Valuation methods of intangible assets

We saw that intangible assets can take multiple forms and that there is no real consensus on how to define them and on their impact on companies' value. The only thing that everyone seems to agree on is that intangible assets are important for a company and must be take care of. In fact, the OECD (2012) states that most of the companies appear to have a limited ability to incorporate intangibles in their accounting framework and that, therefore, accounting reports appear less relevant than they used to. To add to this statement Daum, Norton, Edvinsson, and Lev (2002) analyzed the market-to book value ratio of S&P500 companies and concluded that 80% of the market value of a company did not appear in the financial statements. In a similar study conducted on UK FTSE 100 companies, Beattie and Thompson concluded that the mean market-to-book ratio of the companies went from 2,5 in 2005 to 7 in 2010 (ICAS, 2010). However, these researches base themselves on the assumption that intangibles are the only drivers of a company's market value other than book value, when actually other factors might be important such as future expectations (OECD, 2012). Nevertheless, the main takeaways of these studies are that companies are having a hard time valuing these intangible assets and adding them to their accounting systems. This raise serious concerns on the relevance of financial statements and place growing expectations on non-financial reporting to close this information gap (OECD, 2012). Moreover, in a KPMG's survey of non-executive directors (2003), more than 60% of the respondents declared having almost no knowledge of non-financial indicators resulting from the fact that information given by executives was mainly financial and the situation does not seem to have changed much until now.

Roos, Pike, and Fernström (2004) give us reasons to perform the valuation of intangibles, even imperfectly, and state the clear benefits of intangibles' reporting. This can address, and sometimes resolve, the problems occurring with the traditional methods of disclosure: Reporting can reduce the risks of insider trading by solving information asymmetries between firms relying more on tangible assets and firms relying more on intangibles, to help outside investors assess the true value of intangibles. Moreover, it could solve the higher costs of capital encountered by companies relying heavily on intangibles, as investors and bankers might regard tangibles as security. The third reason to support reporting and valuation of intangibles for companies is that overvaluation of intangibles may lead to misallocation of capital because of the fact that a lack of regulations regarding intangibles valuation may lead businesses to manipulate their processes and

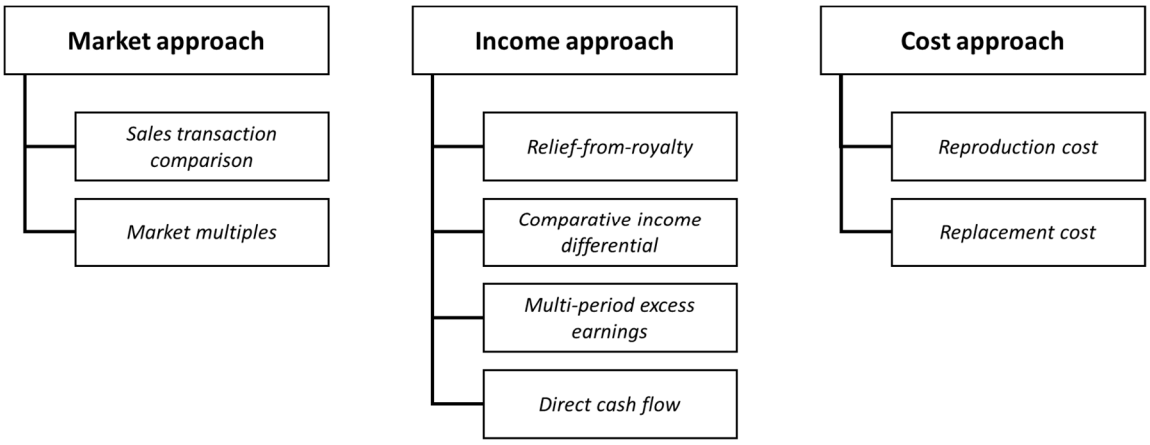
therefore, lead investors to over-value the company (Roos et al., 2004), but it also could lead on the contrary to the undervaluation of companies (Andriessen, 2004). Reporting of intangible assets is also needed to avoid managers exploiting the information asymmetry regarding the value of the people and their ideas and thus eliminate managers taking advantage of their knowledge workers. The last reason given by Roos et al. (2004) to support valuation and disclosure of intangibles is dedicated to reducing the volatility and uncertainty in capital markets by disclosing the quality of a business' intangibles. By promoting intangible assets reporting, we would favor information symmetry and transparency among companies to allow fund managers to reconcile theory and practice to construct portfolios and to while establishing a formalized connection between the past, the present, and the future. For companies' managers, the incentives towards better intangibles reporting lie in supporting transparency regarding the use of private and public funds and explaining their achievements and explain them to shareholders. It also enhances the communication by highlighting a company's strengths and competitiveness, but also ensure that the company will be valued as accurately as possible (Roos et al., 2004).

There is indeed a need for clear valuation methods for intangibles, which can be performed using the three most used approaches: the market approach, the income approach, and the cost approach (Thornton, 2013). The market approach is based on similar transactions and the market price of similar intangibles, as these data are not often disclosed or available, the market approach has a limited use in real life (Pastor et al., 2016). The market approach is usually used in income-based models when trying to determine reasonable royalty rates and discount rates (CGMA, 2012). The cost approaches are either the cost estimated to reproduce a specific intangible asset in its acquisition date condition (reproduction cost method), or the calculation of the costs to acquire a similar asset of comparable utility today (replacement cost method). The cost approaches are less generally accepted than the market and income approaches as they ignore future economic benefits (Thornton, 2013). They are mainly used to value assembled workforce, engineering drawings or designs, and internally developed software where no direct cash flow is generated (CGMA, 2012). We can divide the income approaches in four methods: The relief-from-royalty method which consists of valuing the intangible "by discounting the royalty payments which the acquirer would have to pay in an arm's length licensing arrangement to secure access to the same rights" (Pastor et al., 2016, p.395). The comparative income differential is a valuing method in which the value of the intangible is assessed by subtracting the value of the business with this asset with the value of the business without this asset. The multi-period excess earnings methods are applied when direct measurement of future economic benefits is not possible and consist of deducting the charges for all the other assets to the total expected income of a business or group of assets, this

gives a residual income that is connected to the intangible we try to evaluate (Thornton, 2013). The last one, the direct cash flow method repose on discounting expected cash flows coming from the intangible (Pastor et al., 2016). The Income approaches are best used when the intangible asset is producing cash flow or generating income (CGMA, 2012). These approaches are summarized in Table 2 which summarizes all valuation methods given by Thornton (2013).

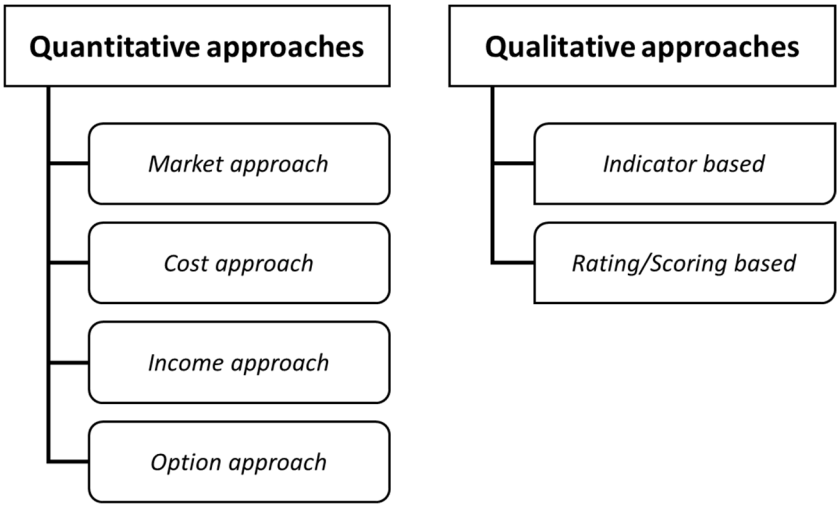
Other authors present other methods for intangible assets' valuations, such as Lagrost, Martin, Dubois, and Quazzotti (2010) who list six approaches to valuation and Sveiby (2010) who list forty-two other approaches.

Table 2: Different valuation methods for intangibles (Thornton, 2013)



Lagrost et al. (2010) add some methods to Thornton's (2013) approaches which may be useful when the other approaches are proven unsuccessful. Lagrost et al. (2010) divide the approaches into Quantitative and Semi-Qualitative methods. In the Quantitative ones we can find the market approach, the income approach, the cost approach and the option approach. The option approach consists of using real options methods based on the Black-Scholes formula, the Monte Carlo method, and the binomial expansion based on decisional tree (Lagrost et al., 2010). The semi-qualitative approaches are indicator based and rating and scoring based. The rating/scoring method consists of on a multi-parameter scoring and rating approach that will assess a numeric score for the asset. The indicator-based method, which is mostly used for patent valuation, is based on the analysis and collection of information of the intangibles: e.g. if we look for a patent's value we can find a correlation between the patent's value and standardized indicators present in the patent information documents (Hagelin, 2002), such indicators can be the number of citations a patent has received, or the outcome of oppositions to the patent application that can be indicators of value (Lagrost et al., 2010). Lagrost et al. (2010) approaches are summarized in Table 3.

Table 3: Qualitative and Quantitative methods to intangible assets valuation (Lagros et al., 2010)



Sveiby's (2010) other approaches are divided differently: thirteen of them are categorized as direct intellectual capital methods which consist in estimating the monetary value of the assets by analyzing and identifying their components, some of the methods are, on the other hand, only dedicated to human capital, other are focused only on patents and intellectual property, Sveiby (2010) also present some approaches that do not evaluate individual intangibles, and some that are dedicated to core competencies and valuing creating activities, when others use the discounting of cash flows.

As we can see, there are a lot of techniques available to estimate the value of intangibles and all of them have flaws regarding their implementation and the type of data needed. Unfortunately, there is no one-size-fits-all approach and we have to evaluate what data are currently in our possession and what we are trying to evaluate to reach an acceptable outcome. That also might be the reason why most of the companies have less relevant financial statements, as evaluating all of their intangibles and developing a specific method for each one would be a daunting task. Therefore, most of the businesses focus on valuing their intangibles using either the income, the cost, or the market approach as these techniques are the most widespread among accountants. But in the end, managers are the last decision makers and will engage their resources only if they can generate gains from these valuations such as getting easier access to capital or having their company valued higher (OECD, 2012).

1.3.Intangible assets in sport franchises

In sport, intangible assets are a pregnant issue; in fact, what differentiates truly sport franchises from more traditional businesses is that professional sport teams rely heavily on intangible assets. As traditional companies rely heavily on tangible assets such as property, plant, and equipment, but also machinery and inventories, professional sport franchises rely more on

player contracts, local cable and broadcast television and radio contracts, stadium lease, season ticketholder relationships, advertising and/or sponsorship agreements, concession agreements, luxury suite agreements, national franchise agreement, draft rights, management and coach employment contracts, and goodwill and going-concern value (Thornton, 2011). Even though tangible assets represent a decent part of a sport team's value, what should really drive its value is the brand recognition, the branding contracts, the recognition of its players, and obviously the sportive results. People will have a lower tendency to visit constantly losing teams, and fans will struggle to identify themselves to less charismatic players logging mediocre in-game performances. Moreover, as revenue in sport teams comes from advertising contracts, sales of branded products such as players jersey and other derived products, and arenas attendance and its byproducts, such as food and beverages consumptions on game day, sport teams may want to ensure that their brand recognition and fanbase remain high to bring in revenues. Following this idea, brand recognition, when it comes to a sport team, is represented by its athletes. By ensuring that they develop their related skills and remain physically healthy, teams are taking care of their players skills and therefore are consolidating a part of their intangibles.

Sport franchises may repose on different bases than the usual corporation when it comes to their assets distribution, nevertheless, the valuation methods remain the same to identify the worth of their intangibles. As we have seen before, intangibles' valuation can repose either on quantitative or on qualitative approaches, and every of these methods repose on a specific procedure. But, as professional sports franchises' intangible assets are very specific to the industry, the usual methods used to value intangibles have to be tailored specifically for the industry and their application might slightly differ than when applied to value intangible assets on a more traditional company. We should also note that the valuation of these intangibles is only theoretic and that in the end the true value of these intangibles is recognized by the market value potential investors are ready to give to them (Thornton, 2011).

The cost approach method for sports franchises is based on the fact that a sports franchise buyer will not pay more for an intangible asset than the cost of a substitute intangible providing the same utility as the one he is willing to buy. Therefore, the cost of an intangible will be calculated in current dollars as of the franchise acquisition date. Using the replacement cost method, the purchaser will estimate the current dollar cost of replacing the asset with a substitute providing the same utility, whereas for the reproduction cost method, the sports franchise buyer will approximate the cost in current dollars of recreating an exact duplicate of the intangible asset. Reproduction cost will usually differ from replacement cost. However, an intangible cost is not the value of this same intangible asset. To come to the value, the cost has to be adjusted for all

forms of obsolescence and thus analyze its physical deterioration, its functional obsolescence, its technological obsolescence, and its external obsolescence. Physical obsolescence can, for example, affect the valuation of sports intangibles such as player contracts. Even though the contract in itself does not become physically obsolete, a player becomes older or could get injured, which will affect the value of this specific intangible asset. To attain the value, it is necessary to subtract the allowances for all forms of obsolescence to the total cost of the intangible. These allowances are a function of the condition of the subject, the measure of cost selected, and the expected remaining useful life of the subject (Thornton, 2011).

Onto the market approach, which is based on the economic principles of rational behavior and efficient markets and relies on transactional data regarding the intangible we are trying to evaluate. These data regard arm's-length transactions, third-party sales, and licenses of discrete intangibles and aim at concluding cash equivalency prices for the intangible sales by analyzing both the transactional and the subject intangible on common quantitative information, such as growth rates, returns on investment, profit margins, and so on. Based on the comparison of these quantitative data, subject-specific pricing metrics are selected from the range of transactional pricing metrics. To find the value estimate the chosen pricing metrics are applied to the subject intangible's quantitative fundamentals. This approach considers both sales and licenses/leases of comparative intangibles, therefore it examines market-derived license fees, profit split percentages, royalty rates, etc. It is to be noted that all valuation methods used in this approach are taking the naked value of the intangible. Hence, the guideline sales method, the guideline license method, and the market rental income method are often not applicable to intangible assets of sports franchises. This is resulting from the fact that intangibles owned by a sport franchise are almost never sold or licensed to other franchises. However, when sufficient data is available it is still possible to value stadium leases, concession agreements, trademark licenses, which can be convincingly evaluated using this approach (Thornton, 2011).

The third valuation approach for sports franchises is the income approach which is based on the economic principles of rational expectations and anticipation, by relying on the present value of a future income stream to approach the valuation of the intangibles. To perform the income approach, it is needed to calculate the Economic income of the intangible we want to value. This economic income can result from any expected increase in revenues, decrease in operating costs or expense, decrease in cost of capital, acceleration of a cash receipt, decrease in incremental investments, or deferral of a cash disbursement. However, economic income is different from accounting income and can be measured from net cash flow, operating cash flow, net income, or operating income, and can be evaluated before or after income taxes. As many sports franchises

do not earn a positive accounting income, economic income is mostly calculated from cash-flow based measures. To compute the value of the intangible, we need to calculate the present value of the income this asset is expected to generate. This present value is evaluated by "multiplying a projection of periodic income amounts by a corresponding series of present value discount rate" (Thornton, 2011, p.370), or by "dividing a normalized single period income projection by a direct capitalization rate" (Thornton, 2011, p.370). The discount rate used for this method can be derived from the expected market rate of return on the specific intangible investment and from the expected duration of the generation of the intangible asset's income. To bypass the difficulty of extracting the market's expected return on investment, the market-derived costs of capital are usually used. According to (Thornton, 2011, p.370) "this procedure is based on the economic theorem that in the long run an investor's expected rate of return will equal the investor's cost of capital". To apply this approach to sports franchises and because of lack of publicly available information, analysts usually a franchise owner's cost of capital as a proxy for the market cost of capital. The due date of the income projection is calculated from the remaining useful life of the intangible, which, for sports franchises, is a function of the legal life of the asset, or the actuarial or analytical life of the asset. It is not rare that sports teams intangible assets have a finite contractual life, e.g. leases, permits, licenses, agreements, and contracts, etc. Nonetheless, the expected remaining useful life of contract-related intangibles might be greater than their actual term to maturity, which is a direct consequence of expected contract renewals. To estimate the expected number of renewals of these contract-based intangibles, an actuarial analysis of the historical placements, retirements, and turnover rates of these intangible assets is performed. Subsequently, the discount or capitalization factor for these intangibles is a function of the intangible asset's remaining useful life and its expected rate of return (Thornton, 2011).

The chosen discount or capitalization rate is, among other factors, influenced by the premise of value. The premise of value is the answer to two subsequent questions: Is the individual intangible that we try to evaluate separate from all other assets? Is this individual intangible valued as part of a going-concern sports franchise operation? When it comes to the purchase price allocation for a sports franchise, the most applicable premise is the intangible being valued as part of a going-concern. That is why, analysts usually derive the discount or capitalization rates related to the sports franchise business, when valuing intangibles for purchase price allocation purposes (Thornton, 2011).

As for the remaining useful life, it is an important procedure in an intangible valuation. It actually directly affects the selection of the income projection period selection. For the market approach, the remaining useful life influences the selection and its adjustment on comparative sale

transaction. When it comes to the cost approach, the remaining useful life influences the quantification of any obsolescence allowances.

To conclude the valuation process after the use of these methods, analysts have to conduce a value synthesis. This step is especially needed when two or more approaches were used to perform the valuation. Analysts must calculate a final value of the intangible using the alternative values found by the use of different approaches (or different methods within one approach). At first, the analysts have to review each analysis they made. Second, they must assign a weight on each valuation performed. This weight is a function of: the quantity and the quality of the data available, the applicability of each method or approach used to value the specific intangible, any applicable statistical test on the reliability of the analysis or the data used, the degree of dispersion of the values found, the personal and professional judgement of the analyst, and the experience of the analyst on valuation of intangibles for sports franchises. This weighting can be either based on qualitative or quantitative estimations. In the end, the final valuation synthesis and weighting will be based on the analyst own judgement and experience. However, in sports franchises intangibles valuation, it is often the case that only one approach will be pertinent, given the lack of information available (Thornton, 2011).

As we could see multiple approaches can be used to evaluate and intangible assets worth and most of the choice of how to perform a valuation analysis rests on the shoulders of the analyst that must judge which method and approach to use. However, it might be preferable, notwithstanding exception cases, to use the commonly accepted methods to evaluate the often-encountered intangibles in sports franchises. Vine (2004) summarized these mostly encountered intangibles and their respective advised valuation methods which we reproduced to give the reader an overview of the usual methods used to perform the valuation sports franchises intangibles. For example, player contracts, which often represent the largest part of intangibles of a sports franchise, better be evaluated using the cost approach by estimating the current cost to replace a player with equivalent skills. However, the replacement cost analysis of an athlete is very complicated as the valuation consists in examining the procedure the franchise would have to go through to replace its current player, by either acquiring an already efficient player or by training one from the time he gets drafted until the time he can be ready to play at the same level as the player whose contract we try to evaluate. Moreover, a thorough analysis of the contract is also needed, including compensation, term to maturity, contract specific conditions, remaining useful life, etc. The result of this analysis can either be a unique value estimate, or a unique remaining useful life estimate for each player contract. Even though the cost approach might be the most appropriate approach in many cases when valuing a player contract, the market approach is also

sometimes used by asking for an industry expert to corroborate the analysis by giving an independent analysis of the market value of a player contract (Thornton, 2011).

Table 4: Common valuation methodologies for sports franchises intangible assets (Vine, 2004)

Intangible Asset	Valuation Methodology
Player Contracts	Cost Approach
Franchise Agreements	Income Approach
Stadium Leases	Market Based Analysis / Income Approach
Workforce	Cost Approach
Intellectual Property	Typically Encompassed in Workforce
Contracts	Income Approach
Season-Ticket Holder Subscriptions	Income Approach
Acquired Goodwill	Residual Analysis of Price Allocations

Franchise agreement, which correspond to the right for sport teams to be part of the league, but also to share revenue generated by the league, are usually valued using the income approach by analyzing the economic income specifically attributable to the franchise agreement and by discounting it at an appropriate present value. The national franchise agreement can be valued on the present value of future ticket sales and net income, or of any other income not already attributed to another intangible (Thornton, 2011).

Stadium leases are some of the main assets of sport teams as they play an important factor in a team financial success. A team either owns or leases its stadium to another company or regional authority. To analyze the value of stadium lease, either the market or the income approach is used. For the market approach, the valuation is performed by comparing the terms of the lease to the terms of other leases for similar properties, which makes the analyst understand if the current lease is a favorable or an unfavorable one. For favorable lease agreements, the value is estimated by calculating the present value of future rent savings. However, as the comparison of leases is usually complicated as most of the lease agreements are kept confidential, the income approach might also be used to evaluate the worth of a stadium lease. For this income approach the lease is valued by projecting future economic income attributable to the lease of the stadium (Thornton, 2011).

Many sport intangible assets relate to employees: fist there is the trained and assembled workforce which includes all the “administrative” personnel, second there is the coaching and

player development staff with recruiting scouts, coaches and assistant coaches, physical therapists, etc. Then there are the athletes. Usually, most of the administrative workforce is not under contract, when all the players and most of the coaching and player development employees should be under some type of contract. To value the human capital related intangibles, the cost approach is widely used. For the administrative personnel, value is mostly function of training, assembling, and recruiting an equivalent team or workforce. For the coaching and development staff, the cost approach might also be used, but as the pool of candidates for specific positions such as head coach, is usually limited, but also because of the strategic importance of such personnel, the recruitment costs might be quite large (Thornton, 2011).

There are four types of intellectual property: patents, trademarks, copyrights, and trade secrets. These trade secrets are usually part of the workforce valuation, as the organization and its employees might have developed some specialized systems and procedures related to player development, therapeutic procedures, accounting, and administration. If those trade secrets are documented in manuals or guides within the organization, they count as intangible assets. However, these trade secrets are usually encompassed in the collective knowledge and experience of the employees. Moreover, some franchises may own copyrights on songs, brochures, slogans, which are all intangibles. Something even more valuable are trademarks and trade names that an organization may own, these intangibles may be the team name, the logo, or even national or local product licenses. These name-related, even though secondary, are an income stream for the franchise (Thornton, 2011).

In addition to the national franchise agreement, stadium lease, and product licenses, franchises have multiple contract-related intangibles. For these contract-related intangibles, which are not player contracts, the income approach is usually preferred. The value estimate is performed through a calculation of the economic income earned and projected by the franchise over the contract remaining useful life. Favorable vendor or supplier contracts might be valued using a cost saving method, where the reduction in operating or cost expenses is projected and present valued over the remaining useful life of the contract (Thornton, 2011).

Customer-related intangibles are important for a sports franchise, they typically encompass recurring customer relationships with corporate and institutional season ticketholders and individual season ticketholders. They are usually valued using the income approach, by analyzing the expected coverage remaining useful life of the season ticketholder relationships, the future and current ticket prices, and the cost of providing entertainment to the season ticketholders. A value approximation is achieved through the present value of the expected future net income from season subscriptions (Thornton, 2011).

In addition to all these intangible assets, buyers are sometimes paying for intangible goodwill when acquiring sports franchises. This goodwill is considered the part of the franchises' value that cannot be associated to any of the tangible or intangible assets of the sports franchise. Therefore, goodwill is usually analyzed through a residual analysis for purchase price allocation purposes with the residual value assigned to goodwill being the total price paid to acquire the franchise minus the value of the working capital, tangible assets, and intangible assets of the sports franchises (Thornton, 2011).

1.4. Intangible assets in NBA franchises

Narrowing down sports professional teams to NBA franchises, intangible assets can be present in multiple forms. As we remember from the definitions provided by Pastor et al. (2016), intangibles are non-monetary, have no physical substance, and are not used in the production of goods or services. Moreover, their critical attributes are that they are identifiable, controllable, and have expected future economic benefits. Added to other frameworks developed in this part, we will try to analyze which intangibles are important for an NBA franchise and would be interesting to be analyzed. The question of analyzing whether or not intangible assets are important for NBA franchises might also allow teams owners and managers to understand how to prioritize their investments and drive the growth of a franchise, but also to know on which intangibles to focus when purchasing and valuing a franchise. We will try to assess here the most important intangibles for a basketball franchise and try to understand to which category of intangible assets they belong.

First of all, the age of a franchise, can be ordered as an intangible as it represents the knowledge of league of the franchise's workforce, but also its processes, and the ways used to scout potential players. Thus, the older a franchise, the more it is supposed to be acquainted with the way things are done in the league, but also the more it is supposed to have developed its own methods. The age of a franchises can be sorted into intellectual capital as it is mostly resulting in knowledge. However, when trying to subdivide it into Pastor et al. (2016) framework, we can see that it covers more than just one subcategory of intellectual capital. For example, we can classify the age of a franchise into human capital, as it encompasses the workforce experience and knowledge. Moreover, the older a franchise is, the more its brand is developed and the better built the relationships with suppliers and the distribution channels for branded products; it therefore can also be a part of relational capital. As for structural capital, a more ancient franchise would have had time to build better processes, extensive databases about potential players or adverse teams, moreover its organizational structure should also be well matured, and the roles should be accurately defined. As we can see, it is complicated to classify the age of a franchise into a specific intellectual capital category, however, as it should have the most impact on the processes and

databases, it makes sense to sort it under structural capital more than under one of the two other categories.

The population of a city can also be considered of representing a group of intangibles as it has an expected future economic benefit. It shows, first, the possibility of a franchise in its market and the potential of a franchise to reach an important fanbase. Again, the population, of a city cannot be identified as an intangible asset on its own, but it represents all the potential for advertising contracts, the potential customer relationships, and it is not directly visible in the financial statements of a franchise and is a part of the goodwill a potential buyer is ready to pay on top of a franchise book value. The population of a franchise can be defined as a part of the goodwill as it part of the premium a potential buyer will be willing to pay and is not represented in the book value of a franchises – at least not directly.

The change of location of a team can also be viewed as an intangible asset as it is representative of the "honeymoon effect", analyzed by Alexander and Kern (2004) which states that after a change in location, a team would see an increase in interest in the team from the people of the new place where the team relocates. This effect is supposed to start to fade after three years and completely disappears after eight years. It makes sense to assume that this honeymoon effect would increase the value of an NBA franchise during the eight years following a change of location as if the population of a certain area is showing a high interest in a team, the marketing and branding contracts as well as customer relationship would be worth more and then should reflect on the intangible value of the franchise. It is therefore representative of all the branding contracts and the customer-related intangibles and is part of the relational capital category of intangible assets. The question regarding this honeymoon effect is if it is actually influencing the value of a franchise; as it is supposed to last only up to eight years, a potential owner aware of this effect could decide to adjust the value of the team regarding of an expected drop in attendance in a certain amount of years and the disappearing of this effect. In the meantime, if a potential acquirer of a team were not aware of this effect he could overpay for the franchise he is buying by not accounting for the artificial high attendance and interest in the team.

The amount of titles an NBA franchise has won throughout its history is also representative of a group of intangible assets in the fact that it represents the history of a team that is not represented in the book value of the franchise, moreover a potential franchise acquirer would be more inclined to pay a higher amount to acquire a franchise with a great history. As representing the history of a team, it would be part of the premium an acquirer would pay and therefore be a part of the intangible goodwill. However, it can be questioned whether or not the past success of a franchise is susceptible to be a reason why a team command a premium in its transactional value.

It is indeed uncertain whether some potential owner would be willing to pay more for a franchise due to its history even though it is not currently competitive. A reason, for this willingness to pay a premium to acquire a franchise with a successful history might be attributed to the ego factor theorized but not analyzed by Vine (2004), which describes the pleasure that potential franchise owners derive from the prestige of owning a sport franchise. Even though this "ego factor" is difficult to be quantitively proven, there is in fact some sports teams' owners that admitted that they viewed their position as a status symbol (Vine, 2004).

On the same note, when a franchise has not won a title for a certain amount of years, its value can decrease on the market, even though its book value has been remaining the same. In the meantime, a team which has encountered a lot of success in recent years is most likely to see its market value increase. This success is represented by intangible assets such as the trained and assembled workforce, but also the players and coaching staff. Moreover, it can also impact the customers relationships and the sales and marketing contracts as a short-term team's success is likely to increase the number of fans of a certain team and therefore make the branding contracts more valuable and bring extra revenue. As the effect of recently having won a title is mostly a recognition of the trained and talented workforce, especially coaching staff and players, we will classify it as part of the human capital category of intangible assets.

The winning percentage of a team is also representative of the quality of the assembled workforce of a team and therefore of a franchise's intangible assets. The short-term success of a team can indeed be a value trigger as a potential franchise owner might be ready to pay a premium for a highly competitive team. A team competitive success is a byproduct of the skills of its organization, the talent of its players, and the strategical competencies of its coaches. Therefore, this variable relates to the human capital intangible category and is an indicator of the recent success of a team. If there is indeed an ego factor among franchises owners, purchasing a team that is already competing at a high level and that does not need to be rebuilt can be a strong driver for the willingness of a potential owner to pay a premium to acquire a specific team instead of another one.

The number of players having been introduced to the Naismith Memorial Basketball Hall of Fame (Hall of Fame) over the history of a franchise represents different intangible assets as well. In fact, investigation among the four major North-American sports leagues showed that the NBA had the lowest competitive balance of all four leagues. Competitive imbalance, as in the NBA, defines the on-field domination of a few number of organizations over the others, and therefore show a low uncertainty of outcome in sport games. The NBA having a low competitive balance with a small number of teams dominating the league, should be linked to lower games

attendance as here is a proven relationship between uncertainty of outcome in a sport game and the demand for sporting events. However, the NBA managed to maintain the customer demand by focusing its marketing on its stars rather than on on-court productivity (Berri, Schmidt, Brook, 2004). Stars are therefore one of the main factor regarding fans support, who will identify themselves with star players instead of teams, to a certain extent. Hence, the number of Hall of Famers that played for a specific team in the past being representative of the relational capital of a franchise because it encompasses the brand reputation of a franchise, but the customers relationship as well. People will identify themselves to stars and therefore support a specific team, that will build a fanbase which will remain for a certain period of time, no matter the sporting results of the franchise, therefore the important players having played for a specific team in the past, even though they cannot be classified as human capital anymore may still have an influence in the fandom of the team and therefore help the team having good customer relationships and a attractive reputation, which can impact the amount a future franchise owner will be willing to pay for this specific franchise.

These are only a part of the most important intangibles for an NBA franchise and their categorization into identifiable metrics. There are indeed other intangible assets that would also deserve some attention, but we decided to focus on the easily identifiable ones. Table 5 summarizes all the intangibles that have been outlined with their respective metric and categorization.

Table 5: Intangibles affecting the value of NBA franchises

Metric	Intangibles affected	Classification
Age of a franchise	Processes, trade secrets, organizational structure	Structural capital
Population of the city	Potential for advertising contracts and customer relationships	Goodwill
Franchise's location	Relationships with customers, branding contracts, distribution channels	Relational capital
Amount of titles won through a franchise's history	History of the franchise, fanbase	Goodwill
Amount of years since last NBA title	Assembled and trained workforce, players, coaching staff	Human capital
Winning percentage of a team	Trained workforce, adaptability, players and staff	Human capital
Numbers of players introduced to the Hall of Fame	Season-tickets holders, brand and reputation	Relational capital

As we could see in this part, intangible assets valuation and reporting are an issue that really needs to be addressed by companies in any industry, as they represent more and more value of a company as the time goes by. But it is especially important for professional sports franchises to monitor their intangibles as they represent the biggest part of their value. A thorough analysis of their intangibles using the methods outlined in this chapter is a must do for every owner desiring

to know the value of his sport franchise, but also willing to assess the efficiency of his franchise contracts and know-how. Even though intangible assets are complicated to value with acute certainty, it is still recommended to be aware of their presence and to know to which extent they contribute to the welfare of the company or sports franchise.

The next stage of this work will focus on actual NBA franchises transactions and their comparison to their theoretical value given in Forbes magazine, but also on the recent value trends of these franchises. This preliminary analysis will help us understand how pregnant intangibles are among basketball franchises of the main American league.

CHAPTER 2: ANALYSIS OF NBA FRANCHISES' VALUES: TRENDS AND GROWTH

2.1. Difference between sale price and theoretical valuation in the National Basketball Association

Since 1991 Forbes (formerly Financial World Magazine) estimates the current value of the teams from the four major American sport leagues, being: The National Football League (NFL), The National Hockey League (NHL), the Major League Baseball (MLB), and the National Basketball Association (NBA). In 2018, for the first time in history and according to Forbes' ranking, all NBA franchises are now worth more than $1 billion, the average team being worth $1,65 billion, which represents 22% more than last year and three times more than five years ago. In the meantime, the NBA is already selling its team over $1 billion for a few years. In fact, the first ever NBA tam which was sold for more than $1 billion were the Los Angeles Clippers, acquired by Steve Ballmer, in 2014. The team sold for $2,099 billions when its Forbes value was approximated at $1,679 billion, making the actual sale price 25% more than the theoretical team value (Forbes, 2018).

When looking into Forbes' (2018) model for valuing we can see that the analysis considers four main criteria:

- The "Sport" criteria, which calculates the portion of the franchise's value which can be attributed to the revenue shared among all teams by the National Basketball Association
- The "Market" criteria which is the portion of the team value that comes from its city and market size
- The "Stadium" criteria which is the portion of value that comes from its arena
- The "Brand" criteria which is the portion of the team's value portion attributable to its brand value

By adding all these four numbers together, Forbes' analysts come to their assumed team value. 'Therefore, Forbes' value should come close to the actual sale price of a team.

In table 6 we compared Forbes' value with the actual sale price of teams since 1991 following the methodology of Hill (2010). Hill's research was done on the NFL comparing NFL franchises actual sale transactions with the value of NFL teams calculated in Forbes. A similar study was also conducted by Vine in his paper "The Value of Sports Franchises" (2004), where he compared the average Forbes value with the average teams' transaction price for the four American sport leagues between 1999 and 2003 as he accounted for the four major American sport leagues and therefore chose a smaller sample than the one that would be available, knowing the year the ranking was started. Vine found that a NBA team was, on average, sold at a 38% premium

compared to its Forbes value. This can be explained by the fact that there are factors that drive a franchise price other than just its Debt, Revenue, and Operating Income. Vine assumed that these differences could be explained by the existence of an "ego factor" which would be the feeling of prestige when acquiring a sport team. However, as this "ego factor" is surely a reason for the price people are ready to pay to acquire a sport team, it is definitely not the only factor that drives these values. On his study on the NFL, Hill also found that teams were on average sold at a 15,4% premium compared to their Forbes' value, which shows a pattern happening in two of the four of the major American sports leagues. Actually, this pattern, was also highlighted by Vine that found out that, between 1999 and 2003, the NFL, the NBA, and the MLB teams demanding on average a premium to their Forbes value. Only the NHL teams were sold lower on average than their theoretical value, which could be explained by the financial potential of the NHL being lower than the three other major leagues.

For our table and to compare both values, we used the actual sale prices of NBA teams since 1991, the creation year of the Financial World/Ranking, until 2017 and the sale of the Houston Rockets. Since 1991, there have been 32 transaction of NBA teams which were compared to the value that was given to the team by Forbes this year. All the Forbes' value come from Rodney Fort's internet database, so do the sales prices of transactions. Forbes' prices and actual transactions were adjusted for inflation and are therefore presented in dollars' value of 2017. Converting these prices for inflation was not necessary for this study as the corresponding Forbes value for a specific transaction was done in the same period, but as it will make sense when we will proceed further in our study, we wanted to avoid differences in sales prices referring to the same transaction in this paper. Therefore, we decided to keep the transactions in 2017 dollars and to adjust Forbes' values as well. Regarding the sales prices, we took only the transactions which had clearly defined prices and, when the transactions included several other assets such as other teams or the arena, we took these transactions into account only when the amount paid for the team was clearly distinguishable from the whole amount paid for the package. When Fort's data was contradicted by other elements, we always arbitraged in favor of Fort's numbers. The teams' names are the current names used if different than when the transaction took place: for more information on the teams' history, please see Appendix 1.

On average teams are sold 15,99% higher than their Forbes value for the period 1991-2017. This value is way inferior than the 38% premium found by Vine. This can be a result of different factors, first and foremost, as seen before Forbes account for some intangibles in the 2018 teams' values. Thus, it is possible and even almost certain that Forbes' valuation model evolved over the years and is closer to the reality now than it has been during the period 1999-2003. Once again,

this ranking was created recently, and nothing is better training than comparing one's past results with real world cases, which Forbes' analyst could do when analyzing actual transactions. The second reason to this lower premium could be explained by the fact that NBA teams' value has strongly increased over the years to now reach more than $1 billion on average, thus potential buyers of teams are not ready anymore to pay such big premiums when willing to acquire a team. In fact, we can see that since 2010, only three teams were sold at a premium out of nine transactions. But as the three premiums were consequent enough, especially the one paid for the Los Angeles Clippers amounting almost $420 million, the average price premium of these 9 transactions is of 25% more than Forbes value.

In general, 20 teams were sold at a premium and 11 were sold at a discount between 1991 and 2017. The one that sold at the same price can be explained by the fact that the Houston Rockets were sold not long enough prior to the publication of the Forbes valuation which could be corrected before publishing to account for the real-life value of the Houston Rockets. On average, the teams that were sold at a higher price commanded a premium of $80,66 million, representing 32,47% more than their Forbes published values. The discount for teams sold at a lower price was on average $35,51 million, which represents 12,51% less than the theoretical values. So, we can see that most of the discounts at which teams are sold are lower than the premiums paid by future owners. The average price paid for a team is $445 million since 1991, even though only 10 teams out of the 32 were sold at more than this price, this can be explained that the fact that team's prices saw a strong increase recently and the last sale occurred at values exceeding everything seen before, i.e. the Houston Rockets sold at $2,2 billion in 2017, the Los Angeles Clippers sold at $2,09 billion in 2014, and the Atlanta Hawks sold at $886 million in 2015.

These actual transaction prices show us that the theoretical value calculated by Forbes is somewhat incomplete in most of the cases. In fact, we can see that something behind the book value of franchises is driving the prices as well. We can safely assume that this come from intangible assets that are not included in Forbes valuation but are included in the actual prices that future owners are ready to pay to acquire a franchise. In fact, even the discounts can be attributed to the presence of intangibles, which might devaluate the franchises' book value. Such intangibles are named intangible liabilities and can take the form, among other things, of poor processes or poor relationships with customers or fans. These intangible assets and liabilities are what constitute these variations in the franchises prices and what make a franchise unique. Thus, the business, recruiting, and scouting processes of a franchise, its players contracts, its relationship with its fanbase, and its stadium leases, etc. are what motivate potential purchasers to pay a premium or a discount on the franchise's book value when acquiring it.

Table 6: Difference between actual sales prices and Forbes Value 1991 - 2017 (2017 $bln.)

Year	Name	Price $2017	Forbes $2017	Diff	% Diff
1991	Denver Nuggets	125,194	72,613	(52,58)	-72,41%
1991	Orlando Magic	152,021	108,740	(43,28)	-39,80%
1992	Golden State Warriors	146,000	109,499	(36,50)	-33,33%
1993	San Antonio Spurs	126,929	110,005	(16,92)	-15,38%
1995	Golden State Warriors	203,643	133,439	(70,20)	-52,61%
1996	Minnesota Timberwolves	93,380	171,198	77,82	45,45%
1996	Philadelphia 76ers	194,543	144,740	(49,80)	-34,41%
1997	New York Knicks	459,000	382,582	(76,42)	-19,97%
1998	Brooklyn Nets	225,934	235,875	9,94	4,21%
1998	Sacramento Kings	443,275	179,090	(264,19)	-147,51%
1998	Toronto Raptors	188,250	182,329	(5,92)	-3,25%
1999	New Orleans Pelicans	335,229	199,461	(135,77)	-68,07%
2000	Denver Nuggets	286,436	248,220	(38,22)	-15,40%
2000	Memphis Grizzlies	241,128	167,372	(73,76)	-44,07%
2001	Atlanta Hawks	256,876	277,817	20,94	7,54%
2001	Oklahoma City Thunder	280,596	279,213	(1,38)	-0,50%
2002	Boston Celtics	490,804	373,557	(117,25)	-31,39%
2004	Atlanta Hawks	269,398	300,483	31,08	10,34%
2004	Brooklyn Nets	388,555	383,374	(5,18)	-1,35%
2004	New Orleans Pelicans	240,534	291,416	50,88	17,46%
2004	Phoenix Suns	519,369	461,085	(58,28)	-12,64%
2005	Cleveland Cavaliers	469,723	445,924	(23,80)	-5,34%
2009	Brooklyn Nets	228,382	307,174	78,79	25,65%
2010	Golden State Warriors	506,265	408,387	(97,88)	-23,97%
2011	Philadelphia 76ers	305,835	342,972	37,14	10,83%
2012	Memphis Grizzlies	375,903	404,901	29,00	7,16%
2012	New Orleans Pelicans	363,015	365,163	2,15	0,59%
2012	Sacramento Kings	563,442	563,854	0,41	0,07%
2014	Los Angeles Clippers	2099,476	1679,581	(419,90)	-25,00%
2014	Milwaukee Bucks	577,356	629,843	52,49	8,33%
2015	Atlanta Hawks	886,075	860,014	(26,06)	-3,03%
2017	Houston Rockets	2200,000	2200,000	0,00	0,00%
Averages		445,080	406,873	(38,21)	-15,99%

When looking at the values from table 6, we can identify a growth in franchises Forbes' value and transactional value over time. As these values are accounted for inflation, we can be sure that inflation is not the reason of this growth. However, a growth in franchises revenue and interest in the league could be the reason of such a growth.

By analyzing all the transactions and the Forbes values we can distinguish somewhat of a positive growth trends in NBA teams' values. Therefore, it would be interesting to see in which

extent this growth is occurring, if it is a long-term trend, and how the sales prices behave since the first ever team transaction until today.

2.2. NBA Franchises value trends and growth

We will now move on to analyze the growth rates of sales of NBA franchises and of Expansion fees; i.e. the price an owner must pay to the league when creating a totally new franchise. To analyze the growth rates, we will use the same methodology as Fort (2006) and Hill (2010) in their respective papers:

> The transaction data were constructed as follows. If a team sells at time t for Pt and then sells again at time t+ for Pt+, then the buy and sell pair for this transaction at t+ is (Pt, Pt+). Throughout the data, the actual owner at time t is not necessarily the owner that sells at time t+. In many cases, there were intervening transactions for which there are no data. Purchases of less than 100% were adjusted to full-purchase price. No transactions that included other inseparable purchases (real estate, broadcasting ventures, teams in other leagues, and stadiums) were included. (Fort, 2006)

To perform this study, we compared two transactions for the same team happening over time and analyzed the annual growth rate between the first and the second transaction. Our dataset for this study is from 1951 until 2017 and all prices are adjusted for inflation in 2017 dollars. The dataset comes from Rodney Fort's online database where he listed all transactions with known prices that happened for NBA teams. We performed this study for every franchise, when enough data was available. All the transactions that include other assets than just the franchise and when these other assets cannot be separated from the transaction will therefore be excluded. The main problem that arises when trying to perform a growth rate analysis since 1951 is that all the data are not available. Our study, even though incomplete because of lack of past information will give us a glimpse in the teams' sales prices growth dynamics. As in Hill (2010) and Fort (2006), the analysis will be conducted on the franchise itself and not on the team's location. Franchises are named after their most current denomination. As an example, the Charlotte Hornets represents all the transactions involving both the Charlotte Bobcats and the nowadays Charlotte Hornets. Even though, in 2014 the Charlotte Bobcats reclaimed the name of Charlotte Hornets and were awarded all the Charlotte Hornets franchise's history and titles between 1988 and 2002, as part of the deal made between the NBA and the New Orleans Pelicans, the new Charlotte Hornets are still the continuity of the 2004 expansion team Charlotte Bobcats and will be treated as such. Therefore, the New Orleans Pelicans will be treated as the 1988-2002 Charlotte Hornets and, in the continuity of their history, as the 2002-2013 New Orleans Hornets. For the whole teams' history and further explanations, see Appendix 1.

As all transactions are not straightforward and sometimes buyers buy only part of the teams, all the data are adjusted to 100% when known the percentage of shares bought; otherwise when the percentage of share is not 100% and is also not specified, the transaction was left out of the model. When the transactions included other assets than just the team and the amount paid for the team was impossible to be separated from the whole acquisition, the transactions were also not included in the analysis.

As in Hill's (2010) and Fort's (2006) works, expansion franchises are analyzed separately because the price of an expansion franchise does not represent a true sales price but a fee that is decided by the league when a new franchise is allowed to enter this specific league. For a full list of what transactions were excluded or modified and why, see Appendix 1.

Table 7 shows all transactions that were considered according to the aforementioned principles. When analyzing the sample of transactions and comparing it with Hill's (2010) and Fort's (2006) works, there are some main differences.

First, when Fort's (2006) presented 98 observations for the MLB and Hill (2010) presented 43 observations, for the NBA there are only 41 observations that can be taken for this study which do not lack any information. This difference in the amount of transactions available can be explained by the fact that the NBA was only founded in 1946, when the NFL was founded in 1920 and the MLB in 1900. Moreover, the first transaction in the NBA only date back to 1951 which is five years later after the league started when the first NFL transaction started in 1922, shortly 2 years after the league's foundation. On the other hand, even if the NFL's transactions made before 1951 are removed there are 41 transactions, which is actually the same number as the NBA.

The reason for this fewer amount of transactions can vary, but it is more possible that it would be for popularity reasons and that the NBA was just less popular than other leagues and therefore, attracted less investors, first of all maybe because of the "ego factor" theorized by Vine (2004) that one might research when buying a team, second maybe because of the will to get a safe investment that will generate gains if needed. Buying a team in a less popular league might mean that it would not be possible to generate any gain when selling the franchise.

Table 7: Teams Sales Prices and Annualized Growth Rates ($ mln, 2017)

Most Recent Name	t	t+	Length	Pt	Pt+	Growth
Atlanta Hawks	1968	1977	9	24,277	28,833	1,93%
Atlanta Hawks	1977	2001	24	28,833	256,876	9,54%
Atlanta Hawks	2001	2004	3	256,876	269,398	1,60%
Atlanta Hawks	2004	2015	11	269,398	886,078	11,43%
Boston Celtics	1951	1965	14	0,930	23,226	25,84%
Boston Celtics	1965	1968	3	23,226	41,617	21,46%
Boston Celtics	1968	1970	2	41,617	37,110	-5,57%
Boston Celtics	1970	1972	2	37,110	23,162	-21,00%
Boston Celtics	1972	1975	3	23,162	17,750	-8,49%
Boston Celtics	1975	1983	8	17,750	36,479	9,42%
Boston Celtics	1983	1986	3	36,479	267,654	94,32%
Boston Celtics	1986	2002	16	267,654	490,804	3,86%
Brooklyn Nets	1998	2004	6	225,934	388,555	9,46%
Brooklyn Nets	2004	2009	5	388,555	228,382	-10,08%
Chicago Bulls	1972	1985	13	29,531	37,046	1,76%
Cleveland Cavaliers	1980	1983	3	19,975	48,639	34,53%
Cleveland Cavaliers	1983	2005	22	48,639	469,723	10,86%
Denver Nuggets	1985	1989	4	42,845	105,646	25,31%
Denver Nuggets	1989	1991	2	105,646	125,194	8,86%
Denver Nuggets	1991	2000	9	125,194	286,436	9,63%
Golden State Warriors	1962	1992	30	6,881	146,000	10,72%
Golden State Warriors	1992	1995	3	146,000	203,643	11,73%
Golden State Warriors	1995	2010	15	203,643	506,265	6,26%
Houston Rockets	1971	1973	2	33,529	10,655	-43,63%
Houston Rockets	1973	1982	9	10,655	27,768	11,23%
Houston Rockets	1982	2017	35	27,768	2200,000	13,31%
Los Angeles Clippers	1981	2014	33	35,374	2099,476	13,17%
Los Angeles Lakers	1957	1965	8	1,300	38,710	52,84%
Los Angeles Lakers	1965	1979	14	38,710	64,200	3,68%
Memphis Grizzlies	2000	2012	12	241,128	375,903	3,77%
Milwaukee Bucks	1985	2014	29	37,207	577,356	9,92%
New Orleans Pelicans	1999	2004	5	335,229	240,534	-6,42%
New Orleans Pelicans	2004	2012	8	240,534	363,015	5,28%
Oklahoma City Thunder	1984	2001	17	49,154	280,596	10,79%
Philadelphia 76ers	1963	1981	18	3,984	31,444	12,16%
Philadelphia 76ers	1981	1996	15	31,444	194,543	12,92%
Philadelphia 76ers	1996	2011	15	194,543	305,835	3,06%
Phoenix Suns	1987	2004	17	117,505	519,369	9,14%
Sacramento Kings	1958	1998	40	1,917	443,275	14,58%
Sacramento Kings	1998	2012	14	443,275	563,442	1,73%
San Antonio Spurs	1988	1993	5	96,023	126,929	5,74%
Minimum			2	0,930	10,655	-43,63%
Maximum			40	443,275	2200,000	94,32%
Average			12,34	105,108	326,526	9,67%
Median			9	38,710	228,382	9,46%
Standard Deviation			9,95	118,001	465,201	19,88%

When looking into the data we can see that the average price growth for an NBA franchise is not as high as the one of the NFL. The average growth rate for an NFL team in Hill's (2010) research was 21,3%, when the NBA is only 9,67%. On the other hand, the MLB that has seen more transaction than the NFL and the NBA since its creation has an average growth rate of only 6,2% in Fort's (2006) study. Nevertheless, when looking at the real growth rate of the economy which is only 3% and the generally accepted annualized growth rate for the S&P 500 which is usually 7-8%, we can see that owning an NBA franchise is generally profitable.

When looking at the main five growth rates, we can see that four of them were made in short span from three to eight years, the remaining one was made over 14 years. It would be usually expected that the biggest growth rates would be made over a long period with a buyer acquiring a team early in league history and selling it way later. Here, it is not the case.

Table 8: Teams transactions summary ($ mln, 2017)

Most Recent Name	t	t+	Length	Pt	Pt+	Growth
Atlanta Hawks	1968	2015	47	24,277	886,078	7,95%
Boston Celtics	1951	2002	51	0,930	490,804	13,08%
Brooklyn Nets	1998	2009	11	225,934	228,382	0,10%
Chicago Bulls	1972	1985	13	29,531	37,046	1,76%
Cleveland Cavaliers	1980	2005	25	19,975	469,723	13,46%
Denver Nuggets	1985	2000	15	42,845	286,436	13,50%
Golden State Warriors	1962	2010	48	6,881	506,265	9,37%
Houston Rockets	1971	2017	46	33,259	2200,000	9,54%
Los Angeles Clippers	1981	2014	33	35,374	2099,476	13,17%
Los Angeles Lakers	1957	1979	22	1,300	64,200	19,39%
Memphis Grizzlies	2000	2012	12	241,128	375,903	3,77%
Milwaukee Bucks	1985	2014	29	37,207	577,356	9,92%
New Orleans Pelicans	1999	2012	13	335,229	363,015	0,61%
Oklahoma City Thunder	1984	2001	17	49,154	280,596	10,79%
Philadelphia 76ers	1963	2011	48	3,984	305,835	9,46%
Phoenix Suns	1987	2004	17	117,505	519,369	9,14%
Sacramento Kings	1958	2012	54	1,917	563,442	11,10%
San Antonio Spurs	1988	1993	5	96,023	126,929	5,74%
Minimum			5	0,930	37,046	0,10%
Maximum			54	335,229	2200,000	19,39%
Average			28,11	72,359	576,714	8,99%
Median			23,5	34,317	422,813	9,50%
Standard Deviation			16,62	97,098	608,068	5,04%

Table 8 is a summary of the transactions analyzed in table 7, with only the oldest and the most recent transactions for a specific considered. This table gives us insights on the more general trends regarding NBA teams' sales prices and longer team ownership.

Out of the 18 teams presented in this table, only 5 of them have an annual growth rate lower than 7,9%, which is more than twice over the US economy real growth rate of 3%, the average growth rate being 8,99% and the median growth rate is situated at 9,5%. We can also see that the five teams with the highest growth rate have quite different ownership length between 51 years and 15 years, therefore, we can see that there is no real correlation between the ownership length of a team and the growth rate; the average ownership length being 28,1 years and the median being 23,5 years. Meanwhile, out of the 13 teams that have an ownership length of 15 years of longer, only one has an annual growth rate of less than 9%, thus showing us that even though keeping a team longer does not guarantee a higher growth rate, it, at least hedges the risks of not getting any return on investment. Interestingly enough, the higher the Pt+ does not mean that the annual growth rate will be one of the highest, as the three higher differences between Pt and Pt+ are not the ones with the highest annual growth rates.

The reasons for these observations can be that as the NBA is not the most popular and not the most profitable league, potential investors can look for safety and therefore, not be ready to pay such a high price as they expect a return on investment in case they have to or want to sell the team they acquired.

Table 9 shows the expansion fees of the NBA since the creation of the league, "which represent the anticipated future return generated by owning" (Hill, 2010, p.23) an NBA team. As we did not find any information on Expansion fees the year the NBA was created, we started our study only 1966 with the second expansion wave and the creation of the Chicago Bulls. Expansion fees in the NBA have grown from $9,35 million in 1966 to $401,377 million in 2003 for the Charlotte Bobcats, which represents an annual growth of 10,70%, which is slightly higher than the franchises annual growth rates, meaning that expansion fees have grown at a slightly higher rate than the value of existing teams. We can see that at two points in history, expansion fees actually decreased instead than increased: from 1974 to 1976 and from 1988 to 1989. From 1974 to 1976 it can be explained by the fact that the teams that entered the NBA in 1976 were teams of the American Basketball Association (ABA) which merged with the NBA in 1976 and therefore, did not have to pay the full amount of expansion fees to enter the NBA as they were already existing teams with their own players. Moreover, in 1976 the Brooklyn Nets (New York Nets at the time) had to pay a premium over the expansion fees to the New York Knicks for territory invasion as they were playing in the same city as the Knicks, hence the higher Expansion fees on this line. As for 1989 and the creation of the Minnesota Timberwolves, the reason for the diminution of the expansion fee is that the Minnesota Timberwolves were part of the 1988 expansion fees and paid the same fees as the teams introduced to the NBA in 1988, the difference happened when

accounting for inflation and putting it 2017 dollars, the absolute value of $32,5 million remaining the same for the franchises created in 1988 as for the Minnesota Timberwolves created in 1989.

Table 9: NBA Expansion fees evolution ($ mln, 2017)

Expansion	Name	Expansion fee	Growth Over Last Expansion
1966	Chicago Bulls	9,350	
1967	Houston Rockets	12,709	35,93%
1967	Oklahoma City Thunder	12,709	
1968	Milwaukee Bucks	13,872	9,15%
1968	Phoenix Suns	13,872	
1970	Los Angeles Clippers	22,884	28,44%
1970	Cleveland Cavaliers	22,884	
1970	Portland Trail Blazers	22,884	
1974	Utah Jazz	29,173	6,26%
1976	Denver Nuggets	13,536	-31,88%
1976	Indiana Pacers	13,536	
1976	Brooklyn Nets	30,457	
1976	San Antonio Spurs	13,536	
1980	Dallas Mavericks	34,242	26,12%
1988	New Orleans Pelicans	66,508	8,65%
1988	Miami Heat	66,508	
1989	Minnesota Timberwolves	63,583	-4,40%
1989	Orlando Magic	63,583	
2003	Charlotte Bobcats	401,377	14,07%
Growth 1966-2003			10,70%
Growth 1974-2003			9,46%
Growth 1988-2003			12,73%

In conclusion we can first see that that the NBA values are on the rise since the creation of the league. The sales transactions have been growing on average at a higher rate than the usual US economy growth, even though all transactions did not command for a premium and happened at a discount. The average annual growth for actual NBA value being 9,67% and the mean growth of Expansion fees being 10,70%. This trend shows us that the NBA is a league which is in full expansion and that potential investors are generally ready to pay a premium for acquiring a team, even at a few years interval when the value of a franchise has not much evolved, people are ready to invest more than the face value of a team. We can also see an increase in Expansion fees over the years resulting of the fact that the NBA is getting more and more attractive to invest in. Investors can realistically expect a consequent return on their investment if they are planning to sell a franchise.

Moreover, we can see that the growth rates of NBA franchises are way higher than the economy growth and even than the companies of the S&P500. Therefore, we can assume that this growth is not only led by revenue, but also some intangible factors that do not relate to the financials of a franchise. As the franchises market prices increased so did the brand value of the league and its reputation, assets that are not accounted for the financial statements of a franchise.

Such a difference in Forbes' values and actual transactions for the acquisition of NBA teams, linked to the impressive growth rates of franchises' prices, show us the presence of other value determinants driving a team's market value than just its revenue and operating income. Forbes analysts started to acknowledge the importance of intangibles as shown by their adjustments made to their calculation model by accounting for the market size and the brand reputation, however, their valuations still differ from the actual transactions. These primary studies confirm our assumptions that some intangible assets have an effect on NBA franchises' value and that these values are not only driven by the revenue and operating income of franchises.

CHAPTER 3: MODEL DEVELOPMENT AND EMPIRICAL STUDY

3.1. Model specifications

The second study of this work is going to be based on identifying intangible assets that affect a franchise's value. In the previous part, we saw that NBA franchises are sold at prices that not always reflect their theoretical book value calculated in Forbes magazine. Moreover, there is a strong growth in NBA franchises prices which cannot be attributed only to a growth in revenue. Therefore, there is strong evidence that franchise buyers are not only paying for the book value of an NBA franchise but also for some intangible value that is not reflected in a team's financials. These premiums paid to acquire franchises can be attributed to intangible assets which are an important part of a sports franchise's value. That is why, we will analyze the impact that some intangible assets have on the transactional value of NBA franchises.

Alexander and Kern (2004) research was one of the first analyzing the determinants of a franchise's value in the four major American sport leagues. They conducted their research on the period 1992-1997 and used nine variables to explain their influence on the franchises value, among them were: the market size, the team performance, and the presence of a new facility, which were all proven significant in improving the value of a sports franchise, when having a regional identity for a franchise was proven non-significant in every league except for the MLB. A subsequent study was performed by Vine (2004) who analyzed franchises valuation comparing the Forbes'/Financial World's value – during the period 1999-2003 – and then by using also nine variables to examine the teams' values. Vine's (2004) conclusions were that revenue is the main driver of a team's value, but as he used Forbes' valuations as a dependent variable, which are based mainly on revenue, this conclusion is no surprise. Moreover, Vine (2004) concluded that there is an "ego factor" for owners of sports franchise which confers them the feeling of having a different socio-economical status when owning a franchise, and which prompts them to pay a premium to acquire a franchise. A later research was conducted by Hill (2010) in which he focused on the NFL and tried to analyze the value determinants of the sale of a franchise. In his work he used 12 variables and four league specific dummy variables to analyze leagues specific events that are supposed to have led to an increased interest in the NFL and therefore helped increase the teams' values. Hill (2010) analyzed the Price of a franchise in 2009 dollars, the average GDP for the three years leading to the transactions in 2009 dollars, whether or not a team has a new stadium, whether or not a team recently changed its nickname, if a team has a regional identity – the regional identity has been theorized by Alexander and Kern (2004) and is stating that a sport franchise having a regional name instead of a city name is more susceptible to attract fans from the whole region instead of counting a majority of people from the city in which the team is located as its fanbase –

whether or not a team recently changed its location recently, the population of the city, the number of years a team has gone without winning a title, the combined number of titles a team has won, a team average winning percentage for the three years leading to transaction, the average league-wide attendance per team for the three years prior to the transaction, and the age of the franchise. The four dummy variables that were supposed to have a league-wide impact were: the playing of the "Greatest Game Ever Played" (GGEP) in 1958, this event is thought to be one of the main turning point in NFL history and was a reason for its popularity increase. The second variable was the NFL-AFL merger and the introduction of "Monday Night Football" which both happened in 1970. The third dummy variable is the founding of ESPN in 1979, which was significant because it was the first ever channel only dedicated to sport. The fourth one was the introduction of Plan A free-agency and the salary cap in 1992 which made the league more competitive and increased the competitive balance. Hill (2010) concluded that NFL teams playing in a new stadium, teams who recently changed their identity, league-wide attendance, and the creation of the salary-cap all had a significant impact on the value of a team. Moreover, he found out that teams with a regional identity and the number of years a team has gone without winning a title had a negative impact on value.

For this paper's research we will focus on analyzing the impact of intangibles on the transactional value of NBA franchises. The goal will be to analyze the impact of intangible assets on the sale value of a franchise and to draw conclusions from it. To analyze this phenomenon, we will use a panel data of league transactions and respective intangible assets and analyze their impact on the actual sale value of NBA teams by running a pooled Ordinary Least Squares (OLS) regression model. We will, therefore, use some determinants of a franchise value analyzed in previous papers, such as Hill's (2010), which can be directly linked of being affected by the intangibles of an NBA franchise. The variables we will use as independent variables are not intangible assets in the pure definition of the term, but they are franchise value determinants that relate to these intangibles. As seen in the first part of this paper, intangible assets are still rarely valued by publicly listed companies and are, moreover, difficult to be quantitatively assessed. When dealing with sports franchises that are not publishing their financial statements, the simple quest of gathering financial information on the teams is already a complicated task, so when dealing with intangible assets it is even more complicated to find any value on these. That is why, we decided to analyze franchises' value determinants, already analyzed for different leagues or under different regression models and find the one that represent the impact of intangibles on the value of the team. These value determinants do not always represent only one intangible asset but can be impacted by multiple intangibles. We already started the analysis of these determinants in

the first part of this research and applied them to the classification given by Pastor et al. (2016) by merging different theories on intangible assets. The value determinants described in the first part of this work are the same as the one we will use for our regression analysis. By analyzing these value determinants related to intangible assets, we should arrive to conclusions regarding intangible assets in NBA franchises and will therefore manage to conclude which of them are really impacting the market value of a franchise, which would help us draw our managerial implications.

To perform our pooled OLS regression we will analyze eight independent variables, one dependent variable, to which we will add four league specific dummy variables. These time specific dummy variables will represent four events that have impacted the league over its history and are supposed to have participated to its recognition and expansion in North America, as well as worldwide. The use of dummy variables to analyze league specific factors has only been analyzed by Hill (2010) for the NFL and is therefore done for the first time when analyzing the NBA.

This paper will attempt to analyze transaction prices for NBA franchises since 1951, therefore the unit for analysis g for these team values will be actual teas sales prices, excluding expansions, for all transactions for which the purchase price for the sole franchise could be clearly assessed. For the list of all transactions and the one that have been modified or excluded, see Appendix 1. This paper will aggregate variables from other researches described previously as long as they are representing intangible assets and their effect on the sale price of a franchise. The list of variables used for the research are the following:

The actual sale price of an NBA franchise (PRICE) in 2017 dollars, as calculated by taking the Consumer Price Index (CPI) change from year-to-year since 1951 and accounting for year to year changes for the base of 1 dollar in 1951 and multiplying the value in 2017 dollars with the actual transaction prices. As for the first transaction happening in 1951, the NBA was created in 1946 and the first sale of a franchise happened only five years after the league's creation. The last transaction recorded happened in 2017. This variable is the dependent variable of our model. The data relative to franchise sale prices was collected on Rodney Fort's – professor of Sport Management at the University of Michigan who wrote and co-authored more than 100 articles and eight books on sport economics – online database, and through an article from SBNation part of the Vox Media Group for the seven transactions happening after 2012. The CPI year-to-year changes were collected through Thomson Reuters Eikon.

The average US Gross Domestic Product (GDP) for the three years leading up to a transaction (GDP_3Y) in 2017 dollars, calculated the same way as for the sales prices of franchises (PRICE). This variable acts as a control variable and is therefore introduced in the model to capture the trend in prices growth but also to account for non-league-specific macroeconomic factors that could have affected the NBA franchises and the league as a whole. The GDP data were collected as current prices data using Thomson Reuters Eikon.

The population of the city in which the team is located (POP). POP is considered as a representative of a group of intangible assets as it affects the potential for advertising contracts and the potential of the franchise to reach an important fanbase. Moreover, it is not represented in the traditional book value of a franchise but is part of the intangible goodwill a potential owner will pay for when acquiring a franchise. This variable is therefore supposed to have a positive impact on a franchise value, as the larger a city's population, the bigger the potential fanbase to draw upon to generate revenue and negotiate more advertising contracts. The city's population was gathered using the most recent United State Census which happened in 2010 through the website BiggestUsCities.com which gathers all the data coming from the United States Census Bureau.

The age of franchise at the time of the transaction (AGE). This variable is considered representative of the structural capital of aa franchise because it is representative of a franchise's knowledge of the league, its trade secrets, and the quality of its organizational structure. The older a franchise is, the more time it had to develop efficient processes in the multiple areas of its business and therefore the less is to be improved. It is supposed to have a positive effect on the value of the team as stated by Humphreys and Mondello (2008, p.11) "team buyers are effectively buying the history of the team, and the longer the team has been in existence, the more team history there is to buy". Data regarding the history of franchises were collected through NBA.com, the official website of the National Basketball Association (http://www.nba.com).

The average winning percentage of a team over the past three years prior to the transaction (WIN_3Y). This value determinant is considered as an intangible asset in its quality of representative of the human capital of a franchise. In fact, WIN_3Yshows the quality of the assembled and trained workforce as well as the talent of the players under contract and the ability of the coaching staff to lead the team to victories. As it is representative of the recent success of a team, it is supposed to have a positive impact on the franchises sales prices and should lead franchises purchasers to spend more on a high winning team. This variable is designed to capture a team's recent performance and it is supposed that the better a team winning record is, the more

is human capital is going to be worth. All the data regarding teams winning percentages were taken from Rodney Fort's online database.

The combined number of NBA championship or titles a team has won throughout its history prior to the transaction (TITLES). An NBA championship is defined as having won the NBA Finals play-off series between the years 1946 and 2017.This variable influence is to be seen on the goodwill a franchise purchaser is ready to pay to acquire the team. It is depictive of the history of the franchise that has been proven to bring extra value to a franchise, especially if this story is prestigious and represents also the fanbase acquired by the franchise thanks to its winning past which is here also not fully represented in the financial statements. Moreover, it can also influence the "ego factor" of a future owner in the status that owning a historically renowned franchise can bring, especially knowing that franchise owners testified that owning a franchise is viewed a status symbol (Vine, 2004). Therefore, this variable is expected to have a positive effect on the franchises value, as the more titles a franchise has won; the larger the national exposure and the fanbase. The data regarding the number of titles a franchise has won prior to a transaction has been found on the NBA's website (http://www.nba.com).

The number of years since that a team has gone without winning an NBA championship at the date of the transaction (NOTITLEY). For a team that has never won a title, this number is the number of years this franchise has been existing. This value determinant is representative of the human capital value of a franchise through the skills of the workforce, the talent of the players in the team, and the expertise of the coaching staff. It can impact the relationship with fans and the value of branding contracts as well. NOTITLEY is supposed to have a negative effect on the team's value as the longer a team has gone without winning a title the less its workforce, players, and coaches are expected to be skilled. Even though the book value of a team may not show the decrease in value, it is presumed that the market worth of the team will decrease. This data was collected through the official website of the NBA (http://www.nba.com).

Whether or not a team has recently changed their location prior to a transaction (CHANGELOC). This variable exhibits the relational capital category of intangible assets through the "honeymoon effect" scrutinized by Alexander and Kern (2004) which assumes that when a franchise changes its location, the population of the new area will be highly interested in the team for the first eight years following its relocation. This effect is supposed to start fading after three years and completely disappears after eight years. As the franchise will draw a lot of interest for its first eight years in a new location, the locality change of a franchise can be a booster for its fanbase, customers relationships, and advertising and branding contracts, hence the effect on intangible assets. This variable is thus assumed to have a positive effect on the franchises value

over a period of eight years. We created the variable the same way as Alexander and Kern (2004) and Hill (2010) by giving a value of 1 for the first three years after the team's relocation, the fourth year the value will be 0.8, 0.6 for the fifth year, 0.4 for the sixth year, 0.2 for the seventh year, and 0 from the eighth year, to account for the diminishing return of the "honeymoon effect". The information on teams' relocation was gathered with the help of the NBA's official webpage (http://www.nba.com) and their page on teams' history.

The number of Hall of Famers that a team has had in its history prior to the transaction (HOF_PLAYERS). As Berri et al. (2004) stated in their research, the NBA has the lowest competitive balance of the four major North American sports leagues, meaning that a few teams are dominating most of the other teams, leading to a low uncertainty of outcome when team are facing each other. A competitive imbalance is theoretically supposed to lower the fans interest in a specific league, as there is little to no suspense during the season and the play-offs because of franchises being clearly better than others. However, by focusing its marketing on its star players, the NBA managed to overcome the lack of competitiveness of certain teams by switching the fans interest for specific teams to specific star players. As a result, teams are supposedly less evaluated on their sporting performances than in other leagues, but more on the in-game performances of their star players. A simple but clear indicator of this focus on players instead of teams in the NBA is for example the common usage of the term "franchise player" to designate a player so talented that it is possible to build a team around him. Even though used in the four major sports leagues, the term is more often and widely used to designate NBA players than in any other league. Therefore, and as NBA players are attracting fans interest, HOF_PLAYERS has an effect on the brand reputation of a franchise, its branding contracts value, and its fanbase relationship, and can be classified as having an impact on the reputational capital value of a franchise. In fact, the higher the number of players having been introduced to the Hall of Fame prior to a sale, the higher the brand reputation of the franchise is supposed to be. That is why, this variable is assumed to have a positive effect on franchises market value. The number of Hall of Famers were collected using the Naismith Memorial Basketball Hall of Fame official website (http://www.hoophall.com). As the star power in the NBA is directed to players and less to coaches or franchises officials, only the players inducted to the Hall of Fame were counted as "Hall of Famers". Players that played less than one year in a certain team were not counted as Hall of Famers for this specific team, as it is supposed that they did not impact the team's history enough to have an effect on its value.

Four dummy variables were also introduced to account for league-specific events and to assess whether or not these events were significantly affecting the value of NBA franchises. These variables were set to 1 if the event had occurred and 0 if it had not occurred yet. The first of these

variables was the creation of the cable network ESPN (ESPN) in 1979. The creation of ESPN was significant because it was the first network dedicated only to sport and allowed fans to watch more sports events that they ever could before. Before the creation of ESPN, sports fans had to wait for the 6 or 11 o'clock news to get their sports highlights and results. With the launch of ESPN and its subsequent growth into a behemoth of sports channels, the four major sports leagues received a better coverage than ever, with not only more games broadcasting but also talk shows dedicated to discussing and analyzing the results of these games. This is why we assume that the creation of ESPN has had a positive effect on teams' value. The second variable is the implementation of the salary cap in the NBA in 1984 (SALARY_CAP), which by limiting the amount of money NBA franchises are allowed to spend on their players, increased the competitive balance of the NBA. This increased competitive balance is supposed to have led to a greater interest from fans, by giving fans the thought that their team had a better chance at competing. A subsequent event, the introduction of the free-agency (FREE_AGENCY) in 1988, also helped the competitive balance and the fans interest by allowing players to change teams at the end of their contract, thus giving worse teams the chance to improve themselves by recruiting players from competing franchises. Fourth was the creation of the NBA TV channel (NBATV) in 1999, which in a similar fashion as ESPN, gave the NBA even more coverage than before. The creation of NBA TV gave the NBA a platform to broadcast games analysis and results, but also to broadcast games that were only broadcasted by regional channels. All of these variables are supposed to have helped the NBA develop, but also to have increased the fanbase and the public interest in the NBA, resulting in an increase in teams' values.

With the use of these variables, our model will be the following:

$$PRICE=\alpha+\beta_1 GDP\_3Y+\beta_2 POP+\beta_3 AGE+\beta_4 WIN\_3Y+\beta_5 TITLES+\beta_6 NOTITLEY+ \beta_7 CHANGELOC+\beta_8 HOF\_PLAYERS+\beta_9 ESPN+\beta_{10} SALARY\_CAP+ \beta_{11} FREE\_AGENCY+\beta_{12} NBATV+\varepsilon$$

3.2.Model findings

The preceding variables were run using different combinations in a pooled Ordinary Least Squares regression to determine the empirical effects of these variables on PRICE. As our sample was only made up of 68 observations, we had to split the regression analysis into smaller regressions to allow the results to remain significant. Therefore, we will base our observations of the model's results by assessing the amount of time a specific variable was observed significant and will draw our conclusions regarding these occurrences. The results are shown in Table 10. All regressions, except for one, had a R-squared greater to 0,40 and all had a significant F-statistic

(<0,05). That means that the model has its limitations, but some conclusions can still be extrapolated from it, as it is able to explain some phenomenon and the effects of the variables on PRICE.

The first inference that can be reached from these regressions is that POP is highly significant when it comes to explain PRICE. Meaning that the greater the population of a city, the higher the premium paid by the future franchise owner. It means that the higher the potential for customer relationships and advertising contracts, the more a franchise will be worth. Comparing it with Hill's (2010) research on the NFL where the same variable was not deemed significant, shows us that the NBA is more dependent than the NFL regarding the population of the area where it is situated. Regarding the effect of intangible goodwill on PRICE, we can see that TITLES did not appear significant in explaining the independent variable, meaning that it is not taken into consideration when a potential purchaser is assessing the amount he will be ready to spend on the franchise. Important to be noticed is the fact that TITLES, if proven significant would in majority of the cases have a negative impact on the market value of NBA franchises. This comes as a surprise, as the amount of title won by a team through its history should normally represent the organization's reputation and a greater number of championships won should impact positively the image of a franchise leading to an increase in its worth on the market.

AGE was only proven significant three times out of the twelve times it was analyzed. This shows us that the age of a franchise has a lower power on explaining the market value of a team. However low, the explanatory power of this variable remains existent. The impact of AGE on the franchises value is positive, as assumed. The older the team, the higher chance that a future franchise owner will pay a premium. A reason for the fact that AGE is not always significant might be that AGE alone is not sufficient to command a premium on the value of a team, thus the history of the franchise should not be long but should also be successful. A franchise being created early in a league's history is not enough to make it desirable for potential purchasers. Hence the only partial explanatory power of the variable.

Table 10: Descriptive Statistics (Coefficients)

	R-squared	F stat	C	GDP_3Y	POP	AGE	WIN_3Y	TITLES	NOTITLEY	CHANGELOC	HOF_PLAYERS	ESPN	NBATV	SALARY_CAP	FREE_AGENCY
Regression 1	0,569944	13,4737	**-930,1643**	**6,29E-05**	**7,08E-05**	2,16306	**666,6168**	-3,324811		110,2549					
		0	**0**	**0**	**0,0155**	0,3616	**0,0316**	0,7515		0,2802					
Regression 2	0,594056	12,5434	**-551,5736**	**9,33E-05**	**8,18E-05**	4,136537		12,89059	-4,870186		-19,02659	**-217,1252**			
		0	**0**	**0**	**0,0036**	0,3555		0,5153	0,1457		0,2414	**0,0462**			
Regression 3	0,601267	12,9253	**-861,0344**	**9,22E-05**	**7,36E-05**		487,4379		-1,693512	36,76591		-237,9145	-23,75064		
		0	**0,0004**	**0,0001**	**0,0109**		0,0977		0,5113	0,7123		0,0592	0,8701		
Regression 4	0,506358	10,4286	**-608,4495**	**0,000103**		1,155167		-11,24347	-6,461634	80,49622					-205,7879
		0	**0,0001**	**0**		0,6651		0,3788	0,0749	0,4545					0,1255
Regression 5	0,50298	8,67421	-118,7814		**0,000102**	5,203637			-0,557885	-26,30358	-6,495311		**384,4192**	93,44251	
		0	0,3401		**0,0013**	0,1531			0,8503	0,814	0,5385		**0,0008**	0,3559	
Regression 6	0,419068	6,18318	**-674,576**			**9,745166**	**986,8192**		4,027654	58,28291	-12,01923			9,155028	190,473
		1,8E-05	**0,0048**			**0,0148**	**0,0053**		0,197	0,6382	0,2934			0,9479	0,2046
Regression 7	0,426592	6,37678	**-436,9507**				**772,6285**		2,171438		3,324473	-3,385548	**317,8854**	24,64728	167,2717
		1,3E-05	**0,0418**				**0,025**		0,5338		0,6419	0,9808	**0,0103**	0,8777	0,2673
Regression 8	0,486012	8,10488	-85,93184		**0,000106**			-4,059665	0,154452	-56,53429	5,583182		**404,6826**		114,6013
		1E-06	0,5112		**0,0009**			0,8099	0,9614	0,611	0,5599		**0,0006**		0,2971
Regression 9	0,613498	13,6055	**-846,3604**	**0,000102**	**6,70E-05**		543,2415	-14,07413	-3,848772			-197,8779		-111,7386	
		0	**0**	**0**	**0,0171**		0,0643	0,2347	0,2197			0,0851		0,3514	
Regression 10	0,569961	11,3603	**-901,59**	**8,95E-05**		5,575437	**732,7938**	6,369975			-17,21244	**-227,8073**			-139,3422
		0	**0**	**0**		0,2258	**0,0157**	0,7527			0,3042	**0,0421**			0,277
Regression 11	0,51989	9,28163	**-375,9172**		**9,02E-05**	3,776787	504,0384	-9,086895				-8,757799	**385,1361**	114,8848	
		0	**0,0262**		**0,0047**	0,0989	0,1167	0,4157				0,9422	**0,0001**	0,3383	
Regression 12	0,485057	9,57663	**-639,2481**	**9,51E-05**						31,15954	2,060253		-39,3588	-193,524	-116,2537
		0	**0,0028**	**0,0007**						0,7861	0,7326		0,7947	0,1841	0,4375
Regression 13	0,585768	12,1209	**-699,8767**	**0,000104**	**8,33E-05**	0,904258						-260,6328	-48,85781	-30,01161	-172,0184
		0	**0,0002**	**0,0008**	**0,0041**	0,6665						0,053	0,7513	0,8304	0,2113
Regression 14	0,427747	7,59937	**-399,0987**				**847,3462**	-8,175178				23,0795	**354,8623**	18,91968	187,0746
		4E-06	**0,0295**				**0,0144**	0,4627				0,8594	**0,0013**	0,9052	0,2011
Regression 15	0,575282	13,7708	**-923,5392**	**6,02E-05**	**6,84E-05**	4,338393	**713,6257**			96,04565	-8,026539				
		0	**0**	**0**	**0,0178**	0,208	**0,0159**			0,349	0,3549				
Regression 16	0,52041	11,032	**-610,7602**	**0,000122**					**-7,602231**	9,191885	-9,365743		-65,00899	**-259,1159**	
		0	**0,0013**	**0,0001**					**0,0268**	0,933	0,2278		0,6573	**0,0494**	
Regression 17	0,524834	9,46738	**-598,8772**	**0,000121**				-6,547933	**-7,854218**	16,95751	-6,668517			-195,9287	-113,9177
		0	**0,0001**	**0**				0,6833	**0,0287**	0,8775	0,4958			0,1406	0,4324
Regression 18	0,503197	12,5596	**-496,1596**	**8,93E-05**				1,802138		-41,28425		-221,2609		-129,0869	
		0	**0,0004**	**0**				0,8544		0,7029		0,0959		0,3298	
Regression 19	0,504754	12,6381	**-556,6004**	**0,000107**					**-7,215897**		-8,481384		21,25609		-191,0569
		0	**0,0013**	**0,0001**					**0,036**		0,2426		0,875		0,1562
Regression 20	0,512435	10,6853	**-370,5709**		**8,91E-05**	4,10823	493,6065	-10,34884				69,29355	**410,1689**		
		0	**0,0281**		**0,0051**	0,0698	0,1238	0,3507				0,4391	**0**		
Regression 21	0,454132	8,45809	**-617,9284**		**7,31E-05**	**5,834995**	**737,9941**		**5,916181**			-58,94744			210,7095
		1E-06	**0,0023**		**0,0232**	**0,0122**	**0,026**		**0,0325**			0,5988			0,0723
Regression 22	0,412717	8,71418	**-407,8073**		**7,50E-05**	**4,752587**	497,2589							61,30355	**288,1444**
		3E-06	**0,0186**		**0,0239**	**0,0397**	0,1197							0,6409	**0,0406**
Regression 23	0,370212	7,28917	17,31892					-13,57995		-45,99961	10,55192	57,89622	**413,9305**		
		0,00002	0,8857					0,4154		0,7215	0,2951	0,6002	**0**		

WIN_3Y was proven significant in improving a franchise value most of the time it was scrutinized. The significance of this variable is in lien with our assumptions, being that the better a team is, the higher its market value will be, and vice versa. This significance resonates with Alexander and Kern (2004) who found the place of a franchise in the league ranking to be negatively significant, as they attributed a place to each franchise related to their finishing in the league the previous year, hence the negative significance as a lower number indicated a higher standing. They also found that the average winning percentage for the 5 years prior to the transaction was insignificant. Thus, we can assume that only the most recent seasons have an explanatory power on the sale value of a franchise. Hill (2010) assume that there is a "diminishing significance for years that are further away from the date of transaction" (p.42).

NOTITLEY was proven significant only four times, however the significance is negative as assumed in three cases and positive in one. These results are concerning because of the change of sign happening in one case. The variable was assumed negatively significant as the greater the number of years a team has gone without winning a title, the lower the quality of its workforce, and thus the lower its market value should be. The reason for this discrepancy can be attributed to the fact that in the 21st regression, NOTITLEY is associated with AGE, POP, and WIN_3Y whose association can have had induced an error in the model. As each time AGE was proven positively significant in one regression, NOTITLEY was also positively significant we can assume that AGE is affecting the variable NOTITLEY. As the longer a franchise has been in the league, the more chance it has to have had a longer time since its last title, NOTITLEY lose some its explanatory power over the value of a franchise and become less relevant to the whole regression.

CHANGELOC and HOF_PLAYERS were proven insignificant when it comes to explaining the increase or decrease in an NBA franchise's price. CHANGELOC was also proven insignificant for the NFL (Hill, 2010) and throws shade at the "honeymoon effect". Hill (2010) assumes that other similar variables may have clouded the significance of the variable. However, these variables supposedly affecting the significance of CHANGELOC are not present in this paper's regression. Thus, we can assume that CHANGELOC is insignificant when valuing a franchise. As for HOF_PLAYERS insignificance, it shows that past star players do not have an impact on the value of a franchise. We can assume that having had players inducted to the Basketball Hall of Fame is not taking into account when assessing the value of a franchise for a future owner. As seen with the impact of WIN_3Y and, to a lesser extent, NOTITLEY, the market value of a franchise is more dictated by the recent success of a team than by its past success.

When analyzing the results of the four dummy variables, we can see that only ESPN and NBATV are significant variables, when SALARY_CAP and FREE_AGENCY are only proven

significant once. As expected NBATV was an important event for the NBA and contributed greatly to its development. Having its own channel only dedicated to the NBA helped the league tremendously to increase its popularity and to grow its fanbase, thus increasing the market value of franchises. As certain games are only broadcasted regionally, the creation of the NBA TV channel, may have supported the growth of a non-local fanbase, meaning that people being on different regions could have had access to games that they would not have been able to watch before, thus allowing fans from different regions to identify themselves to different and further located teams. When analyzing the significance of NBATV, we can see that the variable was proven significant only in the absence of GDP_3Y in the model. The reason to this phenomenon must be that there is a high correlation between NBATV and GDP_3Y.

Interestingly enough, ESPN was proven significant only twice and, moreover, had a negative impact on teams' value. This can imply two things: the first being that ESPN, as a global sport network, actually helped other leagues to raise their popularity among the American sports fans and this increase of other leagues' popularity happened at the expense of the NBA, the second being that as the NBA first refused to broadcast its games on a cable network, as it was supposed to not reach an audience big enough, lost some market power and some fans awareness. The first option might be the most probable one, as ESPN broadcasted at first more American football than basketball.

SALARY_CAP was only proven significant once and its impact on teams' value was deemed negative. This result is far from the one that was expected. However, the main problem with SALARY_CAP is its strong collinearity with GDP_3Y and FREE_AGENCY, both of these variables could have messed the results of SALARY_CAP, but even when these two variables were kept out of the equation, SALARY_CAP was not proven significant. Thus, we can conclude that its effect on franchises value is almost inexistent.

Same for FREE_AGENCY which was proven significant with a positive effect on the value of franchises, but only once. As the variable is highly collinear with GDP_3Y and SALARY_CAP it is possible that GDP_3Y might have captured the trend of the two other variables. The variable representing the implementation of the free-agency was assumed to be positively significant as the induction of the free-agency improved the competitive balance of the NBA, however, we can see that its impact on franchises value is very low.

As we could see, POP, WIN_3Y, AGE, and NBATV were all positively significant, and NOTITLEY and ESPN were negatively significant when it comes to their explanatory power of PRICE. As all these variables are representing different categories of intangible assets, this

analysis of the influence of certain intangible assets on the market value of franchises will help us to provide some advices on which intangibles are important when it comes for valuing an NBA but also a professional sports franchise.

3.3.Managerial implications

This research is devoted to give advices on intangible assets valuation and their effect on an NBA franchise market value. Therefore, its goal is to inform potential franchise purchasers but also investors and analysts regarding sports franchises in general and helping them to choose on which intangibles to focus when assessing the market value of a professional sports franchises and especially NBA franchises.

As seen in the regression analysis, CHANGELOC and HOF_PLAYERS were found insignificant when assessing an NBA franchise value which are both the variables representing the Relational capital of a franchise. As per this research, the relational capital represents relationship with customers, season-ticket holders, and suppliers, the brand and company reputation, and the distribution channels of a company. These value determinants are supposed to be really important in a sports franchise whose business rest on the relationship with its fanbase and games attendance. However, their insignificance proves that they are not the most important intangible assets when it comes to assessing the market value of an NBA team. However, it seems logical to assume that a franchise which would not care about its relationship with fans would be a set up to failure. The implication of these findings is not to advise franchises to cut all ties to their fanbase, but more to focus less on relational capital than on structural and human capital, and goodwill when valuing intangibles to assess the real market value of a franchise.

As relational capital is less important for calculating the transactional value of an NBA franchise, it is supposed that other categories of intangible assets would need to be assessed more carefully. As shown by the significance of WIN_3Y and NOTITLEY, the human capital is an important category of intangible assets when computing the actual value of a franchise. The skills of the current workforce from the franchise's executives, to the players, and through the coaching staff are important elements for franchises buyers. In fact, judging these variables important is a logical development, as acquiring a franchise composed of skilled employees justify that the buyer would pay a premium for it. If the already present workforce is competent, the new owner will not have to rebuild everything when taking ownership of the team; he will already start with a sound foundation and will be able to build the franchise starting at a better point than if the employees were incompetent and it would be needed to completely rebuild the whole franchise starting from its employees. There is indeed a great importance of human capital when valuing a franchise, but

it is not the only category of intangibles that needs to be taken into account when willing to invest in a sports franchise. In fact, the structural capital is also a very important intangible metric to be assessed when deciding on the premium that will be paid to acquire a team; as the significance of AGE illustrates it. The age of a franchise is representing all the processes, trade secrets, and experience of an organization. It is supposed that the longer a franchise has been around, the more time it has had to refine its methods. However, AGE alone is not sufficient to assess the prosperity of a franchise in the manner that it is not because a franchise is old that it is efficient. Nevertheless, the significance of AGE proves us that buyers, indeed, buy the history of the team and older teams will command a premium when being bought. Therefore, we can infer that the structural capital is an important value determinant for a franchise and therefore needs to be carefully valued when assessing the premium paid on top of a team book value.

The intangible goodwill is also an important factor of a franchise's price premium, as illustrated by the significance of intangible that can be linked to the reputation, history, and brand image of a team, such as POP. All the intangible metrics which consists of a franchise's potential, but also that are not represented in its value and are not contracts, processes, talents, or relationships, etc. are part of the goodwill paid in excess of the book value. The importance of the goodwill was already assessed before this work; however, it was important to understand that not all of the premium, paid by a future franchise owner, is part of the goodwill, but it also represents different intangible assets that cannot be classified under this category.

With these intangible assets' analysis, we can see that the intangibles representing processes, knowledge of the environment, and business structure are very important in gauging the long-term success of a team, and intangibles such as the recent winning records and the assembled and trained workforce are the intangibles that are more representative of a franchise's short-term accomplishments. The way these short and long-term influenced intangibles must be taken care of is different. As a matter of fact, when a franchise owner wants to improve the value of its franchise, e.g. for a future sale, he has two choices: the first being to only focus on the short-term intangible assets that are more easily and quickly improved and, if properly developed, will lead to an increase in the value of the franchise; the second being to focus only on the long-term intangibles and try to improve the value of his franchise by developing these, however, these intangibles take more to increase in value as they represent more of a long haul franchise's development. Thus, the easiest way to improve a franchise's intangible assets' value would be to focus only on these short-term intangibles and to leave behind the long-term intangibles. However, an NBA franchise's value would only be maximized when developing both the long-term and short-term intangibles, and it would therefore, be meaningless to only devote one's work to

improve the value of a franchise only by supporting the short-term intangibles. The solution of caring only about the short-term intangibles is, however, a good option when a franchise owner would have a short-term sale of his franchise in mind, as it would maximize the value of the intangibles for this upcoming sale. Another noticeable fact is also that when focusing on short-term intangibles for a long enough period of time, the value of the long-term intangibles would actually be impacted. This shows that, even though, we can split intangibles in these two categories, most of the intangible assets are, in the end, affecting each other, no matter the short or long-term point of view, and should be assessed with these interrelationships in mind.

This dichotomy between short-term and long-term intangibles is representing well the importance of intangible assets regarding a franchise's value: intangible assets represent the past, the present, and the future of an organization and therefore should be analyzed with the utmost consideration. Valuing intangible assets is not an easy task due to the difficulty of their identification, but a well performed intangible assets' valuation will ensure a future franchise owner, not only to pay the right price for the team he wants to buy, but also to assess the problematic and the well-functioning parts of the organization. The valuation of intangibles gives a quantitative point of view, but its qualitative explanatory power should not be underestimated.

CONCLUSION

This research aims at analyzing the effect of intangible assets on a sports organization. To do so, it divides the research in two parts: first, analyzing the actual effect of intangible elements on an NBA franchise market value to separate it from its theoretical book value and in a second part assessing which type of intangible assets are the one actually affecting the value. Several interesting conclusions were reached. First, there is an important gap between the teams' value calculated by Forbes on a theoretical basis and the actual transactional values of the franchises. In fact, the average NBA franchise commands a 15,99% premium over the Forbes value even though some teams were sold at a discount. This difference between the actual transaction prices and the Forbes assessed values demonstrates the effect of intangibles on a franchise value beyond its registered book value. It allows us to admit that intangibles are having a non-negligible effect on the market value of an NBA franchise. Moreover, we also found out that the average annual growth rate of NBA franchises' price is approximately of 9% per year. This growth in the market value cannot be only attributed to the revenue growth of franchises but has some exterior factors influencing it, factors that are acknowledged by the NBA in the increase of expansion fees.

After analyzing the existence of intangible assets on NBA franchises value, we proceeded to study the influence of intangible assets on the market value of franchises for 68 sale transactions of NBA franchises that happened between 1951 and 2017. The following variables had the following significant effects on value: the population of the city the team plays in, the average winning percentage for the past three years leading up to the transaction, the age of a franchise, and the creation of NBA TV had all a positive effect on the sale value of a franchise; when the amount of years since the last time a franchise has won a championship and the launch of the ESPN network had a negative effect on franchises value. These variables were used to represent the effects that intangible assets have on the value of NBA teams and their significance brought us to the conclusion that the structural capital, the human capital, and the goodwill were the categories of intangibles that had the biggest effect on the value potential owners were ready to pay to acquire a franchise. Interestingly enough, the variables were presented as having an insignificant impact on a team's valuation.

The main conclusion of this research is that potential owners or investors have to focus their attention on these intangibles to determine whether or not a premium or a discount should be paid on top the franchise's book value. Moreover, we can divide intangible assets that are affecting a franchise into long-term and short-term intangibles by acknowledging the fact some of them represent the knowledge of the competitive environment and the processes and business structure developed over the existence of the organization and, due to their long-term development

perspective, cannot be quickly improved to change the value of a team; and some other intangibles have a more short-term oriented nature because they represent the recent performance of a team and the assembled and trained workforce, these short-term intangibles can be improved on a faster basis and lead to the increase of a team's market value. These findings have two implications: the first being that potential franchises investors have to focus on them when deciding the amount of the premium, or discount, they should offer to acquire the team; and the second regards current owners that would like to improve the market value of their franchise by focusing on developing these specific intangible assets.

Nevertheless, there are some limitations in this study due, first of all, to the sample size of only 68 observations, and second to the limited number of intangibles analyzed. Regarding the sample size, almost every transaction that occurred since the creation of the NBA has been taken into consideration, except for the one that were comprised as a package including either another team or some facilities and the actual price paid for the team alone could not be clearly separated from the rest of the elements acquired. However, as the NBA was only created in 1946 and the first transaction happened five years later, the time frame of this study is quite low; a similar research should possibly be conducted in the future when more franchises purchases will have occurred. As for the number of intangibles assets analyzed, they do not represent all the intangibles existing in a sports franchise, which are shown in the first part. Therefore, an absolute conclusion cannot be reached and there is a need for further research dedicated on intangible assets in the NBA.

Moreover, this study is only dedicated to the NBA and, as shown in other researches more focused on value determinants, all professional sports leagues are not equal when it comes to variables affecting their value. Therefore, further researches should be conducted on the three other major North American sports leagues, but also on the effect of intangibles on the value of other countries' professional sports leagues.

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APPENDIX 1: FRANCHISES' TRANSACTIONS AND HISTORY

All the transactions taken for this research come either from Rodney Fort's internet database for all transactions happening until 2012 or an article from SBNation part of the Vox Media Group for the seven transactions happening in or after 2012. Several of these transactions require an explanation on why they were either not taken for the research or changed.

The "NBA franchises' sales considered for analyses" table shows the transaction that have been used in this thesis.

CHANGED TRANSACTIONS

The Los Angeles Lakers acquired in 1979 for $64,2 million (dollars value of 2017): the whole transaction included the Los Angeles Kings, The Forum, and NV Real Estate. As Forbes evaluated the transaction including only the Lakers, we took Forbes' value to reach this amount.

The New York Knicks sale in 1997: Forbes listed the 1995 New York Knicks transaction in 1997. As the transaction stated by Fort in 1997 is unclear concerning the amount it involves; we decided to follow Forbes evaluation of the team's value and the date provided by Forbes.

The acquisition of the Sacramento Kings in 1998 included the Arco Arena, a WNBA and an Indian Super League team. We took Forbes Sacramento Kings' price approximation for the research.

The 1998 Toronto Raptors' sale included the acquisition of the Arena in which they play, therefore we took Forbes' evaluation of the team acquisition.

In 2000, the Denver Nuggets were acquired in a package including the Storm WNBA team and the Full House Sports and Entertainment company. Therefore, we also took Forbes' acquisition price estimate for the franchise price.

REMOVED TRANSACTIONS

In 1992, the Sacramento Kings were acquired in a package including their arena, the team price alone was not found and therefore the transaction was excluded from the study.

In 1993, a majority share of the Houston Rockets was bought. As no information was found on what exact percentage of the franchise was acquired, we left this transaction out of the research.

In 1995, the Mickey Arison family increased its share in the Miami Heat to 88%. However, as the original share is unknown, we could not introduce this transaction in the analysis.

In 1995, a syndicate led by Glenn Taylor acquired a majority share in the Minnesota Timberwolves. As the exact percentage of this majority share remains unknown, this transaction was left out.

In 1999, FOX group bought out Liberty's share in the New York Knicks, as Liberty's share amount is unknown, it was judged better to avoid adding this transaction to the research.

In 2000, Mark Cuban acquired 54% of the Dallas Mavericks and 50% of the AA Center. As the exact amount given for the team remains unknown, we decided to exclude this transaction.

In 2003, Bell Globemedia bought the Toronto Raptors as part of a package including the Toronto Maple Leafs and the Air Canada Center. Exact amount paid for the Toronto Raptors is unknown.

In 2006, the Seattle Supersonics (now: Oklahoma City Thunder) were acquired in a package including the Storm WNBA team. The exact amount paid for each of the franchises separately is not communicated.

In 2010, Michael Jordan raised its shares in the Charlotte Bobcats (now: Charlotte Hornets) from a smaller share amount to a bigger one. As none of this exact share percentage is known, we could not include this transaction.

In 2011, Tom Gores acquired the PS&E holding composed of the Detroit Pistons, the Palace of Auburn Hills, the GTE theater, and the Festival. As the sum paid to acquire only the Detroit Pistons is unknown, we did not include this transaction in the research.

FRANCHISES' HISTORY

For the history of each NBA franchises, consult the table "NBA franchises' history. The data have been collected through the official website of the NBA (http://www.nba.com).

All the franchises' history has been taken per NBA.com, except for the history of the Charlotte Hornets. The Charlotte Hornets were created in 1988 in Charlotte through an NBA expansion. Through the 1990s the attendance and the fans' interest decreased dramatically and, therefore, the team was relocated in New Orleans in 2002. Shortly after the relocation of the Hornets to New Orleans, the NBA considered to expand and add a new franchise in Charlotte. Thus, in the beginning of the season 2004-2005 the Charlotte Bobcats were created. At the beginning, of the 2013-2014 season, it was announced that the New Orleans Hornets would change their name to the New Orleans Pelicans. Following this rebranding, Charlotte Bobcats' owner

Michael Jordan sent a request to the NBA to change the name of the Charlotte Bobcats into Charlotte Hornets.

This request was approved by the NBA, and the Hornets' name was back in Charlotte at the beginning of the 2014-2015 season. Moreover, as part of the deal made with the NBA, the renamed Hornets reclaimed the past records and history of the original 1988-2002 Charlotte Hornets, while all the records of the Hornets in New Orleans remained with the Pelicans. However, for our research on franchises' intangible assets, as we analyzed each franchise through its complete history and its subsequent sales, we could not consider the 1988-2002 history of the Hornets as part of the current Charlotte Bobcats/Hornets history, as the Bobcats were an expansion franchise created in 2004 with no history and with mediocre sporting records. Therefore, we decided that the New Orleans Pelicans are representing the 1988-2002 Charlotte Hornets' history prior to the move to New Orleans. And the currently named Charlotte Hornets represent the Charlotte Bobcats' and 2014-2017 Hornets' history.

Appendix 1: NBA franchises' sales considered for analyses

Year	Former Name	Current Name	Price paid ($ mln., 2017)	Percentage	Price ($ mln., 2017)
1951	Boston Celtics	Boston Celtics	0,465	50%	0,930
1957	Minneapolis Lakers	Los Angeles Lakers	1,3	100%	1,300
1958	Cincinnati Royals	Sacramento Kings	1,917	100%	1,917
1962	Philadelphia Warriors	Golden State Warriors	6,881	100%	6,881
1963	Syracuse Nationals	Philadelphia 76ers	3,984	100%	3,984
1964	Baltimore Bullets	Washington Wizards	8,678	100%	8,678
1965	Boston Celtics	Boston Celtics	23,226	100%	23,226
1965	Los Angeles Lakers	Los Angeles Lakers	38,71	100%	38,710
1968	Saint Louis Hawks	Atlanta Hawks	24,277	100%	24,277
1968	Boston Celtics	Boston Celtics	41,617	100%	41,617
1970	Boston Celtics	Boston Celtics	37,11	100%	37,110
1971	San Diego Rockets	Houston Rockets	33,529	100%	33,529
1972	Boston Celtics	Boston Celtics	23,162	100%	23,162
1972	Chicago Bulls	Chicago Bulls	29,531	100%	29,531
1973	Houston Rockets	Houston Rockets	5,86	55%	10,655
1974	Detroit Pistons	Detroit Pistons	38,423	100%	38,423
1975	Boston Celtics	Boston Celtics	8,875	50%	17,750
1977	Atlanta Hawks	Atlanta Hawks	15,858	55%	28,833
1979	Los Angeles Lakers	Los Angeles Lakers	64,2	100%	64,200
1980	Cleveland Cavaliers	Cleveland Cavaliers	3,995	20%	19,975
1981	Philadelphia 76ers	Philadelphia 76ers	31,444	100%	31,444
1981	Los Angeles Clippers	Los Angeles Clippers	35,374	100%	35,374
1982	Houston Rockets	Houston Rockets	27,768	100%	27,768
1983	Boston Celtics	Boston Celtics	36,479	100%	36,479
1983	Cleveland Cavaliers	Cleveland Cavaliers	48,639	100%	48,639
1983	Indiana Pacers	Indiana Pacers	26,752	100%	26,752
1984	Seattle Supersonics	Oklahoma City Thunder	49,154	100%	49,154
1985	Chicago Bulls	Chicago Bulls	20,746	56%	37,046
1985	Denver Nuggets	Denver Nuggets	42,845	100%	42,845
1985	Milwaukee Bucks	Milwaukee Bucks	37,207	100%	37,207
1985	Utah Jazz	Utah Jazz	54,12	100%	54,120
1986	Boston Celtics	Boston Celtics	267,654	100%	267,654
1987	Phoenix Suns	Phoenix Suns	117,505	100%	117,505
1988	San Antonio Spurs	San Antonio Spurs	62,415	65%	96,023
1988	Portland Trail Blazers	Portland Trail Blazers	143,248	100%	143,248
1989	Denver Nuggets	Denver Nuggets	105,646	100%	105,646
1991	Denver Nuggets	Denver Nuggets	125,194	100%	125,194
1991	Orlando Magic	Orlando Magic	152,021	100%	152,021
1992	Golden State Warriors	Golden State Warriors	36,5	25%	146,000
1993	San Antonio Spurs	San Antonio Spurs	126,929	100%	126,929
1995	Golden State Warriors	Golden State Warriors	152,732	75%	203,643
1996	Philadelphia 76ers	Philadelphia 76ers	194,543	100%	194,543
1996	Minnesota Timberwolves	Minnesota Timberwolves	9,338	10%	93,380
1997	New York Knicks	New York Knicks	459	100%	459,000
1998	New Jersey Nets	Brooklyn Nets	185,266	82%	225,934
1998	Sacramento Kings	Sacramento Kings	234,936	53%	443,275
1998	Toronto Raptors	Toronto Raptors	188,25	100%	188,250
1999	Charlotte Hornets	New Orleans Pelicans	117,33	35%	335,229
2000	Denver Nuggets	Denver Nuggets	286,436	100%	286,436
2000	Vancouver Grizzlies	Memphis Grizzlies	241,128	100%	241,128
2001	Atlanta Hawks	Atlanta Hawks	256,876	100%	256,876
2001	Seattle Supersonics	Oklahoma City Thunder	280,596	100%	280,596
2002	Boston Celtics	Boston Celtics	490,804	100%	490,804
2004	Atlanta Hawks	Atlanta Hawks	269,398	100%	269,398
2004	New Jersey Nets	Brooklyn Nets	388,555	100%	388,555
2004	Charlotte Hornets	New Orleans Pelicans	84,187	35%	240,534
2004	Phoenix Suns	Phoenix Suns	519,369	100%	519,369
2005	Cleveland Cavaliers	Cleveland Cavaliers	469,723	100%	469,723
2009	New Jersey Nets	Brooklyn Nets	228,382	100%	228,382
2010	Golden State Warriors	Golden State Warriors	506,265	100%	506,265
2011	Philadelphia 76ers	Philadelphia 76ers	305,385	100%	305,835
2012	New Orleans Pelicans	New Orleans Pelicans	363,015	100%	363,015
2012	Memphis Grizzlies	Memphis Grizzlies	375,903	100%	375,903
2012	Sacramento Kings	Sacramento Kings	366,237	65%	563,442
2014	Milwaukee Bucks	Milwaukee Bucks	577,356	100%	577,356
2014	Los Angeles Clippers	Los Angeles Clippers	2099,476	100%	2099,476
2015	Atlanta Hawks	Atlanta Hawks	886,075	100%	886,075
2017	Houston Rockets	Houston Rockets	2200	100%	2200,000

Appendix 2: NBA franchises' history (nba.com)

Current Franchise Name	Franchise History	Start	End	Years
Atlanta Hawks	Atlanta Hawks	1968	2017	50
	St. Louis Hawks	1955	1967	13
	Milwaukee Hawks	1951	1954	4
	Tri-Cities Blackhawks	1949	1950	2
Boston Celtics	Boston Celtics	1946		72
Broooklyn Nets	Brooklyn Nets	2012	2017	6
	New Jersey Nets	1977	2011	35
	New York Nets	1976	1976	1
Charlotte Hornets	Charlotte Hornets	2014	2017	18
	Charlotte Bobcats	2004	2013	10
Chicago Bulls	Chicago Bulls	1966		52
Cleveland Cavaliers	Cleveland Cavaliers	1970		48
Dallas Mavericks	Dallas Mavericks	1980		38
Denver Nuggets	Denver Nuggets	1976		42
Detroit Pistons	Detroit Pistons	1957	2017	61
	Ft. Wayne Zollner Pistons	1948	1956	9
Golden State Warriors	Golden State Warriors	1971	2017	47
	San Francisco Warriors	1962	1970	9
	Philadelphia Warriors	1946	1961	16
Houston Rockets	Houston Rockets	1971	2017	47
	San Diego Rockets	1967	1970	4
Indiana Pacers	Indiana Pacers	1976		42
Los Angeles Clippers	LA Clippers	2015	2017	3
	Los Angeles Clippers	1984	2014	31
	San Diego Clippers	1978	1983	6
	Buffalo Braves	1970	1977	8
Los Angeles Lakers	Los Angeles Lakers	1960	2017	58
	Minneapolis Lakers	1948	1959	12
Memphis Grizzlies	Memphis Grizzlies	2001	2017	17
	Vancouver Grizzlies	1995	2000	6
Miami Heat	Miami Heat	1988		30
Milwaukee Bucks	Milwaukee Bucks	1968		50
Minnesota Timberwolves	Minnesota Timberwolves	1989		29
New Orleans Pelicans	New Orleans Pelicans	2013	2017	5
	New Orleans Hornets	2002	2012	9
	New Orleans/Oklahoma City Hornets	2005	2006	2
	Charlotte Hornets	1988	2004	16
New York Knicks	New York Knicks	1946		72
Oklahoma City Thunder	Oklahoma City Thunder	2008	2017	10
	Seattle SuperSonics	1967	2007	41
Orlando Magic	Orlando Magic	1989		29
Philadelphia 76ers	Philadelphia 76ers	1963	2017	55
	Syracuse Nationals	1949	1962	14
Phoenix Suns	Phoenix Suns	1968		50
Portland Trail Blazers	Portland Trail Blazers	1970		48
Sacramento Kings	Sacramento Kings	1985	2017	33
	Kansas City Kings	1975	1984	10
	Kansas City-Omaha Kings	1972	1974	3
	Cincinnati Royals	1957	1971	15
	Rochester Royals	1948	1956	9
San Antonio Spurs	San Antonio Spurs	1976		42
Toronto Raptors	Toronto Raptors	1995		23
Utah Jazz	Utah Jazz	1979	2017	39
	New Orleans Jazz	1974	1978	5
Washington Wizards	Washington Wizards	1997	2017	21
	Washington Bullets	1974	1996	23
	Capital Bullets	1973	1973	1
	Baltimore Bullets	1963	1972	10
	Chicago Zephyrs	1962	1962	1
	Chicago Packers	1961	1961	1

APPENDIX 2: VARIABLES USED FOR THE EMPIRICAL ANALYSIS

Most of the variables used for the regression analysis were thoroughly explained in this paper. For more information on the variables used, the following table shows all the values given to the variables for each transaction analyzed.

Appendix 3: Data collected for the empirical analysis

YEAR	NAME	PRICE	GDP_3Y	POP	AGE	WIN_3Y	TITLES	NOTITLEY	CHANGELOC	HOF_PLAYERS	ESPN	NBATV	SALARY_CAP	FREE_AGENCY
1951	Boston Celtics	0,930	3011295,29	801 444	5	0,435	0	5	0,6	0	0	0	0	0
1957	Los Angeles Lakers	1,300	4015582,28	482 872	10	0,495	5	3	0	4	0	0	0	0
1958	Sacramento Kings	1,917	4079124,18	502 550	35	0,440	1	7	1	5	0	0	0	0
1962	Golden State Warriors	6,881	4668176,26	2 002 512	16	0,616	2	6	1	5	0	0	0	0
1963	Philadelphia 76ers	3,984	4868746,23	216 038	17	0,531	1	8	1	2	0	0	0	0
1964	Washington Wizards	8,678	5132324,66	939 024	3	0,308	0	18	1	2	0	0	0	0
1965	Boston Celtics	23,226	5418737,45	641 071	19	0,746	7	0	0	10	0	0	0	0
1965	Los Angeles Lakers	38,710	5418737,45	2 816 061	18	0,600	5	11	0,6	5	0	0	0	0
1968	Atlanta Hawks	24,277	6297317,47	622 236	22	0,538	1	10	1	7	0	0	0	0
1968	Boston Celtics	41,617	6297317,47	641 071	22	0,692	9	0	0	13	0	0	0	0
1970	Boston Celtics	37,110	6617560,00	641 071	24	0,553	11	1	0	16	0	0	0	0
1971	Houston Rockets	33,529	6769090,57	696 769	4	0,423	0	25	1	0	0	0	0	0
1972	Boston Celtics	23,162	7024047,60	641 071	26	0,545	11	3	0	16	0	0	0	0
1972	Chicago Bulls	29,531	7024047,60	3 366 957	6	0,598	0	26	0,4	1	0	0	0	0
1973	Houston Rockets	10,655	7342595,92	1 232 802	6	0,435	0	27	1	1	0	0	0	0
1974	Detroit Pistons	38,423	7460963,97	1 511 482	33	0,480	0	28	0	12	0	0	0	0
1975	Boston Celtics	17,750	7483768,68	562 994	29	0,748	12	1	0	17	0	0	0	0
1977	Atlanta Hawks	28,833	7902190,62	425 022	31	0,370	1	19	0	12	0	0	0	0
1979	Los Angeles Lakers	64,200	8430215,56	2 966 850	32	0,589	6	7	0	12	1	0	0	0
1980	Cleveland Cavaliers	19,975	8396360,82	573 822	10	0,447	0	34	0	3	1	0	0	0
1981	Los Angeles Clippers	35,374	8343848,63	875 538	11	0,463	0	35	1	3	1	0	0	0
1981	Philadelphia 76ers	31,444	8343848,63	1 688 210	35	0,683	2	14	0	9	1	0	0	0
1982	Houston Rockets	27,768	8341953,71	1 595 138	15	0,516	0	36	0	3	1	0	0	0
1983	Boston Celtics	36,479	8568495,14	562 994	37	0,736	14	2	0	24	1	0	0	0
1983	Cleveland Cavaliers	48,639	8568495,14	573 822	13	0,268	0	37	0	3	1	0	0	0
1983	Indiana Pacers	26,752	8568495,14	700 807	16	0,403	0	37	0	4	1	0	0	0
1984	Oklahoma City Thunder	49,154	8916586,37	493 846	17	0,577	1	5	0	5	1	0	1	0
1985	Chicago Bulls	37,046	9369188,77	2 783 660	19	0,378	0	39	0	4	1	0	1	0
1985	Denver Nuggets	42,845	9369188,77	467 549	18	0,549	0	39	0	5	1	0	1	0
1985	Milwaukee Bucks	37,207	9369188,77	628 300	17	0,651	1	14	0	7	1	0	1	0
1985	Utah Jazz	54,120	9369188,77	159 952	11	0,472	0	39	0,4	3	1	0	1	0

1986	Boston Celtics	267,654	9832623,69	574 289	40	0,780	15	0	0	24	1	0	1	0
1987	Phoenix Suns	117,505	10148293,89	988 983	19	0,423	0	41	0	4	1	0	1	0
1988	Portland Trail Blazers	143,248	10464021,89	486 083	18	0,577	1	11	0	2	1	0	1	1
1988	San Antonio Spurs	96,023	10464021,89	997 434	21	0,382	0	42	0	4	1	0	1	1
1989	Denver Nuggets	105,646	10740906,60	467 549	22	0,549	0	43	0	5	1	0	1	1
1991	Denver Nuggets	125,194	11045632,23	467 549	24	0,435	0	45	0	6	1	0	1	1
1991	Orlando Magic	152,021	11045632,23	163 435	2	0,299	0	45	1	0	1	0	1	1
1992	Golden State Warriors	146,000	11144657,41	399 886	46	0,553	3	17	0	16	1	0	1	1
1993	San Antonio Spurs	126,929	11349829,53	997 434	26	0,614	0	47	0	5	1	0	1	1
1995	Golden State Warriors	203,643	12002346,25	400 674	49	0,443	3	20	0	17	1	0	1	1
1996	Minnesota Timberwolves	93,380	12324089,87	382 545	7	0,272	0	50	0,2	0	1	0	1	1
1996	Philadelphia 76ers	194,543	12324089,87	1 513 800	50	0,273	3	13	0	13	1	0	1	1
1997	New York Knicks	459,000	12700685,36	8 015 348	51	0,646	2	24	0	15	1	0	1	1
1998	Brooklyn Nets	225,934	13156962,05	8 716	31	0,402	0	52	0	6	1	0	1	1
1998	Sacramento Kings	443,275	13156962,05	409 230	75	0,406	1	47	0	15	1	0	1	1
1998	Toronto Raptors	188,250	13156962,05	2 385 421	3	0,272	0	52	1	0	1	0	1	1
1999	New Orleans Pelicans	335,229	13677581,39	569 858	11	0,600	0	53	0	2	1	1	1	1
2000	Denver Nuggets	286,436	14148953,22	556 094	33	0,280	0	54	0	8	1	1	1	1
2000	Memphis Grizzlies	241,128	14148953,22	146 574	5	0,220	0	54	0,6	0	1	1	1	1
2001	Atlanta Hawks	256,876	14528423,28	431 321	55	0,422	1	43	0	16	1	1	1	1
2001	Oklahoma City Thunder	280,596	14528423,28	570 724	34	0,529	1	22	0	5	1	1	1	1
2002	Boston Celtics	490,804	14794289,07	607 931	56	0,485	16	16	0	31	1	1	1	1
2004	Atlanta Hawks	269,398	15421614,38	468 839	58	0,390	1	46	0	16	1	1	1	1
2004	Brooklyn Nets	388,555	15421614,38	8 716	37	0,602	0	58	0	8	1	1	1	1
2004	New Orleans Pelicans	240,534	15421614,38	461 915	16	0,537	0	58	1	2	1	1	1	1
2004	Phoenix Suns	519,369	15421614,38	1 424 000	36	0,443	0	58	0	6	1	1	1	1
2005	Cleveland Cavaliers	469,723	15899947,48	449 188	35	0,382	0	59	0	3	1	1	1	1
2009	Brooklyn Nets	228,382	16907161,09	8 913	42	0,443	0	63	0	9	1	1	1	1
2010	Golden State Warriors	506,265	16853804,97	390 724	64	0,419	3	35	0	18	1	1	1	1
2011	Philadelphia 76ers	305,835	16750010,86	1 538 567	65	0,443	3	28	0	15	1	1	1	1
2012	Memphis Grizzlies	375,903	17045336,26	655 155	17	0,557	0	66	0	0	1	1	1	1
2012	New Orleans Pelicans	363,015	17045336,26	369 250	24	0,443	0	66	0,6	2	1	1	1	1
2012	Sacramento Kings	563,442	17045336,26	475 516	89	0,310	1	61	0	15	1	1	1	1

2014	Los Angeles Clippers	2099,476	17769064,48	3 928 864	44	0,661	0	68	0	6	1	1	1	1
2014	Milwaukee Bucks	577,356	17769064,48	599 642	46	0,372	1	43	0	10	1	1	1	1
2015	Atlanta Hawks	886,075	18282031,68	463 878	69	0,577	1	57	0	17	1	1	1	1
2017	Houston Rockets	2200,000	19098656,40	2 303 482	50	0,618	2	22	0	12	1	1	1	1