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The Dynamic of the Soccer Economy: The Competitive Disparity of the Transfer Market

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The Dynamic Of The Soccer Economy: The Competitive Disparity Of The Transfer Market

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Introduction

The world of soccer is an ever-changing and ever-growing environment that encapsulates a vast amount of us, generating careers and, for many, a great love within ourselves. Over time, the world of soccer has changed tenfold, growing to proportions that were scarcely imaginable when the sport was first created. Billions of dollars, euros, pounds, all currencies, have been invested into this game that we all love. This game has sparked competition, passion, and has caused heartbreak and triumph for all who involve themselves. This game has turned from a hobby, something to pass the time and a way to have fun with friends, to a form of business. Soccer has become influx with political and economical processes that have caused the game to become an entire new being in itself. Soccer has now become an empire, with a growing population, government, and economy. This growing economy has allowed for the game of soccer to exponentially grow, and it will only continue to become larger. As the sport grows, so do those affiliated with it. Clubs have significantly changed throughout history, and now are massive compared to their origins. More money, more fans, more everything. Soccer has now become a way of life, it has become a world in itself, one that we allow ourselves to live within and be affected by. This world is one that is under constant examination as we continue to look for ways to continue to better the game that we all love.

The economic side of soccer has been a part of the game since its inception, but only in recent history has it become what it is now. Clubs have become richer and richer, with various different suitors and affluent owners coming into the game. This has affected the game significantly, along with the emerging economy that goes with it. Clubs have become more strategic in every possible aspect, as now soccer has become a way of business as well as a

competition. With this growth of the sport, those involved have to adapt and continue to grow as well. Competition has become fierce, and the only way to stay ahead is to look at every aspect and see where improvements can be made. The economic side of the game is only one aspect of the game that is subject to this scrutiny, but it is an all important one as it is the aspect that allows our game to grow to measures beyond imagination.

There are multiple aspects of the game that are affected by the economic side of soccer. Club size, spending, wages, any part of a regular business that you can think of has now become part of the soccer economy. Clubs continue to examine themselves like any normal business would, as do those of us outside of said clubs. As similar as soccer clubs are to a regular business, they are also significantly different in many ways. The soccer market is dealt in the form of buying and selling players. A team needs to acquire players that will make them better overall. In theory, the better the player, the more expensive it is to acquire them. The transfer market is unique to sports, and within the soccer world the vast spread of clubs and players on the move has turned this market into a massive one. The transfer market is one aspect that affects the overall soccer economy.

In this paper I will dive into the economy of the soccer world, and examine the growth of clubs. The transfer market is a massive part of the soccer economy, and a massive part of how clubs operate as a whole. We will see how clubs are currently operating within the transfer market, how players are valued and what affects the price of a player and whether or not the way clubs generate these prices are effective and accurate. Where can improvements be made, and how does this differ from club to club? How has this changed over time? This can be brought forth in various different aspects, such as efficiencies within the market and how clubs go about acquiring players. As we have seen, clubs are continuing to grow, but is this growth sustainable

for the entirety of the soccer industry? Clubs come in all different shapes and sizes, and what truly inspires us is the heat of competition. Will this level of competition be sustained with the growth of the soccer economy? The soccer economy is heavily affected by the transfer market, and looking into how certain transfers have affected the economy will help guide us in looking into the future and determining what adjustments need to be made.

Literature Review

Like the growing soccer world itself, the world around it continues to grow. Extensive research and analytics have become a recent tool utilized in the soccer world that continues to grow as the importance of it is beginning to be recognized and appreciated. Several studies, books, and articles have been published in recent times emphasizing the increased importance of analytics in the soccer world. With this growth, it will help expand and improve the soccer world and its economy.

One recent piece of literature that provides great insight into many topics that are of interest to this research topic is the novel *Soccernomics: Why European Men and American Women Win and Billionaire Owners are Destined to Lose* by Simon Kuper and Stefan Szymanski. Kuper and Szymanski provide a great amount of insight into the economics of soccer, looking into various topics including t transfer market, strategy, and clubs financial spending and earnings. *Soccernomics* digs deep into the secrets of the transfer market, and Kuper and Szymanski research various different clubs and their transfer strategies aiming to see what works best and to show how clubs actually act, and determining what is important to them in the purchasing and selling of players.

Kuper and Szymanski conducted extensive field research, meeting with clubs and learning about the strategies they already have in place in the transfer market. With this, they broke down various parts of the transfer market, such as how it affects teams league position, the importance of player salaries and how they should be allocated, and the various successes and failures in the transfer market.[1] Their findings are compelling and show a clear understanding of

[1] Kuper, Simon, and Stefan Szymanski. *Soccernomics: Why European Men and American Women Win and Billionaire Owners are Destined to Lose*. Bold Type Books, 2022.

the transfer market. As stated previously, the growth of the soccer world has pumped an immense increase of money into the sport. This has resulted in the amount clubs pay for their players, and the salaries of those players, has skyrocketed over the years. Kuper and Szymanski looked into summalities of these transfers for individual clubs, looking to see how their spending affected the teams results and league position. What they found was that net transfer spending provided little explanation for total variation in league position, rather what clubs spend on player salaries provides more intel on how the team will perform and where they will finish in the league.[2] They found that clubs' total spending on wage bills explained 92% of variation in league position, dating back from 1978 to 1997, and had almost the exact same results in the English Premier League and Championship for the decade through 2020.[3] With this, they give extensive explanations and strategy to how clubs should handle their funds, while also looking into how it is already done. High pay is what attracts good performers, not what causes it, and is why the best players earn such high salaries.[4] This increase in salary increases the players perceived value in the market, and increases the amount that would have to be paid for their transfer from one club to another. Kuper and Szymanski provide a potential strategy for the spread of salaries over a team, but it is not one that is used in practice, nor do the authors think a club would ever implement it. They used an analysis from two other authors and argued that the best way for a club to allocate their funds was for the best player and second best player to earn approximately 50% of the clubs transfer budget, 70% for the best three players, and spend almost nothing on the five cheapest players.[5] They admit that this would not actually be enacted by a premier league club, but it is interesting to see how their analysis creates their strategy.

[2] Kuper and Szymanski 2022, p. 13
[3] Kuper and Szymanski 2022, p. 15
[4] Kuper and Szymanski 2022, p. 16
[5] Kuper and Szymanski 2022, p. 31

They carried this analysis into the acquisition of players in the transfer market. There are many different aspects of a player that a club takes into account when deciding if they want the player and their price. Previous prices paid for that player, the league that player is in, the cost of a different replacement, their image in the media, how important the player is to the squad, various different factors that will be analyzed by the club before they decide to buy the player for millions.[6] First, they studied various successful clubs and their transfer strategies. This method is one that will be of much use later in this research paper in breaking down transfer strategy. In the acquisition of players, there is a very human aspect that is difficult to escape. Kuper and Szymanski speak of this frequently, and give numerous examples that show why certain clubs have excelled and others have struggled in the transfer market. Some niche points were interesting and not something one would typically think about, such as when coaches are scouting youth players, blondes tend to get recruited more vigorously because of their ability to stand out on the field due to the brightness of their hair.[7] They discussed biases with players from certain countries, especially Brazilians and Dutch players.[8] Also, to be wary of the bias of players that performed well at the most recent World Cup. They found that those players typically get significantly overvalued, and their actual performance and quality is not wary of the high price they received from performing well in the recent tournament.[9] Removing these innate biases that many scouts of elite soccer clubs have is an important point to the transfer strategy that Kuper and Szymanski built.

Two teams that Kuper and Szymanski analyzed deeply were Nottingham Forest and Lyon. Nottingham Forest had much success in the 1970's, with much of their success being

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[6] "How Players Are Valued." *Football Finance*, 29 July 2014, footballfinanceblog.wordpress.com/84-2/.
[7] Kuper and Szymanski 2022, p. 32
[8] Kuper and Szymanski 2022, p. 32
[9] Kuper and Szymanski 2022, p. 33

attributed to Forest's manager Brian Clough and his assistant Peter Taylor.[10] Clough and Taylor lead Nottingham Forest to win the Champions League and also turn a profit in the transfer market, which is almost as extraordinary.[11] Kuper and Szymanski used the book written by Peter Taylor, called *With Clough by Taylor*, to peek into what their strategy was that made them so incredibly successful. They found that Clough and Taylor had rules that they evoked frequently: be as eager to sell good players as to buy them, older players are overrated, and lastly to buy players with personal problems at a discount, then help them deal with their problems.[12] Clough and Taylor treated the transfer market almost like the stock market. They would gauge when one of their players reached the top of their hill, and then would look for the next best thing and sell the already peaked player.[13] As for older players, they related players to melting blocks of ice, and that it is the job of the club to gauge how fast they are melting and to get rid of them before they turn into a puddle.[14] They argue that most strikers peak at the age of twenty-five, with exceptions of course, and that many clubs still insist on paying higher prices for past performances when they need to be looking towards the future.[15] The last rule that Kuper and Szymanski touched on lies mostly in the failure of clubs rather than the problems players have with themselves. They touch on the attitude that many clubs have of "we paid a lot of money for you; now get on with it" instead of working with the player to make them more comfortable so they can perform.[16] This led to another important point in Kuper and Szymanski's transfer strategy which is helping with the relocation aspect of players, in order to make them feel

[10] Kuper and Szymanski 2022, p. 33
[11] Kuper and Szymanski 2022, p. 34
[12] IKuper and Szymanski 2022, p. 36
[13] Kuper and Szymanski 2022, p. 36
[14] Kuper and Szymanski 2022, p. 36
[15] Kuper and Szymanski 2022, p. 37
[16] Kuper and Szymanski 2022, p. 41

comfortable and able to perform.[17] Much of the transfer strategy that the two of them built was based on the failure of clubs to simply take care of their players.

Kuper and Szymanski then began to look into the transfer strategy of Lyon, a club in France. The two authors attributed much of Lyon's transfer market success to their ability to take care of their players, which was also heavily influenced by the surrounding landscape and environment of the town of Lyon.[18] Lyon is a very wealthy small town with good restaurants, beautiful scenery, and with great people who for the most part were not too interested in soccer.[19] Because of this environment, it made it very easy for new transfers to relocate to Lyon and start performing. This was only part of the reason for the success Lyon had in the transfer market, but factors such as the outside environment are often overlooked, when in reality they are a massive part for the performance of the club overall. People forget that the players are human, and need the right environment around them in order to be at their best.

Lyon, like Nottingham Forest, had rules and strategies that they enacted when purchasing and selling players in the transfer market that Kuper and Szymanski took note of. The first rule that Lyon had that they looked into was their belief in using the wisdom of crowds when making transfers. They have a group of men, the club president, advisors, multiple coaches, all sit in and give opinions on the transfer, rather than just the manager or technical director deciding whether to complete the move or not.[20] Many clubs surprisingly do not do this, with Kuper and Szymanski relating them to a sort of dictatorship under which that manager is treated as the monarch who gets to make all decisions.[21] Lyon understood this, and instead of just blindly following the manager until they were fired, they would use this wisdom of the crowds to get the

[17] Kuper and Szymanski 2022, p. 41
[18] Kuper and Szymanski 2022, p. 50
[19] Kuper and Szymanski 2022, p. 50
[20] Kuper and Szymanski 2022, p. 52
[21] Kuper and Szymanski 2022, p. 53

best possible results, which led to them winning seven consecutive titles with four different coaches.[22]

Also like Forest, Lyon were keen on buying younger players. Their club president stated that the best time to buy a player is when he is in his early twenties.[23] Any younger, it is too hard to judge if they will be good or not, and once a player hits around 25-27, their price is 18% higher than players who were aged 22-23, with the younger players having lower salaries and a higher future resale value.[24] Teenagers tend to flame out, and many great players were not considered to be good when they were teenagers. Lyon understood this, but also did not want to be extra for an older player who already has made a name for themselves.[25] Kuper and Szymanski attributed their success in this partly to the environment of the fans that supported Lyon. Typically, fans of big clubs want to see their team go out and sign the best players, giving them hope for the future and giving them the excitement that they want, rather than looking towards the future with their transfer strategy.[26] Lyon was not subject to this because their fans and local media did not demand the big signings that are demanded of other big clubs.[27] Lyon also had an array of other rules and secrets that differed quite a lot from what other clubs look to sign in the transfer market. Lyon would try to not buy center forwards, as they firmly believed that their position was heavily overpriced in the market, whereas goalkeepers are heavily underpriced.[28] Like stated earlier, Lyon focused heavily on helping their new signings relocate, having translators that would help with all aspects that any person would have to go through with moving to a new place.[29] One last piece of wisdom that Kuper and Szymanski noted from Lyon

[22] Kuper and Szymanski 2022, p. 53
[23] Kuper and Szymanski 2022, p. 53
[24] Kuper and Szymanski 2022, p. 55
[25] Kuper and Szymanski 2022, p. 55
[26] Kuper and Szymanski 2022, p. 55
[27] Kuper and Szymanski 2022, p. 56
[28] Kuper and Szymanski 2022, p. 57
[29] Kuper and Szymanski 2022, p. 57

was very similar to Nottingham Forest, which was to sell any player if another club offers more than he is worth.[30] The president of Lyon stated that the buying and selling of players to them was not for the objective of improving the soccer performance, rather it was a trading activity in which they produce a gross margin, which meant that if an offer for a player comes in that is higher than their market value, you must sell them.[31] It does seem somewhat cruel, but the success of this for Forest and Lyon came from them not being sentimental about their players, and having the ability to sell them with ease. Lyon would constantly keep track of their players market values, and when one of their players would start to get attraction from another club, they would begin to replace the player before they were even sold.[32] Lyon would then be able to put their new player through the transition period that would come with moving clubs before they had to be fully in the squad, giving them more time to adapt and become comfortable with the new environment.[33] Another thing the president of Lyon would do was to try and drive up the price of their players by spreading to the media that their star player was untransferable, making any suitors of the player think they need to offer more to get him.[34] Lyon were very innovative about how they went about acting in the transfer market, and much of this is reflected in how they performed over their prime years.

Kuper and Szymanski used the lessons learned from Nottingham Forest and Lyon to make a, in their words, free service list of main secrets to the transfer market. Much of what is in the list was what was shown previously, using wisdom of crowds, certain nations overvalued, older players overvalued, best time to buy a player is in their early twenties, replace your best players before you even sell them, help your players relocate, and sell any player when there is

[30] Kuper and Szymanski 2022, p. 57
[31] Kuper and Szymanski 2022, p. 57
[32] Kuper and Szymanski 2022, p. 57
[33] Kuper and Szymanski 2022, p. 58
[34] Kuper and Szymanski 2022, p. 58

an offer that is more than what he is worth.[35] There are several other secrets that Kuper and Szymanski also had that were not covered here. The transfer strategy and secrets that they shared are very innovative to how soccer clubs are currently and have previously been run. Kuper and Szymanski offer a hypothetical transfer strategy that would be interesting to see put in use at an actual club. They give various reasons as to why clubs aren't this innovative as well. Fear of things going wrong and easily being given the blame, clubs being filled with people who have always done things a certain way and are reluctant to change, fear of relegation which makes teams less innovative and stick to what they know.[36] Most are very valid reasons, and it is understandable why it would be difficult to alter away from the way things have been run in the past. They next go into a historical analysis of how clubs have been run in the past, and give insight into the flow of money in soccer and how clubs are actually run as a whole.

With looking into the transfer market we are able to see how the soccer economy is operated as a whole. Clubs are the agents of the market, and how they are run is regulated in various different ways. Kuper and Szymanski also dug into this in order to give insight on the soccer economy. One aspect they examined was the difference between soccer clubs and modern business. Many of us are led to believe that a club is almost like any normal business, from what we see in the transfer market they seem to bring in huge profits and appear to be at the height of luxury. However, looking into the actual financials of a soccer club, one would be surprised to see that any normal club is not that profitable. Huge amounts of money run through soccer clubs, but almost none of it ends up as profits.[37] This has led to the viewpoint that the current economic model for soccer is unsustainable, as it is driving smaller clubs into bankruptcy,

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[35] Kuper and Szymanski 2022, p. 58-59
[36] Kuper and Szymanski 2022, p. 58
[37] Bond, Gareth. "The Economics of Modern Soccer." *Online Library of Liberty*, 19 Dec. 2022, oll.libertyfund.org/reading-room/2022-12-19-bond-the-economics-of-modern-soccer.

making leagues more lopsided in favor of the more expensive team.[38] Kuper and Szymanski address this, and give a basis of what goes into clubs going bankrupt and the processes and rules that go along with it. In their focus, they looked at the bigger clubs in existence, whereas our later analysis will look at the bigger picture of the clubs, and how this affects clubs big and small in the future. In Kuper and Szymanski analysis, they dug into the surprising unprofitableness of clubs. They looked into the profits/losses of premier league clubs by league position. They found that there was barely any connection between league position and making money.[39] For all of soccer history, it was almost impossible to run a soccer club as a profitable business.[40] This leads to the question of how soccer clubs are able to continue to survive even though they do not bring in profits. This is what Kuper and Szymanski analyzed when looking at the current state of the soccer economy.

The difference between a soccer club and a profitable business is that clubs do not care about earning profits, rather they are concerned about winning prizes and trophies.[41] This is what in part drives up the price of certain players in the transfer market, as if one owner refuses to pay a certain amount, another owner will.[42] This leads to clubs consistently outspending what they are earning, and the concern that this current in place economic model is not sustainable for all clubs in the future. There are a few ways that Kuper and Szymanski looked into that clubs use to keep operations running without bringing in profits. The first way they looked was the use of Phoenix Companies by clubs. Kuper and Szymanski explain phoenixing as such: every English football club is also a public limited company, such as Arsenal also being Arsenal Holding PLC

[38] Bond, Gareth. "The Economics of Modern Soccer." *Online Library of Liberty*, 19 Dec. 2022, oll.libertyfund.org/reading-room/2022-12-19-bond-the-economics-of-modern-soccer.
[39] Kuper and Szymanski 2022, p. 78
[40] IKuper and Szymanski 2022, p. 78
[41] Kuper and Szymanski 2022, p. 79
[42] Kuper and Szymanski 2022, p. 81

or Bristol City also being Bristol City Football Club PLC.[43] This protects the actual club from going under in times of insolvency, which is when a company is unable to pay off its debts and has a negative net worth. When a business is unable to pay of their debts, they are insolvent and are supposed to undergo a process in order to pay off its creditors as much as possible, by either getting the creditors to write off the debt or, in the worse case, the business will have to sell its assets and close its doors potentially.[44] Soccer clubs have developed numerous ways to avoid this happening, as it is quite rare that a soccer club comes to a close because of insolvency. The clubs create their phoenix company, and in the case where the club becomes insolvent, they dissolve their phoenix company and create a new phoenix company so that essentially nothing happens and the club lives on.[45] This way of escaping creditors was quickly noted and used by many clubs.

This method in England had to be changed when the UK made its Insolvency Act of 1986, which created the procedure of administration which Kuper and Szymanski expanded on.[46] Now, whenever a club became insolvent, they entered administration where an outside practitioner came in with the tasks to help find a way to keep the business running while paying off its debts as much as possible.[47] Kuper and Szymanski noted that the process of administration actually made it easier for clubs on the brink of financial collapse, saying it was somewhat of a breeze to go through. What the two authors took note of was the difference in effect for big clubs and small clubs; big clubs never have the threat of going under, whereas small clubs do. It is the lower level clubs that are at risk of becoming insolvent, especially those who are facing relegation.[48] With the increased fear of the health of the soccer economy from the 2008 financial

[43] Kuper and Szymanski 2022, p. 85
[44] Kuper and Szymanski 2022, p. 85
[45] Kuper and Szymanski 2022, p. 85
[46] Kuper and Szymanski 2022, p. 86
[47] Kuper and Szymanski 2022, p. 86
[48] Kuper and Szymanski 2022, p. 87

crisis, UEFA created the regulation Financial Fair Play to help level the playing ground.[49] The aim of the Financial Fair Play (FFP) rules was to stop clubs from spending more than what they took in, meaning that every club had to be solvent.[50] This of course comes with its own set of problems. Clubs have to keep up with their finances and make profits in a model that is already showing that they are unable to generate lots of profits. Outside factors such as a rise in interest rates or a decline in income generated from television would be detrimental to many clubs and could see many fall back into insolvency.[51] There are many risks that play a massive role in the sustainability of clubs in the soccer economy.

As previously built upon, the world of soccer has gone through tremendous changes throughout its history. This exponential growth has been particularly noticeable within the last few decades, with bigger money resulting in bigger transfers, investments, and overall club growth. What we have seen is the biggest clubs in the biggest leagues continue to become stronger in all aspects on and off the field, increasing the level of competition exponentially as well. A growing concern from this growth is how sustainable it is for clubs in the future, as will the growth of the biggest clubs result in a lack of competition from less financially affluent clubs. This was a main concern during the creation of the Super League, with many fans immediately revolting against the idea that would have excluded so many middle to small class clubs from the competition, which would in no doubt bring in large amounts of money and attention. With the increase in valuation of players, it seems that it would be increasingly difficult for smaller clubs to compete with the biggest in the transfer market, and thus increasing the difference in quality of teams. Are we ever going to see the likes of a team like Leicester City winning the premier

[49] Kuper and Szymanski 2022, p. 90
[50] Kuper and Szymanski 2022, p. 90
[51] Dalrymple, Theodore. "Will the Soccer Bubble Burst? - Theodore Dalrymple." *Law & Liberty*, 10 Jan. 2020, lawliberty.org/will-the-soccer-bubble-burst-europe-football-fifa/.

league again? Or even an FA Cup or Carabao Cup? It is seemingly becoming increasingly more unlikely that something like this will ever happen again. This worry strengthens the concerns of the soccer community, as seeing the same team win over and over again would drain the life out of our beloved sport.

UEFA, the Union of European Football Associations, have made various efforts to help combat this problem of sustainability within the game. UEFA have continuously updated their rules and regulations to follow the growth of the game. Their first implementation was Financial Fair Play, which we previously built upon.[52] UEFA outlined their framework for the club monitoring process that they have in place for clubs that compete in all UEFA men's club competitions. UEFA implemented three key pillars that they monitor for all clubs, looking into solvency, stability, and cost control for the clubs with the goal to ensure that all clubs are financially sustainable and able to keep their costs under control.[53] Firstly, looking into how UEFA is handling solvency, the association has outlined several rules and deadlines that clubs must follow. Clubs are not allowed to have overdue payments to other football clubs by July 15th, October 15th and January 15th in the license season.[54] Obtaining and maintaining UEFA licensing is a major factor in the regulations put out by UEFA. In regards to stability, UEFA set general rules on the income of clubs. For any licensee, they are allowed to have either an aggregate football earnings surplus, or an aggregate football earnings deficit that is within the acceptable deviation.[55] Lastly, for cost control, UEFA outlined its goals for the future of how to control the costs that clubs endure. The cost control rule places limits on spendings for clubs in regards to the amount of revenue that the clubs bring in.[56] Their goal is for clubs costs to not

[52] "Financial Sustainability: Inside UEFA." *UEFA.Com*, 6 July 2023
[53] Ibid
[54] Ibid
[55] Ibid
[56] Ibid

exceed 70% of the clubs revenue, with this gradually decreasing from 90% in 2023/2024, 80% in 2024/2025, and finally hitting the goal of 70% in 2025/2026.[57] UEFA reported that since these regulations have been implemented, virtually all overdue payments have been eradicated.[58] They also showed that in 2009, net losses for clubs were €1.6 billion, whereas in 2018 clubs made a profit of €140 million, while also reporting that as a result from Covid there was a significant increase in losses that UEFA have addressed and implemented financial solutions to help maintain the sustainability of the clubs.[59] We will see in the future how UEFA continues to expand their rules and regulations to help maintain this level of stability that they are striving for.

The future of soccer is something that is difficult to predict. How the game will grow will be an interesting tale to follow. Kuper And Szymanski briefly discussed their logic for how they believe the future of the soccer industry will look like. They believe that the soccer economy is not a bubble, as it is so often described, rather that it will continue to expand instead of burst.[60] They attribute much of this foreseen growth to the rise in viewership, particularly through social media. Television has been huge for the soccer industry, and can be attributed to the large amount of financial growth that the sport has seen. Kuper and Szymanski tell about how this increase in viewership has led to many changes in the sport, and how it will only continue to bring money in and grow the world of soccer. For instance, soccer is only just beginning to break into the four most populous countries in the world - China, India, the United States, and Indonesia - which account for 45% of the world's population.[61] We have seen the increase in transfer spending for players, as clubs with the financial backing of their increase in revenues and influx of money can now afford to pay such ludicrous amounts. For instance, PSG was able

[57] "Financial Sustainability: Inside UEFA." *UEFA.Com*, 6 July 2023
[58] Ibid
[59] Ibid
[60] Kuper and Szymanski 2022, p. 408
[61] Kuper and Szymanski 2022, p. 409

to sign Neymar for such a high fee because the club was funded from the State of Qatar; who knows how something like this will turn out in the future.[62] Another prediction that they made was for the English Premier League. The EPL brings in about $6 billion from just the inside of England, and generates around the same amount from the rest of the world combined.[63] This will in no doubt continue to increase from around the world, and will pump more money to the clubs within the league.

Whether or not the soccer world is a so-called ‘bubble’, it is still important to examine it from all possible angles. Kuper and Szymanski provide a brilliant insight into this world, and see the trajectory of the economy being mostly positive for the overall life of the sport. There are many areas of the soccer economy that play a massive role in its overall sustainability. How clubs operate themselves within these areas is what is going to be key to keeping the competitiveness of the game alive, which will keep viewerships high and pump even more money into the game. We have seen key insights into how clubs should go about improving their squads, such as through the successes of Nottingham Forest and Lyon in the past. However, as times have been changing, it is evident that transfer strategies need to continue to be updated if they are going to remain competitive and compete for trophies; which is the actual goal for most clubs rather than bringing in revenue. Nottingham Forest have not seen the same success as they once did, and it is clear that there is a divide within almost all leagues in Europe with the top clubs and those below. Now using a more recent viewpoint and data from more recent transfers, clubs need to reevaluate their spending capabilities within the transfer market and identify the best route for them that will allow them to continue to compete with the highest spenders.

[62] Kuper and Szymanski 2022, p. 409
[63] Kuper and Szymanski 2022, p. 410

Looking into how the different levels of clubs should be acting within the transfer market will help provide a synopsis of the future sustainability of the soccer economy.

METHODOLOGY

In this paper I will examine the sustainability of the soccer economy, aiming to project how the competitive nature of the game will adapt in the future. As built upon earlier, there are various factors that affect the economy of the game. The key factor that will be a major factor in my projection will be an analysis of the transfer market. As we have seen, many clubs have been led to great success through their decisive action within the transfer market. However, the game has continued to grow and a new analysis of how clubs should be acting within the available market is needed.

Although there are multiple tactics within the transfer market that we have seen that would be beneficial to all clubs, what is important and lacking in previous research is an analysis of the market through the lens of different club sizes. Not every club has the same financial buying power as the largest juggernauts, such as Manchester City or Chelsea. That is why a distinction between club size will be important in creating the hypothesis of how clubs should act within the transfer market. The budget that each club is given is vastly different as you go throughout a league table. Determining the best possible targets will also be affected by the amount that the club is able to spend. Having an effective analysis on the valuation of players will be increasingly important in determining this transfer strategy and, furthermore, projecting the future of the soccer economy. Narrowing down how clubs value their own players and players that they are looking to purchase will give insight into what affects this valuation. This paper will look into factors on and off the field to help determine what price should be paid for a player.

As far as what will go into the transfer market analysis, there are the more clear-cut statistics that will play a factor, such as goals, assists, club size, tackles, age. Now, as we enter the new age of statistics in sports, there are also more high level statistics that are now available that will provide even further insight into how players should be valued. An analysis of what the player has brought in previous years, systems that work best for the player, and the overall general fit for the player within the club will be taken into consideration. This will all be described more in depth as we get into the analysis for each club.

What will be a major difference between this transfer market analysis from those prior will be the consideration of club size. As Kuper and Szymanski brought forth, what is typically reflected in a club's success within the league is the amount that they are able to spend on wages for their players. The underlying problem with this is that not all clubs are able to spend the same amount. Therefore, within this modeling there is an inherent gap between the top clubs and those below based purely on the amount of wealth that the club has. It is an uneven playing field from the start. This does not mean that it will be impossible for the smaller clubs to be able to compete, but it will mean that they must have a more economical and effective strategy with the players that they acquire.

Chapter 1: The Recent Transfer Market

Creating an effective strategy within the transfer market is a challenge that clubs go through every single year. There is only so much time that a team has in order to complete a transfer, and with increasing rules and regulations it is important for clubs to be on the front foot. Thousands of clubs have to carefully select which players they believe will be valuable additions for their squad, and determine the right price to pay. Clubs of all different sizes compete with each other during the summer and in the middle of their seasons in January to sign players, with the biggest and smallest clubs open to buy and sell throughout all markets around the world. The transfer window is only open for a short amount of time, and clubs need to move quickly to get deals done. There are millions of players that could potentially be bought, and many different factors that need to be analyzed before making a purchase for millions.

The transfer market analysis for this paper will be focused on the Premier League in England. The EPL has quickly become one of the most popular leagues in the world, with an ever increasing number of viewership and attention being put on the league. The majority of literature used in this analysis focuses on the premier league, such as *Soccernomics*. The market value data used for this analysis comes from a trusted dataset called Transfermarkt.us, and from what clubs themselves report. The premier league has very reliable and accessible information about its transfers and players, adding to why it will be the primary focus.

More top players are frequenting towards the league, making the competition that much more intense. Furthermore, the top clubs within the EPL are more frequently spending high amounts in order to sign these top players. This has created an increase in talent amongst the teams within the EPL, as well as being reflected in the Champions League with three different

teams in the EPL winning the coveted competition in the last five years, and with an English team making the final five times in the last six years.[64] The talent among the league has increased significantly, and for this reason will be the main league analyzed.

The transfer window of the 2023/2024 season for the EPL was a very eventful and significant one. Nineteen of the top one hundred most expensive transfers in the EPL happened in this season's transfer window alone. It was clear that the top clubs came into the transfer window with the same intention: spend. There were upwards of 145 acquisitions within the recent transfer market, with all teams making at least four, and in total almost three billion euros spent in the one year alone. A large amount of spending was done by the traditional big six in the league; Arsenal, Chelsea, Manchester United, Manchester City, Spurs, and Liverpool. Newcastle have also begun to emerge as big spenders, not being too far off from the big six. In this transfer window, there are also a few traditional mid table clubs that have begun to be able to spend more. Aston Villa and West Ham are a part of this group. Aston Villa spent €55 million on Moussa Diaby, and €33 million on Pau Torres with a total of €111.5 million spent in this year's transfer window alone. West Ham spent a total of €144.56 million. Also, to some surprise, Nottingham Forest and Bournemouth spent €131.05 and €127.29 in total, with Nottingham bringing in thirteen total players. Burnley also brought in thirteen players, spending a total of €111.05 million. However, this high amount of players brought in and spending for these clubs have not necessarily created desired results. Aston Villa are performing well, challenging for a spot in the top four that would guarantee them a spot in the Champions League.[65] West Ham are not too far off, but do not seem to be challenging for a top four spot.[66] Bournemouth are in the

[64] "Finals: History: UEFA Champions League." *UEFA.Com*, www.uefa.com/uefachampionsleague/history/winners/finals/. Accessed 2 Apr. 2024.
[65] "Premier League Live Scores, Stats & Blog: 2023/24." *Premier League*, www.premierleague.com/matchweek/12299/table. Accessed 3 Apr. 2024.
[66] Ibid

middle of the table, looking to maintain their spot in the premier league, while also looking to stay above spending juggernaut Chelsea.[67] Burnley and Nottingham Forest on the other hand are fighting to avoid relegation, and clearly the high amount of players brought in and spending has not worked out.[68] The same can be said for one of the traditional big six clubs, Chelsea. Chelsea heavily outspent all clubs in the transfer market this year, almost doubling the amount of the second highest spender Spurs. Chelsea spent a humongous €467.8 million, bringing in twelve new players. Like Nottingham Forest and Burnley, they have significantly underperformed with their spending and haul of players. Chelsea at the beginning of April sit in twelfth, far off from where a team spending over 400 million euros would want to be.[69] Chelsea were in a very similar situation last year as well where they spent over 600 million euros, and finished in 12th. Chelsea must reevaluate their transfer market strategy, as their extensive amount of spending has not paid off.

The big six clubs were certainly the biggest spenders in the transfer market, accounting for almost half of the total amount spent. There was a clear divide between the biggest clubs in the league and those below, with multiple individual transfers outdoing the majority that total clubs spent during the window. Arsenal's acquisition of Declan Rice for €116 million outdid the total amount that half of the clubs in the league spent during both transfer windows. Arsenal weren't alone with this feat, as Chelsea also splashed out €116 million on Moises Caicedo, with both transfers being tied for the third most expensive transfers in the history of the premier league, with the most expensive transfer coming only half a season ago during the winter transfer window by Chelsea purchasing Enzo Fernandez for €121 million. It was also only three years

[67] "Premier League Live Scores, Stats & Blog: 2023/24." *Premier League*, www.premierleague.com/matchweek/12299/table . Accessed 3 Apr. 2024.
[68] Ibid.
[69] Ibid

ago that Manchester City spent €117.5 million on Jack Grealish, making him the most expensive English player in history. These top clubs are becoming more willing to spend highly on new players, with the majority of the most expensive transfers in the history of the premier league coming within the last three years. Twenty-two of the all time most expensive transfers have occurred since 2023, and eighteen since 2022. It is clear that going forward in the transfer market the big clubs are going to spend incredible amounts of money to bring in top prospects, and those of smaller financial size have to find ways to compete. This economic trend of high spending is going to be a problem within the pricing dynamics for smaller clubs.

As Kuper and Szymanski looked into, there are many trends with the type of players that were purchased in the last window. The vast majority of players purchased were English players, with twenty-seven in total. The next highest nations were the Netherlands, France, and Brazil with nine Dutch players and eight players coming from France and Brazil respectively. English teams evidently have a bias towards English players, and as Kuper and Szymanski predicted, there was significant interest towards Dutch and Brazilian players. This trend is very similar to the top transfers of all time in the premier league, with England national players having the most total and highest amount. Brazil has the third highest, and France has the second. There are many factors that can play a role in this, but there is a clear trend of nations that teams buy players from.

Kuper and Szymanski also analyzed the amounts paid for certain positions. They argued that forwards are always overpriced, and typically are the ones who draw the highest transfer sums. This was not the case for this one transfer window, as the most sought after positions were a defensive midfielder and a center back, with twenty defensive midfielders being purchased as well as twenty-two center backs. However, there were twelve attacking midfielders and fifteen

strikers who were purchased, and the attacking midfield position only had €10 million less spent than the total amount for center backs, showing the higher prices for the forward position. Also, if we break down the positions into three main categories, forwards, midfielders, and defenders, the forward position was the most expensive. In total, there were more defenders transferred than the other two categories, yet they still in total cost much less. This is also the case for the all time transfer list, with the striker position being the outright most expensive in total, and the forward category doubling the amount paid for midfielders and defenders. There are more than double the amount of forwards that are a part of the most expensive transfers, and the same amount for the defender category as midfielders, yet the total cost is less. The trend that Kuper and Szymanski discussed about forwards is evidently still true, but other positions are also starting to draw higher transfer sums as well. Three of the top five most expensive transfers in premier league history were for midfielders, and in this last window there were only two forwards in the ten most expensive moves of the year. We are beginning to see a market where it is not just forwards who drive high prices, rather the most coveted players available are driving increasingly high prices. Teams are beginning to see the value of a quality player, rather than just their output in goals and assists.

One position that has been flying under the radar in the transfer market is the center back position. As previously mentioned, high profile forwards and midfielders have been stealing the show. However, in the last transfer market, the center back position was the second highest amount spent upon, with the most total transfers in said position. Josko Gvardiol became the most expensive defender in the history of the premier league this year with his €90 million move to Manchester City from RB Leipzig. One aspect of this transfer that Kuper and Szymanski analyzed was the recent World Cup. Gvardiol was one of the multiple players who stood out in

the World Cup, and being a young and promising player he earned himself a high transfer value. His market value at the time was reportedly €75 million, showcasing the increase in value seen by Manchester City. Gvardiol was one of multiple high quality center backs that were purchased this last year. Axel Disasi, Jurrien Timber, And Micky van de Ven were center backs who were purchased by fellow big six clubs Chelsea, Arsenal, and Spurs respectively. As reported by the premier league, Disasi and van de Ven have been getting valuable time with their clubs, with Timber unfortunately being injured early in the season. Disasi has made twenty eight appearances in the league with five clean sheets and van de Ven making twenty appearances with four clean sheets. Gvardiol has done much of the same, with twenty-one appearances and five clean sheets. Gvardiol statistically has done equally as well as Disasi and van de Ven, but cost double the amount. There is much more beneath the surface that will be delved into later in this paper, but we are beginning to see the variations in prices for top players in all positions on the field.

Overall this year's transfer market was highly eventful, record breaking, and expensive. The big clubs did not shy away from spending, and those below followed suit. Teams looked to build for the future, bringing in young talent with high potential. The average age for a player signed this year was slightly below twenty four, with thirty players being twenty and below. We have seen many of the trends that Kuper and Szymanski discussed about the transfer market. Many of their claims are evidently true. Players from certain nations were highly favored, forward positions were the most expensive, and the big clubs spent big money. There were very clear economical trends of an increase in aggregate spending. This ability for clubs to increase the amount they pay increases the price of a player. This increase in price results in less demand, as only a certain number of clubs are able to keep up with rising prices. This is a concern for the

soccer economy, as with rising prices it will become impossible for smaller clubs to be able to compete in the transfer market.

What is still left to be determined is for how each level of club should operate within this market. Not all clubs in the premier league are able to keep up with the spending habits of Manchester City or Chelsea. What needs to be determined is the logic of pricing in this market. How can clubs accurately determine how much they should pay for a player, and what other factors play into driving that price up or down? We have seen so far that positions, nations, age, and other general factors play a heavy role in determining the price of the player. However, there is still much more beneath the surface that goes into a transfer value. Demand for the player is crucial, and looking into certain individual transfers that have happened will shine a light on the dynamic between pricing and demand in this very niche market. Clearly, if one of the biggest clubs in England wants a player, they are going to be able to use their influence to acquire them. The question remains for the clubs below that do not have as much pull. What needs to be determined is where these clubs stand within the market, and what level of player they should be aimed at. Firstly, looking into certain transfers for each level of club by splitting them into three groups of big, medium, and small will give us the insight into a club's market share within the soccer economy, and the factors that go into determining the market value for a player and what can be done to acquire the best possible price.

In order to conduct an analysis of the factors that go into determining the value of a player, there are various controls and elements that must be brought into consideration in order to understand the differences from player to player, position to position, and club to club. Firstly, without even considering the concrete statistics that players have, we need to understand the logic of demand behind clubs. This is not any different from the economic theory of consumer

demand, which can be thought of as the relationship between the quantity demanded and its price.[70] In this scenario, clubs are purchasing from another club a player, with the hopes of the player providing certain aspects of the game that will be beneficial to the club's success. Two key details within this relationship of consumer demand and soccer clubs are determining for each player what aspects the purchasing clubs hope to gain, and overall what is determined to be a success for the club overall. This differs from real world economies where factors such as income, inflation, and unemployment levels are used in relation to spending habits. This smaller economy does show its own levels of inflation, as we have seen with the increased transfer values in the last few years. But clubs are not entirely focused on profits, as brought forth by Kuper and Szymanski. Each level of club is vastly different based on their overall stature. A newly promoted team to the premier league is, most likely, not setting their targets to winning the league itself, rather the newly promoted club is likely to be more focused on maintaining its spot in the premier league by avoiding relegation. As reported by the premier league and transfermarkt.us, newly promoted Luton Town spent a total of €25.92 million in the transfer market, which would only cover about 22% of the cost that Arsenal, who are hunting to win the premier league, paid to purchase Declan Rice. Evidently, the two clubs have different definitions of success. What remains is the understanding that what both clubs want from a player is different, which leads to a vastly different price of purchasing. This does not mean that Luton Town would not love to have Declan Rice on their team, rather that he is not that type of player that Luton Town has demand for based off of his price. Therefore, each level of team needs to first understand what price they are willing to pay for a player, and determine what factors of play, based on that market value, will drive them to acquire the player. This analysis will look

[70] Studenmund, A.H. *Using Econometrics: A Practical Guide*. Pearson, 2017.

into the statistics that a player generates on the field and show it affects their market value. This will show the different levels of valuations that are derived from on, and some off, the field performance and factors.

Just as there are different levels of clubs, we have also seen the different levels of valuations of players. It is extremely important for this analysis of players that we separate all valuations by positional group; forwards, midfielders, and defenders. As previously mentioned, these three positional groups each have their own levels of valuation. Forwards are typically priced higher than midfielders and defenders, but a team's success is brought forth from having a strong basis of all three groups. Each group of players brings something different to the team. Teams are looking for their forwards to score goals, assist other players, and create chances; rather than have a defensive presence with tackling players and getting clearances. Therefore, each group of players will have to have its own way of determining what statistics are significant to their market value. In order for a team to build their strongest possible squad, they need to determine what they are looking for from each positional group. In more economical terms, they need to be able to derive what level of utility they gain from each positional group and from their players. A small level team might need an outside back who is a defensive presence, whereas a top level team might look for one who also gives offensive output. This is another factor that plays into determining the market value, as, for example, a defender on a more successful team might have less defensive statistics as their team is more often on the offensive, whereas a team that struggled more might show more defensive statistics. For a smaller team to be able to succeed, they need to be able to identify players that bring value to their squad, while being in a price range that they can afford. Finding players that might fly under the radar with their market value comparatively to what they bring to the field would be one valuable advantage to their

transfer market strategy. If clubs can be aware of which statistics heavily affect a players market value, and more importantly those which do not but still have significant value, it would be a massive step in maintaining the competitiveness between all levels of clubs.

Chapter 2: Market Value Analysis

In this analysis of player statistics, ninety players who are currently playing in the premier league were chosen, thirty players from each positional group of forwards, midfielders and defenders. Goalkeepers were excluded as their statistics and market values are significantly different from outfield players. A good goalkeeper is essential for a team's success, but the position is not a part of this paper's analysis. Statistics were taken from the 2022/23 season, as well as the market values for each player coming from what was reported to be their value at the end of said season. The player statistics came from trusted database FBref, as well as verified by the premier league itself, and market values came from previously used database Transfermarkt.us. In order to accurately determine what statistics correlate with the player market value, the sample has a scattered range of players with high and low market values. This was also chosen, rather than looking at all players with high market values, as to see if there are players with lower market values that excel in particular statistical categories such that clubs with less freedom with price could benefit from finding players with low market values but high statistical upside. As earlier discussed, there are individual players who have had transfers in the last year that exceeded the total amount spent by smaller clubs on multiple players, a prime example being Burnley acquiring thirteen players for a total price lower than what Chelsea and Arsenal paid for Moises Caicedo and Declan Rice respectively. In order for smaller teams to remain competitive within the market, they need to be able to identify these high upside players with low market values that will allow them to compete with the major agents within the soccer economy.

The range of players within the sample vary within their market values and the statistics that they have. In this sample there is an average market value of €34.5 million, with a range from up to €120 million down to €6.5 million. Player ages also vary from as old as thirty-two down to as young as nineteen years old, with an average age of twenty-four and a half. Age is a very important statistic when it comes to determining a player's market value and will be a major part in this analysis. Even though certain players are statistically superior in particular categories, their market value could be lower based on their age and potentially progress for the future. Age is an important control factor when looking at player statistics.

One other factor that was taken into consideration is the strength of the team that each player is playing on. In order to quantify this, the total market value for the team that each player was a part of was used as a control factor. This was how team strength was accounted for in the statistical regression analysis. The average team market value was €575 million, with the peak being Manchester City with a team market value of €1.15 billion, and the lowest being Sheffield United with a team market value €118 million. There is a clear divide between the values and quality of the top and bottom teams, and this is also reflected in the player statistics from the range of clubs. An example of this is Erling Haaland. Haaland was initially a part of the range of players in the sample, as he is the player with the highest market value from the 2022/23 season. He also played for Manchester City, the team with the highest team market value. Haaland was a significant statistical outlier, as his high market value was derived almost completely from the amount of goals he scored - which was almost four times higher than the second highest scorer in the sample - his young age of twenty-two, and the fact that he was playing for Manchester City. Haaland excelled in various statistics such as his goals scored, xG, and goal creating actions. However, as for the type of player that he is, did not rack up high numbers in other important

statistical categories. He had low numbers in total touches, shot creating actions, and progressive carries and passes. Because of his statistical fluctuation, he was removed from the sample. Another example of this was Ryan Giles, who played in the second division of English soccer before his transfer to the premier league. Giles had a very low market value, but in his 2022/23 season had provided eleven assists. However, when he made his move to the premier league, his quality dropped with the increase in competition, which led to his removal from the sample. Overall, it was clear that a control for the competitiveness of the team a player was on and the league they participated in was needed.

The factorial analysis accounted for thirty possible statistics that a player could have in a season that would affect their market value. This includes the players age, their teams market value, their positional group, and where their team finished in the league. The previously mentioned statistics were used as control factors in order to create a more even playing field within the generation of their market values. The rest of the statistics have a blend of aspects that each positional group brings to the game. Goals and assists were naturally big factors for forwards, but defensive statistics such as tackles and clearances were not taken into consideration for determining a forwards market value, and vice versa for defenders. Other statistics that were taken into consideration were the amount of starts a player has, total matches played, and minutes in order to determine how much playing time affected a players market value. In the below analysis, statistics that were clearly influential to the logic of pricing and player performance were analyzed. Clubs use a vast amount of data in order to examine a player, but here statistics that show quality of the individual were used as this was the goal of this analysis.

With the improvement of technology, more advanced statistics have become much more widely available. Expected goals, xG, is one statistic that gives an increased insight into the

production of a player. As FBref defines it, xG is the amount of expected goals a player generates from their play based off of the shots and opportunities that they had. This is the same for expected assists, xAG, which is the xG generated from a pass from the player that resulted in a shot. There is also the amount of progressive passes a player has, defined by FBref as the amount of completed passes that move towards the opponents goal at least ten yards from the balls furthest point in the last six passes, or any completed pass into the offensive penalty area, excluding any passes within 40% of the players defensive half of the field. Like progressive passes, another statistic that was analyzed was a players progressive carries, which are any carries of the ball that move the ball towards the opponents goal line, or any carries into the offensive penalty area, from which the player carried the ball a minimum of ten yards from its furthest point in the last six passes, excluding any carries which end in the entirety of the players defensive half of the field. The last type of more advanced statistics that were taken into account in this analysis were a player's shot creating actions and goal creating actions. A shot creating action is defined as offensive actions that directly lead to a shot, such as passes, take-ons and drawing fouls. This shows the total number of shots a player was able to create in a season, and the secondary statistic shot creating actions per 90 shows the average amount of shot creating actions a player has during ninety minutes of a game. Likewise, goal creating actions are defined as offensive actions that directly lead to a goal, with the same measures as shot creating actions that could lead to a goal. Furthermore, goal creating actions per 90 shows the average amount of goal creating actions a player has per ninety minutes of a game. Using these more advanced statistics gives the ability to gauge more accurately the impact that a player has on the field, which can be difficult to do with a pure statistical analysis. All that a player brings to the game cannot be completely quantified, such as their impact as a leader or physical attributes, or certain

actions that do not result in a goal or something that can be captured statistically. This is a limitation of any statistical analysis within the sport of soccer, and is an aspect that will be built upon further.

Before getting into the analysis of the independent variables that have a direct effect on the dependent variable of a player's market value, understanding the importance of the control factors that have a preliminary effect on the output of a player is essential. As previously stated, the control factors that were initially used were the teams market value that a player is a part of, the players age, and where the players team finished within their league. The aim of these is to accurately measure the strength of the players team as well as eliminate age bias towards their market value.

```
. reg marketvalueatendofseasonm teammarketvaluem
```

Source	SS	df	MS	Number of obs	=	89
				F(1, 87)	=	29.63
Model	12107.5102	1	12107.5102	Prob > F	=	0.0000
Residual	35554.4898	87	408.672296	R-squared	=	0.2540
				Adj R-squared	=	0.2455
Total	47662	88	541.613636	Root MSE	=	20.216

marketvalueate~m	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
teammarketvaluem	.0394867	.0072546	5.44	0.000	.0250675	.0539059
_cons	11.77868	4.692272	2.51	0.014	2.452283	21.10508

Source: Author's Calculations

In this table of the regression between the players market value at the end of the 2022/23 season and their teams total market value, the team market value is significantly correlated with how much a player is worth. As team market value increases, the player's market value tends to rise as well, with a range between 2.5% and 5.4%. This does not mean that just because a player is on an expensive team that they will have a higher market value, but there is a statistical correlation between the two and it does have an effect.

```
. reg marketvalueatendofseasonm leagueposition
```

Source	SS	df	MS	Number of obs	=	89
				F(1, 87)	=	15.80
Model	7326.96951	1	7326.96951	Prob > F	=	0.0001
Residual	40335.0305	87	463.62104	R-squared	=	0.1537
				Adj R-squared	=	0.1440
Total	47662	88	541.613636	Root MSE	=	21.532

marketvaluea~m	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
leagueposition	-1.502814	.3780285	-3.98	0.000	-2.254187	-.7514413
_cons	47.28236	3.943071	11.99	0.000	39.44508	55.11964

Source: Author's Calculations

League position was equally significant, and shows a negative correlation representing that the lower a team finishes in the league, it tends to correlate with a lower market value for the player. However, one aspect of this control factor is the similarity between team market value, and in most cases this factor was removed as the team market value encapsulated in full what the finishing position in the league showed.

```
. reg marketvalueatendofseasonm age
```

Source	SS	df	MS	Number of obs	=	89
				F(1, 87)	=	4.26
Model	2225.94367	1	2225.94367	Prob > F	=	0.0419
Residual	45436.0563	87	522.253521	R-squared	=	0.0467
				Adj R-squared	=	0.0357
Total	47662	88	541.613636	Root MSE	=	22.853

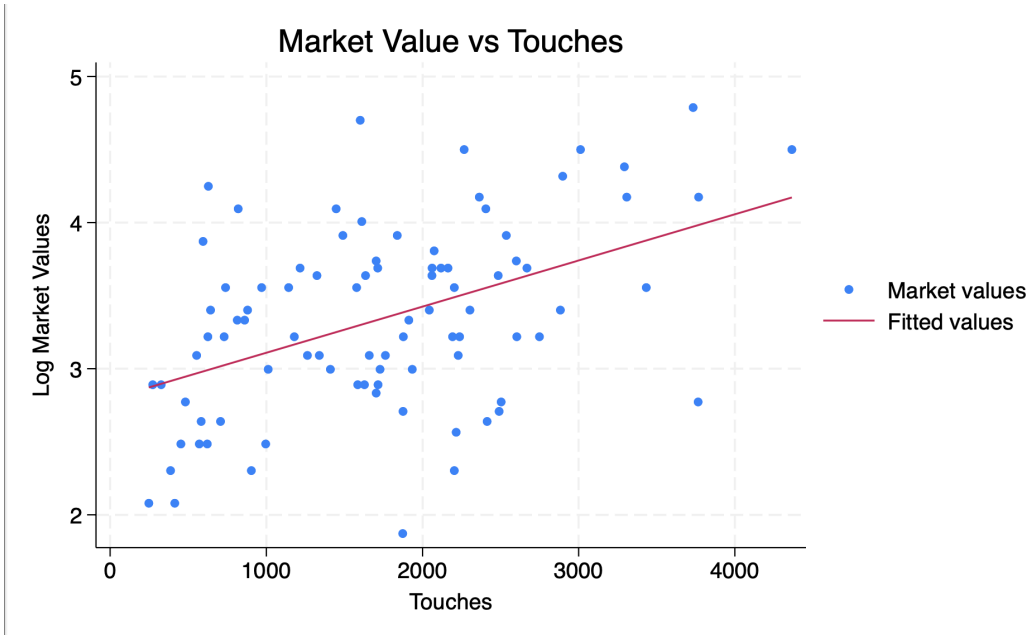
marketvalu~m	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
age	-1.595659	.7729005	-2.06	0.042	-3.131882	-.0594352
_cons	73.6026	19.09468	3.85	0.000	35.64985	111.5553

Source: Author's Calculations

The last control factor being age has an interesting relationship with player market values. In this table and individual regression we can see that age is less significant than team market value and league position. Like league position, there is a negative correlation between the two variables, indicating that with higher age, market values tend to go down. Age is less significant in this regression as it is the only factor that is being accounted for, and there are a number of older players that have high market values. In other regressions where age is a control factor, rather than the independent variable here, it is extremely significant, having a p-value of 0.00 showing its importance. Age and team market value are the main controls for this statistical analysis. With these controls, we will more accurately be able to see which statistics purely have a significant impact on player market values. It is important to not overlook the importance of these control variables and the effect that they do have, but the goal of this analysis is to look past these controls and determine which clear soccer statistics have significant value.

The first aspect of the game that will be a part of this analysis is looking into a player's quality while on the ball. The statistics that fall into this category are ones such as total number of touches, pass completion percentage, progressive carries, and more. The importance of these statistics is clear, and is certainly an aspect of the game that a team looks for in a player.

The first statistic we will look at is the total amount of touches that a player had within their season and its comparison with their market value. This statistic shows how often a player is able to get on the ball, with the underlying factor being that the higher amount of touches the player has the more impact they have on the game.



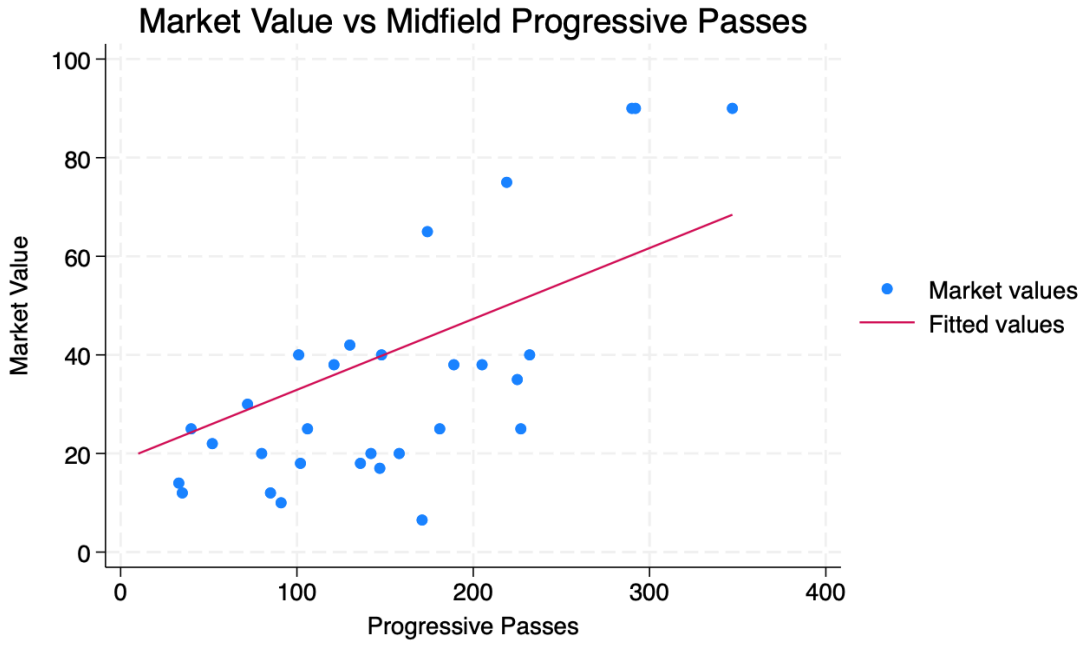
Source: Author's Calculations

As we can see there is an upward trend in the correlation between player touches and their market value. Even though the statistic of touches was significant in its regression against market value, the percentage that it increases a players value was tiny, indicating that it is not the one of the stronger factors, but it does have an effect. The comparison shows that there are multiple players who have lower market values, but have an equal amount of touches compared to players who have higher market values. As we move upwards, this starts to become negated showing the correlation between the two variables. But the fact remains that smaller clubs are able to benefit from finding such players with low market values and equal amount of touches, possibly resulting in more impact on the game. This statistical significance remains true if we break the players up into their positional groups, with an almost equal amount of impact on the percentage change in market values. However, this percentage change is relatively small compared to other statistics, thus implying that there is not too strong of an impact. A great

example of this is Erling Haaland. Haaland had a total of 957 touches in 2022/23 as reported by FBref, significantly less than the majority of players in this sample. Yet, Haalands market value was still exponentially higher than those with triple the amount of touches, indicating that his value lay within other statistical categories, with this being the same for many other players.

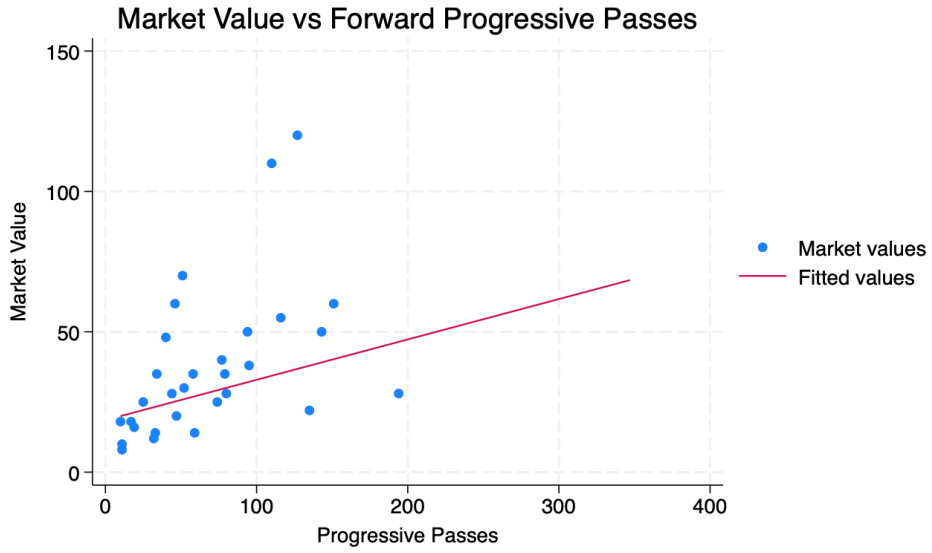
The category of progressive passes and carries has a similar impact as the amount of touches a player has. However, these two statistics have more offensive bias within their nature, as for the exclusion of the amount of passes within the players defensive half. Hence, there was no surprise when the regression for both progressive passes and carries was not statistically significant for the position group for defenders, and surprisingly only progressive passes were statistically significant for midfielders and not carries. Therefore for the analysis of these two categories it will mainly focus on forwards.

First looking at progressive passes, there is clear statistical significance for both forwards and midfielders. Progressive passes is an offensive statistic that gives insight into the ability of a player to create opportunities with their passes; to show how effective they are at breaking the lines and moving the ball forward. As previously mentioned, the progressive passes statistic regression was both significant for midfielders and forwards.



Source: Author's Calculations

We are clearly able to see the upward linear trajectory between midfield player market values and the amount of progressive passes that they have. Once again, however, there are still multiple players who escape this threshold, and have only a marginal difference in total progressive passes compared to players with much higher market values.

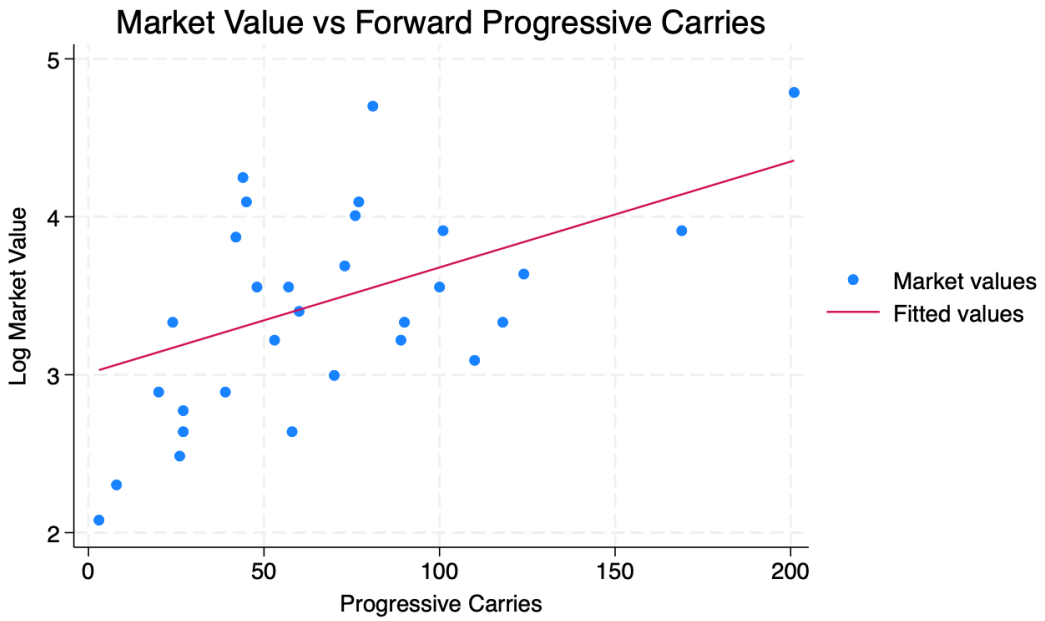


Source: Author's Calculations

Forwards have somewhat of a similar story, but there is evidently less variation between players. The outlier player here is Fulham forward Alex Iwobi, who has seen his market value fluctuate in recent years as reported by Transfermarkt.us. Iwobi is an example of a phenomenal addition for Fulham. Fulham were promoted to the premier league in 2022/23, and added Iwobi during the January transfer window, picking him up from Everton for a price of €25.7 million. That season, Fulham finished in tenth, with Iwobi providing six goals and two assists - along with 136 progressive passes - for the club in the current year helping maintain Fulham's place within the premier league.[71] Progressive passes is a good example of a telling statistic that smaller clubs can take advantage of with finding players for low market values with high potential output. Even with its evident positive correlation with market values, there are still reasonably priced players who have high outputs in this statistic.

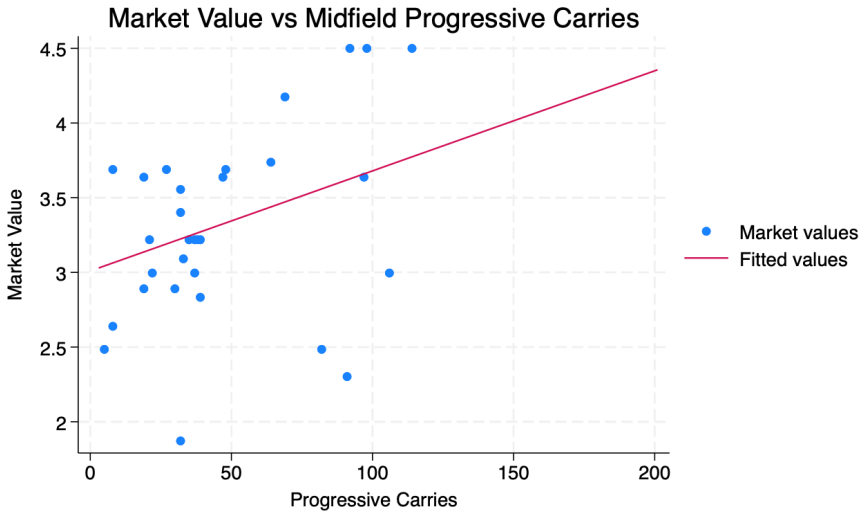
Progressive carries were also significant for both forwards and midfielders but not the defender group. This has to do with the limitations of the statistic, where any potential progressive carries within the defensive half are excluded. Nonetheless, there are still many takeaways from the regression analysis of progressive carries. This statistic gives into the players ability to move the ball themselves, rather than have to rely on completing a pass to another teammate. The ability to drive into the offensive part of the pitch and create chances is certainly something a club would like to have with any player that they acquire.

[71] "Premier League Live Scores, Stats & Blog: 2023/24." *Premier League*, www.premierleague.com/matchweek/12299/table . Accessed Apr. 2024.



Source: Author's Calculations

There is an extremely clear upward correlation between forward market values and progressive carries. The extreme outlier in this graph is Arsenal's Bukayo Saka, who had 201 progressive carries for the club in the 2022/23. Saka at the end of that season had a market value of €120 million, which can also be attributed to multiple other statistics that he is a leader in which will be touched upon later.



Source: Author's Calculations

Midfielders have a less linear spread than the forward positional group does. What stands out is the equal number of midfielders who have high and low market values, and high amounts of progressive carries. Taking away those outliers, it is clear that progressive carries is not a statistic that has a lot of weight in determining the market value for a midfield player, even though it is surely an aspect of the game that a club would look for. This has to do with the potential output that comes from these progressive carries, which leads into the next statistical category.

Physical output is what any club would chase after with obtaining a player. When all is said and done, the only statistic that matters is the score at the end of the game, and the amount of points the team accumulated at the end of the season. This is represented in the increased statistical significance in variables that lead to the accumulation of goals for the club. Clubs need to understand which statistic represents the most possible goals for their respective side, and there are a few that have statistical significance. Other than the obvious total amount of goals and assists a player has, shot creating actions and goal creating actions are two of such statistics that give way into the physical output of a player.

To start off, in order to score goals players need to be able to generate shots. As stated previously, a shot creating actions is defined by FBref as offensive actions directly leading to a shot, such as a pass, dribble, or drawing a foul. In the table below, the regression between goals and shot creating actions shows that the statistic is significant in the correlation with the amount of goals scored by the player. This emphasizes the importance of a player's ability to generate shots during a game.

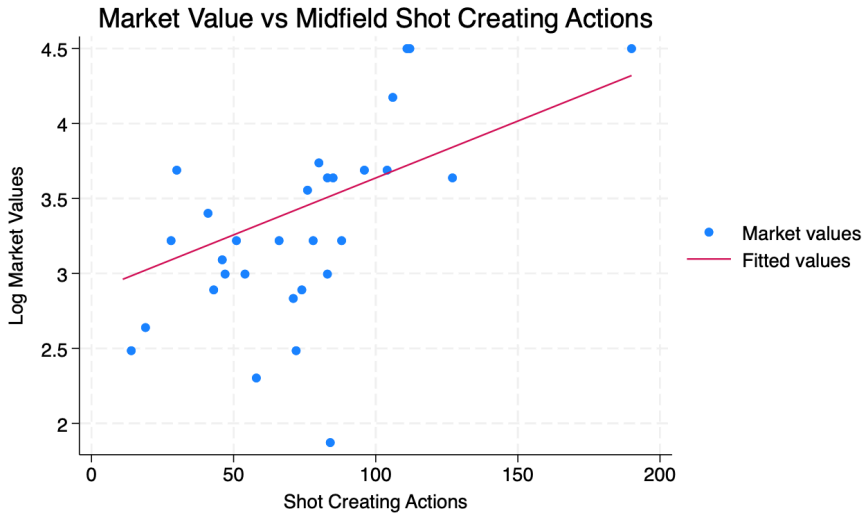
```
. reg goals sca
```

Source	SS	df	MS	Number of obs	=	89
				F(1, 87)	=	49.11
Model	814.86305	1	814.86305	Prob > F	=	0.0000
Residual	1443.54144	87	16.5924304	R-squared	=	0.3608
				Adj R-squared	=	0.3535
Total	2258.40449	88	25.6636874	Root MSE	=	4.0734

goals	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
sca	.0728494	.0103953	7.01	0.000	.0521875	.0935113
_cons	.8499588	.7669669	1.11	0.271	-.674471	2.374389

Source: Author's Calculations

An interesting aspect of this statistic is that it is more statistically significant for the regression between the amount of goals scored and shot creating actions for midfielders than forwards, with a higher percentage change within its correlation. This is the same in the regression between player market values and their shot creating actions, showing within the midfielder group a potential correlation between offensive output and market value.

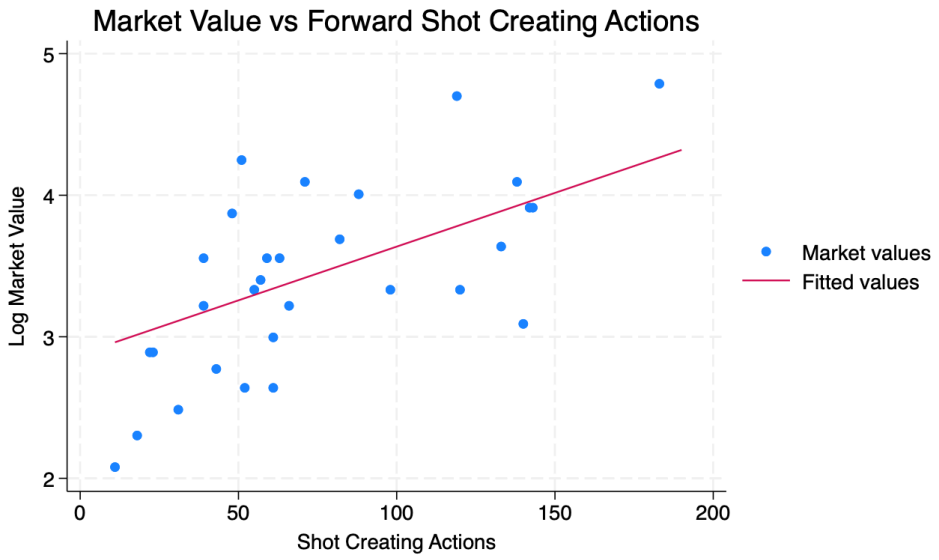


Source: Author's Calculations

The positive linear correlation between the two variables is very evident within the midfield positional group. This graph has one very noteworthy outlier with a drastically lower market

value then other players with similar amounts of shot creating actions, with that player being Liverpool's recent addition Wataru Endo. Endo was acquired by Liverpool from a small market value team within the Bundesliga in Germany VFB Stuttgart. Liverpool paid a price of just €20 million for the Japanese midfielder, despite his reported market value of the time being a low €6.5 million. Endo is a thirty year old defensive midfielder, not from one of the high demand countries that have been shown to produce high market values for players. This clearly had an effect on the market value of Endo, as he had significant impact in various statistical categories that are being examined here. Looking at the amount of shot creating actions Endo generated, he was not far off the amount that players with much higher market values produced. Liverpool were able to find the player for a low price, and made sure that they signed him while outspending his market value by almost €14 million. If smaller clubs are going to be able to continue to compete with the likes of Liverpool and other large market clubs, finding players like Endo is going to be essential. Endo has been a key player for Liverpool since his transfer. As reported by FBref, he has played in thirty-eight matches, starting thirty of those. Even for a player with an initial low market value, he is showing that he can make an impact for the biggest teams, as Liverpool currently sit third in the premier league and have been challenging for the title all season long.[72]

[72] "Premier League Live Scores, Stats & Blog: 2023/24." *Premier League*, www.premierleague.com/matchweek/12299/table . Accessed Apr. 2024.



Source: Author's Calculations

The forward positional group had a clear positive linear correlation with the amount of shot creating actions each player generated in comparison with their market value. However, an interesting aspect of this regression was that the shot creating action variable was not statistically significant in comparison with forward players market values. Even though we are still able to see a positive correlation, there are multiple players with high market values that generate low amounts of shot creating actions. One such player is Newcastle's Alexander Isak. Even though Isak in the 2022/23 season was able to generate eleven goals, he only logged fifty-one shot creating actions. There are many factors that can be used to explain this, such as Isak being more of a central striker, whereas players with higher shot creating actions tend to play more on the wing. This indicates that shot creating actions is not the best statistic in determining a forwards market value, as various forwards obtain output in a more clinical fashion. There is still a benefit in using this statistic nonetheless, as it is evident that the players with the highest market values do generate high amounts of shot creating actions. Having an understanding of both sides of this statistic can give valuable insight to the value of a player.

Goal creating actions is naturally the next step from shot creating actions. This statistic more clearly shows the impact that a player has in generating goals for their team. To no surprise, the correlation between player goals and assists compared to their goal creating actions was extremely significant, with a high percentage increase showing the high correlation between the two. It varies whether the total amount of goals and assists a player has is either equal to or different to the amount of goal creating actions they have, with it not being a linear amount that have either higher or lower total goals and assists to their goal creating actions. This shows the intricacies of the statistic, and leaves a lot to be gained from analyzing it for players. Goal creating actions was only significant for the forward positional group in comparison to the market values of the players. This emphasizes the importance for the forward position to create goals, and highlights the less need for midfielders and defenders to have high numbers in such statistical categories.

```
. reg lnmarket gca age teammarketvaluem
```

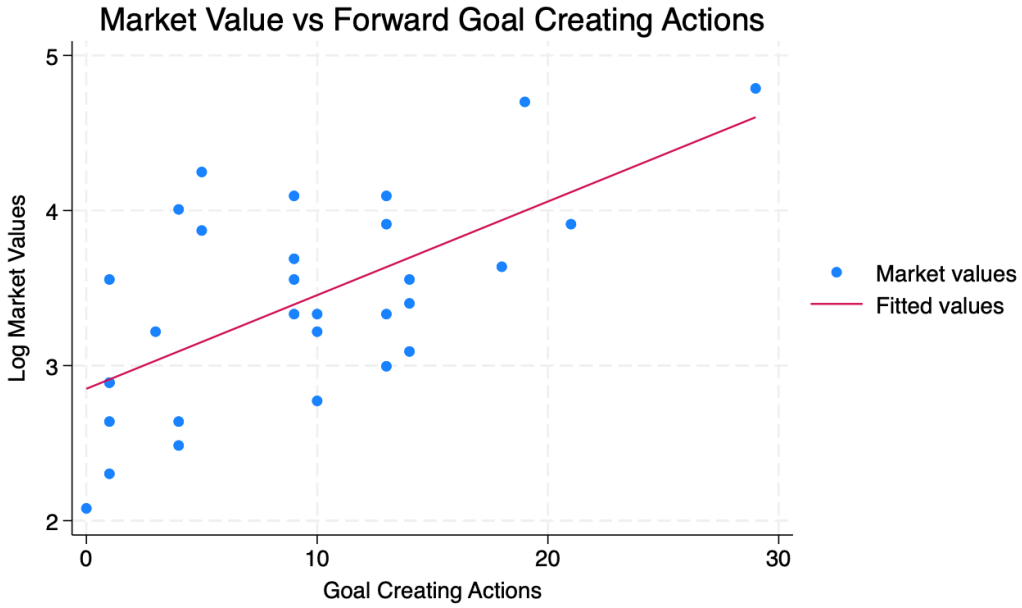
Source	SS	df	MS		
Model	15.6937412	3	5.23124706	Prob > F	0.0000
Residual	20.1323929	85	.236851681	R-squared	0.4381
Total	35.826134	88	.407115159	Adj R-squared	0.4182
				Root MSE	.48667

lnmarket	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
gca	.0397008	.0091177	4.35	0.000	.0215724	.0578292
age	-.0378849	.0165958	-2.28	0.025	-.0708818	-.004888
teammarketvaluem	.0010649	.0001756	6.06	0.000	.0007157	.001414
_cons	3.391759	.4248871	7.98	0.000	2.54697	4.236549

Source: Author's Calculations

Here in the regression analysis for goal creating actions and forward player market values, we are able to see the impact the statistic has on how forwards are valued. League position was

statistically insignificant as a control factor in this regression, and was omitted. What is shown here is the percent increase in market value for a player with higher goal creating actions, with a range of increase between 2.1%-5.8%. Age still has a negative percentage correlation, indicating that even though a player might have a higher number of goal creating actions, their market value is still affected by their age.



Source: Author's Calculations

Goal creating actions has a clear upward trajectory in relation to market value. Once again, Alexander Isak is an outlier player within this statistic, as he has the third highest market value in the forward position group, but only logged five goal creating actions in 2022/23. Looking into Isak over the year, he saw his market value increase from €30 million at the beginning of the year to €70 million at the end of the season. His move from Real Sociedad to Newcastle in August of 2022 coincided with his increase of market value. At the time, as reported by Transfermarkt.us, Isak had a market value of €30 million, but was signed for a fee of €70 million. Isak has upheld the price paid for him, now in the 2023/24 season logging himself

twenty one goals so far, however only recording six goal creating opportunities. This is another limitation of this statistic, as it does not take into account the amount of goals scored by the individual player themselves, which clearly has an immense impact on the market value for a forward player. This, like shot creating actions, does not take away from the insight the statistic gives; recall that within its regression it is statistically significant. It however does not completely encapsulate all of the goal creating actions that a player generates, but rather gives a narrower view into such actions, which would be beneficial for a club to have access to when looking to sign a new player.

Goals and assists are the statistics that immediately come to mind when analyzing any player. Players receive awards within their respective leagues for tallying up the highest amount of each respective statistic, implying the importance of being able to score high amounts and being able to provide for your teammates in order to win games. The Ballon d'Or, the award given annually for the best player in the world, has been awarded to a forward every year since 2006, with the exception of Luka Modric and Kaka who themselves are attack minded midfielders.[73] As previously discussed, even without a statistical regression we can see how goals and assists have an effect on player market values. It is impossible to deny that goals win games, and in order for a team to be successful they need to be able to produce offensively.

[73] Robert Wood, "List of the Ballon d'Or Winners." Topend Sports Website, first published July 2015, https://www.topendsports.com/sport/soccer/list-player-of-the-year-ballondor.htm, Accessed 30 April 2024

```
. reg lnmarket goals age teammarketvaluem
```

Source	SS	df	MS	Number of obs	=	89
				F(3, 85)	=	21.60
Model	15.4968013	3	5.16560044	Prob > F	=	0.0000
Residual	20.3293327	85	.23916862	R-squared	=	0.4326
				Adj R-squared	=	0.4125
Total	35.826134	88	.407115159	Root MSE	=	.48905

lnmarket	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
goals	.0436269	.0102965	4.24	0.000	.0231546	.0640992
age	-.0456789	.0165731	-2.76	0.007	-.0786307	-.0127271
teammarketvaluem	.0011042	.0001759	6.28	0.000	.0007544	.0014541
_cons	3.593743	.4188658	8.58	0.000	2.760926	4.426561

Source: Author's Calculations

In the general regression for all positional groups, goals are extremely significant towards player market values. What is also evident is that age is still significant and still has a negative correlation with player market values. Even if a player is still scoring high amounts of goals, their age still has a factor with their market value, with this regression showing a range of decrease between 1.3% to 7.9%, higher than the increase in market value for scoring goals, which has a range from 2.3% to 6.4%. Goals overall have an impact, but player market values are still held accountable in respect to the players age.

When breaking down the regression for goals into each positional group, there are slight differences in the impact age and total amount of goals scored for each group. For each positional group total goals scored was significant for player market values, even for defenders, showing the importance of the statistic. Firstly looking at the forward positional group, we are able to see the impact goals have as well as player age.

```
. reg lnmarket goals age teammarketvaluem if positiongroup==1
```

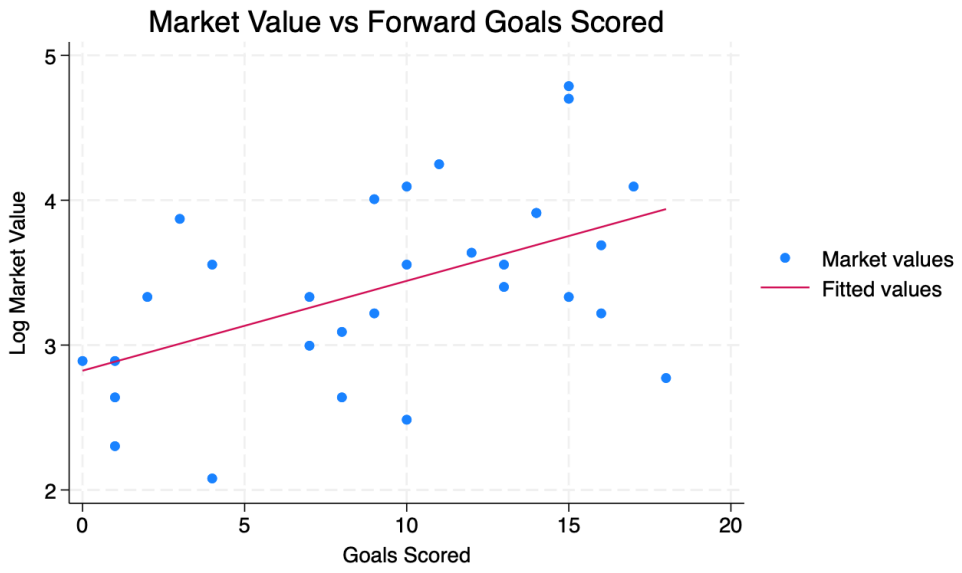
Source	SS	df	MS	Number of obs	=	30
				F(3, 26)	=	9.53
Model	6.71589085	3	2.23863028	Prob > F	=	0.0002
Residual	6.10527937	26	.234818437	R-squared	=	0.5238
				Adj R-squared	=	0.4689
Total	12.8211702	29	.442109318	Root MSE	=	.48458

lnmarket	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
goals	.059686	.0165447	3.61	0.001	.025678	.093694
age	-.0622363	.0283794	-2.19	0.037	-.1205709	-.0039017
teammarketvaluem	.0007011	.0003576	1.96	0.061	-.000034	.0014361
_cons	3.936235	.8168841	4.82	0.000	2.257105	5.615364

Source: Author's Calculations

Goals and age were both significant factors for forward players' market values. Team market value for the first time was not significant, indicating that if a forward is scoring a high amount of goals, they are going to be heavily sought after no matter what level of team they are playing on. Team market value is only slightly higher than the threshold for a statistic to be significant, showing that there is still possibly a slight uptick towards players who score goals for bigger teams, but nonetheless the fact remains that if a player is scoring their market value is going to rise.

The range for percentage increase for market value compared to goals was higher for the forward positional group in comparison to all groups to no surprise. What stands out is the percentage decrease for player market value in comparison to their age, with a range of 12%.



Source: Author's Calculations

The scatter plot for the forward positional group shows this dichotomy between goals and forward player values, evidently representing that goals is not all that makes up what goes into a forwards market value. As we can see, the spread of players within the scatter plot is varied, with the highest goal scorer in this sample having one of the lower market values. This player is Callum Wilson. Wilson was thirty years old during the 2022/23 season and played for Newcastle. Wilson's market value has been on the decline since 2019 when he was twenty seven. Despite having the third highest scoring season of his career, his market value has continued to decline. There are multiple possibilities for this decline, such as his age and the fact that Wilson plays behind previously mentioned Alexander Isak. Wilson currently has a market value of €13 million, reflective of the limited number of years he might have left of high scoring seasons. On the other side of the spectrum, the second highest goal scorer in this sample was Julian Alvarez, who scored seventeen goals for Manchester City in the 2022/23 season. Alvarez was twenty-two years old during that season, which was his first for City after moving from River Plate during the summer. Alvarez had a market value of €60 million at the end of the season, and has now

seen it increase to €90 million as of December, 2023 as reported by Transfermarkt.us. Just one goal difference between these two players, and a €77 million difference in market value. However, if we look back to Erling Haaland we are able to see the impact scoring goals has for his market value. Haaland scored fifty-two goals in the 2022/23 and had a market value of €180 million. However, Haaland only logged ninety-two shot creating action and nineteen goal creating actions. Even more surprising, Haaland racked up such a high tally of goals, while only having a total of 970 touches. To put this into perspective, Haaland scored a goal for about every nineteen touches that he took. Haaland is a pure example of a goal scorer, and the impact that that has on his market value is extremely evident.

```
. reg lnmarket goals age teammarketvaluem if positiongroup==2
```

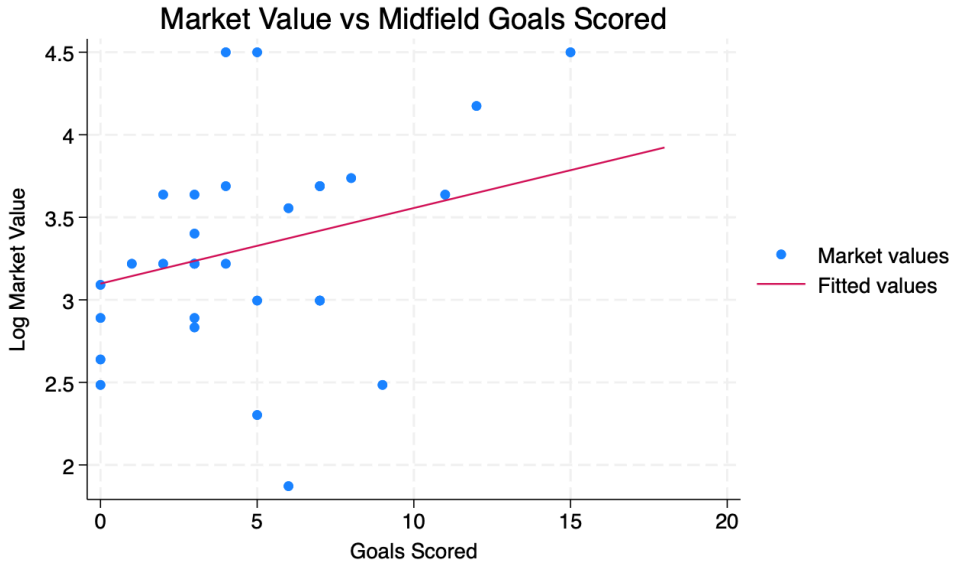
Source	SS	df	MS	Number of obs	=	30
				F(3, 26)	=	9.79
Model	6.28684763	3	2.09561588	Prob > F	=	0.0002
Residual	5.56665155	26	.214101983	R-squared	=	0.5304
				Adj R-squared	=	0.4762
Total	11.8534992	29	.408741351	Root MSE	=	.46271

lnmarket	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
goals	.068911	.0236914	2.91	0.007	.0202125	.1176094
age	-.0314717	.0318409	-0.99	0.332	-.0969217	.0339783
teammarketvaluem	.0013749	.0003033	4.53	0.000	.0007514	.0019983
_cons	3.052395	.7622579	4.00	0.000	1.485552	4.619239

Source: Author's Calculations

Total goals scored was also significant for the midfield positional group. An interesting aspect of the regression for the midfield positional group is that the percentage increase is higher for midfielders than it was for forwards, having a range from 2.0% to 11.8%. Age was even more insignificant in this regression, and team market value was significant. Team market value being

significantly correlated within this regression indicates that it does have an effect on midfield player market values in comparison to the amount of goals scored.

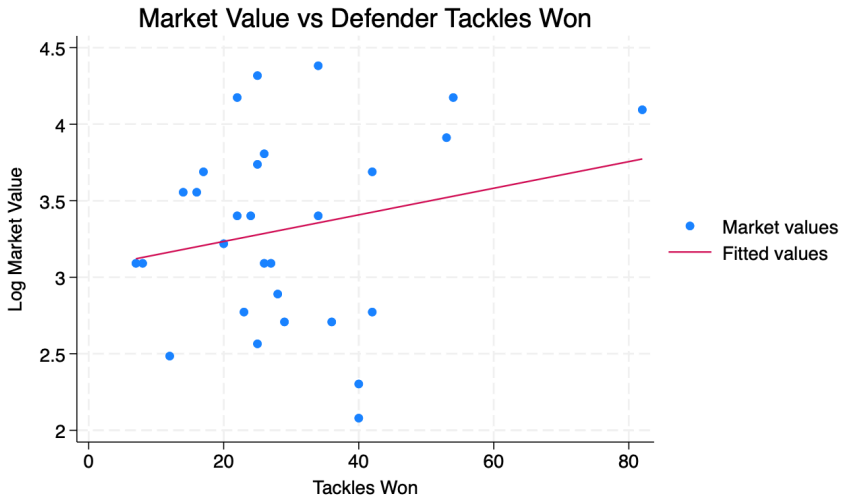


Source: Author's Calculations

The scatter plot for the midfield positional group does not have the clearest linear correlation between market value and goals scored. However, we are able to see multiple high value midfielders who do score high amounts of goals. Arsenal's Martin Odegaard was the midfielder in this sample who had the highest goal tally. Odegaard at the end of the season had a market value of €90 million, equal to the market value of now teammate Declan Rice, who scored just five goals in the 2022/23 season. For the midfield positional group, there is clear evidence that market value is not completely reflective of the amount of goals a midfield player scores, hence there being distinct names given to positions within the general midfield positional group, such as central defensive midfielder or attacking midfielder.

A regression analysis for defensive statistics proved to be a challenge, as for the defender positional group no defensive statistics were significantly correlated with defender player market

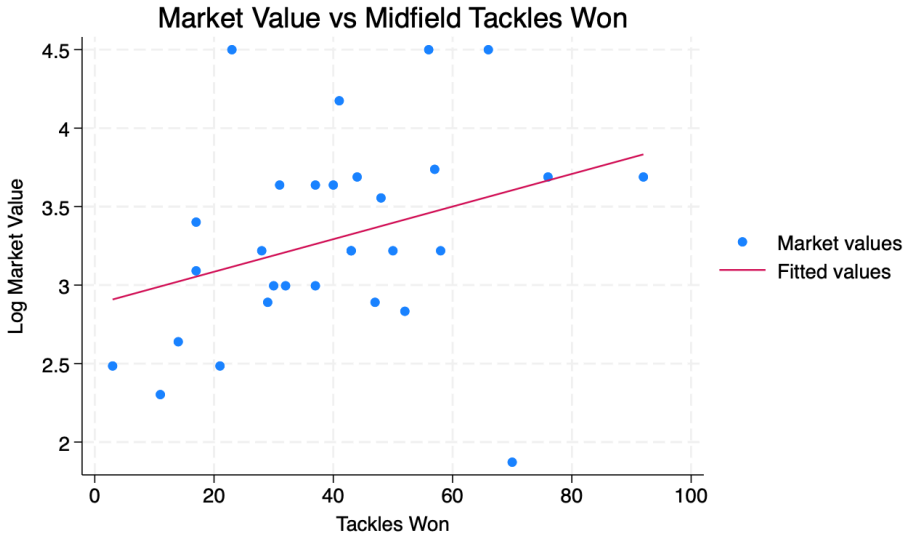
values. The sample showed a scattered range for defenders on the amount of tackles, clearances, interceptions, and blocks generated throughout the season in comparison to their market values.



Source: Author's Calculations

Firstly looking at total tackles won by defenders, there is a slight upward trend in the correlation between tackles won and player market values, but within the greater majority it is quite spread with player market values that have a near equal amount of tackles won. Cristian Romero had the most tackles by some distance in this sample, winning eighty-two tackles in the 2022/23 season and having a market value of €60 million. Within the greater majority, we see a much wider spread. The player with the lowest market value for the defender positional group was Santiago Bueno, who had a market value of €8 million at the end of the 2022/23 season, and generated forty tackles in that year. In comparison, the player with the highest market value was Ruben Dias who had a market value of €80 million at the end of the year, and won thirty four tackles. Clearly tackles do not encapsulate the full picture of what goes into a defender's market value. One of the greatest defenders of all time Paolo Maldini himself said "If I had to make a tackle

then I have already made a mistake."[74] We are able to see in this sample that tackles won is not necessarily reflective of defender market values, even though it is certainly an aspect of the game that a high quality player would want to have. There could be various different reasons for this, such as the one Maldini brought forth of not allowing himself to get into a situation where he had to win a tackle.



Source: Author's Calculations

The midfield positional group shows a slightly more clear correlation between tackles won and player market values. The regression analysis showed that the statistic was only slightly insignificant, as can be seen from the scatter plot with various high value midfield players having low amounts of tackles. As mentioned earlier, the midfield position group can be broken up into various sections, with attacking and defensive midfielders being included. Martin Odegaard is an example of this, where he is an attack minded midfielder thus he only won twenty-three tackles

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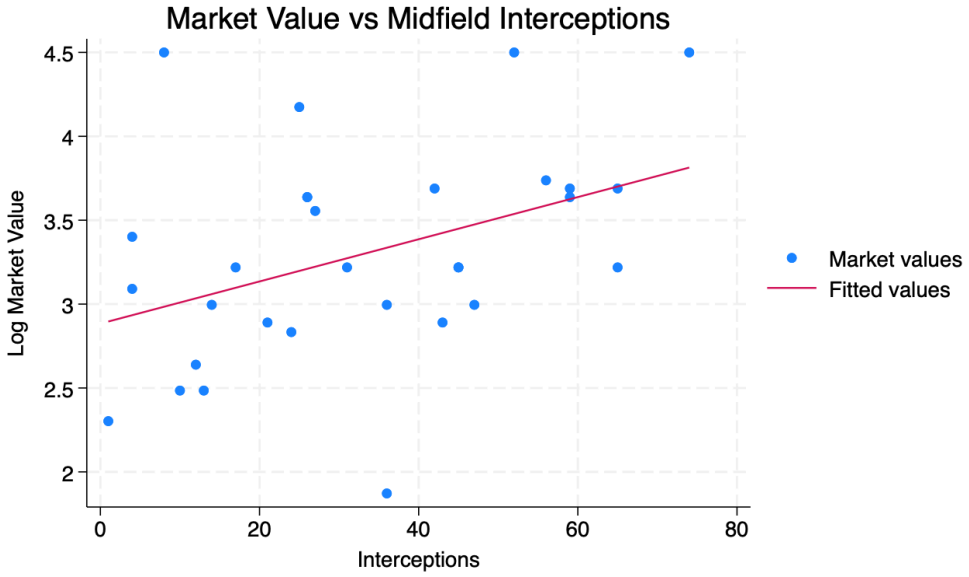
[74] Martin, Scott. "Tactical Analysis: Timeless Lessons in Defending from Paolo Maldini." *Total Football Analysis Magazine*, 24 Apr. 2022, totalfootballanalysis.com/article/tactical-analysis-timeless-lessons-in-defending-from-paolo-maldini-tactical-analysis-tactics.

in the 2022/23 season. The players with the highest amounts of tackles were all defensive midfielders, with Fulham's Joao Palhinha leading the way with ninety-two tackles with a market value of €40 million.

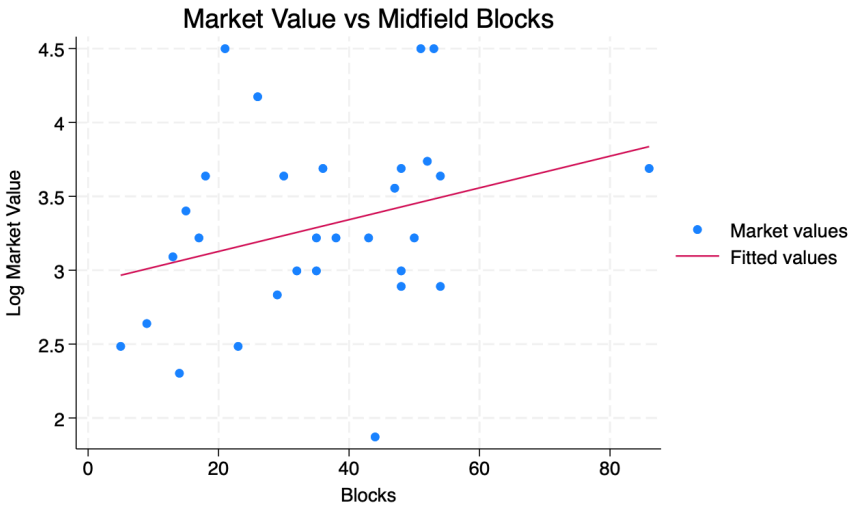


Source: Author's Calculations

Interceptions was the only defensive statistic that was significant in the regression analysis for midfield players. Declan Rice had the most interceptions in this sample for the midfield position group in the 2022/23 season, intercepting the ball seventy-four times. The scatter plot above shows the clear upward correlation for midfielder player market values and their total amount of interceptions. The two outliers who had high market values and a low amount of interceptions are both attack minded midfielders, Martin Odegaard and Alexis Mac Allister.

The remaining two defensive statistics, blocks and clearances, were both statistically insignificant in the regression analysis for both the midfield and defender positional groups.

Blocks did show an evident upward trend for the midfield positional group, as can be seen in the scatter plot below. Blocks were only slightly insignificant for the midfield positional group, hence there being a visible correlation between the two variables.



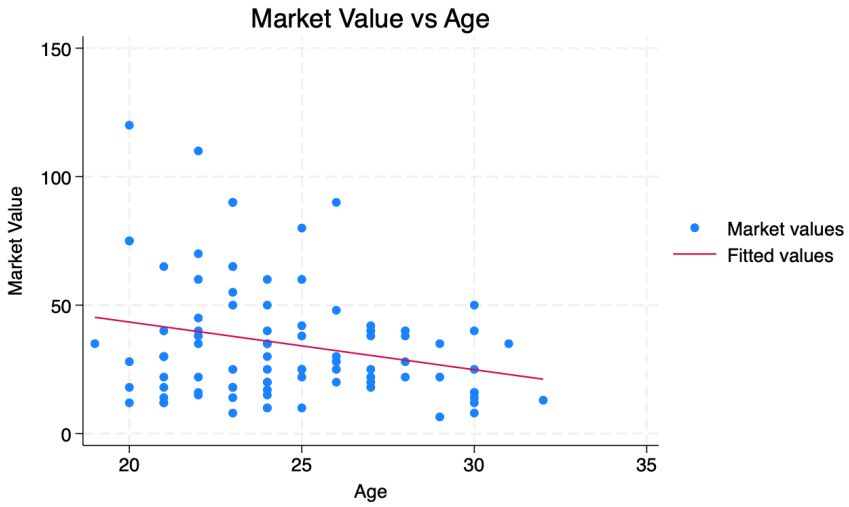
Source: Author's Calculations

The midfielder with by far the most blocks was Manchester United's Casemiro, who generated eighty-six blocks in 2022/23. Casemiro had a market value of €40 million, and has seen that number decrease with his age, with his market value as of December 2023 being €30 million.

It is clear that defensive statistics are not all that makeup the market value of a defender. There was some evidence of correlation between defensive statistics and midfield player market values, but what was also evident was the distinct difference between attack minded midfielders and defensive minded. Looking into the defensive minded midfielders, these defensive statistics gave valuable insight into their quality. Mixing these defensive statistics with significant offensive ones, such as possessive passes and touches, gives valuable insight into the valuation of a midfield player. For defenders, a pure statistical analysis is clearly not enough in order to determine a valuation of a player. Team market value, touches, and goals were the only statistics

that were significant in comparison to defender player market values. In order for clubs to be able to determine the price for defenders, taking into account the individual moments instead of the total amounts at the end of the season seems to be the best way for determining market value. This does not mean that the statistics analyzed here do not have value, rather for the defender positional group it does not completely capture what a player has to offer.

As we have seen throughout each statistics regression analysis, age was one of the most important factors when looking at a player's market value. Clearly, what goes into a player's market value is their potential future value.



Source: Author's Calculations

This is more than visible in the above scatter plot comparing player market values to their age, with the player with the highest market value being one of the youngest within the sample. This player is Bukayo Saka, who during the 2022/23 was a twenty year old forward player who scored a high amount of goals for a high market value team. On the other end, no player past the age of twenty-seven had a market value higher than €50 million. Younger players have a higher potential future value for clubs, hence their significantly higher market values. Kuper and

Szymanski would agree with this valuation of older players, as in their transfer market strategy they labeled older players as overrated. Looking into this statistical analysis, there were several older players who led in various categories, indicating that they still have value for clubs.

Overall we have seen the value of various statistical categories for the three positional groups that make up a soccer club. Along with the statistics covered in this analysis, there are even more that are available to a club in order to look into the quality of a player. How a club uses these statistics is extremely important to their transfer market strategy, and the importance of acquiring the right players for the right price cannot go understated.

For each positional group it was clear that there was a difference in significance for each statistic in comparison to the player market values within the groups. Forwards market values were heavily reliant on goals and age, whereas midfielders saw more significance with total touches as well as both offensive and defensive statistics. For the overall players, each statistic brought forth valuable information for various players with different levels of market values. Even with statistics that were found to be insignificant, those statistics still have value that can be used to determine the value of a player. This was extremely evident for the defender positional group, as all defensive statistics were insignificant in their regression analysis. This does not mean that it does not matter, for example, how many tackles a defender makes. Rather, it is the overall quality of the player that determines their market value. Evidently, there were players with low market values that generated nearly the same amount of totals as players with high market values. This is a net positive for the middle to lower level clubs, as this indicates that there is potential for them to acquire high quality players for reasonable prices. However, there is still the factor of having to compete in a pricing battle with the biggest clubs who are able to outspend those below.

This aspect of competition within the transfer market is not something that clubs have much control over. In any market, what affects the demand for any item is the price. As price increases, the demand for that item decreases, showing the natrual inverse relationship between the two.[75] One aspect that plays into the demand of a player is something that Kuper and Szymanski dove into, and that is the media. We saw this aspect with the success of Lyon, where the club did not have to worry about the media as they are located in a secluded area in France. A higher demand for a player is only going to drive up the price, so keeping the level of demand down is what is going to help combat the spending ability of bigger clubs. Knowing what statistics are significant and are influential to the success of a will give way into finding players that are of high quality and attainable at a reasonable price.

The soccer economy is a very niche market that has an interesting aspect as to what drives it forward. Income in this economy is not the driving force, rather it is the success within the competitions that clubs participate in that spending tries to bring forth. Clubs do not completely aim to make profits, hence the increased rules and regulations by Financial Fair Play rules that are based on the amount of revenue that a club brings in. This limits clubs from entering into administration, and acts as a control that makes clubs spend more wisely. There is still a clear dynamic between the supply and demand of high quality players, with it evidently causing the rise in prices. In this analysis there are clearly multiple factors that play into the demand of clubs, and what drive up the price of a player. Strategic spending and statistical analysis by clubs is what will allow for the market to become more competitive and equal, and limit the power of the biggest clubs in the world.

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[75] Pindyck, Robert S., and Daniel L. Rubinfeld. *Microeconomics*. Pearson/Prentice Hall, 2009.

CONCLUSION

Transfermarkt.us goes into how they generate their market values, listing the various factors that go into their pricing model. These factors include age, player performance on both club and national teams, level of the league they play in on both sporting and financial terms, their reputation, experience level, developmental and performance potential, general demand and trends in the market. There are also other variables that are taken into account, such as clubs desire to sell the player and aspects like contract length, but what is most interesting is the emphasis put on the general discussion between the people in their community that help determine the market value of a player. There is no concrete way to determine the price of a player in the soccer economy. As Kuper and Szymanski built on, what really matters is the amount of money a club is willing to spend on a player. Richer clubs are going to be more able to overspend on a player than a smaller club is. We saw this with various players in this analysis, such as Wataru Endo who had a market value of €6 million but Liverpool paid a total of €20 million for the player.

The sustainability of the soccer economy is reliant on the ability of all levels of clubs to remain competitive with one another, on and off of the field. There was a clear separation between the biggest clubs in the premier league and those below in the 2022/23 transfer market. Evidently, the biggest clubs are becoming more willing to spend large sums of money to acquire the biggest players. Overspending is becoming more of a normality within the transfer market. The ten most expensive transfers in the 2022/23 season all had transfer sums that exceeded the reported market value of the player, with nineteen of the top twenty also having transfer sums that exceeded player market values. The logic of pricing within the soccer transfer market is a

complicated phenomenon where there is no real trend. Negotiations and competition have a heavy influence on the final amount that clubs come to when buying and selling a player. This was a major point brought forth by Kuper and Szymanski, where the end value of a player with all things considered comes down to how much the owner of the club allows the general manager to spend on a player. This innately creates a divide between the richest clubs in the world compared to those below as not every club has an equal amount of spending power.

Financial Fair Play has attempted to combat this issue, but there is still much left to do in order to decrease the amount of inequality within the soccer economy. As reported by UEFA, the goal for spending regulations is to limit club expenses to not exceed 70% of what they generate in revenue. This still has an underlying level of inequality however, as all levels of clubs bring in different totals in revenue. In 2023, Manchester United generated €643.9 million in revenue,[76] whereas Luton Town generated €18.4 million in revenue.[77] Once Financial Fair Play reaches its goal of 70%, then that would have allowed Manchester United to spend €450.73 million in the transfer market, and Luton Town €12.88 million. Evidently, there is immense inequality within the transfer market, and there is only so much Financial Fair Play can do to help combat this.

Clubs need to find ways in which they can remain competitive within the transfer market. Mixing an effective transfer market strategy and adequate financial backing is the only way for clubs to be able to get to the top. In this statistical analysis, it was found that various statistics are significant in relation to player market values. The best players have an accumulation of a vast amount of statistical categories that were significant in the regression analysis with market values. Each positional group had different statistical categories that were significant to what

[76] "Annual Report 2023 – Manchester United." *Manutd.Com*, 2023, ir.manutd.com/financial-information/annual-reports/2023.aspx.

[77] O'Conner, Kieron. "Luton Town Finances 2022/23." *Luton Town Finances 2022/23*, The Swiss Ramble, 5 Feb. 2024, swissramble.substack.com/p/luton-town-finances-202223.

affected market values. Even so however, the variables that were found to be insignificant still hold value to learning of the quality of a player. Clubs need to be able to use all available data in order to gauge if they should acquire a player. This analysis showed that there are statistical categories that can be taken advantage of in order for smaller clubs to find high quality players that have low market values. This is one way for clubs to remain competitive within the soccer economy, as having an understanding of the dynamic between player demand and what goes into their price can allow for clubs to be able to remain competitive with the biggest clubs in the world. Smaller clubs have to work with what they have in order to be able to challenge the top clubs. This is an accumulation of what was brought forth in this analysis as well as outside aspects touched upon by other works of literature, especially factors that Kuper and Szymanski in *Soccernomics* brought forth. Acquiring the right player is one thing, but helping that player integrate into the squad and new environment is essential. Knowing what innate biases all scouts have and using the knowledge of them to see through it will allow clubs to be able to find the best possible options.

The soccer economy has grown immensely in just the last couple of years. There have been record breaking moves that have changed the landscape for pricing within the market of the soccer economy. The current state of the soccer economy is not an equal playing field. Looking at the premiere league, Manchester City have won the title five times in the last six years, and currently are in a favorable position to win it again. Looking at the bottom of the table in 2022/23, all three teams that were promoted currently sit in the relegation zone and are potentially going to be sent right back down. This is not a state that is competitive and is entertaining for the most important agents in soccer - the fans. It is difficult to determine what can be done to help combat this issue. Looking at American sports, many leagues have various

salary caps that help limit the amount that teams can spend on their players, aiming to level the playing field for all teams involved. At the time of writing, the clubs within the premier league have just begun the process of voting to implement a spending cap.[78] This will make it more possible for smaller clubs to continue to compete with the biggest clubs, as the soccer industry will only continue to grow. This is exactly what this analysis aimed to bring forth, as the level of spending within the soccer economy is evidently unequal.

Even still, with this trajectory it is not clear if a team like Leicester City will ever win the premier league again. We may see similar Cinderella stories in cup competitions, like the Champions League or FA Cup. Coventry City this year were semi-finalists in the FA Cup, and came close to knocking out Manchester United to reach the final, only to lose on penalty kicks. This may be the future for smaller clubs being able to challenge for trophies, as cup competitions have less games, rather than the thirty-eight game long season for the premier league that requires the utmost consistency and excellence. But within the premier league, it does not seem that a small club will be able to challenge for the coveted trophy. Keeping competition fresh and open to all is what will allow the world of soccer to remain competitive and entertaining, rather than seeing the same teams win over and over again. The world of soccer will continue to grow, and so will the teams within it. Teams will have to continuously update how they act within the transfer market to keep up to date with the trends within the soccer economy. If not, fans will certainly push for the world of soccer to get back to what it once was, like how fans revolted against the creation of the Super League. Soccer is a world for all, and keeping it that way will allow for it to thrive.

[78] Scott, Laura, and Simon Stone. “Premier League Spending Cap: Clubs Vote in Favour of Developing Plans.” *BBC Sport*, BBC, 29 Apr. 2024, www.bbc.com/sport/football/articles/cpegd3dy8j7o.

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