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The financial impact of COVID-19 on sport franchises and the salary cap

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Introduction

At the beginning of 2020 the world has witnessed the diffusion of a new virus named COVID-19 which has had a gigantic impact on all aspects of everyday life, and like most activities, this impact has been mostly negative for the sport sector. Empty stadiums, external contact reduced to minimum possible, modified training facilities, temporary hiatuses, cancellation of tournaments, etc. has all had an important effect not only on the performance of teams and individual players but also on the franchises finances and how managers had to handle all these changes. This impact on the financial aspect of sports is reflected deeply on the salary cap of every sports league in North America and, as we will see, changes in the salary cap have huge repercussions on all aspects of the league, from luxury taxes paid by owners to the transfer market and where players decide to take their talents. The objective of this paper is to analyze in detail the changes that the pandemic has brought on all these aspects of sports and to try to theorize what the future holds for the leagues and the teams which compose it, mostly concentrating on North American sports, but while still keeping an eye on the situation of other sports around the world. In the first part we will find the fundamental definitions and tools that will be used to understand and analyze the contents of the following chapters, then we are going to talk extensively about the salary cap, how it works, how it's calculated, and why we consider it an important measuring stick for growth rates of most American sport leagues. After that we gather as much data as we can on the financial state of US franchises before the 2019-2020 season and the state in the months after the COVID-19 pandemic hit to see the level of impact it had. After having analyzed abundantly the data gathered, in the final part we take a look at how both American sport leagues and European soccer associations have tried to bounce back from this dreadful situation and the extent to which they have been successful in their attempt to limit the damage as much as possible.

1. General definitions and the salary cap

As we said before, one of the most accurate indicators of financial prosperity or distress of a sport league is the “Salary cap”, but what is the salary cap? First of all, this notion is not found in all sports, it characterizes only team sports and not individual ones, it's not found in most sports outside the USA, even if in recent years there has been talks of introducing it in some soccer leagues in Asia because of the high wages teams pay to incentivize European and South American players to move to Eastern countries. The salary cap is an agreement, and in some cases a rule, which places a limit on the amount of money teams are permitted to pay for players' salaries. ("A Look Back at Professional Sports Labor Disputes – AMOG", 2017) These rules are written in each league's individual Collective Bargaining Agreement (or “CBA”), which is a written legal contract between a union that represents the employees and their employer. It is the result of a long negotiation process between these two parties regarding topics like wages, hours and terms and conditions of employment. (Society for Human Resource Management (SHRM), 2017) The salary cap is implemented to maintain a competitive balance by restricting richer clubs from having almost monopolistic power over the player's market and signing more top athletes than rival clubs, reducing so the gap between the big market and small market teams. There are two types of salary caps: a hard cap and a soft cap. The hard cap is a maximum amount which cannot be exceeded for any means, in the case of a breach of this cap very heavy sanctions are imposed against it, including the voiding of contracts and the withdrawal of trophies earned during the period of the breach. This stricter type of cap is enforced on the National Football League, and it is a major reason for which very few teams in the history of the NFL have ever been able to win back-to-back championships and pursuit sustainable success since after winning the first one the value of the players rise substantially and the teams are unable to pay all of them enough to keep the team intact, as they are confined by the salary cap. On the other hand the soft cap is also a limit but it can be exceeded in some cases. Under normal circumstances they still imply sanctions of financial nature in the form of a luxury tax in case of violation of the cap, which represents a smaller burden with respect to the sanctions of the hard cap. This luxury tax is proportional to the amount by which you surpass the limit and it gets heavier the more time you spend over the limit, so it acts as a strong incentive to stay under the cap while still leaving the teams some leeway to organize themselves and work around it. This soft cap plus luxury tax system is imposed on the National Basketball Association and the Major League Baseball, where we can see a substantial difference from the leagues that incorporate the hard cap since in the NBA and the MLB we find franchises that are able to sustain success for a different number of years in a row (like the Golden State Warriors who went to five straight NBA finals in the second half of the 2010s and the New York Yankees in the early 2000s (Ed Attanasio, 2005)) showing us that the way the salary cap is structured has a big influence on the possibility of long-term prosperity for a franchise.

The salary cap has two main purposes: to maintain competitive rivalry and parity between teams and to contain costs from becoming out of hand and a problem too big to handle for the owners.

The first purpose is so important because, differently from most sports outside the US, the players' transfer market depends only on two aspects: the trade market and free agency. In most European sports, like soccer, the transfer market almost exclusively depends on the classic transaction between two franchises where the managers start a negotiation trying to assess the value of the player in contention, this value is called the transfer fee, and after agreeing on the transfer fee the player, by way of his agent, work out the terms of his contract with the new team. These types of transactions have little to no restriction and regulation, this is why the most successful teams in these sports are almost always the clubs with the richest owners, as we can see with the recent rise of historically small teams after the acquisition by rich presidents like Paris Saint-German Football Club and Manchester City FC (BBC, 2017). While in sports that incorporate the salary cap this doesn't happen because teams are unable to fit under the cap more than a certain number of top players, as they are also the ones that have the highest salaries, so the talent is more equally spread around the whole league and even the small market teams are able to inspire interest and acquire big name players through free agency by having the possibility to offer them contracts with higher wages than the teams that already have at least one or two top athletes in their roster. This is true not only when looking at the free agency market, where a player after his previous contract has reached its expiration date is free to sign a new one with any team that offers him a deal, and usually an agreement is reached with the team that is able to and willing to advance the highest recompensation for the player's work, but it is also true regarding the trade market where teams are able to exchange players and/or other assets between themselves while still having to fit inside the salary cap, making it so that the assets traded have to be of somewhat equal value.

2. Salary cap as a financial indicator

Before explaining what the notion of salary cap meant we said that it can be considered an accurate indicator of the financial state of a sports league, this is because of the nature of the cap and how it is calculated. As it will soon be shown, all four major sports league in America have a different way to calculate the salary cap (with bigger differences seen between the ones that use the hard cap rules and the ones that use the soft cap rules), but the one thing that is common to all the leagues is that the cap depends almost exclusively on the expected future revenues the specific league is going to make during the following year. This is why we can sometimes see big discrepancies between average salaries of different sport leagues, because the wages (like in most working environments) depend on production. An example of this can be seen even without having to change sports, as there have been many debates on the fairness of the enormous gap in wages between the NBA and the WNBA (Women's National Basketball Association). Despite the coordinated efforts of both the men's and women's National Basketball Players Association (or "NBPA"), which is the union for current professional basketball players, this gap was not able to be filled since the salaries are proportionate to the popularity of the league and not to actual level of play, so even if considering two highest paid players in both competitions (which are Golden State Warrior's Stephan Curry who earned $43,006,362 during the 2020/21 season for the men's league (Adams, 2021) and Phoenix Mercury's DeWanna Bonner who instead earned only $221,450 in the WNBA, just over 5% of the NBA player's earnings and less than the minimum wage that can be offered for a contract in the male competition (Bucalo, 2021)) the difference in the salaries is not justified by the clearly smaller difference in the level of entertainment.

Salary cap calculation for each league:

NBA (soft cap) - The salary cap in the National Basketball Association is calculated by multiplying the projected Basketball-Related Income (also called the "BRI") by 44.78%, then subtracting the projected player benefits, like health and welfare benefits, written in the Collective Bargaining Agreement (which are negotiated between the league commissioner, Adam Silver and his legal team, and the NBPA), and finally dividing this number by the 30 current teams in the NBA. Since teams can structure a player's compensation in a number of ways, the CBA includes extensive rules for determining when and what part of a player's salary is included in a team's Team Salary and therefore counts towards the Salary Cap for a particular salary cap year. (CBA Breakdown, s.d.)

The Basketball-Related Income includes all the income that teams receive from their basketball operations and to be more precise, it includes:

1. Regular season ticket sales;
2. National broadcasting rights;
3. Exhibition ticket sales;
4. Playoff ticket sales;
5. Concession and merchandise sales;
6. 50% of fixed arena signage;
7. 50% of luxury suite sales;
8. 50% of arena naming rights;
9. International broadcasting rights;
10. Premium seat licenses;
11. 50% of practice facility naming rights;
12. Revenues pertaining to the selling of BRI rights;
13. Gambling revenues;
14. Parade revenues;
15. 50% of stadium tour and ATM fees.

Instead here are listed some of the things that are excluded from the BRI:

1. Proceeds from assignment of player contracts;
2. Proceeds from sale, transfer or other disposition of assets or property deemed to be included in BRI;
3. Expansion team fees;
4. Dues;
5. Capital contributions to a NBA-related venture from an owner;
6. Fines and withheld compensation;
7. Revenue sharing;
8. Interest income;
9. Insurance recoveries;
10. Sale of real estate.

NFL (hard cap) - The rules of the salary cap in the NFL are somewhat complicated respect to the more straightforward ones of the NBA, even if it is based on the same fundamental principal that it essentially depends on the revenue the league makes through different types of cash inflows. When the cap was introduced in 1996 it was valued at $34.6 million and this number was based off of defined gross revenue, or money earned from contracts with national television networks, ticket sales and merchandise. This changed in 2006 after a new Collective Bargaining Agreement was stipulated which made it so that the cap could include other types of inflows such as naming rights, local advertising, and essentially all streams of revenue.

The system of setting the salary cap is reasonably simple, using the previous season's revenue as a starting point:

- Revenue calculations x CBA percentage (48%) = Players revenue share
- Players revenue share – projected benefits = The amount available for salaries
- The amount available for salaries / number of teams = Base salary cap per team

The complexity of the NFL system for the salary cap derives from what counts against the salary cap and what doesn't. Usually contracts are reported as, for example, four-year deal worth $12 million, and what is incorporated in the cap in a given year is the average annual salary, so in this case 12 / 4 = $3 million dollars every year of the four-year contract (Rolfe, 2021). While in the NFL teams tend to make contracts like these back-heavy, meaning that the player gets paid more in the later years of the contract. This helps lessen the impact in theory in the earlier years. If a team wishes to not pay the player in the later years, they can either release the player or renegotiate the contract. This would make players less likely to sign a back-heavy contract, but signing bonuses are used to persuade these players to sign anyway. This is guaranteed money that is given to the player and is given regardless of whether or not the player stays with the team.

This guaranteed money still counts against the cap, but not the way you might think. In order to help this make a bit more sense, we will throw in a couple of examples.

Andrew Luck, the first overall pick in the 2012 NFL draft, signed a four-year deal worth $22.1 million and included a $14.5 million signing bonus. Rather than have that $14.5 million count in just one year against the cap, it is spread out over the deal. So for the Indianapolis Colts, his signing bonus would count for $3.625 million each year for four years. Things might get a bit confusing even when a player signs a contract extension. Aaron Rodgers recently signed a five-year extension with a $35 million signing bonus to extend his contract though the 2019 season. With the signing bonus for the extension, it actually impacts the cap every year of his entire contract, rather than just the years extended. This means that Rodgers' signing bonus will be worth only $5 million against the cap each year for the next seven years. If a player is released, traded or decides to retire, the remaining cap hit is pushed up to the next season, so in this case if Rodgers retires after just one year, his team (The Green Bay Packers) would take a hit of $30 million the very next season. Another thing to consider when looking at what could be included in the salary cap are the cash incentives. In a way incentives act like signing bonuses, but they are broken into two categories, likely to be earned (LBTE) or not likely to be earned (NLTBE). LTBE incentives are normally performance-based goals that are listed in a contract that a player was able to complete in his previous season. For example, if there is an incentive for Adrian Peterson to rush for 1,000 yards in 2013, this would qualify as LTBE and is included in the team salary since Peterson ran for well over 1,000 yards in 2012. Other things that are included as LTBE are incentives that require a player to report to off-season workouts, minicamps and things of that nature. If a player has an incentive that he did not complete in the previous year, this is considered NLTBE and therefore not counted against the cap. Things can get complicated with this as well, particularly for players who did not play in the previous season like rookies or injured players. For disputes, there will often be arbitrators to listen to both sides and come to an agreement (Brook). Very clever managers are able to use all these rules strategically to try to reduce player's annual cap hits and so have more cap room to offer greater salaries to upcoming free agents (either already on the team or possible new possible additions to the roster) or to acquire high paid athletes through the trade market without going over the cap. The latest example of this tactical use of the rules can be seen with the astonishing job done by the general manager of the 2021 Super Bowl champions Tampa Bay Buccaneers, Jason Licht, who, against all odds, was able to maintain most of the roster intact and reacquire the whole starting team after winning the national championship, through a series of renegotiation of their contracts with new incentives and extensions. This event is something extremely rare in the NFL and that has actually never happened to this degree with a Super Bowl winning team, this is why they are considered to still be the favorite to win it again in the upcoming season, not only by both casual and die-hard fans but, most importantly, by Las Vegas bookmakers.

NHL (hard cap) – Unfortunately for players and managers, the National Hockey League is widely considered to have the most restrictive and blunt salary cap of any professional sports league. This is because, even being a league with a hard cap like the NFL, the rules with which you calculate what is considered against the cap, so the cap hit, are the same ones used in the NBA (a soft cap league). This means that while having to stay under the cap by any means necessary, with very big repercussions in case of breach, managers are not able to manipulate the cap hit rules like in the NFL to try to fit higher paying contracts under the cap (Bird, 2014). Like the other national sports associations seen until now, the NHL's salary cap is not a random number, it's calculated based on a percentage of the league's Hockey Related Revenue (or "HRR"). According to the latest Collective Bargaining Agreement this percentage is fixed at an even 50%, before with the previous CBA of 2005 the share would depend on the income of the previous year and would be as follows:

- When League Revenue is below $2.2 billion = 54%
- When League Revenue is between $2.2 billion and $2.4 billion = 55%
- When League Revenue is between $2.4 billion and $2.7 billion = 56%
- When League Revenue exceeds $2.7 billion = 57%

Like with the Basket-Related Income in the NBA, the Hockey Related Revenue refers to the money that is generated from revenue streams that are directly or indirectly related to the playing of NHL games, including ticket sales, concession sales, broadcasting agreements, etc. In addition, if player's names and likenesses are used (videogames, for example) they will participate in those revenue streams as well. The types of cash inflows included in the HRR are listed in the 2005 version of the CBA and are:

- NHL Regular season and Playoffs gate receipts;
- Pre-season games;
- Special games (international exhibition games, etc.);
- NHL national, international and national digital broadcasts;
- NHL networks;
- Local cable television broadcasts;
- Local Pay-Per-View, satellite and other broadcasts;

- Local Over-The-Air television broadcasts;
- Local radio broadcasts;
- Club internet;
- Publications;
- In-arena novelty sales;
- Non-arena novelty sales;
- Concessions;
- Luxury boxes/suites;
- Club/premium seats;
- Fixed signage/arena sponsorships;
- Temporary signage/club sponsorships;
- Dasherboards;
- Parking;
- Other revenues (sale of game-worn jerseys, skills competition, open practices, etc.).

Instead the revenues that are not covered in the HRR include:

- Revenues from relocation of sale of any existing club;
- Proceeds from loans or other financing transactions;
- Interest income.

MLB (luxury tax) – Differently from the other league the MLB doesn't have an actual salary cap, in order to level the amount a team can spend on the salaries of their roster they have a luxury tax called the "competitive balance tax". This tax was implemented in 1997 to keep a competitive fairness among the league. At the beginning of each year, a threshold is set by the Commissioner's office of Major League Baseball that limits how much a team can spend on their players. In Major League Baseball the "competitive balance tax" allows teams to go over the threshold, but at a premium. The goal of this is to encourage big spending but maintain balance in competition. The MLB's tax has undergone several changes since 1997.

1997 – 1999

In 1994 the Major League Baseball season was not finished due to a strike. The primary reason for this strike was the overwhelming power the league allowed the owners of the team to have over their players' salaries. Small market teams felt this was unfair since their budgets could never rival, or even be in the same ball park, of the budgets of the other, historically more important and geographically more gifted, big market teams, but at the same time players were not willing to accept the substantial changes in their pay that a salary cap would likely have brought. The end of this conflict resulted in the 2006 CBA, which created Major League Baseball's first luxury tax. The first agreement stated that the top five salary teams in each year would pay a 34% fine on each dollar a team spent beyond halfway between the salaries of the fifth and sixth team. For example, if the fifth highest salary team had a payroll of $100 million and the sixth highest salary team had a payroll of $98 million, the top five teams would pay 34% on each dollar they spent over $99 million. Below is the amount each team paid from 1997 to 1999, when this system was in place.

MLB Team	**1997**	**1998**	**1999**	**Total**
Baltimore Orioles	$4,030,228	$3,138,621	$3,475,048	$10,643,897
New York Yankees	$4,431,180	$684,390	$4,804,081	$9,919,651
Los Angeles Dodgers	$0	$49,593	$2,663,079	$2,712,672
Boston Red Socks	$0	$2,184,734	$21,226	$2,205,960
Cleveland Indians	$2,069,496	$0	$0	$2,065,496
Atlanta Braves	$1,299,957	$495,625	$0	$1,795,582
New York Mets	$0	$0	$1,137,992	$1,137,992
Florida Marlins	$139,607	$0	$0	$139,607
Total	$11,966,468	$6,552,963	$12,101,426	$30,618,857

2002 – Present day

Today's system is based off of the Collective Bargaining Agreement stipulated in 2002, where the previous luxury tax was eliminated in the year 2000 and then brought back two years later under a different format. Instead of basing the tax on the costs incurred by the 5th and 6th team, they decided it was better to put a fixed threshold, linked with fees in case the threshold was breeched, so that teams could have more control over their own faith and not depend on decisions made by the other teams, taking away the need to make comparisons between each other. This meant that teams would be punished if they surpassed a certain level of spending and not for being just in the top of the league in salaries. This system remained the same over the years but the threshold kept being updated, first before the 2007 season, then before the 2013 season and finally before the 2017 season.

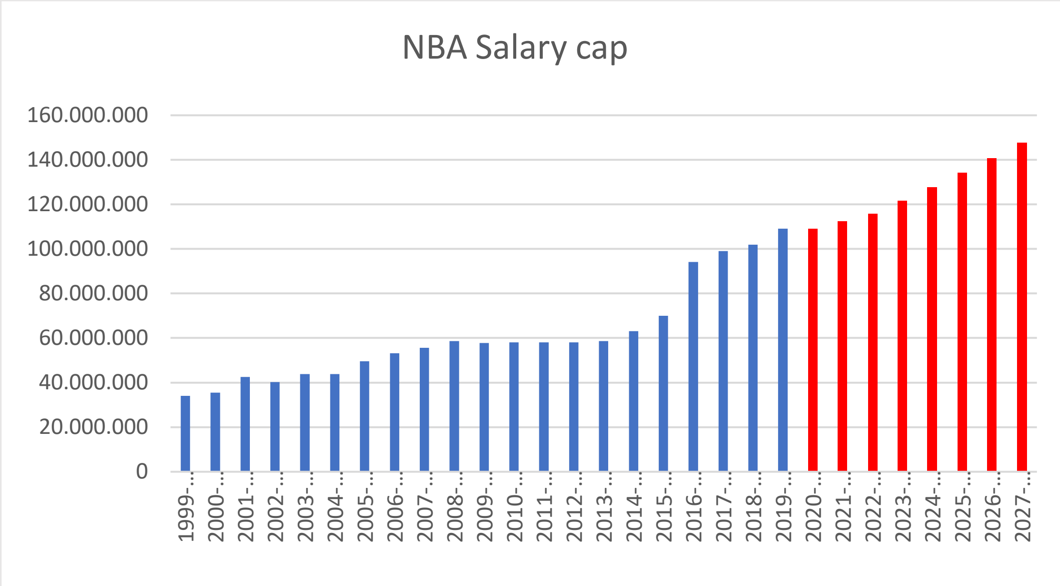
Just as with the old system, teams would have to pay a percentage of every dollar by which their payroll exceeded the set threshold. Under the 2002 and 2006 CBAs, the agreement brought about a progressive taxation system. They agreed that first time offenders would pay a fee of 17.5% of excess payrolls (later increased to 22.5%), second time offenders would pay 30%, and third time offenders would pay 40%. In the 2012 CBA, after seeing teams go over more than three times, the agreement added a 50% taxation level when teams went over the limit four or more times. Under the 2016 CBA, first time offenders would pay a fee of 20% on the dollar, second time offenders would pay a 30% on the dollar, and third or subsequent time offenders would have to pay 50% on the dollar (These offenses must be in consecutive years for these percentages. If a team falls below the threshold one year the penalty re-sets the next year to the "first offense").

The MLB has also set a system to improve the competitive fairness outside the playing field. As part of their plan to share revenue, each team is obliged to pool 31% of their Local Net Revenues, which are the teams' gross revenue from the selling of tickets, concessions, etc. minus the revenue incurred from television and radio deals and stadium expenses. This revenue will then be split equally and distributed to all 30 teams, independently from the amount paid by each one. This is done to balance the level of competition by directly taking money from richer teams and give it to poorer ones.
There are still contrasting opinions on the effectiveness of this luxury tax system among the owners of the MLB franchises. Since the level of taxation increases after going over the limit in consecutive years, there is a strong incentive to reset to the first year rate, which can have a big influence on the teams' decisions to keep key players or to let them go to avoid substantial fees. While some owners have stated that they are willing to pay these important fees for the good of the team and to keep the franchise competitive, others believe that this could be a big handicap for long term success. Many also believe that a system with a salary cap instead of the competitive balance tax would work much better and that the current rules still give an unfair advantage to big market teams like the New York Yankees, Boston Red Socks and other rich teams because the tax is to light to stop these teams from spending excess money on overpriced superstars. Thanks to the success of the salary cap in other leagues and the great difference in spending between small and big market teams in the MLB it is believed that in the not so distant future the luxury tax will be substituted by the salary cap system.

3. Sport leagues before and after the COVID pandemic

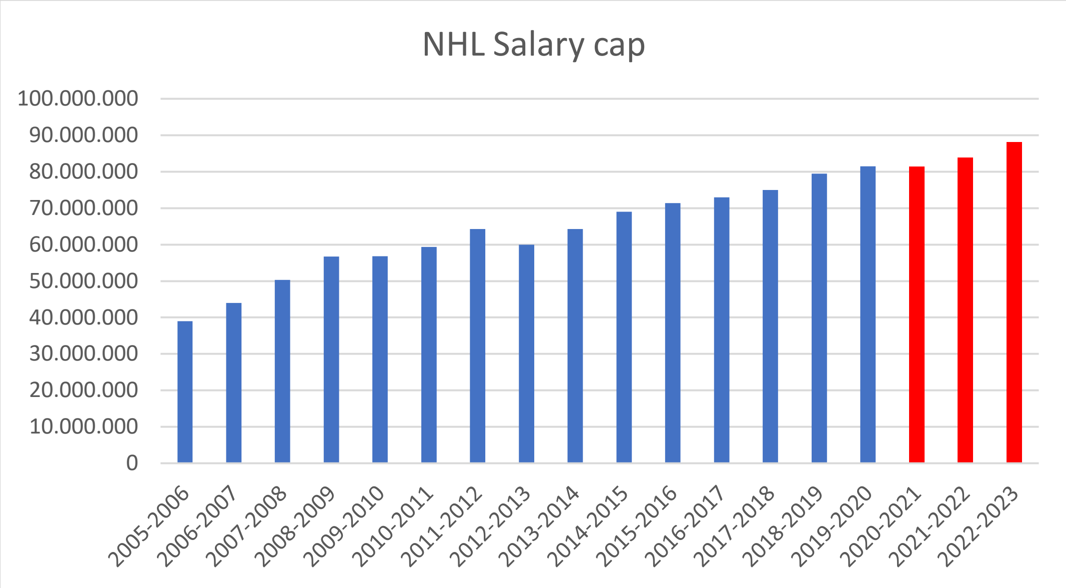
As we are about to see in recent years the North American sports scene has been subject to a steady and constant growth, not only in revenues both also in popularity, in the US and especially worldwide. The attention given to the entertainment and spectacular factor of American sports is something that lacks in most sports around the world, which might be more competitive driven; this is why more and more people outside the United States are being drawn to the four major American leagues, in particular the NBA and the NFL. This has brought an abundance of requests to widen the spectrum of broadcasting rights to many new countries, currently NBA games can be seen in 215 different countries and 47 languages, which has had an important impact not only financially for the teams but also on the court since the leagues have become much more international and abundant of non-American players.
This expansion in popularity has been obviously welcomed by the owners as it has brought a lot of new sources of income and an enormous growth in overall revenues and profits, which is then reflected in many different aspects of the sports, most notably the salary cap. As we previously said, the cap can be a good indicator of how the league is growing financially, since it directly depends on the revenues connected to the level of the sport (Basketball-Related Income for the NBA, Hockey Related Revenue for the NHL, etc.). As a matter of fact we can see that the salary cap of all the sports leagues has risen substantially over the years preceding the

pandemic, and it was expected to continue rising, as we can see from the next graphs showing past salary caps (blue bars) and the future caps (red bars) predicted before the pandemic:



(RealGM, s.d.)

(Over the cap, s.d.)



(Puckpedia, s.d.)

Unfortunately this is not exactly what came to be once the COVID-19 virus started to spread around the World. Many different countermeasures were taken to try to diminish as much as possible contagion: once the virus reached the US, in the NBA it was announced that some games were going to be held without fans in the stadium, but an important incident accelerated this process immensely. On March 11th 2020, right before a game between the Utah Jazz and the Oklahoma City Thunder, it was announced that a Jazz player resulted positive to a COVID-19 test. The fans in the stadium were immediately sent home, and the players and staff were all put in a temporary quarantine. While all the other games were being played, news hit that the NBA commissioner announced an official hiatus until it could be decided what to do to finish the season, or if it was even possible to finish it instead of cancelling it completely. For the next few months players were not able to go to team facilities and could only train individually at home until it was reported that the NBA had come up with a plan to play the remaining games of the season. This plan consisted in calling up only the teams that were in position to play the playoffs (the 8 teams with the best records in each conference up until the hiatus) plus a few teams that could still reach the 8th seed and so enter into the playoffs, and keep them in an isolated area (the area chosen was Walt Disney World situated in Orlando, Florida) without the possibility to have any outside contact, which meant they had to be kept away from their families until the season was over since the only people allowed to enter were a few selected, and essential, members of each team (the coaching staff and a small number of trainers). Once the players arrived in this "bubble" they were put in precautionary quarantine for two weeks and tested every day, but as soon as it was clear that any trace of the virus was destroyed from the area players were able to restart training and eventually playing real NBA games. They were able to play 8 additional regular season games and then finish the season with the playoff tournament. The fact that no one from outside the "bubble" was able to enter meant that the stadiums, for the first time in the NBA, were completely empty, so no revenue came from the selling of tickets or from in-arena leisure activities, plus not all 30 NBA teams were called up to come so the ones that were not invited couldn't even gain from the broadcasting of games on television or radio. All this took a big financial toll on the league if we also consider the high costs that were payed to sanitize and prepare the isolated area to host the invited teams. Even if teams tried to partially cut some of these losses by boosting as many paid sponsorships and adds during the broadcast of games, but obviously this wasn't enough to recover fully from this unprecedented situation. Something similar was done for the NHL season, which also was temporarily put on halt and then resumed at a later date in an isolated area (the two "hub cities" selected were Toronto's Scotiabank Arena and Edmonton's Rodgers Place). Even if, differently from the NBA, in this case the regular season was completely scratched from the plan to finish the season and only the playoffs were played, so not only revenues were decisively less than expected because of the absence of fans attending the sporting event but also because a lot less games were broadcasted and eventual income from television and radio contracts were cut. The start of the Major League Baseball 2020 season had to be delayed by several months because of this situation, under normal conditions it would have started on March 26th and there would have been 162 regular season games plus the playoffs; instead the 2020 MLB season consisted of only 60 regular season games that started on July 23rd and ended on September 27th. For this not only, for the first time, they had to cancel the spring training session but some teams couldn't play in their own stadiums and hade to relocate to neutral grounds for games, even if they didn't copy the NBA and NHL format of gathering teams in an isolated bubble. Instead, regarding the National Football League, their season is much shorter than the other three sports seen until now. The regular season is composed of just 16 games, and the playoffs consist single game eliminations and not 3, 5 or 7 game series, this is why their season fortunately was able to dodge the worst and most uncertain part of the pandemic. The 101st NFL season started on scheduled on September 10th without the need to shorten the number of games or to delay the first Kickoff and nether to play in an isolated area, so there wasn't any major effect on the regular season as the were able to play all the games in their own stadium; but an impact was seen on the pre-season as for the first time there was no training camp, where all members of the team, old and new, train together for the first time in the year to get back on track by studying formations, tactics and trying out game plans, and there were also no pre-season games. So, apart from the fact that players that changed teams during the off-season had to learn on the fly all the tactics and in-game movements, the NFL is considered to be the league that was impacted the least from the pandemic, at least on a strictly competitive and on-field point of view, this is true in part even by a financial position as some teams were able to open stadiums to a restricted number of fans towards the end of the season, being a league with games being played in open locations and not closed arena to avoid the influence of weather conditions on matches like in the NBA and the NHL.

This is the situation we find in the four major leagues, that even undergoing many difficulties and changes due to COVID were still able to finish their seasons; the same cannot be said for less known leagues and tournaments which in some cases were completely cancelled and never terminated for the reason that they were considered less relevant and not essential. An example of this situation occurred for the National Collegiate Athletic Association (or "NCAA") men's and women's basketball tournaments which, even if considered to be upon the most followed and prestige college sporting events, were cancelled for the 2020 season, as this was seen as the most sound alternative from a financial standpoint if we consider the fact that the athletes’ daily livelihood doesn’t strictly depend on the salary in this situation since for NCAA rules players cannot receive payments from their teams.

Even if we said that the fluctuations in the salary cap over the years is a good indicator of the general financial prosperity of the league, to get a more precise idea of how the franchises were hit by the COVID-19 pandemic we will look at their revenues. For now we have looked at the way in which this situation has influenced the players and fans, as they are the ones that were hit more immediately, but we know that the pandemic will have great impact on the teams and owners in a long-term prospective, as it was estimated that the current scenario has negatively impacted the sports world up to $160 billion in total due to empty stadiums and broadcasting rights of the cancelled games. In fact one of the leagues that suffered most for the absence of fans was the Major League Baseball as 40% of their revenues came from in-arena spending by fans and ticket selling; but obviously even the other leagues are suffering, especially the less followed ones like the USA Rugby league which had to file for bankruptcy because of its debts that were only made bigger by these circumstances. Now to see how much these leagues were impacted we are going to confront the forecasted revenues for each league in the 2020 season if it were under normal conditions, so with fans at the arenas and with all the games being carried out, with the actual revenues that the leagues ended up making.

To be able to calculate these factors first we are going to look at past shocks in the sport industry because, even if there has never been an event that had an impact comparable to the one we are living today, it might be useful to observe past strikes and lockdowns to gain a general idea of the losses incurred by teams in case of the suspension or cancellation of games. Strikes and lockouts have been found to influence a variety of facets of sports, including attendance, hotel occupancy levels, staff efficiency, wages, customer preference, and sales, according to studies. The National Hockey League lockout of 1994 is an example of a long-term game suspension. The NHL's owners wanted to introduce a revised Collective Bargaining Agreement that included a payroll tax that served as a salary cap. The players refused to recognize the payroll fee, resulting in a three-month lockout.

On January 12, 1995, the lockout came to an end, with the owners receiving minor concessions. The NHL ended up losing 442 games and billions of dollars in income as a result of lockout. On September 15, 2004, ten years later, NHL owners declared a lockout for the 2004–2005 season. Another salary cap battle occurred in this lockout. The NHL missed 1,230 games as a result of the lockout, which lasted 310 days. Around $2 billion in sales and $1 billion in player bonuses is lost by the league. In 2012–2013, the NHL saw yet another lockout. The reason for the lockout was that the owners and players couldn't agree on how the Hockey Related Revenue could be split between them. 625 games were cancelled as a result of the lockout, and the league lost a billion dollars in income. Both of these recent lockouts had a negative impact on attendance, particularly for the larger franchises. Major League Baseball players went on strike for similar reasons. In 1994, team owners demanded a revised Collective Bargaining Agreement that included provisions such as a salary cap and the abolition of salary arbitration, among other things. On August 12, 1994, the players refused the revised agreement and went on strike. The rest of the season, including the 1994 World Series, was canceled as a result. The strike lasted 232 days, resulting in the cancellation of 948 games and $1 billion in earnings. The

MLB lost attendance for years after the strike, for both small and large franchises. Baseball and hockey leagues aren't the only ones that have experienced negative financial shocks. The NBA has also had lockouts, including the one that began on July 1, 1998, due to a lack of a collective bargaining arrangement between owners and players. The lockout lasted 204 days, costing the league more than $1 billion in sales and an extra $500 million in player compensation. In addition, after the strike ended, average attendance, Television ratings, and league notoriety all fell. Apart from league lockouts and strikes, previous recessions have had a financial impact on the major leagues, like the Great Recession of 2008. As a matter of fact the NBA lost a total of $400 million in revenue in the 2009-2010 season as teams saw a drop in gate revenue, attendance, and corporate sponsorship. Although various sports leagues have experienced significant financial repercussions in the past as a result of various shocks such as protests, lockouts, and recessions, the financial consequences of these shocks pale in comparison to the ongoing instability facing every club and league in North America and around the world. Sports, especially in cities with several big clubs, play a vital role in the economy by generating jobs and economic growth, so the impact of the pandemic on the suspension of sporting activities is crucial to estimate. Now we will use financial statistics from Forbes (2020) for individual clubs in the NBA, MLB, NHL, and NFL to assess the financial effects of the COVID-19 pandemic at the league level. Financial information used in the dataset includes team valuation, debt, earnings, administrative income, athlete expenditures, gate receipts, and more; which will be used to assess our two main variables, revenue and gate receipts. According to the data, the annual revenue for teams in the NFL, MLB, NBA, and NHL from 2007 to 2019 was $317, $245, $167, and $122 million, respectively. The NFL has the highest overall sales, followed by MLB, NBA, and NFL. In terms of gross sales, these leagues are the strongest not only in North America but also across the world. Now we are going to calculate the estimated revenue for each league and team in the COVID-19 scenario. To forecast the revenue situation for individual leagues, the previous revenue details available up to 2019 were used to predict revenue for 2020. To do so, first we calculate the annual growth rate of revenue for each team based on the past revenue data. We take the difference of the natural log for each season’s revenue and the previous season’s revenue, which gives us the growth rate of revenue:

$$\text{Revenue\_Growth}_{i,t} = \ln(\text{Revenue}_{i,t}) - \ln(\text{Revenue}_{i,t\text{-}1})$$

where, i represents each team from NFL, MLB, NBA and NHL; and t = 2007–2019. As such, we get the growth rates of revenue for each team for the period 2008–2019. Using the growth rates calculated above and the team revenues, we estimate the growth rate of revenue for each year using the following linear regression:

$$\text{Revenue\_Growth}_{it} = a_i + a_1\text{Revenue}_{it\text{-}1} + \text{a}_2\text{League}_i + a_3\text{Team}_j + a_4\text{Season}_t + a_5\text{League*Season}_{it} + a_6\text{Team*Season}_{jt} + \varepsilon_{it}$$

where, Revenue_Growth$_{it}$ is the growth rate of revenue for team i, that belongs to league j, in season t. This growth rate of revenue is modeled as a function of the team's current and previous season revenue. We also control for the league, team and season fixed effects as well as the appropriate interaction terms that are likely to affect the growth rates of revenue. This estimation gives us the predicted value of the growth rate for each team, which is then used to estimate the expected revenue for the 2020 period as:

$$\widehat{Revenue}_{i,2020} = \text{Revenue}_{i,2019} * (1 + \widehat{Revenue\_Growth}_{i,2019})$$

League	Mean	Std.	Min.	Max.
MLB	$244.51	$85.97	$124	$683
NBA	$165.82	$68.41	$78	$472
NFL	$316.77	$103.32	$185	$950
NHL	$122.22	$41.76	$61	$270

Note: N = 123 teams represented in the Big four leagues. Revenue in 2020 US$ millions

This method of revenue estimation gives us the predicted revenue value for each team under standard conditions, i.e. without the COVID-19 ramifications. Factors such as lost hours, television sales, gate revenues, and so on would impact each team's overall income. As previously said, we believe that gate receipts would account for a significant portion of the teams' losses under the current circumstances. To account for this, we measure the average proportion of gate receipts to overall sales for the 2016–2018 season using the formula below:

$$\text{Gate\_Receipts\_Proportion (GRP}_i\text{)} = \frac{\sum_{t=2016}^{2018} Gate\_Receipts_{it}}{\sum_{t=2016}^{2018} Revenue_{it}}$$

Then, we adjust the 2020 expected revenue by removing the average proportion of the gate receipts. This gives us the expected revenue for each team in the absence of fans.

$$\text{Expected\_Revenue\_Without\_Fans}_{i,2020} = (1 - \text{GPR}_i)\widehat{Revenue}_{i,2020}$$

To calculate the 2020 season completed for both the NHL and NBA, we divide the games played by the number of games in a season þ average playoff games per team. This meant each NBA team has 82 regular season games þ 160/30 playoff games. Each NHL team has 82 regular season games þ 174/31 playoff games. However, playoff games are worth more in revenue to a team than a regular season game. Gate receipts for postseason games are about 1.666 times that of regular season games for the NBA. It was not possible to find the NHL regular season and post season difference in gate receipts so the ratio estimated for the NBA was used. As a result, our forecasted revenue for 2020, excluding fans, is based on the following equation:

$$\text{Expected\_Net\_Revenue}_{i,2020} = \widehat{Revenue}_{i,2020} * \text{Season\_Completed}_{i,2020} + \text{Expected\_Revenue\_Without\_Fans}_{i,2020} * (1 - \text{Season\_Completed}_{i,2020})$$

From here, we calculate the expected revenue loss for each team as:

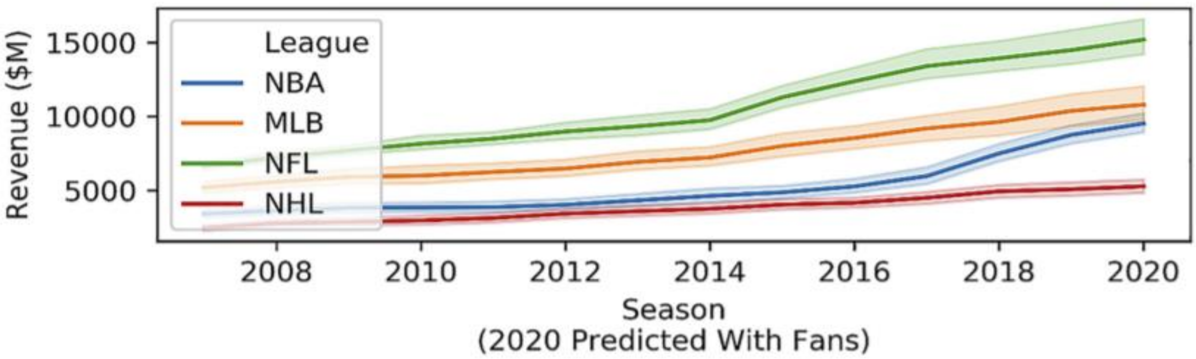
$$\text{Expected\_Revenue\_Loss}_{i,2020} = \widehat{Revenue}_{i,2020} - \text{Expected\_Net\_Revenue}_{i,2020}$$

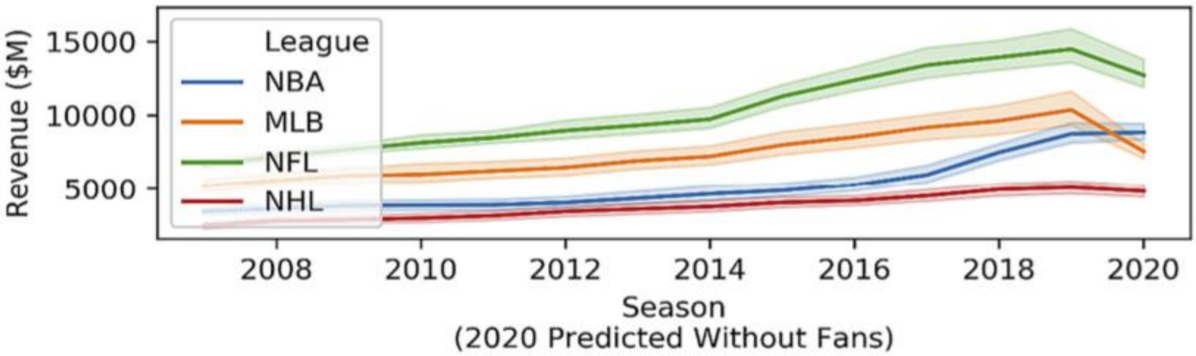
Now for the results of these calculations we focus on two estimates which are the projected league income under normal circumstances (i.e. no COVID-19, with fans) and expected league revenue in COVID-19 circumstances (i.e. without the fans) that are shown in the following chart:

League	**League revenue with fans**	**League revenue without fans**	**League revenue loss**	**League revenue percent loss**	**Average team loss**
MLB	$10,796.58	$7,578.54	$3,218.04	29.81%	$107.27
NBA	$9,525.17	$8,862.41	$662.77	6.96%	$22.09
NFL	$15,185.26	$12,720.68	$2,464.58	16.23%	$77.02
NHL	$5,284.47	$4,824.38	$460.09	8.71%	$14.84
Average	$10,197.87	$8,496.50	$1,701.37	15.43%	$55.33
Total	$40,791.48	$33,986.00	$6,805.48		$6,805.48

Note: *N* = 123 teams represented in the Big four leagues. Revenue in 2020 US$ millions

The data reveal that without the COVID-19 epidemic, projected gate receipts throughout the four leagues would have been over $40.79 billion, while the revised projections without the fans are just around $33.98 billion. This equates to a $6.8 billion loss for the four leagues: $3.22 billion for MLB, $0.66 billion for the NBA, $2.46 billion for the NFL, and $0.46 billion for the NHL. The MLB is expected to lose the most money (29.81 percent), followed by the NFL (16.23 percent), NHL (8.71 percent), and NBA (8.71 percent) (6.96 percent). Each franchise in the MLB, NBA, NFL, and NHL is expected to lose an average of $107.27





million, $22.09 million, $77.02 million, and $14.84 million, respectively. The graph above displays the expected income for each league with spectators (top panel) and without supporters (bottom panel) (bottom panel). According to current projections, the total financial loss of the NFL, MLB, NBA, and NHL teams will exceed $6.8 billion in gate receipts alone. Athletes, coaches, and clubs will be affected by the lower league funding. The long-term future of these leagues is still uncertain, especially regarding how the teams will recover the financial losses suffered from this period of drastic changes, but many franchises are already moving to try to go back to normal conditions of past years. What the managers of the teams are doing and what the exact, non-financial, consequences of this pandemic have brought will be seen in the next chapter. The magnitude by which each league was affected changes based on how much they depended on the gate receipts. In fact the MLB was predicted to fare much worst than the other leagues as its percentage of revenue coming from stadium activities is much higher than in the NFL, NBA and NHL. In our calculations we considered only gate receipts, while teams concern themselves also with other in-stadium income flows like the sale of jerseys, hats and other merchandise, drinks and food, parking, etc. which all takes part of the live stadium experience (Justin Andrew Ehrilch, 2020). The MLB in particular thrives on the live experience, as many spectators come to their town's arenas not only to watch the game but to participate in the creation of atmosphere, singing of chants, drinking with friends, eating the stadium food and in general having a fun time while the game is going on. Since baseball games usually take up most part of the day as matches can be as long as 8 hours, it is not unusual that people don't come just to watch MLB teams face each other but spend the day having fun with friends entertaining themselves with all types of activities offered by the stadium. This idea of going to arenas not just to watch the matches is a very "American" concept, as fans of opposing teams are able to enjoy the game harmoniously together without leading to fights or having to get separated, thanks to the atmosphere of joy and amusement. In most stadiums abroad, especially in Europe, this isn't the case, also due to the fact that the most followed sports outside the United

States are much shorter, all the attention is centered and focused on the game, which naturally brings an overtone of rivalry between the opposing fans. This excessively high tension gives rise to aggressive behavior, like fights after the game or hateful chants during it, that has to be regulated by authorities. The way in which this is done is by a series of procedures to keep rival fans separated from each other:

- Each team organizes bus rides to and from the stadium for their groups of supporters;
- The arena is fractioned into different sections on opposite sides of the stadium to hold fan groups as distant as possible from each other;
- Rival fan groups have to enter and leave the stadium at different exits and different times;
- Stewards put between each section of fans to make sure they don't get too close;
- Those fans that decide to not take the bus rides organized by the teams have to take specific routes to the stadium;
- Some streets around the arena get closed off to ease all these procedures and to avoid confusion;
- To distinguish rival supporters from each other each person must have an official fan card given to them by the teams that must be shown both when buying tickets and when entering the stadium.

Other theories trying to explain why there is such a big gap between the behavior of attending fans in the United States and abroad have been made; the two though to be the most accurate say that these differences are due to:

- **Cultural factors**: Sports in the US are mostly considered to have the sole function of entertaining the spectators, to amaze, to help pass the time in a joyful way; and this is why it is taken less seriously then elsewhere and why there isn't the need to have all the absurd procedures listed previously. Outside the United States it's a different story as sport fandoms are almost seen as a lifestyle by which you live and die. This type of mentality, mostly found in European countries, has its pros and cons: obviously the passion shown by these fans is unrivaled and envied everywhere, but at the same time a mind set where every game is seen as a war brings out the more aggressive and ugly side of people.
- **Price factors**: the gap in fan behavior might in part be explained by the gap in ticket prices, as sport tickets in the United States usually cost much more than in other countries. Up till now the most expensive ticker for a sporting event outside the US ever sold was recorded in 2014 at the FIFA World Cup Final between Germany and Argentina, where a ticket was sold for a record price of $39,224. As that is already an astonishing number, in American sports we've seen this price be beat by a great amount several times:
    - 2017 NBA Finals Game 5, Cleveland Cavaliers vs Golden State Warriors ($133,000);
    - 2017 Boxing match, Floyd Mayweather vs Conor McGregor ($157,770);
    - 2010 NBA Finals Game 7, Los Angeles Lakers vs Boston Celtics ($167,146);

- 2013 Boxing match, Floyd Mayweather vs Manny Pacquiao ($204,746);
- 2013 Super Bowl XLVII, Baltimore Ravens vs San Francisco 49ers ($316,000);
- 2016 World Series Game 7, Chicago Cubs vs Cleveland Indians ($1,170,000). (Parra, 2021)

As we can see there is a major difference in ticket prices, which shows that sporting events in the United States are mostly exclusive to high income earners, while elsewhere almost anyone can buy a ticket as prices for most sporting events are pretty cheap (e.g. a ticket for Serie A game between two high level teams can cost even just €20). Many studies have shown that higher income earners are associated with a lower crime rate so it is natural to theorize that events exclusive to a high income bracket will foster less criminal activity like fights, both verbal and physical assaults, launching of smoke and paper bombs etc.

In recent years there has been an attempt to improve conditions in stadiums abroad with the instalment of heavier legal consequences for criminal activity, of security cameras able to locate with precision the initiators of illegal acts, an increase in the number of security guards and police men at the stadium, etc. Even though these changes have had some big effects on the aggressive behavior at arenas (as we can see in English soccer stadiums, which are now considered to be some of the most well behaved environments in Europe although it was where this chaotic stadium culture was originated with the arrival of the "*hooligans*" in the 1960s) it is hard to imagine that the gap between American sport arenas and sport arenas abroad will be filled completely in the future.

4. Life after the first Pandemic season

With lower revenue, the clubs must devise a management strategy that includes not just the immediately affected athletes, coaches, and officials, but also stadium personnel and vendors. The cost of this pandemic will be much higher than what we predicted based on gate receipts alone. The leagues should move quickly to protect individual clubs from the worst-case financial scenario by devising particular strategies for concerns such as missed time, broadcast income, gate revenues, and salary requirements. In this chapter we are going to see what strategies the leagues adopted to recover from all the losses indured during this period, as this may take some time we see that there is hope.
As fans begin to make their way back to the seats at sporting events, some areas are further progressed than others. For a variety of reasons, having fans back in any capacity is something that team executives have been delighted to see.
We estimated losses of at least $6.8 billion once all sports were suspended on March 11, 2020 due to COVID-19. While the restart of leagues reduced that expense by a substantial amount, league owners still have a huge hole in their wallets. The National Basketball Association was allowed to finish their season in

the bubble in Orlando, FL, which cost the league $180 million to run. However, the NBA was more than ready to pay that price because their successful investment at the Walt Disney World Resort averted a $1.5 billion in losses.

Normally, ticket sales make up a large portion of the NBA's annual income, but the pandemic has forced them to rely solely on television and sponsorships. In the end, the team's total income for the 2019-20 season was $8.8 billion, down by about 10% from the previous full season.

There was a lot to be decided when they began the new 2020-21 season. The NBA had to make judgments about the salary cap and how they would set up their finances with an unknown start date and a lack of fans in most venues. Because a January start would have cost the league up to $1 billion in revenue, they chose to start the season on Dec. 22, 2020. Teams would not be as badly impacted, nor would they have to make significant financial changes, if their salary cap remained the same as it was in 2019-20 ($109.1 million). According to the agreement between the players association and the league, at least 10% of wages would be held in escrow to enable for the annual pay cap increase of 3 to 10%.

The revenue losses for this season are still unknown, but following a year in which the majority of games were didn't host fans, it's conceivable that the losses may worsen from previous year. Although spectators may gradually return as the playoffs near, it is apparent that the epidemic has made a big hole in the NBA's future plans, which had previously indicated a lot of financial prosperity.

The pandemic stopped the National Hockey League's season, much as it did the NBA's. When everything came to a halt in March, the league lost an estimated $150 to $200 million in playoff ticket sales alone, as well as a significant amount of additional media and sponsorship income. While they concluded last season in an NBA-style bubble in Canada, the build-up to this season has been disappointing. The NHL only played 56 games, although Commissioner Gary Bettman said that not playing at all would have saved the league more money.

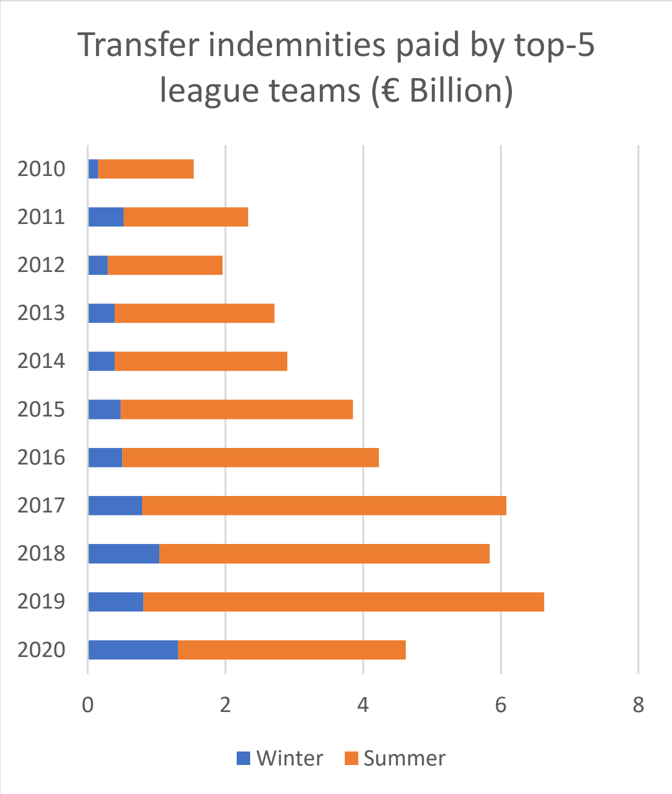
The NHL's salary cap, like the NBA's, remained unchanged at $81.5 million. However, even with their new lucrative television agreement with ESPN, the salary cap may remain static for up to five years. This might put clubs that were banking on the rise of the cap in jeopardy, as it could result in significant reduction to players' future wages, especially those seeking for a huge payday in the future. The NHL, which relies largely on ticket income and has faced possible losses in the billions of dollars, is especially anxious for fans to return to the venues.

Major League Baseball, out of all the leagues set to play in 2020, witnessed the most significant changes to their sport, with a season cut from 162 to 60 games. MLB and the players' association struck a deal for their abbreviated season after a long discussion, and after many postponed games, the league eventually welcomed fans back for the first time in the National League Division, Championship and World Series.

According to a research by Penn National Gaming, the truncated season with no fans cost MLB roughly $2.5 million in ticket sales. Due to the lack of a salary cap in baseball, the amount of financial changes in

wages is determined by the owners' willingness—or rather, unwillingness—to spend. Because there is no official figure for how much money was lost, the answer shifts depending on who you ask.
According to a statement made by MLB Commissioner Rob Manfred in October, the league would lose at least $2.8 billion in 2020. But, according to prominent baseball agent Scott Boras, no club has lost any money. While the number fluctuates per team, COVID-19 has resulted in even greater spending hesitancy. Whether it's because of large losses or because MLB owners are unwilling to invest a lot of money, this baseball season is one that the league and clubs are hoping to rebound from, with all venues welcoming back some proportion of spectators.
The way the National Football League handled COVID-19 was significantly different from how the other leagues handled it. The NFL was not in season during the March shutdown, nor did they have any formal league business in person that necessitated significant adjustments. Apart from the draft, the NFL had plenty of time to prepare for the next season. Despite this, they were unable to come to an agreement with the NFL Players Association until late July. Despite this, the league began its regular season without a preseason, and attendance fluctuated depending on the venue, as clubs like as the Dallas Cowboys, Tampa Bay Buccaneers, and others welcomed back some supporters. Many more clubs were able to get some spectators in as the season proceeded, but not enough to significantly reduce the financial losses. After a season of postponing games to prevent cancellations, the league was able to cap off the season with their annual Super Bowl in front of 25,000 socially distant fans. Finally, the NFL profited by being the last league to begin its season during the epidemic, allowing them to learn from other leagues and devise methods to welcome some fans into select venues nationwide.
According to the co-owner of the New York Giants, the league lost $3 to $4 billion in income. While this is a significant sum, they feel it is not "catastrophic," given the NFL is the world's most lucrative league. Despite the fact that the salary cap was set at $182.5 million this year ($15 million less than last year), a new television agreement worth $10 billion per year beginning in 2023 will undoubtedly help raise the salary cap in the coming years. The NFL was able to recoup a significant amount of money thanks to agreements with CBS, FOX, NBC, ESPN/ABC, and Amazon, and will be able to fully recover from the pandemic losses in the future.
It's difficult to say if these sports leagues would have been able to sustain the significant financial losses if they hadn't signed huge broadcast deals. Sports have grown increasingly profitable over time, thanks in part to the television business. As fans begin to fill the seats, the majority of sports leagues' road to recovery begins, but it will take time, given the extraordinary magnitude of what has transpired in recent months. (Navarro, s.d.)
American sports are not the only ones that had bad financial repercussions that affected the near future and that now have to find ways to recover from them. The effects of the COVID-19 virus were deep also in Soccer, as the first transfer market window after the lockdown was very stale of big purchases by teams, which goes completely in the opposite direction of the trends we’ve seen in past seasons. The evolution of

the sums spent on transfer indemnities (including add-ons) by the top-5 league teams since January 2010 are going to be displayed subsequently:



Year	Winter	Summer	Total
2010	0,15	1,39	1,54
2011	0,52	1,81	2,33
2012	0,29	1,67	1,96
2013	0,39	2,32	2,71
2014	0,39	2,51	2,90
2015	0,48	3,37	3,85
2016	0,50	3,73	4,23
2017	0,79	5,29	6,08
2018	1,04	4,80	5,84
2019	0,81	5,82	6,63
2020	1,31	3,31	4,62

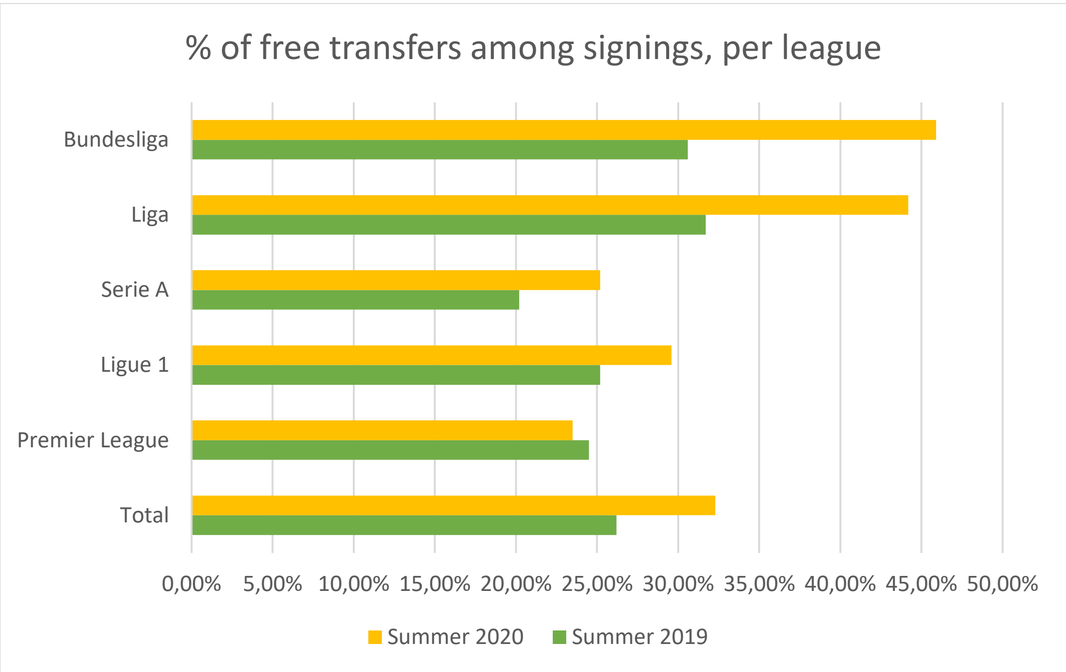
The calendar-year study provides a first indication of COVID's influence on investment volume. In fact, the value measured in 2020 is 30% lower than the record-breaking year of 2019. The same research reveals the impact of the pandemic on the amount of investments even more clearly when the summer transfer periods are isolated. In this example, the decrease is 43% as compared to summer 2019. Though a record amount was invested in the winter transfer windows in 2020, expenditure by top-5 league teams during the most recent transfer window was lower than in 2016.

The English Premier League's teams are consistently the most extravagant, according to a study of the sums spent on the transfer market over the summer time in each league. Furthermore, the decrease in the English top division between 2019 and 2020 was much smaller than that shown in the other four major league championships: -10 percent versus an average of -54 percent in the other four.

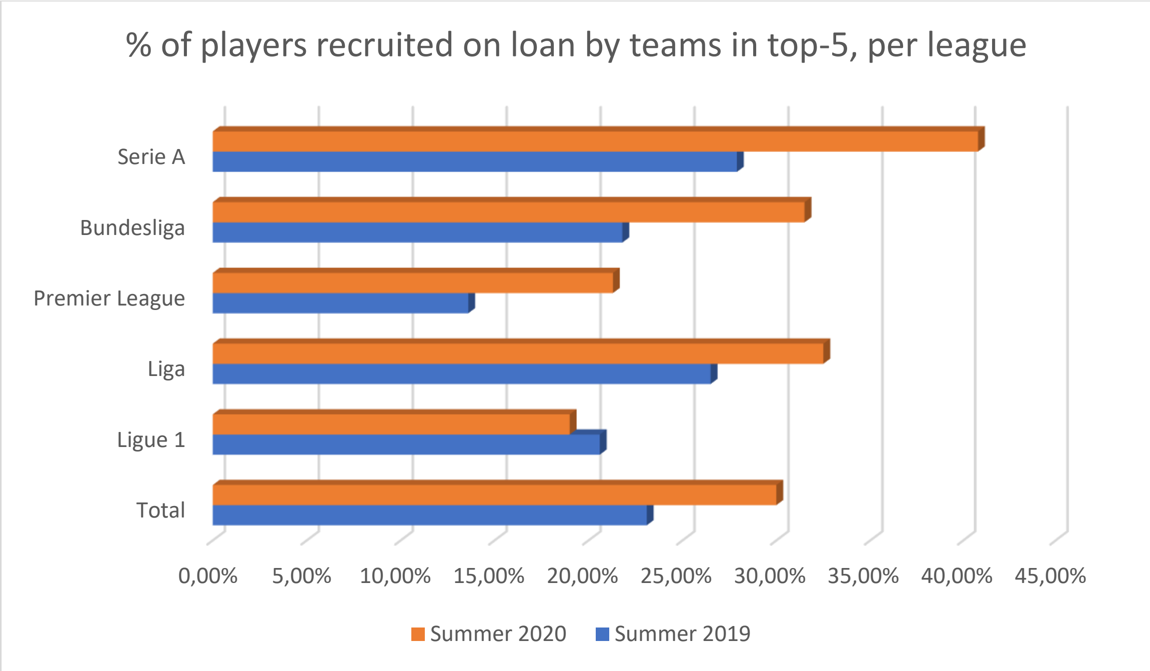
Year	ENG	ITA	FRA	ESP	GER
2010	430	363	149	291	161
2011	550	515	197	389	160
2012	635	411	206	164	252
2013	783	455	377	435	272

2014	1.091	391	169	555	303
2015	1.323	716	335	573	421
2016	1.502	745	245	579	659
2017	1.819	1.115	916	758	679
2018	1.609	1.131	512	1.031	516
2019	1.649	1.246	755	1.397	776
2020	1.492	667	474	348	333

A second technique to investigate COVID's real influence on the transfer market is to compare the recruitment strategies used by top-5 league teams. In this line, we computed the proportion of paid transfers among players who have been signed on a long-term contract. 32.3% of players signed by top-5 league teams were signed without paying a transfer fee during the previous transfer window. This proportion was merely 26.2% during the summer 2019 transfer period. Following the COVID crisis, the proportion of free transfers among new recruits increased dramatically in the Spanish Liga and the German Bundesliga.



The pandemic has also exacerbated the trend among teams from the top five European leagues to sign players on a loan basis. During the previous transfer window, 30.0% players acquired by top-5 league teams were on a temporary basis. This percentage was only 23.1% in the summer of 2019.



Transfer indemnities would have been bargained at lower amounts than in the past due to the lack of COVID-related revenues, according to a recurrent theory. This idea may be confirmed due to a transfer value algorithm created solely by the CIES Football Observatory research group.

There is a variable indicating the season in which the transfer took place among the many factors included in this method. We can track the evolution of prices through time using this variable if all other factors remain constant. This research demonstrates that COVID has not resulted in a decrease in the level of payments for moved players, contrary to many experts' hypotheses.

Top-5 league teams spent roughly 6% more in the previous transfer window than they did in the summer of 2019 to sign footballers with similar characteristics. From this perspective, the pandemic will have only served to put a slight halt to the skyrocketing inflation seen between 2015 and 2019. (15% per year on average).

While prices all things being equal continued to increase despite the COVID crisis, the latter has highlighted the necessity of conditional payments in player transfers. This technique allows buyer teams to reduce the risks of transfers by just investing extra money if the player is satisfied or the outcomes produced are favorable.

In addition to the use of add-ons, we've seen a generalization of the tendency to include a sell-on percentage for future transactions, even when the transfer is made without indemnification due to a contract violation. This technique allows selling teams to make significant profits on subsequent transfers of a released player, and it also allows recruiting clubs to decrease the upfront acquisition price in a cash-strapped environment.

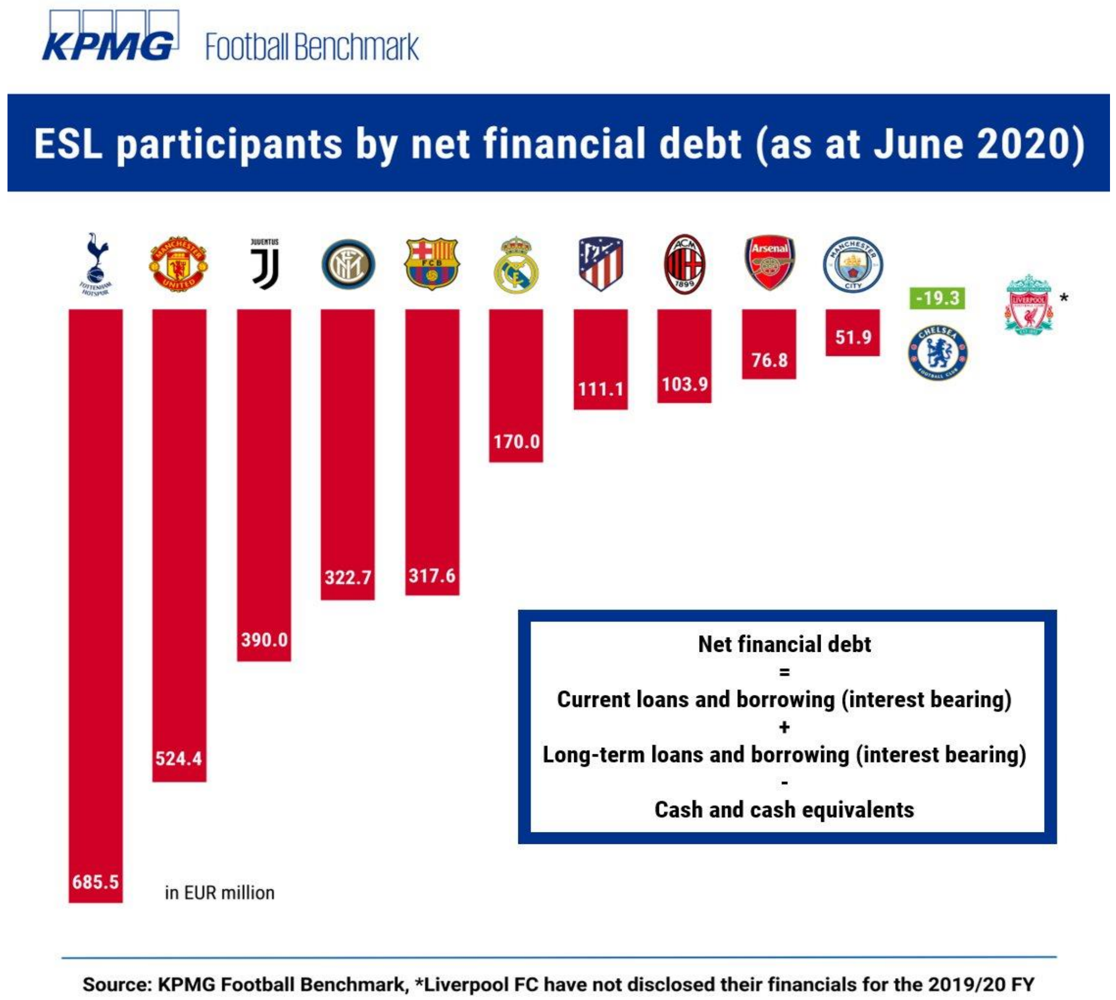
The COVID epidemic, as expected, has resulted in a significant reduction in transfer market investments. In contrast to summer 2019, the decline in the five main European championships during the past transfer window was 43%, with the smallest loss in England (-10%) and the largest in Spain (-75%).

In comparison to summer 2019, the % of free transfers among all players signed permanently by top-5 league teams grew considerably during the previous transfer window (from 26.2% to 32.2%). The most significant increase was seen in the Bundesliga (+15%), while the share in the Premier League remained constant (-1%). The number of players signed on loan increased as a percentage of total signings (from 23.1% to 30.0%).

The COVID crisis has consequently had a significant influence on the likelihood of players being subjected to a paid transfer. If a transfer occurs, however, the premise that the price would have been negotiated to a lower level than before the pandemic is invalidated. Footballers signed for money by top-5 league teams during the previous transfer window were paid approximately 6% more on average than players with comparable attributes during the summer of 2019.

In terms of player prices, the pandemic has had the most significant influence on the slowdown of the rapid inflation seen between 2015 and 2019. (on average 15% per year with a peak of 26% for 2017). The COVID problem has also strengthened teams' inclination to include conditional payments and sell-on percentages in contracts. (Drs Raffaele Poli, 2020)

Another big event that shocked the world of Soccer, caused by the financial situation derived by the COVID pandemic, is the European Super League initiative: The idea of an European Super League has been circulating since as far back as 1968, in various different forms, but nothing concrete ever came of it, until 2009 when Florentino Pèrez, the president of one of the biggest and most titled clubs in Soccer history Real Madrid, began preparations for a super-league tournament, believing that the Champions League was "a barrier preventing teams from increasing their operations and constructing infrastructure," and that it was "too outdated and troublesome for the quality of the sport." In 2018, Pérez initiated negotiations with other European teams, primarily from Spain, England, and Italy, regarding the possibility of forming a breakaway tournament with significant financial backing for all parties involved. The teams who took part in the secret meetings were primarily interested in examining possibilities for the league until UEFA offered new reforms for the Champions League that would be acceptable to them as well. Up to this moment, talks about a new tournament between the best teams in Europe remained mostly hypothetical, but when in 2020 the COVID pandemic hit and teams started to suffer extreme financial losses the European Super League became instantly a concrete possibility.



Teams that in previous years made big investment to become more competitive in European tournaments and to add new sources of income inflow (e.g. Juventus who spent €105 million just on Cristiano Ronaldo's transfer fee from Real Madrid, plus €30 million a year on his contract since he was considered to be a top 3 player in the world; Tottenham Hotspur who spent around €1 billion to build their new stadium hoping that in the future fans coming to see the games would take advantage of the various services offered in the arena for money, making so a positive return on the initial investment; etc.) found themselves stripped of their main sources of finance and in debts that seemed impossible to overcome. This situation made a tournament like the European Super League, which offered a huge payout to the teams that participated, very hard to decline. JPMorgan Chase, the largest investment bank in the United States, expressed interest in the new competition and committed $5 billion to help it get started. When seeing the amounts of money an event like this could have brought to their pockets, teams started to officially support the development of the ESL and on 18 April 2021, on the eve of a meeting by the UEFA Executive Committee, which was aiming to revamp and expand the UEFA Champions League by the 2024–25 season in order to increase the number of matches and revenues, following pressure from elite European clubs, Pérez announced the formation of the Super League, via a press release by the twelve clubs who had signed up to be involved, including English clubs

(Arsenal, Chelsea, Liverpool, Manchester City, Manchester United, and Tottenham Hotspur), Italian clubs (Inter Milan, Juventus, and Milan), and Spanish clubs (Atlético Madrid, Barcelona, and Real Madrid), the only clubs to refuse the invite where the German clubs Bayern Munich and Borussia Dortmund and the French club Paris Saint German. Pérez expressed his hopes that the new competition would "provide higher-quality matches and additional financial resources for the overall football pyramid," provide "significantly greater economic growth and support for European football via a long-term commitment to uncapped solidarity payments that will grow in line with league revenues," and appeal to a new younger generation of football fans in the release. Ten of the founding teams were in the top 14 of the UEFA club coefficient rankings at the time of the announcement. On Forbes' list of the most valuable football clubs in 2021, all twelve teams were in the top 16, with a total worth of US$34.4 billion. After these announcements were made Aleksander Čeferin, the president of UEFA, threatened to take legal actions against the teams that accepted the invitation of the ESL, in the form of very heavy sanctions and the banning of the clubs and their players from participating in any future UEFA European tournaments (which meant that this would have had repercussions even on National Teams). Once the clubs figured they were legally binded to the contracts made with UEFA, and could not get out of it in any way, making them liable to the threats made by Čeferin, they all started to back out of their agreement with Pérez and the European Super league. At the end it seems that the saga which kept every soccer fan on the edge of their seats during the summer is over, even if Andrea Agnelli (chairman of Juventus and vice-chairman of the ESL) says that this conversation will make a comeback in the future and it will be eventually realized independently from the UEFA Association.

Conclusion

We started this composition first by listing and explaining all the definitions that would be useful to understand the central arguments of this thesis, and at the same time we also started to open up and categorize all the different parts of the various definitions listed so to better use them as analytical tools later on in the following chapters. After this we started gathering all the possible data regarding how the COVID pandemic affected various entities, industries as a whole and, more specifically, their financial situation before and after the start of 2020, when the pandemic hit. The data gathered was mostly centered around the sports sector, especially in North American sports, while still touching on some major sports around the world. So after an extensive recollection of data and a thorough analysis, also thanks to the tools we constructed initially, of such data we can conclude that, even if the spread of COVID-19 has deeply affected the world as a whole, not only financially but in our everyday life, the sports sector has had a lesser impact relatively speaking, or better, at the start, similarly to everywhere else, almost every sporting event had to be put on a temporary hiatus, which obviously changed the plans and prospects of the future made by teams and leagues. After the hiatus ended though, the league organizers and managers were able to quickly put back in motion the carrying out of the season and, even if this was very costly, everything seems to have gone back to somewhat normality. The biggest impact has come mostly to the growth that the sports leagues were expecting in the following years: the pace at which these franchises were growing, up to 2020, was exponential and it was predicted to keep going in that direction in the future, we were able to analyze this growth thanks to the use of the salary cap as a measuring tool. The events of 2020, the temporary suspension, the costs of the COVID safety measures, the absence of fans, etc. have clearly handicapped this enormous expansion. After a full season has passed we are starting to see this growth return, even if clearly at a slower pace, but that is speeding up and is prospected to eventually go back to former levels seen in the recent past. So, as we have said, there hasn't been a major impact regarding the long-run expectations in this sector, nevertheless we were able to observe some important changes in the short-run in the form of a slow-down in the growth rates of profits and the salary cap, at least this is what resulted in the analysis of North American sport leagues. When looking sports outside the US, more specifically European soccer, the situation differs somewhat, as there are a substantially bigger number of variables and teams in play. In this field the road to recovery seems quite longer and slower, in fact many teams are still in dangerous state of affairs and big debts traps, but are still in time to turn the situation around with good managerial skills.

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