The professional careers of retired football players

Ana Sofia Alvarez Manso Viriato Ramos

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Supervisors: Prof. António Sérgio Constantino Folgado Ribeiro

Prof. Francisco Miguel Garcia Gonçalves de Lima

Examination Committee

Chairperson: Prof. Miguel Simões Torres Preto

Supervisor: Prof. António Sérgio Constantino Folgado Ribeiro

Member of the committee: Prof. Hugo Miguel Fragoso de Castro Silva

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Declaração

Declaro que o presente documento é um trabalho original da minha autoria e que cumpre todos os requisitos do Código de Conduta e Boas Práticas da Universidade de Lisboa.

Declaration

I declare that this document is an original work of my own authorship and that it fulfills all the requirements of the Code of Conduct and Good Practices of the Universidade de Lisboa.

Resumo

A carreira de jogador profissional de futebol tem uma menor duração que a maioria das carreiras e os jogadores reformam-se com uma idade jovem. No entanto, contrariamente à crença comum, nem todos os atletas reformados conseguem depender financeiramente dos lucros da carreira desportiva durante o resto da vida, e alguns atletas reformados seguirão uma atividade profissional secundária, como empregados assalariados ou empreendedores. O objetivo desta dissertação é estudar como características de capital humano e da carreira dos jogadores influenciam a probabilidade de regressar ao mercado de trabalho após reforma do futebol, e no caso de regressarem, a escolha entre se tornarem empreendedores ou empregados. Utilizámos dados dos anos 1991 a 2017, recolhidos da base de dados Quadros de Pessoal, e aplicámos modelos Logit utilizando o software Stata. Os resultados sugerem que um aumento no total de salários durante a carreira de jogador diminui a probabilidade de seguir uma carreira secundária, enquanto uma idade da reforma superior e uma carreira de jogador mais longa a aumentam. Em relação à probabilidade de seguir empreendedorismo, a idade da reforma, o intervalo entre a reforma e o regresso ao mercado de trabalho e o total de salários, mostram uma relação positiva com esta probabilidade. Concluímos que ter um trabalho adicional durante a carreira atlética traduz-se em maior probabilidade de regressar e que experiência empreendedora aumenta a probabilidade de se tornar empreendedor. O efeito da educação não é significativo para a decisão de regresso, mas ter educação secundária aumenta a probabilidade de regressar como empreendedor.

Palavras chave: reforma de carreira desportiva, reemprego, empreendedorismo, modelo Logit, modelo escolha discreta, futebol profissional

Abstract

Professional football player careers have a shorter duration than most common careers and players retire at a young age. However, contrarily to common belief, not all retired athletes can financially rely on their revenues from sport for the rest of their lives, and some retired players will pursue a secondary professional activity, either as a salaried employee or as an entrepreneur. The goal of this dissertation is to study how players' human capital and career characteristics influence the probability of returning to the labour market upon retiring from football, and in the case of doing so, the choice of becoming an entrepreneur versus an employee. We used data from the years of 1991 to 2017, provided by the dataset Quadros de Pessoal, and applied Logit models using the Stata software. The results suggest that an increase in the total amount received in wages as players decreases the probability of pursuing a secondary career, while a higher retirement age and a longer player career increases it. Regarding the probability of pursuing entrepreneurship, the retirement age, the gap between retirement and reemployment and the total of the wages, all show a positive relation with this probability. We conclude that an additional job during the athletic career translates in higher chances of returning and experience as entrepreneur increases the probability of becoming one. The education level effects are not significant to the return decision but having secondary education increases the chances of becoming an entrepreneur.

Key words: sports career retirement, reemployment, entrepreneurship, Logit model, discrete choice model, professional football

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1. Introduction

Professional athletic careers have a very limited time span in comparison with other careers. While the retirement age is around 65 years old for most common professional occupations, professional athletes often terminate their careers, voluntarily or involuntarily, before the age of 30.

Contrarily to common belief, not all retired athletes can financially rely on their revenues from sport for the rest of their lives. Even the best paid players are not able to manage their finances to stay comfortably retired, despite their really high remunerations. In 2016, Forbes (2016) concluded that NFL, NHL, MLB, and NBA players earned, on average, more than 1 million dollars in that season. Nevertheless, 60% of NFL athletes go bankruptcy within only five years from retirement, while for 78% of NBA athletes, it only takes two years to be under financial stress (Torre, 2009). Therefore, when the athletic career comes to an end, former athletes might need to find an alternative professional occupation, either as a salaried employee or as an entrepreneur or investor.

Finding an alternative occupation after the conclusion of their athletic careers may be challenging once they might not prepare themselves for when this moment arrives. Due to the high workload and time constrains that the professional sport career entails, many athletes are not able to continue their formal education for the same time and with the same effort as the regular individual and pursue other interests and occupations outside of sports. So which human capital and career characteristics, such as the wage received as a player, entrepreneurial experience or the retirement age, do influence the probability of returning, or not returning, to the labour market, and the choice of returning as entrepreneur or employee?

1.1. Problem Definition

The transition out of professional sports is very distinct from the regular retirement. Professional athletic careers have a very short time span and athletes start and terminate their careers at a young age, where the majority of workers in other occupations are still in the beginning of theirs (Pearson & Petitpas, 1990). However, retiring from sports does not mean a definitive cessation of occupational activities (Fernandez, Stephan, & Fouquereau, 2006) and former athletes might need to re-entry the job market and pursue another career, either into the sports world or in a completely distinct sector. However, many factors might difficult this process and restrict the available opportunities.

Conditions of top-performance sport practice have been changing through the last decades. There has been a growing commercialization and professionalization of modern high-performance sports, which has resulted in an increase in the training volume and competitive frequency. NBA clubs, for instance, play a minimum of 82 games in a period of just 6 months, while the champion can play up to 110 games in that period. Top athletes' careers demand major time and energy commitments and usually take a parallel course to the period of educational and professional qualification, which difficult educational attainment during the athletic career (Conzelmann & Nagel, 2003). In addition, athletes are not usually

encouraged by their clubs and teams to pursue other interests, educational or professional occupations during the course of their sporting careers, since we can expect that players should only be focused and engaged in the sport, and that having external occupations might interfere with their performance. Although focusing only on the athletic career can improve performance, it can also impact the adaptation process and pose difficulties when looking for an alternative occupational activity upon sports retirement. At the end of their sports careers and after years of investment, the skills acquired by the players are very industry specific. They might not be enough valued and not have much applicability outside of the sports field, which can restrict their post-playing opportunities and make the transition period harder.

On the other hand, the increase in the public interest and media coverage of top-performance sports has led to a rise of the incomes and popularity of the most successful athletes. Some of them are able to achieve a high social status, earn enough money during the athletic career and might be able to manage it cleverly, in order to live comfortably in retirement and never having to work again during the rest of their lives. These athletes can take advantage of their status to participate in events and projects, to be sponsored by brands and even create their own. This might result in a stable source of income even when they do not play professionally anymore. However, only a minority receives such amounts of attention, recognition, and income and not all sports modalities are well compensated (Conzelmann & Nagel, 2003). Most athletes are not able to accumulate enough financial capital to maintain their lifestyles during retirement and even the minority that receives a higher salary than the average of the population might get used to a lifestyle that is not financially sustainable during retirement and might need to adapt to new and very different circumstances (Ogilvie & Taylor, 1993).

Football is one of the most popular sports in European countries. In Portugal, a country which has occupied the top ten places of the UEFA country ranking in the last 16 years, it is the most popular and the most practised sport. The public recognition of a few players and coaches that were very successful internationally and the high salaries and rewards that they earn, have led people to believe that all professional football players receive remunerations higher than the average and that they can live comfortably of their revenues from the sports career, which only applies to a percentage of the players.

The Portuguese football national championships comprise four national leagues: two professional leagues and two semi-professional leagues. The clubs occupying the top of the first league are subjected to fierce competition and their pay scales can be very wide and skewed. These clubs usually hire star players, whose earnings are considerably higher than the other players since the clubs need to retain them in the teams. Within those teams, the top 10% can receive 10 to 30 times the wage of the bottom 10% (Ribeiro & Lima, 2012). On the bottom half of the league there is not so much competition and pay dispersion. These players might not earn much more than an average worker from the general population, but while the latter will have an income until he is 65 years old, players' source of remuneration will cease much earlier. In Portugal, the typical career length of a professional football player is less than 20 years, starting at around 16 to 18 years old and ending shortly after the age of 30 (Ribeiro & Lima, 2019).

The fact that only a few can make a living out of the football career and financial rely on the revenues from sports creates the necessity of returning to the market, either right away or after some years. We

can think that a natural progression from the player position is into coaching, where the skills learnt can be useful and valued. Other possibilities include administrative or management occupations in sports clubs or organizations. However, these positions are limited and only a few are able to extend the career in the sports industry. Some individuals might opt to study again, to acquire skills and improve their educational qualifications in hope of better post-playing career opportunities, while others live a few years on the savings of what they earned, and only then find the need to pursue a new career. We can also think that some players decide to leave professional or semi-professional football since they can earn more outside football and have a more stable contract.

When choosing a second career, former players can opt for working as an employee or for starting their own businesses, becoming entrepreneurs. They can work on the same sector, where industry--specific experience can be valued, or completely change sector. Many factors might impact the professional opportunities that former athletes might encounter after the end of their careers, such as in which country, club, league and position they played on, the level of income, many times associated with the former factors, the age at the time of sports retirement, the educational attainment, other occupational experiences, their social recognition or the social networks created and contacts obtained. However, despite the questions that arise from this topic, very few research has been made in this area of sport economics. The brevity and particularities of the transition of athletes out of sport have interested the sports research community and numerous studies have been performed on the retirement reasons, athletes' reactions to this event and factors and resources that contribute to the quality of the adaptation (see systematic review by Park, Lavallee, & Tod, 2013), but while there is an extensive literature on transition to retirement, there are few studies on the professional careers of athletes upon the end of their sport careers (Conzelmann & Nagel, 2003). This can be due to the difficulty in finding real and reliable data throughout the career of a professional player, both during its course and after retirement. Fortunately, we have access to a large database with valuable information about active and retired professional football players, which will allows us to perform such study. This study is focused on football players once football it is the most popular and practised sport in Portugal, and we do not have sufficient data on other sport modalities.

1.2. Objectives

The goal of this dissertation is to study the professional occupational choices of former professional football players after the end of their careers, namely, the choice of returning or not returning to the labour market upon retirement from football, and the choice of becoming an entrepreneur or an employee. We aim to understand which characteristics of their background and career influence the probability of these possible outcomes.

To achieve this, we use data from Quadros de Pessoal, a longitudinal matched employer-employee dataset, collected yearly by the Portuguese Ministry of Labour and Social Security (*Gabinete de Estratégia e Planeamento do Ministério do Trabalho e da Segurança Social*), covering the Portuguese private sector, which allows us to track workers and firms with at least one paid employee overtime, and

we apply econometric models using the Stata software. In order to do this, we identify both professional football players as well as former football players who have returned to the job market after retiring from football and who are pursuing another professional activity, from the years of 1991 to 2017.

1.3. Organization of chapters

The project is organized into 6 chapters. Chapter 1 introduces the topic and defines the problem that will be addressed, the motivation for the realization of this work and its objectives. On chapter 2, the factors that influence former athletes' opportunities for alternative careers are discussed, as well as the main concepts related with career choices and entrepreneurial motivations. Chapter 3 describes the dataset and the methodology that will be used for the development of the dissertation, while chapter 4 performs a statistical characterization of the data from the dataset. Chapter 5 presents and discusses the results obtained and chapter 6 summarizes the main ideas concluded with this dissertation.

2. Literature Review

In this chapter, in order to better comprehend the choice between pursuing an alternative occupation or remaining retired, we begin by understanding what makes an unemployed individual decide to leave unemployment and how the process of job search is conducted. We proceed to analyse which factors have been studied in the literature to impact the professional opportunities of former athletes upon retirement and then study the various paths the athletes can take if they decide to pursue a secondary career, the factors that influence the career choice between becoming an entrepreneur or an employee, how the entrepreneurial path can fit the athletes' characteristics and the different types of entrepreneurship.

2.1. The job search theory and the reemployment decision

2.1.1. Job search theory

Retired players need to make a choice between remaining retired or getting reemployed. If they decide to re-join the labour market, they need to search for professional occupations that fit their competencies, get offers and commit to one of them. Multiple variables can play a part in explaining what makes an unemployed person leave unemployment, seek a job opportunity, and accept it, and the theory of search is the basis for understanding the conditional probability of leaving unemployment and the length of time that an individual spends unemployed.

The search theory departs from the fact that the search process is sequential and costly since the information about available opportunities and their compensation is imperfect. Therefore, unemployed individuals must invest their time and resources in order to seek for opportunities in the labour market, where the future return of this investment is uncertain (Mortensen, 1986). There are various opportunities offering different wages and job searchers need to choose their best alternative, following a certain criteria. As the individual is faced with a job offer, he will accept it if this offer meets or exceeds a certain acceptable value for the established criteria. If not, he will continue unemployed and searching for a better alternative (McCall, 1970). An acceptable minimum wage can be used as the criteria limit but is not the exclusive variable considered in the decision-making process. For instance, as will be discussed further on, the length of time the searcher is unemployed can make him more willing to accept job offers, lowering the value for this acceptable wage. In addition, remaining in unemployment can also be a possible choice and might happen when one becomes discouraged and gives up searching, when he cannot find any appealing opportunity and information costs are relatively too high (McCall, 1970).

The process of searching for a job includes making several choices, such as the searching methods that will be used, how much effort will be devoted to each method, the firms that should be contacted first, the number of offers collected before deciding to accept one and the criterion for classifying the offer as acceptable (Blau & Robins, 1990). The intensity and amount of search will depend on the costs

of information. If obtaining information about job opportunities is too expensive, individuals will search less, lowering their probabilities of obtaining an offer (McCall, 1970).

Research findings by Holzer (1987) on job search by unemployed youth suggest that unemployed individuals searched for longer hours and using more search methods than employed individuals. They had a higher probability of obtaining a new employment, collected and accepted more offers, but with slightly lower wages. Blau & Robins (1990) suggest that, contrarily to Holzer, employed individuals searching for a job are more likely to generate job offers and to find new employment than unemployed ones, despite using less search methods and reaching to a lower number of firms. On one hand employed individuals might have higher acceptable wages and be less willing to accept offers since they already have an employment position. On the other hand, they might be more likely to receive a job offer than an unemployed individual.

2.1.2. Re-employment decision

Many factors can impact the decision of an unemployed person between remaining unemployed or to re-joining the workforce, and when an individual chooses to seek for employment, some conditions must be met before actually becoming employed.

The conditional probability of an unemployed job seeker leaving unemployment in a given period can be defined as the product of the probability of receiving a job offer with the probability of this offer being accepted, meaning that the offer is higher than the individual's acceptable wage (Lancaster & Nickell, 1980). This will affect the duration of the unemployment spell.

Lancaster & Nickell (1980) considered that there are four main categories of variables that affect one's probability of leaving unemployment. These include its personal characteristics (such as age, health and education), the conditions of the local labour demand, the family composition (weather the individual is married, has children and if so, how many), and income variables (such as the level and length of the unemployment compensation). The variables in the first two categories may mainly influence the probability of receiving a job offer, while the family and income related variables may have an impact on the probability of accepting the offer. Also, these variables can change over the unemployment spell, and so does the probability of leaving unemployment.

2.1.2.1. Personal and family characteristics

Nickell (1979) used data of unemployed individuals seeking a job in Britain's labour market and the results of his study show that personal characteristics such as age influence the expected duration of unemployment. The increase in the length of the unemployment spell is approximately uniform with the increase in the age, being the average duration for a 30-year-old individual of 8.7 weeks while for a 60-year-old person it is almost the double, 16.9 weeks.

Concerning education, workers with higher educational levels have a more efficient job search process in comparison with less educated workers, once they accumulate and process more information during

this process, and are more likely to leave unemployment, struggling less to find work opportunities (Mincer, 1991). Riddell & Song (2011) concluded that education positively impacts re-employment outcomes, increasing the re-employment rates of unemployed individuals seeking job opportunities. This improvement was found to be substantially higher around 12 and 16 years of school attendance. Contrarily, Bover, Arellano, & Bentolila (2002) results show that having a secondary education degree does not increase the probability significantly, while having a university degree only increases it during the first three months of the unemployment period, after which, due to the interaction with the increase duration of the unemployment spell, the conditional probability falls. This can be a reflection of more educated individuals having higher minimum acceptable wages than less educated ones.

Nickell's (1979) results also show that a married man's expected duration in unemployment increases with the number of dependent children. However, the average duration of an unmarried man is considerably higher than their married counterpart. Concerning the re-employment probability, Bover, Arellano, & Bentolila (2002) state that being the household head increases the probability, but that this result is reduced over time.

2.1.2.2. Unemployment compensation

The impact of the unemployment compensation on the conditional probability of leaving unemployment and on the unemployment duration depends both on the amount of benefits received and for how long they are received. The job search theory argues that an increase of the compensation level or of the duration of the benefits will decrease the probability of leaving unemployment and increase the duration of the unemployment (Bover, Arellano, & Bentolila, 2002).

Many studies use the ratio of benefits to the previous wage -replacement ratio- to study the benefit level impact, which is negatively correlated to the conditional probability of obtaining a job. A high level of unemployment compensation can work as a disincentive for leaving unemployment, make individuals more selective, while the prospects of a higher work income will increase the chances of leaving unemployment. However, the impact of the replacement ration on the conditional probability of leaving unemployment varies within age groups and along the duration of the unemployment spell (Narendranathan, Nickell, & Stern, 1985). Narendranathan, Nickell, & Stern (1985) found that this impact is higher for younger people and non-existent for older individuals. They explain this result as a consequence of the difficulties older man face obtaining an offer, partly due to their advanced age, which might make them more willing to accept any offer they get, disregarding the compensation they receive. The impact is also not the same in every week of the unemployment spell but reduced with the increase of the spell's duration (Lancaster & Nickell, 1980). Nickell's (1979) research concluded that the effect of the unemployment compensation levels on the leaving probability is highly significant and negative for the first 20 weeks (and around them), but negligible after. Narendranathan, Nickell, & Stern (1985), who obtained similar results of reduced benefit impact over 6 months of unemployment, explain them, once again, through the undesirable perception of being unemployed for too long, which makes individuals accept offers regardless of the benefit levels. Considering the duration of the benefits received, as we

approach the end of the compensation period, search intensity might increase and the acceptable wage decrease, raising the probability of re-employment (Bover, Arellano, & Bentolila, 2002).

2.1.2.3. Unemployment length

The amount of time that the individual has been unemployed is also a predictor of the probability of obtaining a job (Abraham & Shimer, 2001). Blanchard & Diamond (1994) state that the rate of exit from unemployment is a decreasing function of the unemployment period duration. For instance, Nickell's (1979) results show that the probability of an unemployed individual leaving unemployment after 6 months out of work declines continuously, reaching relatively low number. This conditional probability can decline with the increase of the time that an individual spends unemployed for a number of reasons. First, during this period, individuals loose skills, becoming less attractive to prospective employers (Pissarides,1992). Firms usually perceive long term unemployment as a negative and unfavourable situation, even stigmatizing workers as worse or as lacking motivation (Blanchard & Diamond, 1994). Loosing contact with social networks in the labour market and lacking sources of information on employment opportunities, and a decline on the intensity of search for those opportunities, caused by loss of confidence and motivation about employment possibilities as this period is extended, also explain the decline on the re-employment probability over time (Blanchard & Summers, 1986). On the other hand, one's reservation wage tends to be lowered as unemployment length increases (Lancaster & Nickell, 1980) and the individual might be more disposed to accepting job offers. Results by Narendranathan, Nickell, & Stern (1985) show that the conditional probability of leaving unemployment does not decrease with duration, supporting the view that the wage that one considers acceptable is lowered as the duration increases.

2.2. Factors influencing professional opportunities of retired athletes

In the case of professional athletes, engagement in top-performance sports can influence professional outcomes, either prejudicing or improving occupational opportunities. Literature states multiple factors that might determine the occupational opportunities of former athletes when their athletic careers come to an end. These include the athlete's education level, ethnicity, public recognition, transferable skills, contacts and social networks, the type of career followed or even the playing position.

On one hand, we should consider that the duration of sports careers has been stretching and that the time load due to training and competitions has constantly increased. The high energy requirements and time commitments restrict the remaining available time to be allocated to other aspects of life outside of sport, such as educational and vocational careers, whose timings coincide with the sports career. This results in a decreased level and quality of qualifications and delays the entry into an alternative occupation (Conzelmann & Nagel, 2003), which might limit career options, professional perspectives, and the income level upon reemployment (Dewenter, & Giessing, 2014). However, on the other hand, the mediatization of popular sports has allowed the most successful athletes to gain popularity and public recognition, to enlarge their social networks and to acquire contacts that can increase their

professional opportunities (Conzelmann & Nagel, 2003). An individual's network and personal contacts are often sources of information about job and occupational possibilities, which can enable labour mobility (Granovetter, 2018). Players' contact networks can include, for instance, sports managers and executives, who might offer them job opportunities or provide information about them. In addition, athletes develop transferable skills and characteristics during their participation in elite sports that can also be useful in an alternative career and that can be favoured in recruitment processes. These include discipline, commitment, high stress tolerance (Dewenter, & Giessing, 2014), efficient time management under pressure (Burlot, Richard, & Joncheray, 2018) and drive for greater career achievements (Long & Caudill 1991).

Haerle (1975) collected data on former major league baseball players and concluded that both fame and level of education had an influence on getting the first job upon retirement, while for the main or longest held job, the importance of the baseball career decreased, and education was the only influencing factor. He concluded that while fame can help the former professional players obtain the first job outside the field, employers soon apply the same traditional criteria on education and performance as to other candidates. Splitting possible occupations in two groups, baseball related jobs and non-baseball occupations, Haerle's findings suggest that the level of education has a very strong influence on the non-sport related jobs. However, for the sports related occupations neither education nor even baseball skills are significant explanatory variables. However, the playing position during the active career influenced if the former players had baseball related jobs. The author observed a bigger percentage of catchers and infielders in these types of occupation than other positions, which can be due to the higher interaction skills that are appropriate and valued in managing roles.

Semyonov (1986) studied the effect of sports on occupational mobility of retired players and concluded that only education and ethnicity significantly affect it, contrary to length of the career in sports and the level of sport success. The author also argues that players with lower levels of education can accumulate financial capital during their career and often seek for independent entrepreneurship options, which provide prestige, good incomes and escaping professions associated with this lack of education attainment. However, ethnic minorities have less probability of upward occupational mobility.

Dewenter & Giessing (2014) found a positive effect for the participation in elite sports on the income of the post-sports professional career. Their findings suggest that former athletes receive, on average, higher incomes than similar non-athlete individuals. In addition, the income premium is even higher for former team sports players when compared to former individual athletes. This finding can be due to a greater perceived capacity and willingness to work in a team, which is a characteristic business recruiters usually look for.

The type of career followed by the athlete can also influence its opportunities. Pawlak (1984) studied the professional lives of former Olympians and identified three types of path followed during the active career. These can be considered the starting point for the career after sports and can strongly impact its outcome. The first consists of pursuing the athletic career combined with studies and then looking for a profession, which requires a lot of effort and time-management. However, athletes in this group only experience a short delay in starting a professional career outside sports, comparing with other non-

athletes. The second type of path includes an interruption in the educational career during the period when they seek the biggest sport achievements, which means they later need to catch up with their age group. The third case happens when sport success substitutes education or other life achievements. When athletic career comes to an end, this group does not have the education levels they desire to pursue their aspirations and has to make an extra effort to reach them.

Following a dual career, either competing and working or competing and studying, is an alternative path to devoting solely into a high-performance sport. While focusing only on sports can eliminate distractions and allow more time for training and improving performance, having an additional occupation can have a positive impact in the post-sports life, since it can increase professional opportunities upon sport retirement, ease the transition out of sport and facilitate the integration in the labour market (Barriopedro et al., 2018). While pursuing a dual career path, the athlete can gain skills and knowledge in alternative fields, which might be a competitive advantage at the end of the sports career, when looking for an alternative professional occupation. Research findings by Barriopedro et al. (2018) state benefits for student-athletes, once they get to retirement with higher educational levels than athletes who work and athletes who focus only on sport. Following a dual career can also relate to pre-retirement planning, which can positively impact the quality of the adaptation to post-sports life. Haerle (1975) argues that players with higher educational attainment start taking into consideration the limited time span of their athletic careers and decide to retire earlier than players with less education, who continue in sports for longer periods. In accordance to this, findings by Ramos et al. (2017) suggest that student-athletes usually retire from their professional athletic careers four to five years before the ones exclusively focused on sports, which can be due to a bigger and better planning of the retirement stage. Torregrosa et al. (2004) also suggest that athletes with dual careers usually do elaborate a clearer plan of their future throughout the athletic career, than athletes solely devoted to sports, which can decrease uncertainty and undesired outcomes.

In summary, the educational attainment, the sport success and fame, contacts and social networks, experiences outside sports and transferable skills are factors whose impacts on the post-retirement opportunities of former athletes have been studied in the literature. However, despite authors generally agreeing that the education level impacts opportunities, there is not a strong agreement on the impacts of other variables and this topic has not been very explored yet.

2.3. Second careers of retired athletes

When and if former athletes decide to leave unemployment and return to the job market after the end of their careers, there are multiple options for alternative occupations they can take. They might opt for becoming salaried employees, working for an organization, or starting their own projects, becoming entrepreneurs.

2.3.1. Entrepreneurship and salaried employment

The career choice between finding a salaried employment position or becoming an entrepreneur can depend on various factors. Cooper (1981) considered three main sets of factors that can affect a potential entrepreneur's decision of founding a new firm: its background, the organization where he previously worked at and external environmental factors. The background characteristics affect the knowledge and skills that are acquired and the individual's perceptions and motivations. It can include family influences, educational choices and previous career experiences. For instance, having a father or a relative who owned his own firm or being surrounded by entrepreneur role models during childhood can increase one's probability of starting a business (Roberts & Wainer, 1971). The organization where the individual works can provide him with industry specific knowledge, managerial skills and a network of useful contacts that might be advantageous for starting a business in the same environment. The nature of the organization might also provide him with experience in a small business context and motivate him to leave the organization and start its own. In addition, external factors such as the economic conditions, accessibility and availability of capital to invest may facilitate or discourage entrepreneurial actions.

Various motives have been identified as to why people desire to start-up a business, such as the need for approval, personal development and achievement, independence, autonomy and flexibility, financial improvement, to follow role models or due to job dissatisfaction or job loss (Birley & Westhead, 1994; Dubini, 1989; Scheinberg & MacMillan, 1988; Shapero, 1975). However, there is no universal reason leading to new firm creation and these motives can differ between genders and nationalities (Shane, Kolvereid, & Westhead, 1991). On the other hand, having job security and stability, a fixed workload and schedule, more certain wages, a larger social environment and career promotion opportunities are motives why some people prefer organizational employment over self-employment (Kolvereid, 1996).

2.3.2. Entrepreneurship as a second career

2.3.2.1. Necessity & Opportunity Entrepreneurship

The individual's employment status also influences its propensity for opting to create a new business. The Global Entrepreneurship Monitor (GEM) has considered that entrepreneurial activities can be of categorized into two types, depending on what has motivated the entrepreneur to start its own firm: opportunity entrepreneurship and necessity entrepreneurship (e.g., Bosma & Kelley, 2019; Reynolds et al., 2002; Kelley, Singer & Herrington, 2012).

Opportunity-driven entrepreneurs are individuals that were previously employed but were pulled into founding a new firm after perceiving a profitable business opportunity. Being seen as a voluntary career choice, motivated by higher incomes or a desire of autonomy and self-realization, entrepreneurs driven by the discovery of a business opportunity usually have access to the necessary funds and assets to entry the market (Storey, 1991). Contrastingly, necessity-driven entrepreneurs

are motivated to start a business by economic needs and are pushed into creating their own employment because other alternatives were not available or were not considered satisfactory, consisting mainly of a survival strategy (Smallbone & Welter, 2004). Unemployment is a strong motivator for entrepreneurial activities (Baptista et al., 2014). Experiencing unemployment or being faced with a future unemployment prospect increases the likelihood of founding a new firm (Storey, 1991).

2.3.2.2. Human & Social Capital of entrepreneurs

Human capital theory has also been used to understand the choice of occupational career and the likelihood of becoming an entrepreneur. Human capital can be distinguished into general human capital, which considers formal education and general work experience, and specific human capital, which includes prior experience in the industry, prior self-employment experience and leadership experience in managing or directing positions (Brüderl et al., 1992).

Individuals with higher human capital might have a better ability to perceive a business opportunity and better knowledge and skills to exploit it than individuals with less human capital. Particularly, previous start-up experience was proven to be the most influential type of human capital in the discovery of business opportunities (Davidsson & Honig, 2003). On the other hand, over-investment in human capital, and therefore high levels of certification, might result in risk aversion attitudes, discouraging exploiting a new business, while under-investing might encourage it (Davidsson & Honig, 2003). Opportunity driven entrepreneurs usually have more or higher quality human capital than entrepreneurs who started a business out of economic necessity and usually prepare for the entry into self-employment, investing in useful specific human capital (Block & Sandner, 2009). In addition, people with higher earnings as employees before founding a new firm are in a better position to financially invest and create a larger business, while people with lower human capital, who are often unemployed and forced into self-employment by necessity, might not be able to pursue the best opportunities and with the most appropriate knowledge and resources (Brüderl et al., 1992).

Social capital can also be a predictor of one's occupational decision, complementing their accumulated experience and educational and financial resources. Social capital can be based on strong ties, such as having family members or close friends who have had their own businesses or who encourage him to do so, or based on weak ties, such as being involved in a business network or having contacts and friendships with other businesspersons or business advice organizations (Davidsson & Honig, 2003). During the process of firm creation, apart from seeking financing capital and necessary assets, the entrepreneur also seeks for advice, guidance, and crucial information (Birley, 1985). These networks may facilitate the identification and discovery of opportunities and help to exploit them, by providing useful resources, knowledge, and insights (Davidsson & Honig, 2003).

2.3.2.3. Fit between athletes & entrepreneurship

Former athletes might consider self-employment as an option for a second career, after athletic retirement. The nature of the professional sports environment, its internationalization and globalization, the increase in the funding of teams and events, sponsorships and mediatic coverage have offered opportunities for business creation (Ratten, 2015). The visibility and brand image of successful athletes can be particularly valuable, once it can allow them to have remunerations external to the professional athletic career, which they can still benefit from even after their career ending (Parmentier & Fischer, 2012). Many athletes take advantage of their success in sports to involve themselves in business deals, from marketing campaigns to launching their own products (Ratten, 2015). The contacts acquired and the past business collaborations can be a departing point for exploiting entrepreneurial opportunities after athletic retirement.

Steinbrink, Berger & Kuckertz (2019) proved a match between professional athletes' and entrepreneurs' personality characteristics. This similarity suggests that professional athletes are suitable for an entrepreneur's position. Requirements of a professional athletic and of an entrepreneurial careers are very analogous. Both careers often face high levels of uncertainty on the income, success level and on the return of the investment made to follow an unconventional career. Both are subjected to high workloads, constant pressure, and risk of failure, so they must be resilience and motivated to deal with these circumstances (Steinbrink, Berger & Kuckertz, 2019). Athletes are often competitive, goal oriented and hard-working. They also develop confidence, leadership, and communication skills during their athletic careers, especially in team sports, which are important attributes for entrepreneurial success. Despite the possible lower levels or quality of formal education of a former athlete, when compared to an individual from the general population, he may have an important social network, useful contacts and past business experience, which may be an advantage when following an entrepreneurial career path.

2.3.3. Relocation in sport

Another possibility for an alternative occupational career is the relocation in sports. Stambulova et al. (2007) studied a sample of French and Swedish elite athlete and obtained a considerable percentage of around 67% of former French athletes working professionally in sports and 24% for the Swedish retirees. Dimoula et al. (2013) on a study of former elite athletes from Spain and Greece, also stated a tendency of professional relocation or connection to sports after the termination of their athletic careers.

Transitioning to coaching, clubs and associations management or administrative positions allows former athletes to exploit their experience and knowledge in the field, transferring a portion of the expertise they had previously developed to the new career, reinforcing its importance to these positions. Also, lack of retirement planning and lack of alternative to sport career options exploitation increase retired athletes' tendency of choosing coaching positions (Shachar et al., 2004). This relocation can soften or delay the negative effects that the end of the competitive career can have on the former athlete, since he can still feel socially integrated in sports (Lavallee, Gordon, and Grove,

1997) and capable and useful in the area, due to his knowledge, experience and transferable skills (Kavanagh, 2010). The continuation of involvement in the area fills the void left by the cessation of the previous career and helps maintain the sport-identity, which consequently enables a smoother transition with less difficulties (Lavallee, Gordon, and Grove, 1997).

2.4. Conclusion

We have seen the factors that influence professional opportunities of retired athletes upon retirement, what can make an individual choose between unemployment/retirement or seeking for reemployment, and in the case of doing so, what can influence the decision of following an entrepreneurial path versus becoming a salaried employee. We also looked into how entrepreneurship can be a good alternative for an athlete's second career.

Despite the few studies on what can impact occupational opportunities of retired athletes and on how their characteristics can match an entrepreneur's profile, we found no studies covering the choices of returning or not to the job market and between becoming an entrepreneur or employee, for the cases of former athletes. Thus, our goal is to contribute to this gap in the literature and better understand which variables actually impact this decisions and how big is their effect.

3. Data and Methodology

In this chapter, we present the dataset and the variables that will be used on our study, as well as the methodology that will be applied to these data. We do not present a descriptive analysis of these variables on chapter 3 as chapter 4 is dedicated to that analysis.

3.1. Dataset

For the aim of this dissertation, we use information on personnel records from a Portuguese dataset, Quadros de Pessoal (QP). QP is a mandatory national survey collected yearly by the Portuguese Ministry of Labour and Social Security (*Gabinete de Estratégia e Planeamento do Ministério do Trabalho e da Segurança Social*) covering all firms of the Portuguese private sector that have at least one salaried worker and excluding public administration, military and self-employed workers.

QP is a longitudinal matched employer-employee dataset, where firms and workers are identified by a unique number, which allows us to track and merge information about the firms and workers overtime. QP has, on average, around 350 thousand firms and 2.5 million individuals, between the years of 1985 and 2018.

We observe male professional football players and former professional football players that upon retiring from the football career returned to the database, engaging in another career, between the years of 1991 and 2017. This was done by identifying football clubs by the economic activity classification code (CAE), where we proceeded to identify the players by their professional category code. When we identified all the players by their worker number we looked into which company and professional category they were the following years, which allowed us to track them throughout the whole career. The year their professional category is different from the professional players' is the year that they got reemployed upon sports retirement and returned to the job market as either a salaried employee or as an entrepreneur- If they are still professional players on last year they appear on the dataset, it means they did not return to the job market in Portugal the following year. An entrepreneur was defined as an employer (looking into the professional situation variable), that created a company with at least one salaried employee. We were able to identify 35 001 observations, including 8 809 distinct individuals.

3.1.1. Variables

In order to study the professional occupations of retired professional football players, we identified both professional football players as well as former football players who have returned to the labour market after retiring from football and who are pursuing another professional activity.

With the information available from QP, we also identified and defined a set of variables associated with the players which can impact the probability of each possible outcome we want to study and that will be considered in the next chapters and included in our models. Part of the variables will be used for studying

the comeback to the labour market, others will be used for the entrepreneur/employee choice models, and some are shared by both.

3.1.1.1. Dependent variables

The dependent variables refer to the two binary outcomes of our study: returning to the labour market, taking the value '0' if the retired player does not return and '1' if he does returns; and returning as an entrepreneur, taking the value '0' if the retired player that pursues and alternative career does so as an employee, and '1' if he does it as an entrepreneur. Table 3.1 summarizes the dependent variables that will be used in the models.

Table 3.1 – Dependent variables

Dependent variables		Description
Return	Categorical - Binary	If the former football player re-joins the workforce with an alternative career
Entrepreneur	Categorical - Binary	If the former football player that re-joins the workforce does so as an entrepreneur

3.1.1.2. Independent variables

The independent variables are variables associated with the players' background and career characteristics, which we believe to be explanatory of the possible outcomes under study. Table 3.2 summarizes the independent or explanatory variables that will be used to explain the outcomes of our models.

Having an additional job during the player career was identified when the same worker had two different professional categories in the same year (player and non-player). If his professional situation corresponded to the entrepreneur's one, it means that the additional experience was as an entrepreneur.

Table 3.2 – Independent variables

Independent variables		Description
Education level	Categorical- 4 categories	Number of years completed at school
Portuguese	Categorical-Binary	If the individual is Portuguese
Retirement age (years)	Discrete	Individual's age at the time of retirement from football
Gap (years)	Discrete	Time period between retirement and reemployment
Number of clubs	Discrete	Number of clubs where the individual played
Player career length (years)	Discrete	Number of years the individual was a player
Additional job once	Categorical-Binary	If the player had an additional job during anytime of the football career
Additional job last year	Categorical-Binary	If the player had an additional job during the last year of the football career
Last wage (euros)	Continuous	The value of the salary received in the last year of the professional player career
Total wage (euros)	Continuous	The total value accumulated in salaries during all the years of the professional player career in Portugal
Last league	Categorical- 3 categories	The football league where the individual played during the last year of his football career
Highest league	Categorical- 3 categories	The highest football league where the individual played during all his career
Entrepreneur once	Categorical-Binary	If the individual had entrepreneurial experience during the player career

Table 3.3 summarizes formal educational levels and the respective categories. In Portugal, education levels are divided into three main groups: basic education, which includes the first 9 years where general areas of knowledge are learnt; secondary education, which comprises an additional duration of 3 years and is focused on a specific area of studies; and tertiary education, where students enter higher education degrees. To model the players' formal education, we defined categories based on this convention. An additional category was created to include those who have not completed at least 4 years of school and therefore, have the lower level of formal education.

Table 3.3 - Education levels and categories

Education level	Category
≤ 4 years of school	Low
9 years of school	Basic
12 years of school	Secondary
Higher education	Tertiary

Table 3.4 summarizes the categories used for the variables concerning the Portuguese football leagues, 'Last league' and 'Highest league'. The football league is a categorical variable. As we have seen, the Portuguese football national championships comprise four national leagues. The first and second leagues are professional, whereas the third and fourth are semi-professional. We included both semi-professional leagues into one category since the number of observations on the fourth league is relatively low, and both leagues have similar magnitudes of wages.

Table 3.4 – Portuguese football leagues and categories

League (Last & Highest)	Category
First	Professional- First
Second	Professional-Second
Third	Semi-professional
Fourth	Semi-professional

3.2. Methodology

Our objective is to study the choice of returning or not to the labour market after professional football retirement, as well as, in case of returning, the choice of becoming an employee or an entrepreneur. We want to analyse which of the independent variables that characterize the player and his background have an influence and explain each of these outcomes. In order to achieve this, we applied econometric models to the data using the Stata software.

3.2.1. The Logit model

In order to relate the decisions being studied with the variables available from QP, we used the Logit model, a binary choice regression model, which allows us to predict the probabilities of two possible qualitative and binary outcomes (pursue another career or stay retired; become an entrepreneur or

become an employee). In this type of model, the two possible results are represented as a binary variable, coded as 0 and 1. The probability of a binary event can be modelled by equation 1:

$$P(y = 1|x) = G(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_n x_n + u) = G(X\beta)$$

(1)

Where P is the probability of the outcome, y is the dependent/explained variable (the event of returning or not to the labour market; the event of becoming or not an entrepreneur, both binary variables), and x_n are the independent/explanatory variables, collected from QP. β_0 is the intercept and β_n are the parameters associated with the x_n. The term u models the error term, which includes all other unobserved variables that impact the probability.

In the Logit model, we use the cumulative logistic function for $G(X\beta)$:

$$G(z) = \frac{e^z}{1 + e^z}$$

(2)

Contrarily to the multiple linear regression model, by using the cumulative distribution function of the logistic distribution to fit the data, the Logit model ensures that the probability $P(y = 1|x)$, always fits between 0 and 1 for all values of the β_n and the x_n.

3.2.2. Marginal effects

Due to the non-linearity of the function used for the Logit model, the magnitudes of each β_n are not directly useful. The results of the coefficients for the independent variables obtained with the model, which tell us about the relationship of the explanatory variables with the dependent variables, provide us with no explicit interpretation. We can only interpret their sign, but not their magnitude. Therefore, in order to explain the effects of an explanatory variable x_n on the response probability of study, $P(y = 1|x)$, we calculate the marginal effects of the variables of our model.

The marginal effect of explanatory variables on the response probability depends on whether these are continuous or discrete. If x_1 is a continuous variable, the marginal effect of x_1 on the probability $P(x)$ is:

$$\frac{\partial P(x)}{\partial x_1} = g(x\beta)\beta_1$$

(3)

where $g(z) = \frac{\partial G(z)}{\partial z}$.

If x_1 is a discrete variable, the marginal effect from changing it from the base level to another level (holding all other variables fixed) on the probability $P(x)$ is calculated by:

$$G(\beta_0 + \beta_1 + \beta_2 x_2 + \cdots + \beta_n x_n) - G(\beta_0 + \beta_2 x_2 + \cdots + \beta_n x_n)$$

(4)

To obtain such values in Stata, we use the average marginal effect method, which results from calculating the average of the individual marginal effects across the sample.

4. Descriptive Analysis

In this chapter we perform a descriptive analysis of the data available from Quadros de Pessoal, regarding the active football players and the retired football players who are either employees or entrepreneurs, from 1991 to 2017.

Our dataset is composed by 35 001 observations, including 8 809 distinct individuals, whose career decision after retiring from football is summarized in figure 4.1.

62.9% of the observations of the dataset belong to active professional football players and 37.1% are from retired professional football players. From the 37.1% of the observations concerning former football players who are still in the database after retiring from football, and who therefore followed an alternative professional occupation, 90.3% are employees. Only 9.7% of the observations are entrepreneurs.

Considering distinct individuals, from the 8 809 identified individuals, only 2 859 (32.5%) of them returned to the labour market to pursue an alternative career upon retirement. A percentage of the ones who did not return could be concerning foreign players who either return to their home countries upon retirement or move from Portugal to play in another country. From these 2 859 that did find an alternative professional occupation, just 222 of them (7.8%) returned as entrepreneurs. The majority of the former players that finds a secondary career, does so as an employee.

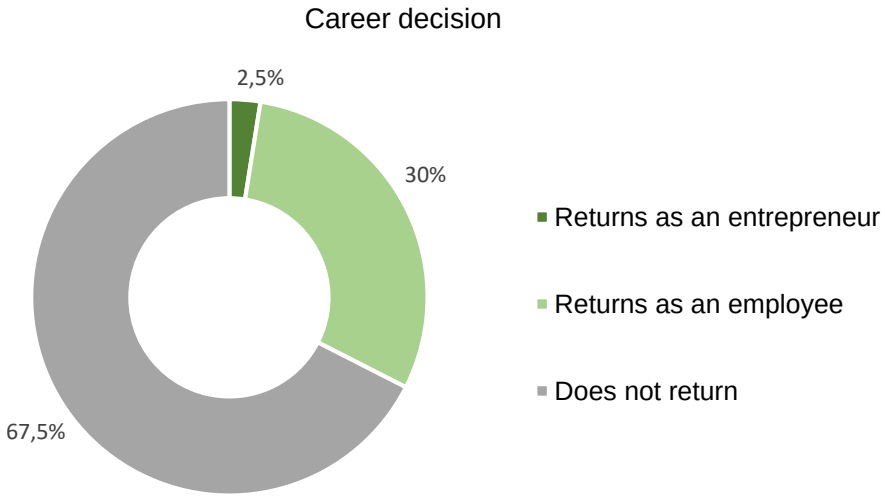

Figure 4.1 – Career decision after retiring from football of the individuals on the dataset (1991-2017)

Variables related with the individuals' characteristics, background and careers are statistically described below.

Table 4.1 summarizes the information about the ages, yearly wages, nationalities, and education levels of all the individuals of the dataset, distinguished for the active and the retired players.

Considering age, the mean value for all individuals on the dataset is of 29.3 years old. As expected, this value is higher for the retired athletes, who are on average 36.6 years old, when in comparison to the active professional players, whose mean age is 25 years old.

Active players earn on average 70 809 euros a year, with a standard deviation of 215 873, around 5 times more than the retired players who are pursuing an alternative career, who receive an average of 13 554 euros per year, also with a lower standard deviation of 39 233. The average value for the yearly wage for all the individuals on the dataset is of 50 215 euros, with a standard deviation of 176 486 euros.

The biggest percentage of the individuals are Portuguese. This value rises from 69% of Portuguese active football players to 95.3% when we only consider the ones who re-enter the workforce upon retirement. This increase can be explain due to the fact that many foreigner players eventually leave Portugal, either to return to their countries when their player career comes to an end, or to play professionally in a club from another country. Brazilian individuals take the second biggest percentage of active players, followed by African players, which was predictable due to the historical relations maintained with Portugal. There is a big portion of observations with no available nationality data, since this variable was only considered in QP since 2002. This will reduce the number of observations considered in our model, when including information on players' nationalities. We will run models with and without information on nationalities, so we can use a higher number of observations and also study the effect of being Portuguese on the choice probabilities.

Concerning formal education, the majority (60.3%) of all individuals have completed nine years of completed enrolment, which was the compulsory level of education until 2012, and 31.5% have studied for twelve years, which is equivalent to finishing secondary school. About 65% of the individuals have less than 12 years of school (mandatory school attendance in Portugal since 2012) and less than 4% have any type of higher education degree. Retired players who pursued an alternative career have on average more years of education than active players and have a considerably higher percentage of individuals with higher education (8.6% for retired players versus 1.1% for active players).

Table 4.1 – Age, wage, nationality, and education of active and retired players (1991-2017)

	Active Players		Retired Players		All observations	
	Average	**SD**	**Average**	**SD**	**Average**	**SD**
Age (years)	25	5.3	36.6	7.9	29.3	8.5
Yearly wage (€)	70 809	215 873	13 554	39 233	50 215	176 486
Nationality			**%**			
Portuguese	69		95.3		78.8	
Brazilian	9.6		1.5		6.6	
African	4.3		1.5		3.3	
Other European	3.7		0.6		2.5	
Other Nationalities	2.5		0.2		1.6	
NA	10.9		0.9		7.2	
Education			**%**			
Low	6.2		0.9		4.3	
Basic	62.5		56.6		60.3	
Secondary	30.1		33.9		31.5	
Tertiary	1.1		8.6		3.8	
NA	0.1		0		0.1	
Number of observations	21 998		13 003		35 001	

Notes: Non available nationality data results from the fact that this variable was only considered in QP since the year of 2002.
The yearly wage was calculated multiplying the monthly wage by 12.

4.1. Active Football players

In the Portuguese championships there are four leagues: the first and second leagues are professional and the third and fourth leagues are semi-professional.

Football players are on average 25 years old. First league players are the youngest, with an average age of 24.5 years old, while second, third and fourth league players have an average age of 25.5, 25.2 and 25.6 years, respectively.

The first league is the one with the highest percentage of foreigners. Almost half of the foreigners in the highest league are Brazilian (48%), followed by European and African players (23% and 16%, respectively). The second, third and fourth leagues follow similar trends, despite having a higher percentage of Portuguese.

Considering the number of completed school years, fourth league players are on average the least formally educated. Almost 75% of them have only completed at most 9 years of school. On the other hand, the fourth league is the one with the highest percentage of players with higher education. Despite all leagues showing low levels of education, with percentages of players with at most 9 years of school

of around 70%, and values of higher education of only about 1%, second league players are statistically the most educated, followed by the third league.

Table 4.2 summarizes information about the age, nationality, and education of the players by league.

Table 4.2 – Age, nationality and education of active players, by league (1991-2017)

	1st League		2nd League		3rd League		4th League		All active players	
	Average	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**	**Average**	**SD**
Age (years)	24.5	5.2	25.5	4.9	25.2	5.2	25.6	6.1	25	5.3
Nationality					%					
Portuguese	61.6		77.6		74		72.7		69	
Brazilian	13.6		10.7		4.3		4.6		9.6	
African	4.6		5.9		3.1		3.5		4.3	
Other European	6.5		2.5		1		0.6		3.7	
Other Nationality	3.3		2.2		1.6		1.5		2.5	
NA	10.4		1.1		16		17.1		10.9	
Education					%					
Low	9.4		1.8		4.3		5.8		6.2	
Basic	59.5		62.1		65.3		69.1		62.5	
Secondary	29.9		35.1		29.2		23.3		30.1	
Tertiary	1		1		1		1.7		1.1	
NA	0.2		0		0.2		0.1		0.1	
Number of observations	9 763		4 027		6 263		1 945		21 998	

Notes: Non available nationality data results from the fact that this variable was only considered in QP since the year of 2002.

The wage of a football player can vary a lot between leagues and even between clubs of the same league. Information about wages is described below, in table 4.3.

For calculating the yearly wage, we used the monthly values of the base salary and the regular benefits received by the player, multiplied by 12. Other benefits given to the players, such as house rents, cars or future fee percentages are not included, since this information is not available in QP. All the values were updated with the inflation rate to the year 2017.

The average wage for all the players is of 70 809 euros per year. Despite the common belief that football players receive very high wages, 50% of all the players receive 15 960 or less per year, and only 1% earns more than 1 100 000. However, a small minority earns much more: the players at the 50% percentile earn 4.4 times the wage of the players at the 10% percentile and those at the 90% percentile receive 36.6 times the wage of the ones at the bottom 10%, which indicates a wide pay scale.

We can see a high variation of wages between leagues, specially from the first league to the others, when we look into values such as the mean wage and the value of the 50% percentile. The mean wage

value of the first league is above the 75 percentile (while in the other three leagues, the mean value is between the percentile 50 and 75).

First league players receive the highest wages, as expected, with a mean value of 140 192 euros per year and a standard deviation of 308 973 euros. The average yearly wage decreases to 23 343 euros when considering the second league players and to just 8 625 euros when looking at the lower league. The maximum wage for the first league players is of 3 936 000 euros, while for the lower league it is of around 243 000 euros.

Table 4.3 – Wage distribution of active players, by league (1991-2017)

	1st League	2nd League	3rd League	4th League	All active players
Mean	140 192	23 343	12 483	8 625	70 809
Standard Deviation	308 973	40 318	15 088	12 176	215 873
Maximum	3 936 000	1 542 857	360 000	242 857	3 936 000
Percentile					
10%	6 584	5 031	2 993	2 140	3 597
25%	17 000	9 480	5 897	3 591	7 638
50%	44 892	16 085	9 600	6 895	15 960
75%	114 282	26 160	14 964	10 176	43 7332
90%	305 004	43 774	22 780	14 887	131 737
95%	665 535	61 350	31 213	19 166	275 651
99%	1 653 000	133 418	64 130	45 000	1 100 004
50%/10%	6.8	3.2	3.2	3.2	4.4
90%/10%	46.3	8.7	7.6	7	36.6
Number of observations	9 763	4 027	6 263	1 945	21 998

4.2. Reemployed former players

Table 4.4 summarizes information about the retired players who did and did not pursue a secondary professional activity.

The average retirement age for all the players is of 25.8 (with a standard deviation of 5.2 years). The individuals who return to the job market retired on average at 26.9 years old, 1.6 years later than the ones who stayed retired. They also played for more years and in more clubs.

The average amount received in wages during the whole player career is of 180 064 euros, with a standard deviation of 689 475 euros. However, this value is very different when considering the two groups. The players who did not return received an average of 216 663 euros, the double of the amount that the ones who returned to pursue an alternative career did.

From the players who did not return, only 58% were Portuguese, while this percentage raises to 92% when considering the ones who returned.

The percentages of players who had an additional job in any year of their football career are very low, but higher for the ones who returned (0.81% versus 1.75%). Professional league players are not allowed to have an additional job. When we only considered the semi-professional leagues, where players are allowed to have another professional occupation, 1.25% of them have had an additional job (2.33% from the ones who returned, 0.46% from the ones who did not).

Considering formal education, the players who did not return are on average more formally educated than the ones who did return, but the difference is not very strong.

Table 4.4- Football career variables and education levels of retired players (1991-2017)

	Does not Return		**Does Return**		**All retired players**	
	Average	**SD**	**Average**	**SD**	**Average**	**SD**
Retirement age (years)	25.3	5	26.9	5.5	25.8	5.2
Player career length (years)	2.4	2.1	3	2.4	2.6	2.2
Number of clubs	1.5	1	1.9	1.2	1.6	1.1
Total earned as player (euros)	216 663	787 276	103 897	407 823	180 064	689 475
% of portuguese players	58%		92%		71%	
% of players with an additional job	0.35%		1.75%		0.81%	
Education			**%**			
Low	5.3		6.6		5.8	
Basic	60.8		63.8		61.8	
Secondary	32		28		30.7	
Tertiary	1.4		1.6		1.4	
NA	0.5				0.3	
Number of individuals	5 950		2 859		8 809	

Note: This values refer to the last year of the distinct individuals' careers as professional players.

Table 4.5 summarizes information about the retired players who followed a secondary profession, either as an employee or as an entrepreneur.

Retired professional players of our dataset that become reemployed do it, on average, at 26.9 years old, with a gap between retirement and reemployment of 3.2 years. The reemployment age for the entrepreneurs is higher than the employees' (28.8 and 26.7, respectively), as well as the year gap, whose value if of 4.4 years for the entrepreneurs and 3.1 years for the employees.

The entrepreneurs show, on average, a bigger career length and more club participations (3.5 years playing professionally and 2.3 club participations) than the employees (who have only played on average for 2.9 years and in 1.8 different clubs).

Looking at the total amount of wage earned during all the years played professionally in Portugal, players who became entrepreneurs earned an average of 191 027 euros, the double of the amount received by the players who became employees (who received an average of 96 562 euros).

The group of all retired players is composed majorly by Portuguese individuals (93%), while this percentage in the group of the players who became entrepreneurs is of 97%.

The percentages of individuals who worked as entrepreneurs during any year of their player career are very small, but higher in the case of the ones who became entrepreneurs (0.17% versus 1.8%). If we consider only third and fourth league players (semi-professional leagues), 2.29% of the players that become entrepreneurs had worked as entrepreneurs before.

Entrepreneurs have a higher percentage of individuals with 12 years of school completed, while employees have a bigger percentage of individuals with higher education degrees.

Table 4.5- Football career variables and education levels of reemployed players (1991-2017)

	Becomes Employee		**Becomes Entrepreneur**		**All reemployed players**	
	Average	**SD**	**Average**	**SD**	**Average**	**SD**
Reemployment age (years)	26.7	5.6	28.8	4.4	26.9	5.5
Gap to reemployment (years)	3.1	3.5	4.4	4	3.2	3.6
Player career length (years)	2.9	2.4	3.5	2.6	3	2.4
Number of clubs	1.8	1.2	2.3	1.4	1.9	1.3
Total earned as player (euros)	96 562	371 934	191 027	701 848	103 897	407 823
% of portuguese players	92%		97%		93%	
% of players with entrepreneurial experience	0.04%		1.8%		0.17%	
Education			**%**			
Low	2.6		0.9		2.4	
Basic	56.3		52.7		56	
Secondary	33.3		40.1		33.9	
Tertiary	7.8		6.3		7.7	
Number of individuals	2 637		222		2 859	

Figure 4.2 shows the time gap between retirement and reemployment for entrepreneurs versus employees. We can see a clear difference on the distribution curves of both cases, being the entrepreneurs' more irregular. Also, entrepreneurs take, on average, more time to becoming professionally active again.

While 30% of former players who become employees do it right away (with a time gap of zero years), this is only the case of 13% of the entrepreneurs. More than half of all employees returned during the first 2 years after retirement and 77% during the first 5 years. Contrastingly, only about 23% of the entrepreneurs return during the first 2 years and 66% during the first 5.

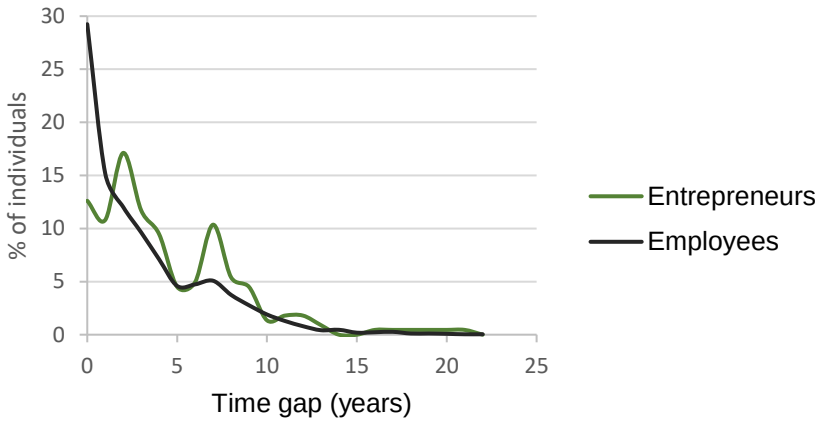

Figure 4.2 – Time gap between retirement and reemployment (1991-2017)

4.2.1. Secondary professional activity

In order to understand what are the alternative professional occupations that retired players choose when they pursue a second career, we looked into the economic activity classification (CAE) of the company where they worked. The choice of this variable over the professional category was due to the fact that the latter entails a very large number of categories which would not facilitate our analysis, and therefore grouping occupations into their CAEs was a simpler way to synthesize the information.

The data concerning the economic activities of the retired professional athletes who decided to pursue a second career after retiring from football is summarized in table 4.6, distinguishing by reemployed individuals as employees and as entrepreneurs.

Half of all the reemployed players found careers included in the same three economic activities. About 18.6% pursue careers in public administration and defence, and compulsory social security, 16.2% are in wholesale and retail trade, and in repair and maintenance of motorcycles and vehicles, and 15.6% found occupations related to sporting, artistic, entertainment and recreational activities, where the careers in coaching, club administration and sports management are included. The fact that this category includes a big percentage of the individuals was expected since it has a connection with their athletic career. Former athletes have industry specific knowledge and skills that can be transferred to this area, as well as contacts that might allow them to discover opportunities in the sports management field. Other economic activities where a considerable percentage of retired players often pursue careers are in financial & insurance activities, administrative services, electricity, oil and steam supply, transportation and storage, construction of buildings and civil engineering.

Considering only individuals that became employees, the top three economic activities with bigger percentages of reemployed former players are the same. If we look into the economic activities of the reemployed individuals who followed an entrepreneurial path, we see that the biggest percentage works in wholesale and retail trade, repair of motor vehicles and motorcycles, followed by transportation and storage activities.

Table 4.6 – Economic activity of reemployed professional players: entrepreneurs and employees (1991-2017)

	Entrepreneurs		**Employees**		**All reemployed players**	
Economic Activity	Frequency	%	Frequency	%	Frequency	%
Public administration and defence & compulsory social security	14	6.3	518	19.6	532	18.6
Wholesale and retail trade & repair of motor vehicles and motorcycles	51	23	413	15.7	464	16.2
Sporting, artistic, entertainment & recreational activities	10	4.5	437	16.6	447	15.6
Financial & insurance activities	20	9	209	7.9	229	8
Administrative services	7	3.2	203	7.7	210	7.4
Electricity, oil & steam supply	18	8.1	181	6.9	199	7
Transportation & storage	43	19.4	111	4.2	154	5.4
Construction of buildings and civil engineering	15	6.8	135	5.1	150	5.2
Manufacturing industries	9	4	126	4.8	135	4.7
Accommodation & restaurants	18	8.1	88	3.3	106	3.7
Consultancy, scientific & technical activities	4	1.8	57	2.2	61	2.1
Human health & social support	3	1.4	34	1.3	37	1.3
Real estate	1	0.4	31	1.2	32	1.1
Information & telecommunication activities	2	0.9	29	1.1	31	1.1
Agricultute, livestock production, hunting & fishing	4	1.8	21	0.8	25	0.9
Other services	1	0.4	19	0.7	20	0.7
Extractive industries	1	0.4	9	0.3	10	0.4
Water supply & waste management	0	0	10	0.4	10	0.4
Education	1	0.4	6	0.2	7	0.2
Total	**222**	**100**	**2637**	**100**	**2859**	**100**

Table 4.7 presents the economic activities of the reemployed players, grouped by the last league where they played, in order to understand whether players from different leagues pursue different types of activities. We can see that the professional leagues have a higher chance of working in the sports and entertainment industry. The data indicates second league players are the ones with the biggest percentage in the sporting, artistic, entertainment and recreational activities (29.6%), followed by the first league (21.9%). Third and fourth leagues only have 8% of their former players on these type of activities. However, they have bigger percentages in activities related to financial and insurance activities than professional leagues. Almost 30% of first league former players work in public administration and defence, and compulsory social security, a group that occupies the top percentages on all league groups. Activities related to wholesale and retail, and repairing of vehicles are also common to all league groups, but show bigger percentages on the semi-professional leagues.

Table 4.7 – Economic activity of reemployed professional players, by last league (1991-2017)

	1st League		**2nd League**		**3rd League**		**4th League**	
Economic Activity	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Public administration and defence & compulsory social security	214	29.3	80	14.8	172	16.3	66	12.4
Wholesale and retail trade & repair of motor vehicles and motorcycles	89	12.2	63	11.7	195	18.5	117	22
Sporting, artistic, entertainment & recreational activities	160	21.9	160	29.6	85	8	42	7.9
Financial & insurance activities	38	5.2	18	3.3	118	11.2	55	10.3
Administrative services	47	6.4	48	8.9	71	6.7	44	8.3
Electricity, oil & steam supply	42	5.8	15	2.8	94	8.9	48	9
Transportion & storage	31	4.2	24	4.4	73	6.9	26	4.9
Construction of buildings and civil engineering	23	3.2	20	3.7	66	6.2	41	7.7
Manufacturing industries	23	3.2	44	8.2	42	4	26	4.9
Accommodation & restaurants	8	1.1	24	4.4	50	4.7	24	4.5
Consultancy, scientific & technical activities	12	1.6	12	2.2	24	2.3	13	2.4
Human health & social support	10	1.4	12	2.2	10	0.9	5	0.9
Real estate	8	1.1	5	0.9	11	1	8	1.5
Information & telecommunication activities	9	1.2	3	0.6	17	1.6	2	0.4
Agricultute, livestock production, hunting & fishing	6	0.8	5	0.9	8	0.8	6	1.1
Other services	7	0.9	4	0.8	5	0.5	4	0.8
Extractive industries	3	0.4	0	0	4	0.4	3	0.6
Water supply & waste management	1	0.1	1	0.2	6	0.6	2	0.4
Education	0	0	2	0.4	5	0.5	0	0
Total	**731**	**100**	**540**	**100**	**1056**	**100**	**532**	**100**

5. Results

In order to study the two binary decisions of returning to the labour market upon retirement, and of, in the case of returning, doing it as an entrepreneur or as an employee, discrete choice Logit models were applied to the QP data and variables described in chapter 3 and 4, using the Stata software. In this section, the results obtained are presented and discussed.

To better interpret the results, these are expressed in the form of average marginal effects. These can be interpreted as the average effect that a change in an explanatory variable has on the change in the probability of the positive outcome, holding everything else constant.

Since the information regarding the players' nationalities is only available since the year of 2002, including it on our models reduces the number of available observations. Therefore, we also tested models without this information, in order to include a higher number of observations. These models test data from the years of 1991 to 2017 and are available on the appendix.

It is also worth pointing the slightly lower number of observations used in the models when comparing with the values presented on chapter 4. This results from the fact that the values of the binary decision variables on the last year (2017) have no meaning since we do not have information whether the players will return to the database or become entrepreneurs in 2018.

5.1. The probability of reemployment

Table 5.1 shows the results of the models obtained regarding the decision to return or not to the labour market, upon retirement from professional football. Table A from the appendix shows the results of these models without the variable 'Portuguese', therefore including the years of 1991 to 2017 and a higher number of observations.

The first model includes a set of base variables that remain on every subsequent model: whether the individual is Portuguese or not, his education level and his age at the time of retirement. The effects of other variables are analysed from model 2 through model 10, which includes the whole set of variables used in previous models.

In addition to the variables presented before, dummies for each year were included in every model, in order to capture fixed effects that could influence the decision in each year and that we are not able to observe. Regarding the variables related to the players' salaries, we used the log of the total earned in wages during the player career and the log of the last wage as player since the yearly wages of the players followed a wide distribution.

The control group is a non-Portuguese individual, with a low level of education (less than 4 years completed at school), with no additional job during the player career or during the last year of the player career, that played on the first league on his last career year and that the highest league where he played was the first league.

The estimation results below show us that the effect of being Portuguese is significant across all models and that being Portuguese strongly increases the probability of finding reemployment in Portugal. The common trend along the models was expected, since a percentage of foreign players leave the country either to play in a club somewhere else or to return to their home countries. On the last model, with all variables included, we see that having Portuguese nationality increases the probability of returning by 24.6 percentage points.

Concerning education, we can see that the level of formal education is not very relevant for the analysis of the decision to return to the market, since its marginal effects are not statistically significant, except for the basic level on models 7 and 8. Contrarily to what we could expect, higher education levels do not increase the probability of returning to the job market.

The effect of the retirement age is positive and significant on all models except model 10, which includes all variables, and where the retirement age loses significance. On models 1 through 9, the older the player retires, the higher his chances of pursuing an alternative occupation. The same happens with the number of club participations along the playing career, which is positive and significant when evaluated along the base set of variables, on model 3, but loses significance when estimated along with all the variables, on the last model. It is likely that effect of these two variables becomes non-significant due to the introduction of the variable regarding the player's career length since there may be some relation between them. For instance, a higher career length may imply a higher retirement age since most players start playing at around the same age, and can also be related with more club participations, on some cases. When looking at the results without the 'Portuguese' variable (table A from the appendix), the effect of the retirement age is significant on all models, including the last model. Despite the effects of this variables being not significant on model 10 from table 5.1, it is significant on models 1 through 9 and also on all models from table A, and therefore, we cannot say they the retirement age does not have an effect of the outcome. However, for the number of club participations, removing the variable regarding players' nationality does not increase the significance level on the last model.

The effect of the length of the player career is positive and statistically significant both when modelled on its own (with the base variables, on model 2) and on the last model, according to which, one additional year in the career of a football player increases its chance of finding an alternative occupation instead of remaining unemployed, by 3.6 percentage points. The results present on the table A from the appendix are similar. The positive results for the age of the football player at the time he retires from the football career, as well as the length of the football career and the number of club participations, may be due to the fact that they can capture industry-specific human capital, which can be valuable for finding an alternative occupation, especially in the sports industry or related fields. In addition, we can think that the more clubs the player belonged to or the longer his career lasted, the more contacts he might have acquired, and as we have seen, contacts and networks might be important sources of information about job opportunities, and therefore can increase chances of finding employment.

Concerning the additional experience working on a job while playing professionally, model 4 estimates allow showing that having had an additional job while being a professional player increases the probability of returning by 19.7 percentage points. When modelled together with the effect of having an

additional job on the last year before retirement (model 10), its marginal effects become statistically not significant. The effect of the variable regarding having an additional job on the last year, which is included on model 5, is the highest of all the variables' effects. According to model 5 estimates, having had a job outside the professional player career on the last year before retirement increases the chance of returning by 34.8 percentage points. We can think that when a player who has another occupation while being a professional footballer retires from sports, he can keep on with this alternative activity. Results from the models without the 'Portuguese' variable show similar results, but with even higher coefficients.

The estimation results related with the log of the total amount earned in salaries during the career (model 6) and with the log of the last salary earned from the player career (model 7) are negative and statistically significant, showing a trend that the more financial capital the player acquired and the higher his last salary was, the lower the likelihood of getting reemployed and pursuing a secondary career. This result is expected, since we can think that the higher the player's wage, the more he might have been able to save and accumulate, and therefore the more possibilities of being financially stable after retirement he has. When modelled together, once again, one of the variables loses significance. Model 10 estimates show that the logarithm of the total wage is the predominant effect and that a 100% increase in the value of total amount in wages decreases the probability of pursuing an alternative occupation by 6 percentage points. Results from table A are similar and both variables show significance on model 10, despite the total wage coefficient being higher once again.

Model 8 results shows that the effect of the league the player last played on is significant and positive. Having played on the second league on the last year before football retirement increases the probability of returning by 12.6 percentage points when in comparison with an individual who last played on the first league, while this probability increase rises to 15 percentage points for someone who played on the semi-professional leagues (third and fourth leagues). Model 9 shows similar results for the effect of the highest league played during the whole career, despite being lower in value. As we have seen on chapter 4, lower leagues are associated with lower wages, which can increase the need of finding a remunerated activity. Therefore, the lower the league, the higher the probability of returning. When both variables (last and highest leagues) are included in the same model (model 10), the effects of the highest league become negative, while the last league shows positive marginal effects and once again, higher coefficient values. Results from table A are similar.

Table 5.1 – Marginal effects for the Logit model- Return after retirement

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Portuguese	0.338***	0.328***	0.328***	0.337***	0.336***	0.317***	0.281***	0.303***	0.329***	0.246***
	(0.012)	(0.013)	(0.013)	(0.012)	(0.012)	(0.013)	(0.014)	(0.013)	(0.013)	(0.015)
Education level:										
Basic	-0.088	-0.084	-0.089	-0.089	-0.088	-0.098	-0.108*	-0.129*	-0.095	-0.100
	(0.069)	(0.068)	(0.068)	(0.069)	(0.069)	(0.067)	(0.066)	(0.067)	(0.069)	(0.064)
Secondary	-0.067	-0.063	-0.069	-0.067	-0.066	-0.075	-0.083	-0.107	-0.074	-0.074
	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.068)	(0.066)	(0.067)	(0.069)	(0.064)
Tertiary	-0.052	-0.036	-0.038	-0.056	-0.054	-0.084	-0.099	-0.105	-0.066	-0.075
	(0.084)	(0.084)	(0.083)	(0.084)	(0.084)	(0.082)	(0.080)	(0.082)	(0.084)	(0.078)
Retirement age	0.005***	0.002*	0.002**	0.005***	0.005***	0.009***	0.007***	0.004***	0.006***	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Player career length		0.013***								0.036***
		(0.003)								(0.005)
Number of clubs			0.026***							-0.004
			(0.005)							(0.008)
Additional job once				0.197***						0.028
				(0.068)						(0.100)
Additional job last year					0.348***					0.267**
					(0.095)					(0.135)
Log of total wage						-0.032***				-0.060***
						(0.004)				(0.013)
Log of last salary							-0.064***			-0.011
							(0.005)			(0.013)
Last league:										
Second								0.126***		0.089***
								(0.017)		(0.023)
Semi-professional								0.150***		0.164***
								(0.015)		(0.027)
Highest league:										
Second									0.070***	-0.042**
									(0.016)	(0.021)
Semi-professional									0.046***	-0.141***
									(0.015)	(0.023)
N	4,880	4,880	4,880	4,880	4,880	4,880	4,880	4,880	4,880	4,880

Note: All models control for the year. The base value of every categorical variable is not displayed (education level= low, last league= first and highest league= first). The standard error for each marginal effect is displayed below it, in the brackets. *significant at 10%; **significant at 5%; ***significant at 1%.

5.2. The probability of becoming an entrepreneur

Table 5.2 shows the results of the models obtained regarding the decision of becoming an entrepreneur or not when returning to the job market. In these models, the control group is a non-Portuguese individual, with a low level of education, with no previous entrepreneurial experience, that the last league he played on was the first league and that the highest league he played on during the whole career was

the first league. Table B from the appendix shows the results of these models without the variable 'Portuguese', therefore including the years of 1991 to 2017 and a higher number of observations.

After the decision of returning is made, being Portuguese only increases the probability of becoming an entrepreneur by around 3 percentage points and is statistically significant on all models. While it has a big impact on the probabilities of retired players pursuing alternative occupations, in Portugal, the effect on the probability of doing so as an entrepreneur is smaller.

The effect of the level of education on the probability of becoming an entrepreneur is only significant for the secondary education group. However, when not including the 'Portuguese' variable (table B from the appendix) all education levels show positive and statistically significant effects. On both tables, the secondary level is the education level with the highest coefficients, increasing the probability of being an entrepreneur by around 7 and 9 percentage points, respectively, when comparing to someone with low levels of education. Schooling allows to capture general human capital and individuals with higher levels of education might be more likely to perceive a business opportunity (Shane, 2000) and more confident and successful at exploiting it, and therefore might be more prone to becoming an entrepreneur. However, someone who has high formal education levels (for instance higher education), might be less prone to the take the risk usually involved in creating and investing in his own business and might opt for a safer income source as an employee.

The retirement age is also significant and positive across all models. We can conclude that the older the player retires, the higher the chances of finding a professional occupation as an entrepreneur, in the case of returning to the market. This can result from the older the individual is, the more money he might have accumulated to finance his business, as well as creating more or better contacts. Similar results were obtained for the year gap between retirement and reemployment: the higher this gap, the more likely the individual is to become an entrepreneur. It has been stated that human capital is likely to depreciate during career interruptions due to unemployment periods (Baptista et al., 2014), and that firms perceive employment gaps negatively (Blanchard & Diamond, 1994). Therefore, it can happen that an individual that has been unemployed for a longer period has more difficulty in finding a job as a salaried employee and consequently decides to create his own business. However, the values of these probability increases are relatively small: around 0.4 and 0.7 percentage points, respectively.

The effect of the length of the player career is significant and positive on model 12, when modelled along the base variables, showing that one additional year on the individual's career increases his chances of becoming an entrepreneur by 0.6 percentage points. This can be due to the fact that a longer career may result in more financial capital that is accumulated in the form of salaries and a bigger network of contacts, which might create favourable conditions to invest and create business opportunities. However, the effect of player career length becomes negative and not significant on the last model, when included along other variables, such as the logarithm of the total wage accumulated, for instance. Table B presents very similar results.

Having been an entrepreneur at least once during the player career is the variable with the biggest effect on the outcome probability. On the last model, when all variables are included, the increase in the

probability of the positive outcome is of 73.8 percentage points and is statistically significant at a 1% level. Entrepreneurial human capital in the form of ownership experience and managerial competencies have been associated with better chances of identifying and exploiting more business opportunities (Ucbasaran, et al., 2008). Someone who has had some type of entrepreneurship experience is more likely to recognize opportunities and pursue an entrepreneurial path as an alternative career. For instance, some football players form partnerships with brands and acquire some contacts and business insights while still on their professional player career that might be advantageous further on.

The log of the last wage and the log of the total wage accumulated during the career have statistically significant and positive effects, on models 14 and 15, respectively. However, combining all the variables, on the last model, increases the value of the effect of the log of the total wage, but makes the effect of the log of the last wage negative and not significant. According to model 18, a 100% increase of the total wage increases the probability of becoming an entrepreneur by 2.9 percentage points, while the log of the last salary is irrelevant for the analysis. Results from table B indicate that only the logarithm of the total wage is significant, and present slightly lower coefficients. The effect of the total value obtained in salaries was expected, since that, considering job options when returning to the job market, someone who has accumulated higher capital during their career as a player might be more capable to create their own business that someone with fewer accumulated capital.

The last league where the individual played during his career is not significant for this decision, on both models where the variable appears. The highest league is statistically significant on model 17, but not on the final model. Model 17 estimates show that someone who played on the second league or on the semi-professional leagues has lower probability of becoming an entrepreneur than someone who played on the first league. Again, playing in lower leagues usually relates to earning lower salaries, and may not enable creating such important contact networks or recognition, which could decrease entrepreneurial opportunities. However, results from table B also show that the variables regarding the football leagues do not have a strong effect on the outcome, and therefore we cannot conclude with certain that having played on a higher league increases the probability of becoming an entrepreneur.

Table 5.2 – Marginal effects for the Logit model- Entrepreneur upon reemployment

Variables	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
Portuguese	0.034*	0.031*	0.033*	0.036**	0.035**	0.034*	0.034**	0.032*
	(0.018)	(0.019)	(0.018)	(0.017)	(0.017)	(0.018)	(0.018)	(0.018)
Education level:								
Basic	0.030	0.033	0.028	0.034	0.038*	0.031	0.032	0.034
	(0.025)	(0.023)	(0.025)	(0.023)	(0.021)	(0.024)	(0.024)	(0.022)
Secondary	0.066**	0.068***	0.065**	0.069***	0.070***	0.067***	0.067***	0.067***
	(0.026)	(0.025)	(0.027)	(0.025)	(0.023)	(0.026)	(0.025)	(0.024)
Tertiary	0.029	0.034	0.029	0.032	0.038	0.030	0.031	0.038
	(0.030)	(0.029)	(0.031)	(0.028)	(0.027)	(0.030)	(0.029)	(0.029)
Retirement age	0.004***	0.003***	0.004***	0.004***	0.003***	0.004***	0.004***	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gap	0.006***	0.007***	0.006***	0.006***	0.007***	0.006***	0.006***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Player career length		0.006***						-0.004
		(0.002)						(0.004)
Entrepreneur once			0.740***					0.738***
			(0.175)					(0.181)
Log of last wage				0.010*				-0.015
				(0.005)				(0.009)
Log of total wage					0.015***			0.029***
					(0.004)			(0.010)
Last league:								
Second						0.009		0.021
						(0.019)		(0.022)
Semi-professional						-0.011		-0.003
						(0.013)		(0.018)
Highest league:								
Second							-0.030*	-0.020
							(0.016)	(0.017)
Semi-professional							-0.024**	0.013
							(0.012)	(0.020)
N	2,269	2,269	2,269	2,269	2,269	2,269	2,269	2,269

Note: All models control for the year. The base value of every categorical variable is not displayed (education level= low, last league= first and highest league= first). The standard error for each marginal effect is displayed below it, in the brackets. *significant at 10%; **significant at 5%; ***significant at 1%.

6. Conclusions

The aim of this dissertation is to understand the choice that retired professional football players have of returning to the labour market upon sports retirement or staying retired, and the choice of, in the case of returning, doing so as an entrepreneur or as an employee. Our goal was to analyse which of the players' individual and career related characteristics influence each of these options.

In order to study the effects of the explanatory variables on the two binary outcomes, we used data from the Portuguese dataset *Quadros de Pessoal*, which allows us to track information over time, given its longitudinal nature. We obtained a total of 35 001 observations, corresponding to 8 809 distinct individuals, who are either active professional football players or retired football players that engaged in another career, in Portugal, during the period of 1991 to 2017. We applied a discrete choice model- the Logit model- to these data, using the Stata software, and obtained the marginal effects of the explanatory variables on the response probabilities of both outcomes.

About 33% of the football players in our database pursued an alternative professional occupation upon retiring from sports, in Portugal, and from this portion, only 8% returned to the market as an entrepreneur, while the rest pursued secondary careers as salaried employees. 92% of the reemployed players are Portuguese, since foreign players leave the country either to return to their own, or to play professionally in a club from another country. The most common career choices among retired players that get reemployed are in public administration and defence, compulsory social security, wholesale and retail trade, repair and maintenance of motorcycles and vehicles, and in sporting, artistic, entertainment and recreational activities, where the careers in coaching, club administration and sports management are included.

Active football players do not have high education levels. About 69% has not completed 12 years of school (the mandatory school attendance in Portugal since 2012) and only about 1% has any type of higher education degree.

Regarding wages, there is a wide pay scale and the wages vary a lot between leagues. While first league players earn on average 140 192 euros annually, 50% of the players (of all leagues) receive not more than 15 960 euros per year. We observe that the players who did not return to the labour market received on average 112 766 euros more in wages as players than the ones who returned to pursue an alternative career, and players who became entrepreneurs accumulated on average almost 95 000 euros more during their football careers than the players who became employees.

The results obtained indicate that being Portuguese increases the probability of returning to the labour market, in Portugal, by 25 percentage points, which is expected since 31% of the players are not Portuguese, and probably return to their countries or leave to play in another one. But once this decision is made, it only increases the chances of returning as an entrepreneur by 3 percentage points.

The level of formal education, contrarily to expected, does not have an effect on the probability of pursuing an alternative occupation upon sports retirement. It does have an effect on the probability of

becoming an entrepreneur, for the individuals with the secondary level of education only, while the effects of the basic and tertiary levels are not statistically significant. The results show an increase of 7 percentage points in the probability of the positive outcome, when comparing the secondary level to someone with a low level of education.

A higher retirement age and a higher career length are both associated with higher chances of finding a secondary career. For the number of clubs, despite there being some evidence that it can increase this probability, we cannot confirm it with certainty. For the decision of self-employment, both a higher retirement age and a longer gap between retirement and reemployment increase the probability of pursuing it, while we found no significant effect of the football career length.

Having an additional job while on the last year of the football career is the variable with the biggest effect on the return decision, increasing the chances of the positive outcome by 27 percentage points. Similarly, having had entrepreneurial experience during the player career is the biggest predictor of becoming one upon football retirement, increasing this probability by 74 percentage points.

Regarding players' wages, as expected, the total amount received during the players' careers decreases the probability of pursuing an alternative professional occupation after leaving football. In the case of returning, receiving higher wages increases the probability of doing it as an entrepreneur.

The effects of the last and highest leagues were not very relevant for the entrepreneurship decision. For the return decision, the effects of the last and highest leagues, when modelled with the base variables, both show that the first league players have the lowest probability of returning.

When individuals decide to pursue a professional or semi-professional career in sports, they should keep in mind that they might need to find an alternative professional career after retiring from the athletic career, and therefore they should develop other interests, create contact networks, and acquire additional experience on other areas, which can be valuable for finding occupational opportunities.

Some limitations of our work include the fact that a lot of the players are not Portuguese and either move to another country to play in another club or return to their home countries upon retirement, and therefore we do not have information about their professional statuses. We also do not have information of the retired players that chose to work as self-employed without creating a company.

A potential improvement of the present work would be to include interactions between the explanatory variables in the models, in order to capture possible differences in an independent variable's effect on the outcome, depending on the values of another independent variable. In the future, our study could be extended to other sports and to other countries where these type of data is available, namely to Swedish and Danish football leagues, which we believe to be possible to obtain information from.

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Appendix

Table A – Marginal effects for the Logit model- Return after retirement: without 'Portuguese' variable

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Education level:										
Basic	-0.027	-0.025	-0.024	-0.027	-0.027	-0.032	-0.039*	-0.062***	-0.036	-0.037*
	(0.023)	(0.022)	(0.022)	(0.023)	(0.023)	(0.023)	(0.022)	(0.023)	(0.023)	(0.021)
Secondary	-0.009	-0.011	-0.010	-0.009	-0.008	-0.011	-0.014	-0.042*	-0.018	-0.016
	(0.025)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.025)	(0.025)	(0.023)
Tertiary	0.013	0.040	0.042	0.006	0.008	-0.013	-0.034	-0.031	-0.000	-0.010
	(0.052)	(0.052)	(0.051)	(0.052)	(0.052)	(0.050)	(0.048)	(0.051)	(0.051)	(0.048)
Retirement age	0.011***	0.003**	0.005***	0.010***	0.010***	0.013***	0.012***	0.010***	0.011***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Player career length		0.042***								0.056***
		(0.003)								(0.005)
Number of clubs			0.074***							0.007
			(0.005)							(0.001)
Additional job once				0.330***						0.029
				(0.057)						(0.100)
Additional job last year					0.436***					0.309***
					(0.063)					(0.120)
Log of total wage						-0.033***				-0.050***
						(0.004)				(0.012)
Log of last wage							-0.084***			-0.044***
							(0.004)			(0.011)
Last league:										
Second								0.140***		0.047**
								(0.016)		(0.022)
Semi-professional								0.160***		0.125***
								(0.012)		(0.022)
Highest league:										
Second									0.082***	-0.012
									(0.016)	(0.022)
Semi-professional									0.046***	-0.130***
									(0.012)	(0.019)
N	7,513	7,513	7,513	7,513	7,513	7,513	7,513	7,513	7,513	7,513

Note: All models control for the year. The base value of every categorical variable is not displayed (education level= low, last league= first and highest league= first). The standard error for each marginal effect is displayed below it, in the brackets. *significant at 10%; **significant at 5%; ***significant at 1%.

Table B – Marginal effects for the Logit model- Entrepreneur upon reemployment: without 'Portuguese' variable

Variables	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18
Education level:								
Basic	0.051***	0.051***	0.049***	0.051***	0.052***	0.051***	0.051***	0.049***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)
Secondary	0.089***	0.089***	0.089***	0.090***	0.089***	0.090***	0.089***	0.087***
	(0.016)	(0.016)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)	(0.017)
Tertiary	0.059**	0.061***	0.059***	0.059***	0.062***	0.059**	0.059**	0.062***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.024)
Retirement age	0.005***	0.004***	0.005***	0.005***	0.004***	0.005***	0.005***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gap	0.007***	0.008***	0.007***	0.007***	0.008***	0.007***	0.007***	0.008***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Player career length		0.006***						-0.002
		(0.002)						(0.004)
Entrepreneur once			0.776***					0.767***
			(0.141)					(0.150)
Log of last wage				0.006				-0.013
				(0.005)				(0.009)
Log of total wage					0.012***			0.024**
					(0.004)			(0.010)
Last league:								
Second						0.016		0.030
						(0.019)		(0.023)
Semi-professional						0.000		0.002
						(0.012)		(0.017)
Highest league:								
Second							-0.028*	-0.023
							(0.016)	(0.017)
Semi-professional							-0.011	0.017
							(0.011)	(0.019)
N	2,681	2,681	2,681	2,681	2,681	2,681	2,681	2,681

Note: All models control for the year. The base value of every categorical variable is not displayed (education level= low, last league= first and highest league= first). The standard error for each marginal effect is displayed below it, in the brackets. *significant at 10%; **significant at 5%; ***significant at 1%.